

## **APPENDICES**

### **CONTENTS**

#### **APPENDIX**

|          |                                                                                                                                       |    |
|----------|---------------------------------------------------------------------------------------------------------------------------------------|----|
| FORM -   | REVISION REQUEST SUMMARY SHEET FOR THE<br>MANUAL OF ENGINEERING STANDARDS &<br>SPECIFICATIONS                                         | A  |
| FORM -   | CONDITION SHEET                                                                                                                       | C  |
| FORM -   | EASEMENT RELEASE AND INSPECTION FOLLOWING<br>INSTALLATION OF UTILITY                                                                  | C  |
| SAMPLE - | EASEMENT SKETCH - RW2                                                                                                                 | C  |
|          | MINIMUM REQUIRED STATUTORY RIGHT-OF-WAY AND TEMPORARY WORKING<br>EASEMENT WIDTHS FOR UNDERGROUND SERVICES THROUGH PRIVATE<br>PROPERTY | D  |
| FORM -   | SUBSTANTIAL COMPLETION STATISTICS RECORD UTILITIES &<br>WORKS FOR DEVELOPMENT                                                         | E  |
| FORM -   | SERVICE SHEET FOR A SINGLE FAMILY RESIDENTIAL LOT                                                                                     | F1 |
| FORM -   | SERVICE SHEET FOR ALL LOTS EXCLUDING SINGLE FAMILY<br>RESIDENTIAL                                                                     | F2 |
| FORM -   | BUILDING DEVELOPMENT WATER METER INFORMATION SHEET                                                                                    | F3 |
| FORM -   | CERTIFICATION OF DESIGN                                                                                                               | G1 |
| FORM -   | CERTIFICATION OF INSTALLED WORKS                                                                                                      | G2 |
| FORM -   | CERTIFICATION OF STREET LIGHT INSTALLATION                                                                                            | G3 |
| FORM -   | CERTIFICATION OF LANDSCAPE INSTALLATION                                                                                               | G4 |
| FORM -   | SANITARY SEWER FLOW ANALYSIS – CALCULATION SHEET                                                                                      | H1 |
| FORM -   | STORMWATER MANAGEMENT FLOW ANALYSIS –<br>CALCULATION SHEET                                                                            | H2 |
| FORM -   | FIRE FLOW – CALCULATION SHEET                                                                                                         | H3 |
| FORM -   | WATER METER SIZING CALCULATION SHEET                                                                                                  | H4 |
| SAMPLE - | WATER METER SIZING CALCULATION SHEET EXAMPLE                                                                                          | H5 |
| SAMPLE - | CITY OF NANAIMO'S FIELD HANDBOOK OF GENERAL SIGNS                                                                                     | I  |
| SAMPLE - | BC HYDRO STREET LIGHT INFORMATION MANAGEMENT SYSTEM<br>(SLIM)                                                                         | J  |

Effective April 2023

**Revision Request Summary Sheet  
for the Manual of Engineering Standards and Specifications**

**APPENDIX A**

**Revision Request No.:** \_\_\_\_\_  
(filed by Engineering Services Technologist)

**Date:** \_\_\_\_\_

**To:** \_\_\_\_\_ Engineering Services Technologist – City of Nanaimo

**From:** \_\_\_\_\_ **Department:**  
(or company name) \_\_\_\_\_

**Phone No.:** \_\_\_\_\_

**Section Number / Drawing Reference:** \_\_\_\_\_

**Change Requested:** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Reason for Change:** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Action:**  
(Eng Ser Tech) \_\_\_\_\_

**Date:** \_\_\_\_\_

CONDITION SHEET

REFERENCE: \_\_\_\_\_ DATE: \_\_\_\_\_

NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

The undersigned agrees to grant access to the property as mentioned herein for the purpose of a \_\_\_\_\_, subject to the following conditions for restoration.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

CITY OF NANAIMO  
455 Wallace Street, Nanaimo, B.C., V9R 5J6

EASEMENT RELEASE AND INSPECTION FOLLOWING INSTALLATION OF UTILITY

Contractor: \_\_\_\_\_ Contract No.: \_\_\_\_\_

Owner's Name: \_\_\_\_\_ Easement  
Reference No.: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

Location: \_\_\_\_\_

Legal Description: \_\_\_\_\_

Manhole No.: \_\_\_\_\_ to Manhole No.: \_\_\_\_\_

Clean-up of easement is satisfactory and meets the requirements as set out in the easement condition form.

Date: \_\_\_\_\_ Property Owner: \_\_\_\_\_

Clean-up of easement is NOT satisfactory until the following work has been carried out: \_\_\_\_\_

Date: \_\_\_\_\_ Property Owner: \_\_\_\_\_

Contractor's Agent: \_\_\_\_\_

=====

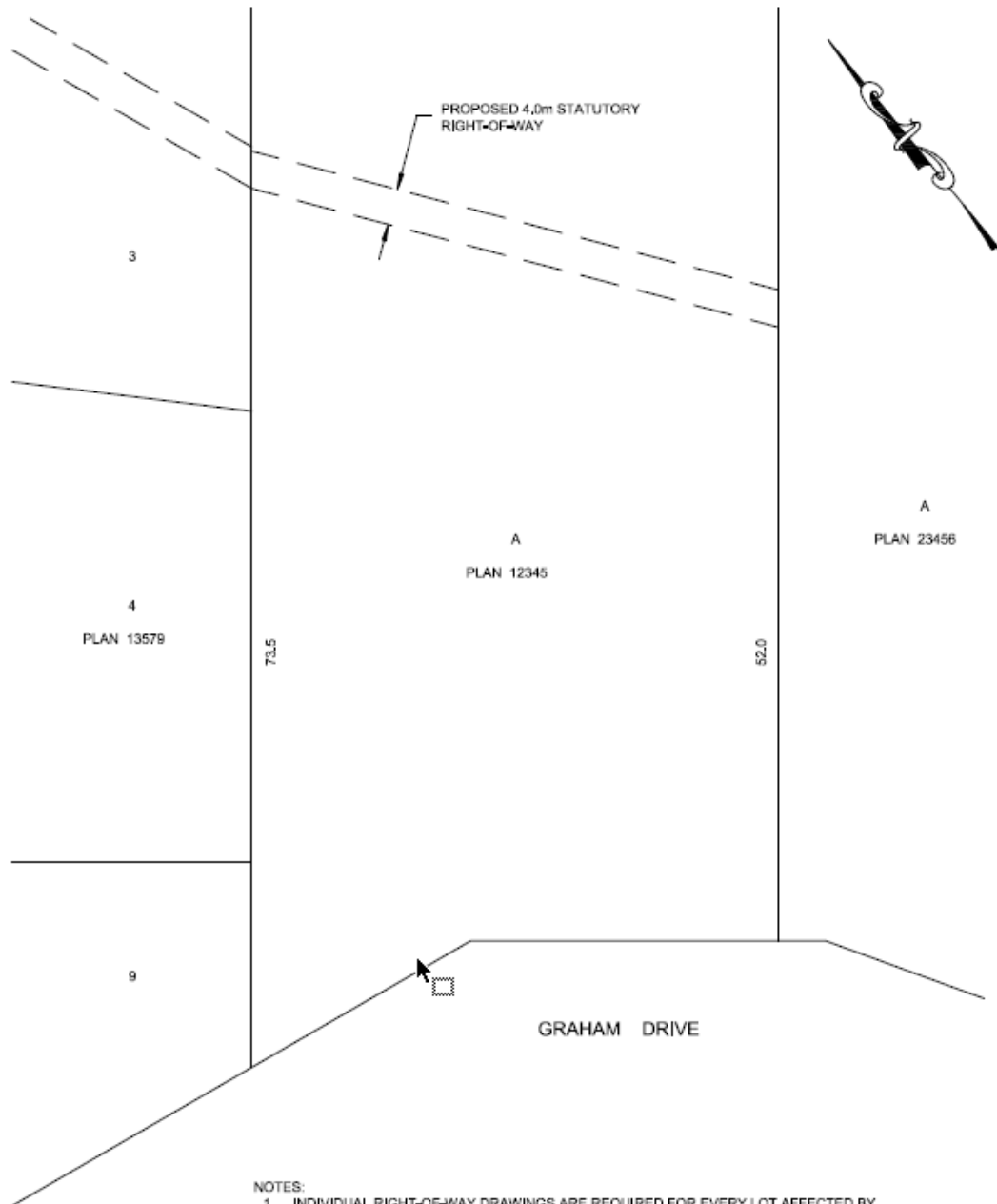
Consulting Engineers' Approval and Recommendation: \_\_\_\_\_

\_\_\_\_\_  
Consulting Engineer

Effective April 2023

## APPENDIX C

G:\INFRASTRUCTURE\PLANNING\STANDARDS & PRODUCTS\STANDARDS\SECTION 1013 MAY 2020\09-08-15 REDLINE INCORPORATION - WORKING DRAWING - SECTION 1013\APPENDIX C\RW-2



### NOTES:

1. INDIVIDUAL RIGHT-OF-WAY DRAWINGS ARE REQUIRED FOR EVERY LOT AFFECTED BY CONSTRUCTION OF A CITY CAPITAL WORKS PROJECT THROUGH IT.
2. THE SKETCH IS AN ATTACHMENT REQUIRED WITH EVERY PERMISSION TO ENTER FORM, AND CONDITION SHEET SIGNED BY THE PROPERTY OWNER.
3. FOR BLANKET WORKING ACCESS AGREEMENTS, REFER TO APPENDIX D, CLAUSE 4.

SAMPLE SKETCH

10.10.2019



PROPOSED RIGHT OF WAY

Scale: N.T.S.

Created: MAY 2013

Rev Date: MAY 2020

Dwg No: RW-2

Effective April 2023

**MINIMUM REQUIRED STATUTORY RIGHT-OF-WAY AND TEMPORARY WORKING EASEMENT  
WIDTHS FOR UNDERGROUND SERVICES THROUGH PRIVATE PROPERTY**

1. Where location of a municipal utility in a statutory right-of-way is permitted by the *City Engineer*, the right-of-way widths shall be as follows:

|     |                                                                                                                                                                                                                                                                  |                |                                                                                                                                                   |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| (a) | Single utility.                                                                                                                                                                                                                                                  | R.O.W. width = | Twice the depth from surface to the crown of the pipe rounded up to nearest half meter [4.0 m minimum width]                                      |
| (b) | Two utilities within the same trench.                                                                                                                                                                                                                            | R.O.W. width = | Twice the depth from surface to the crown of the deeper pipe rounded up to the nearest half meter [5.0 m minimum width]                           |
| (c) | Two or more utilities adjacent to one another but in separate trenches.                                                                                                                                                                                          | R.O.W. width = | Cumulative widths for single services PLUS any difference to provide the required separation rounded up to nearest half meter [6 m minimum width] |
| (d) | The maximum depth shall be used to determine the R.O.W. width and the width shall be consistent throughout the length of the R.O.W.                                                                                                                              |                |                                                                                                                                                   |
| (e) | For pipes 900 mm or larger, add an additional 2.0 m to R.O.W. width.                                                                                                                                                                                             |                |                                                                                                                                                   |
| (f) | When the utility is within a Road allowance and the distance from the property line to the centre of the utility is less than half of the width indicated above for a single utility, the difference shall be provided as right-of-way on the adjacent property. |                |                                                                                                                                                   |
| (g) | Modified right-of-ways will be considered where supported by design and/or supplemental report(s).                                                                                                                                                               |                |                                                                                                                                                   |

2. Rear and side yard utility right-of-ways are acceptable if appropriate access is provided to the utilities for maintenance and replacement by conventional open cut method.
3. In all cases, the width of rights-of-way shall be sufficient to permit an open excavation with side slopes and access for construction equipment in accordance with the WorkSafeBC regulations, without impacting on or endangering adjacent structures. The *Consultant* shall provide cross sections indicating the minimum safe distances to adjacent building footings based on a safe angle of repose from the limits of the excavation.
4. Blanket access agreements are required on private property for the purpose of moving construction equipment and materials onto the utility right-of-way.
5. Right-of-way locations shall be selected to avoid environmentally sensitive areas such as watercourses and wetlands.

Effective April 2023

SUBSTANTIAL COMPLETION STATISTICS RECORD  
ASSETS FOR (FROM) DEVELOPMENT

DATE OF SUBMISSION: \_\_\_\_\_

FILE NO: \_\_\_\_\_

ASBUILT NO.: \_\_\_\_\_

ENG. CO: \_\_\_\_\_

LOCATION: \_\_\_\_\_

DATE OF CERTIFICATION: \_\_\_\_\_  
(Same date as G2 Certification of Installed Works)

**WATER ASSETS**

| ITEM                          | TYPE | DR | UNIT | QUANTITY | COST PER<br>UNIT (\$) | VALUE (\$) |
|-------------------------------|------|----|------|----------|-----------------------|------------|
| PIPE                          |      |    | L.M. |          |                       |            |
| FIRE HYDRANT                  |      |    | EACH |          |                       |            |
| FLUSHOUT                      |      |    | EACH |          |                       |            |
| PRESSURE<br>REDUCING<br>VALVE |      |    | EACH |          |                       |            |
| METER                         |      |    | EACH |          |                       |            |
| FITTINGS                      |      |    | EACH |          |                       |            |
| WATER ASSETS TOTAL            |      |    |      |          |                       |            |

**SANITARY SEWER ASSETS**

| ITEM                        | TYPE | DR | UNIT | QUANTITY | COST PER<br>UNIT (\$) | VALUE (\$) |
|-----------------------------|------|----|------|----------|-----------------------|------------|
| PIPE                        |      |    | L.M. |          |                       |            |
| MANHOLE                     |      |    | EACH |          |                       |            |
| TEMPORARY<br>CLEANOUT       |      |    | EACH |          |                       |            |
| DROP MANHOLE                |      |    | EACH |          |                       |            |
| SANITARY SEWER ASSETS TOTAL |      |    |      |          |                       |            |

Effective April 2023

**STORM SEWER ASSETS**

| ITEM                     | TYPE | DR | UNIT | QUANTITY | COST PER<br>UNIT (\$) | VALUE (\$) |
|--------------------------|------|----|------|----------|-----------------------|------------|
| PIPE                     |      |    | L.M. |          |                       |            |
| MANHOLE                  |      |    | EACH |          |                       |            |
| TEMPORARY<br>CLEANOUT    |      |    | EACH |          |                       |            |
| CATCH BASIN              |      |    | EACH |          |                       |            |
| STORM<br>DETENTION       |      |    | EACH |          |                       |            |
| STORM SEWER ASSETS TOTAL |      |    |      |          |                       |            |

Effective April 2023



**TRANSPORTATION ASSETS**

| ITEM                                       | UNIT | QUANTITY | COST PER UNIT (\$) | VALUE (\$) |
|--------------------------------------------|------|----------|--------------------|------------|
| 50 mm Asphalt Road/Lane                    | L.M. |          |                    |            |
| 75mm Asphalt Road                          | L.M. |          |                    |            |
| Asphalt Widening & Patching                | S.M. |          |                    |            |
| Mountable Curb and Gutter                  | L.M. |          |                    |            |
| Non-mountable Curb or Curb and Gutter      | L.M. |          |                    |            |
| Roundabouts                                | EACH |          |                    |            |
| Medians                                    | EACH |          |                    |            |
| Traffic Calming – Circle                   | EACH |          |                    |            |
| Traffic Calming – Curb Extension           | EACH |          |                    |            |
| Traffic Calming – Speed Hump               | EACH |          |                    |            |
| Pedestrian Crossings                       | EACH |          |                    |            |
| Pedestrian Islands                         | EACH |          |                    |            |
| Pedestrian Sidewalk - Concrete             | L.M. |          |                    |            |
| Pedestrian Sidewalk - Asphalt              | L.M. |          |                    |            |
| Pedestrian 1.8m Wide Sidewalk - Asphalt    | L.M. |          |                    |            |
| Walkway - Asphalt                          | L.M. |          |                    |            |
| Trail*                                     | L.M. |          |                    |            |
| Trail*                                     | L.M. |          |                    |            |
| Transit – Bus Shelters                     | EACH |          |                    |            |
| Transit – Pads                             | EACH |          |                    |            |
| Cycling Marked Bike Lane – Same as Road    | L.M. |          |                    |            |
| Cycling Buffered Lane – Concrete Separator | L.M. |          |                    |            |
| Cycle Track Bike Lane                      | L.M. |          |                    |            |
| Streetlights**                             | EACH |          |                    |            |
| Traffic Signal                             | EACH |          |                    |            |
| <b>TRANSPORTATION ASSETS TOTAL</b>         |      |          |                    |            |

***\*Note the width of the trail and the material type.***

***\*\*The cost per unit for streetlights or traffic signal includes supply of all materials and installation of electrical service equipment, concrete pole base, conduit, wiring, pole and lamp for each streetlight or traffic signal.***

Effective April 2023

**LANDSCAPING & IRRIGATION ASSETS**

| ITEM                                               | UNIT | QUANTITY | COST PER UNIT<br>(\$) | VALUE (\$) |
|----------------------------------------------------|------|----------|-----------------------|------------|
| Street Trees                                       | EACH |          |                       |            |
| ØIrrigation Piping                                 | L.M. |          |                       |            |
| Irrigation Controller                              | EACH |          |                       |            |
| Top Soil                                           | S.M. |          |                       |            |
| Sod/Seeding                                        | S.M. |          |                       |            |
| Rock/Block Wall                                    | L.M. |          |                       |            |
| Bio Swale                                          | L.M. |          |                       |            |
| <b>LANDSCAPING AND IRRIGATION<br/>ASSETS TOTAL</b> |      |          |                       |            |

Effective April 2023

**STATISTIC SUMMARY**

DATE OF SUBMISSION: \_\_\_\_\_

FILE NO: \_\_\_\_\_

ASBUILT NO.: \_\_\_\_\_

ENG. CO: \_\_\_\_\_

LOCATION: \_\_\_\_\_

DATE OF CERTIFICATION: \_\_\_\_\_  
(Same date as G2 Certification of Installed Works)

| ITEM                            | UNITS | QUANTITY | TOTAL VALUE (\$) |
|---------------------------------|-------|----------|------------------|
|                                 |       |          |                  |
| WATERMAINS                      | L.M.  |          |                  |
|                                 |       |          |                  |
| SANITARY SEWERS                 | L.M.  |          |                  |
|                                 |       |          |                  |
| STORM SEWERS                    | L.M.  |          |                  |
|                                 |       |          |                  |
| STORM DETENTION                 | EACH  |          |                  |
|                                 |       |          |                  |
| ROADS/LANES                     | L.M.  |          |                  |
|                                 |       |          |                  |
| SIDEWALKS                       | L.M.  |          |                  |
|                                 |       |          |                  |
| WALKWAYS/TRAILWAYS              | L.M.  |          |                  |
|                                 |       |          |                  |
| BIKE LANES                      | L.M.  |          |                  |
|                                 |       |          |                  |
| CURB AND GUTTER                 | L.M.  |          |                  |
|                                 |       |          |                  |
| FIRE HYDRANTS                   | EACH  |          |                  |
|                                 |       |          |                  |
| STREETLIGHTS                    | EACH  |          |                  |
|                                 |       |          |                  |
| LANDSCAPING/IRRIGATION          | L.S.  |          |                  |
|                                 |       |          |                  |
| TRANSIT FACILITY                | EACH  |          |                  |
|                                 |       |          |                  |
| GRAND TOTAL VALUE OF ALL ASSETS |       |          |                  |

Effective April 2023

# CITY OF NANAIMO SERVICE SHEET

## SINGLE FAMILY RESIDENTIAL LOT

### APPENDIX F1

|                                                                                                                                                |              |          |
|------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------|
| HOUSE NO:                                                                                                                                      | STREET NAME: |          |
| PLAN NO:                                                                                                                                       | LOT NO:      | FILE NO: |
| <p>SHOW: 1) LOT. 2) STREET R/W NAME. 3) RIGHT OF WAYS IF ANY. 4) NORTH ARROW. 5) LOCATION OF ALL UTILITIES – IDENTIFIED &amp; DIMENSIONED.</p> |              |          |

NOTE: "FROM LPL" = FROM LEFT PROPERTY LINE & "FROM RPL" = FROM RIGHT PROPERTY LINE

|                             |               |                                                                          |        |                 |
|-----------------------------|---------------|--------------------------------------------------------------------------|--------|-----------------|
| VACANT LOT                  | DEVELOPED LOT | CAPITAL PROJECT                                                          | L.I.P. | D.C.C.          |
| LOCATION                    |               | CONNECTED                                                                |        | SIZE / MATERIAL |
|                             |               | YES                                                                      | NO     |                 |
| WATER:                      |               |                                                                          |        |                 |
| FIRE LINE:                  |               |                                                                          |        |                 |
| SANITARY SEWER:             |               |                                                                          |        | INVERT EL.      |
| STORM SEWER:                |               |                                                                          |        | INVERT EL.      |
| MINIMUM BASEMENT ELEVATION: |               | <div style="border: 1px solid black; height: 100px; width: 100%;"></div> |        |                 |
| CERTIFIED ACCURATE BY:      |               |                                                                          |        |                 |

COMMENTS:

Effective April 2023

# CITY OF NANAIMO SERVICE SHEET FOR ALL LOTS EXCLUDING SINGLE FAMILY

|           |         |            |          |
|-----------|---------|------------|----------|
| HOUSE NO: | STREET: |            | CARD NO: |
| PLAN NO:  | LOT NO: | PERMIT NO: | FILE NO: |

|                                                                                                                                                  |        |        |
|--------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------|
| L.P.L.                                                                                                                                           | B.P.L. | R.P.L. |
|                                                                                                                                                  | F.P.L. |        |
| SHOW THE FOLLOWING:<br>1) LOT 2) STREET NAME 3) R.O.W.(S) IF ANY 4) NORTH ARROW<br>5) LOCATION OF ALL UTILITIES (DIMENSIONED FROM CIVIC ADDRESS) |        |        |

- ☐ NEW INSTALL  
☐ CHANGE/UPDATE  
☐ METER REMOVAL  
☐ SERVICE CONNECTION  
☐ SERVICE DISCONNECT  
☐ METER REPLACEMENT

COMMENTS:

---



---



---



---

NOTE: "FROM LPL" = FROM LEFT PROPERTY LINE; "FROM R.P.L." = FROM RIGHT PROPERTY LINE;  
 "FROM FPL" = FROM FRONT PROPERTY LINE; "FROM B.P.L." = FROM BACK PROPERTY LINE;

☐ VACANT LOT   
 ☐ DEVELOPED LOT   
 ☐ CAPITAL PROJECT   
 ☐ LOCAL IMPROVEMENT PROJECT   
 ☐ D.C.C.

|          | SERVICE     | LOCATION          | NEW                      | EXIST                    | CONNECTED                |                          | SIZE<br>(mm) | MATERIAL |
|----------|-------------|-------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------|----------|
|          |             |                   |                          |                          | YES                      | NO                       |              |          |
| WATER    | DOMESTIC    |                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |              |          |
|          | FIRE LINE   |                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |              |          |
|          | COMBINATION |                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |              |          |
| SANITARY |             |                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |              |          |
|          | M.B.F.E.:   | INVERT ELEVATION: |                          |                          |                          |                          |              |          |
| STORM    |             |                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |              |          |
|          | M.B.F.E.:   | INVERT ELEVATION: |                          |                          |                          |                          |              |          |

M.B.F.E. = Minimum Basement Floor Elevation

NOTE: Inverts to Geodetic Datum

| METERS |              |
|--------|--------------|
| NEW    | REGISTER NO. |
|        | READING      |
| OLD    | REGISTER NO. |
|        | READING      |

COMPLETED BY: \_\_\_\_\_

DATE: \_\_\_\_\_

PLACE METER STICKER/STAMP IN BOX

| SEAL / ENGINEER'S STAMP |
|-------------------------|
|                         |

Effective April 2023

**TO:** Finance Department  
# \_\_\_\_\_

Building Permit or File

**APPENDIX F3**

City of Nanaimo  
411 Dunsmuir Street  
Nanaimo, BC V9R 5E4

Civic Address \_\_\_\_\_

**BUILDING DEVELOPMENT WATER METER**  
**INFORMATION SHEET**

TO BE USED ON BUILDING DEVELOPMENTS WHERE THE DETECTOR CHECK/METER CHAMBER IS DEVELOPER INSTALLED. COMPLETE FORM FOR EACH METER.

TO BE SUBMITTED UPON INSTALLATION OF WATER METER/DETECTOR CHECK.

1. Type of Water Meter: ☐ Domestic Meter ☐ Detector Check ☐ Combination Meter
- 2.(a) Date of Installation of Water Meter: \_\_\_\_\_  
(b) Date of Installation of Detector Check, if applicable: \_\_\_\_\_  
OR:  
(c) Date of Installation of Combination Meter, if applicable: \_\_\_\_\_
3. Make and Model of meter installed:  
Domestic \_\_\_\_\_ Register No. \_\_\_\_\_  
Detector Check \_\_\_\_\_ Register No. \_\_\_\_\_  
Combination \_\_\_\_\_ Register No. \_\_\_\_\_
4. Size of meter installed: Domestic: \_\_\_\_\_  
Detector Check: \_\_\_\_\_  
Combination: \_\_\_\_\_
5. Meter reading at date of installation: Domestic: \_\_\_\_\_  
Detector Check: \_\_\_\_\_  
Combination: \_\_\_\_\_
6. Reading type: Metric \_\_\_\_\_
7. Does reading contain decimal places: Yes \_\_\_\_\_ No \_\_\_\_\_
8. If reading contains decimal places, how many decimal places are there? \_\_\_\_\_
9. Location of meter/service: \_\_\_\_\_

(must be stated on this sheet)

\_\_\_\_\_ P.Eng.

\_\_\_\_\_  
(Please Print Name)

\_\_\_\_\_  
(Company Name)

\_\_\_\_\_  
(Address)

cc: Manager, Utilities, Public Works  
Manager, Revenue Services, Finance

**(REVISED MAY 2020)**

Effective April 2023

## CERTIFICATION OF DESIGN

I, \_\_\_\_\_, a Professional Engineer registered in the Province of British Columbia, hereby certify that the works, as herein set out on the attached drawings entitled \_\_\_\_\_

have been designed in accordance with the City of Nanaimo's Engineering Standards and Specifications, and in accordance with good engineering practice where such design is not covered by the City's Engineering Standards and Specifications.

I have been retained to provide design, field review, record drawings and final certification for this project

by: \_\_\_\_\_  
(Name of Client)

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Address: \_\_\_\_\_

I am satisfied that in the contractual mandate which exists between myself and my client, the terms of reference will permit me to conduct field reviews of the construction work which will allow me to authenticate the "Certification of Works" required by the City of Nanaimo, a sample copy of which is attached to this document and initialed by me.

In the event that my client releases me from this project, or in the event that I find the terms of reference do not permit me to render a level of review of the construction work which will allow me to put my name and authenticate the form of certification required by the City of Nanaimo, I will notify the City of Nanaimo within twenty-four (24) hours verbally and follow it up with written confirmation and clarification.

Signed this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_\_.

\_\_\_\_\_  
(Signature) P. Eng.

I understand that the "CERTIFICATION OF WORKS" is to be completed in this format and submitted with the "record" drawings.

(Engineer)

SEAL / ENGINEER'S STAMP

Engineer (Signature)

---

Engineering Firm

Permit to Practice Number

Effective April 2023

**CERTIFICATION OF INSTALLED WORKS****NOTE: To be completed in this format and submitted with the "record" drawings**

Location of the Construction Site and Works: (Legal Description)

---



---

all within the City of Nanaimo, British Columbia.

I, \_\_\_\_\_, a Registered Professional Engineer  
(Reg. No. \_\_\_\_\_) in the Province of British Columbia, hereby certify:

1. THAT the following construction tests were carried out to confirm that construction met the specifications required:

(a) \_\_\_\_\_

(b) \_\_\_\_\_

etc.

2. THAT I, or someone under my direction supervision, was able to conduct sufficient field reviews of the construction work sufficient to be able to confirm that: specifications in force and effect by the City of Nanaimo and in the applicable design drawings for the said Works were generally met during the Construction Period and that all materials incorporated into the Works that are regulated by the City's Approved Product List are materials noted at the time of installation, and

3. THAT the accompanying plans labeled:

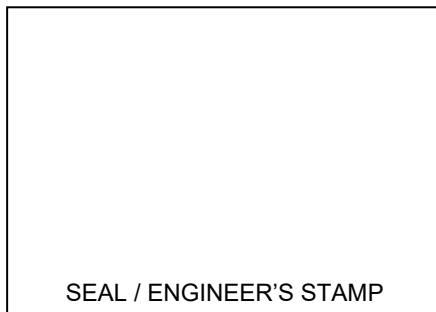
(i) \_\_\_\_\_

(ii) \_\_\_\_\_

(iii) \_\_\_\_\_

accurately record the materials, grades, inverts, offsets and dimensions of the constructed work.

DATED this \_\_\_\_\_ day of \_\_\_\_\_ 20 \_\_\_\_\_.  
(Date Of Certification)




---

 Engineer (Signature)

---

 Engineering Firm

---

 Permit to Practice Number

Effective April 2023



**CERTIFICATION OF STREET LIGHT INSTALLATION**

Location of the Construction site and Works (Legal Description)

---



---

all within the City of Nanaimo, British Columbia.

I, \_\_\_\_\_, a Registered Professional Engineer  
(Reg. No. \_\_\_\_\_), in the Province of British Columbia, hereby certify that:

1. I have received the final electrical inspection request and declaration for the street lighting installation from the electrical Field Safety Representative (copy attached).
2. All of the street lighting system is installed in accordance with all the specifications in force and effect by the Provincial Government and the City of Nanaimo as shown on the drawings and specifications authorized by me and submitted to the City of Nanaimo. The system is in working order and will be ready for use once it is connected to the B.C. Hydro and Power Authority's system.
3. THAT the accompanying plans labeled:
  - (i) \_\_\_\_\_
  - (ii) \_\_\_\_\_
  - (iii) \_\_\_\_\_

accurately records the materials, grades, inverts, offsets and dimensions of the constructed work,

---



---



---

and the certified "record drawing" truly records the construction of all the street lighting required for the subject project.

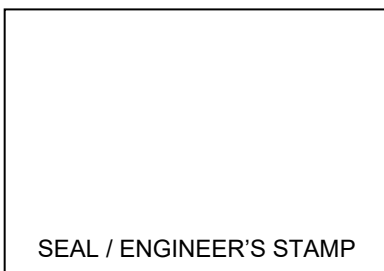
DATED this \_\_\_\_\_ day of \_\_\_\_\_ 20 \_\_\_\_\_.  
(Date of certification)

\_\_\_\_\_  
Engineer (Signature)

\_\_\_\_\_  
Engineering Firm

\_\_\_\_\_  
Permit to Practice Number

Effective April 2023



SEAL / ENGINEER'S STAMP

Engineering Standards & Specifications  
June 2026 Edition No. 15

**CERTIFICATION OF LANDSCAPE INSTALLATION****NOTE: To be completed in this format and submitted with the “As-Built” drawings**

Location of the Construction Site and Works: (Legal Description)

---



---



---



---

all within the City of Nanaimo, British Columbia.

I, \_\_\_\_\_, a Landscape Architect, and member in good standing of British Columbia Society of Landscape Architects, hereby certify

1. THAT the following construction tests were carried out to confirm that construction met the specifications required:
2. THAT I was able to monitor the construction and provide a level of supervision of the construction work sufficient to be able to confirm that the specifications in force and effect by the City of Nanaimo and in the applicable design drawings for the said Works were generally met during the Construction Period and
3. THAT the accompanying plans labeled:
  - (i) \_\_\_\_\_
  - (ii) \_\_\_\_\_
  - (iii) \_\_\_\_\_

accurately record the materials, species, locations, offsets and dimensions of the constructed work.

DATED this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_\_.  
(Date of certification)\_\_\_\_\_  
Landscape Architect (Signature)\_\_\_\_\_  
Landscape Architecture Firm

SEAL / LANDSCAPE ARCHITECT STAMP

Effective April 2023

**CITY OF NANAIMO SANITARY SEWER FLOW ANALYSIS – CALCULATION SHEET**

Project \_\_\_\_\_

ENGINEERING COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

ENGINEER \_\_\_\_\_

|                           |                                          |                                                                                                                                      |
|---------------------------|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Seal/<br>Engineer's Stamp | Date: _____                              | Harmon Peaking Factor:<br>$PF = 1 + 14/(4+P^{1/2})$<br><br>Mannings Formula:<br>$V = (R^{2/3} * S^{1/2})/n$<br>$Q = V*A$ $n = 0.013$ |
|                           | Design By: _____<br>Sheet _____ of _____ |                                                                                                                                      |

|          |                  |          |                   |               |               |                  |                       |                      |                | Sewage Flow       |                    | Infiltration & Inflow |                      | Total Flow          |              | Pipe Data        |                    |                     |                  |
|----------|------------------|----------|-------------------|---------------|---------------|------------------|-----------------------|----------------------|----------------|-------------------|--------------------|-----------------------|----------------------|---------------------|--------------|------------------|--------------------|---------------------|------------------|
| Area No. | MH No. To MH No. | Location | Area (Hectares) A | Units or Lots | Density pp Ha | Equiv. Pop. (ca) | Cum. Equiv. Pop. (ca) | Average Flow (L/day) | Peaking Factor | Peak Flow (L/day) | Peak Flow (ML/day) | Infilt. (ML/day)      | Cum. Infilt (ML/day) | Total Flow (ML/day) | Flow (L/s) Q | Pipe Size (mm) D | Pipe Slope (m/m) S | Pipe Capacity (L/s) | Velocity (m/s) V |
|          |                  |          |                   |               |               |                  |                       |                      |                |                   |                    |                       |                      |                     |              |                  |                    |                     |                  |
|          |                  |          |                   |               |               |                  |                       |                      |                |                   |                    |                       |                      |                     |              |                  |                    |                     |                  |
|          |                  |          |                   |               |               |                  |                       |                      |                |                   |                    |                       |                      |                     |              |                  |                    |                     |                  |
|          |                  |          |                   |               |               |                  |                       |                      |                |                   |                    |                       |                      |                     |              |                  |                    |                     |                  |
|          |                  |          |                   |               |               |                  |                       |                      |                |                   |                    |                       |                      |                     |              |                  |                    |                     |                  |
|          |                  |          |                   |               |               |                  |                       |                      |                |                   |                    |                       |                      |                     |              |                  |                    |                     |                  |
|          |                  |          |                   |               |               |                  |                       |                      |                |                   |                    |                       |                      |                     |              |                  |                    |                     |                  |
|          |                  |          |                   |               |               |                  |                       |                      |                |                   |                    |                       |                      |                     |              |                  |                    |                     |                  |
|          |                  |          |                   |               |               |                  |                       |                      |                |                   |                    |                       |                      |                     |              |                  |                    |                     |                  |
|          |                  |          |                   |               |               |                  |                       |                      |                |                   |                    |                       |                      |                     |              |                  |                    |                     |                  |
|          |                  |          |                   |               |               |                  |                       |                      |                |                   |                    |                       |                      |                     |              |                  |                    |                     |                  |
|          |                  |          |                   |               |               |                  |                       |                      |                |                   |                    |                       |                      |                     |              |                  |                    |                     |                  |
|          |                  |          |                   |               |               |                  |                       |                      |                |                   |                    |                       |                      |                     |              |                  |                    |                     |                  |

CITY OF NANAIMO STORMWATER MANAGEMENT FLOW ANALYSIS – CALCULATION SHEET

PROJECT: \_\_\_\_\_

ENGINEERING COMPANY: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

ENGINEER: \_\_\_\_\_

Return Period: \_\_\_\_\_ Years

Date: \_\_\_\_\_

Mannings Formula

Design By: \_\_\_\_\_

 $V = \frac{(R)^{2/3} \times (S)^{1/2}}{n}$ 

Sheet \_\_\_\_\_ of \_\_\_\_\_

 $Q = V \times A$        $n = 0.013$ Rational Formula:  $Q = C \times I \times A \times 2.78$ 

SEAL / ENGINEER'S STAMP

| MH<br>To<br>MH | Area<br>(Ha)<br>(A) | Coeff.<br>(C) | Area<br>x<br>Coeff.<br>(AC) | Accum.<br>A x C | Time Of<br>Concent<br>(Mins) | Rainfall<br>Intensity<br>(mm/hr)<br>(I) | Q<br>(l/s) | Diam.<br>(mm)<br>(D) | Design<br>Slope<br>(%)<br>(S) | Installed<br>Slope<br>(%) | Cap.<br>(l/s) | Velocity<br>(m/s)<br>(V) | Length<br>M.H. to<br>M.H. (m) | Time of<br>Flow-MH<br>to MH<br>(Mins) |
|----------------|---------------------|---------------|-----------------------------|-----------------|------------------------------|-----------------------------------------|------------|----------------------|-------------------------------|---------------------------|---------------|--------------------------|-------------------------------|---------------------------------------|
|                |                     |               |                             |                 |                              |                                         |            |                      |                               |                           |               |                          |                               |                                       |
|                |                     |               |                             |                 |                              |                                         |            |                      |                               |                           |               |                          |                               |                                       |
|                |                     |               |                             |                 |                              |                                         |            |                      |                               |                           |               |                          |                               |                                       |
|                |                     |               |                             |                 |                              |                                         |            |                      |                               |                           |               |                          |                               |                                       |
|                |                     |               |                             |                 |                              |                                         |            |                      |                               |                           |               |                          |                               |                                       |
|                |                     |               |                             |                 |                              |                                         |            |                      |                               |                           |               |                          |                               |                                       |
|                |                     |               |                             |                 |                              |                                         |            |                      |                               |                           |               |                          |                               |                                       |
|                |                     |               |                             |                 |                              |                                         |            |                      |                               |                           |               |                          |                               |                                       |
|                |                     |               |                             |                 |                              |                                         |            |                      |                               |                           |               |                          |                               |                                       |
|                |                     |               |                             |                 |                              |                                         |            |                      |                               |                           |               |                          |                               |                                       |
|                |                     |               |                             |                 |                              |                                         |            |                      |                               |                           |               |                          |                               |                                       |
|                |                     |               |                             |                 |                              |                                         |            |                      |                               |                           |               |                          |                               |                                       |
|                |                     |               |                             |                 |                              |                                         |            |                      |                               |                           |               |                          |                               |                                       |

Effective April 2023

CITY OF NANAIMO  
FIRE FLOW CALCULATION SHEET  
(Calculations based on "Guide for Determination of Fireflow"  
prepared by Fire Underwriter's Survey)

1. Type (s) of Construction: \_\_\_\_\_  
 Co-efficient (c) based on type of construction = \_\_\_\_\_  
 Ground Floor Area: \_\_\_\_\_ ft<sup>2</sup> No. of Stories: \_\_\_\_\_  
 Total Floor Area: \_\_\_\_\_ ft<sup>2</sup>  
 Fire Flow From Formula (  $F = 14.8 \ C \sqrt{A}$  ): \_\_\_\_\_ IGPM (a)
  2. Type of Occupancy: \_\_\_\_\_ Hazard: Low \_\_\_\_\_ High \_\_\_\_\_ Other \_\_\_\_\_  
 Hazard Allowance: Add or subtract: \_\_\_\_\_ % x (a) = \_\_\_\_\_ IGPM  
 Sub Total: \_\_\_\_\_ IGPM (b)
  3. Automatic Sprinklers: \_\_\_\_\_ (yes/no)  
 Sprinkler Allowance: Subtract (max. 50%): \_\_\_\_\_ % X (b) = \_\_\_\_\_ IGPM (c)  
 Sub Total: \_\_\_\_\_ IGPM (d)
  4. Exposures: Distance/Hazard
 

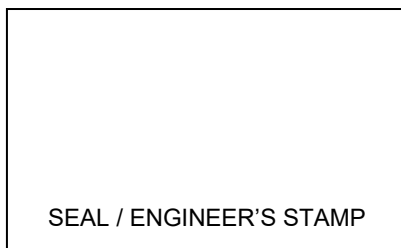
|    |       |     |       |   |
|----|-------|-----|-------|---|
| 1. | Front | Add | _____ | % |
| 2. | Left  | Add | _____ | % |
| 3. | Rear  | Add | _____ | % |
| 4. | Right | Add | _____ | % |

 Exposure Allowance: Add: \_\_\_\_\_ (e) % X (b) = \_\_\_\_\_ IGPM (f)
- TOTAL FIRE FLOW REQUIRED:** \_\_\_\_\_ **IGPM (g)**  
**REQUIRED PRESSURE:** \_\_\_\_\_ **P.S.I.**

**SPRINKLER SYSTEM INFORMATION**

- (a) If building has automatic sprinklers:  
 Distance from sprinkler fire connections at building to nearest available fire hydrant on an unobstructed route \_\_\_\_\_ m  
 Will sprinkler systems be wet or dry: Wet \_\_\_\_\_ Dry \_\_\_\_\_  
 If wet, will system contain anti-freeze or any other chemical additive? Yes \_\_\_\_\_ No \_\_\_\_\_  
 Backflow protection: (describe) \_\_\_\_\_

- (b) If building has no automatic sprinklers:  
 Distance from main building entrance to nearest available fire hydrant on an unobstructed route \_\_\_\_\_ m



Calculations by: \_\_\_\_\_ P. Eng.  
 Signature: \_\_\_\_\_  
 Date: \_\_\_\_\_

Effective April 2023

|  |                                                                             | <b>Water Meter Sizing Calculation Sheet</b><br>For Non-Fire Service Meters<br>AWWA M22 Fixture Value Methodology<br>Page 1 of 2 |                                                                                |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| <b>General Information</b>                                                        |                                                                             |                                                                                                                                 |                                                                                |
| Customer Name:                                                                    |                                                                             |                                                                                                                                 | File No. _____                                                                 |
| Address / Legal Description:                                                      |                                                                             |                                                                                                                                 | Building Permit No. _____                                                      |
| Occupancy Type:                                                                   | Industrial <input type="checkbox"/><br>Multifamily <input type="checkbox"/> | Commercial <input type="checkbox"/><br>Agricultural <input type="checkbox"/>                                                    | Institutional <input type="checkbox"/><br>Other <input type="checkbox"/> _____ |
| Is this a phased development?                                                     | Yes <input type="checkbox"/><br>No <input type="checkbox"/>                 |                                                                                                                                 |                                                                                |
| Calculations pertain to:                                                          | Buildout <input type="checkbox"/><br>Phase <input type="checkbox"/>         |                                                                                                                                 | Phase No. _____                                                                |
| <b>Step 1: Calculate Total Domestic Fixture Value</b>                             |                                                                             |                                                                                                                                 |                                                                                |
| Fixture                                                                           | Fixture Value<br>(GPM @ 60 psi)                                             | No. of Fixtures                                                                                                                 | Fixture Value                                                                  |
| Bathtub                                                                           | 8                                                                           | x                                                                                                                               | =                                                                              |
| Bedpan Washers                                                                    | 10                                                                          | x                                                                                                                               | =                                                                              |
| Bidet                                                                             | 2                                                                           | x                                                                                                                               | =                                                                              |
| Dental Unit                                                                       | 2                                                                           | x                                                                                                                               | =                                                                              |
| Dishwasher                                                                        | 2                                                                           | x                                                                                                                               | =                                                                              |
| Drinking Fountain - Public                                                        | 2                                                                           | x                                                                                                                               | =                                                                              |
| Hose Bibs (c/w 50 ft wash down):                                                  |                                                                             |                                                                                                                                 |                                                                                |
| - 1/2 inch                                                                        | 5                                                                           | x                                                                                                                               | =                                                                              |
| - 5/8 inch                                                                        | 9                                                                           | x                                                                                                                               | =                                                                              |
| - 3/4 inch                                                                        | 12                                                                          | x                                                                                                                               | =                                                                              |
| Kitchen Sink                                                                      | 2.2                                                                         | x                                                                                                                               | =                                                                              |
| Lavatory                                                                          | 1.5                                                                         | x                                                                                                                               | =                                                                              |
| Showerhead (Shower Only)                                                          | 2.5                                                                         | x                                                                                                                               | =                                                                              |
| Service Sink                                                                      | 4                                                                           | x                                                                                                                               | =                                                                              |
| Toilet:                                                                           |                                                                             |                                                                                                                                 |                                                                                |
| - Flush Valve                                                                     | 35                                                                          | x                                                                                                                               | =                                                                              |
| - Tank Type                                                                       | 4                                                                           | x                                                                                                                               | =                                                                              |
| Urinal:                                                                           |                                                                             |                                                                                                                                 |                                                                                |
| - Pedestal Flush Valve                                                            | 35                                                                          | x                                                                                                                               | =                                                                              |
| - Wall Flush Valve                                                                | 16                                                                          | x                                                                                                                               | =                                                                              |
| Wash Sink (Each Set of Faucets)                                                   | 4                                                                           | x                                                                                                                               | =                                                                              |
| Washing Machine                                                                   | 6                                                                           | x                                                                                                                               | =                                                                              |

For single family residential properties, the meter size shall be 19 mm, unless the Applicant can demonstrate the need for a larger meter.

| <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <b>CITY OF NANAIMO</b><br/> <small>THE HARBOUR CITY</small> </div>          |                                         | <b>Water Meter Sizing Calculation Sheet</b><br>Page 2 of 2                                          |                                                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|-----------------------------------------------------------------------------------------------------|------------------------------------------------------|
| <b>Step 1 (cont.)</b>                                                                                                                                       |                                         |                                                                                                     |                                                      |
| <b>Fixture</b><br><br>Other:                                                                                                                                | <b>Fixture Value<br/>(GPM @ 60 psi)</b> | <b>No. of Fixtures</b>                                                                              | <b>Fixture Value</b>                                 |
| _____                                                                                                                                                       | _____                                   | x _____                                                                                             | = _____                                              |
| _____                                                                                                                                                       | _____                                   | x _____                                                                                             | = _____                                              |
| _____                                                                                                                                                       | _____                                   | x _____                                                                                             | = _____                                              |
| <b>Total Domestic Fixture Value</b>                                                                                                                         |                                         |                                                                                                     | = _____ <b>GPM (A)</b>                               |
| <b>Step 2: Calculate Probable Peak Domestic Demand</b><br><small>Refer to AWWA Manual M22, Sizing Water Service Lines and Meters, Figure 4-2 or 4-3</small> |                                         |                                                                                                     |                                                      |
| <b>Probable Peak Domestic Demand</b> = _____                                                                                                                |                                         |                                                                                                     | <b>GPM (B)</b>                                       |
| <b>Step 3: Apply Pressure Adjustment Factor</b>                                                                                                             |                                         |                                                                                                     |                                                      |
| City Water System Pressure (not to exceed 80 psi) = _____                                                                                                   |                                         |                                                                                                     | psi                                                  |
| Pressure Factor from *Table 4 = _____                                                                                                                       |                                         |                                                                                                     | (C)                                                  |
| <small>*AWWA Manual M22, Sizing Water Service Lines and Meters</small>                                                                                      |                                         |                                                                                                     | <b>Adjusted Peak Domestic Demand (B x C)</b> = _____ |
| <b>Adjusted Peak Domestic Demand (B x C)</b> = _____                                                                                                        |                                         |                                                                                                     | <b>GPM (D)</b>                                       |
| <b>Step 4: Identify Irrigation Demand</b>                                                                                                                   |                                         |                                                                                                     |                                                      |
| <b>Total Irrigation Demand</b> = _____                                                                                                                      |                                         |                                                                                                     | <b>GPM (E)</b>                                       |
| <small>For irrigation demands greater than 35 GPM, a detailed irrigation plan shall be provided with appropriately designed zones.</small>                  |                                         |                                                                                                     |                                                      |
| <b>Step 5: Calculate Total Peak Demand</b>                                                                                                                  |                                         |                                                                                                     |                                                      |
| <b>Total Peak Demand (D + E)</b> = _____                                                                                                                    |                                         |                                                                                                     | <b>GPM (F)</b>                                       |
| <b>Step 6: Select Water Meter</b>                                                                                                                           |                                         |                                                                                                     |                                                      |
| Water Meter Make / Model: = _____                                                                                                                           |                                         |                                                                                                     |                                                      |
| Water Meter Size * = _____                                                                                                                                  |                                         |                                                                                                     | inches                                               |
| Water Service Connection Size = _____                                                                                                                       |                                         |                                                                                                     | inches                                               |
| <small>* Total Peak Demand (F) not to exceed 80% of Meter Rated Peak Instantaneous Flow</small>                                                             |                                         |                                                                                                     |                                                      |
| <small>* Pressure Loss at Total Peak Demand (F) not to exceed 5 psi</small>                                                                                 |                                         |                                                                                                     |                                                      |
| <b>Professional Certification</b>                                                                                                                           |                                         |                                                                                                     |                                                      |
| <div style="border: 1px solid black; width: 150px; height: 100px; margin: 0 auto;"></div><br>Seal                                                           |                                         | Name: _____<br>Company: _____<br>Date: _____<br>Comments: _____<br>_____<br>_____<br>_____<br>_____ |                                                      |

For single family residential properties, the meter size shall be 19 mm, unless the Applicant can demonstrate the need for a larger meter.

APPENDIX H5 – SAMPLE  
Page 1 of 3

| CITY OF NANAIMO<br>THE HARBOUR CITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                              | Water Meter Sizing Calculation Sheet<br>For Non-Fire Service Meters<br>AWWA M22 Fixture Value Methodology |               | Example<br><br>Page 1 of 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |         |                              |                 |               |         |   |      |       |                |    |   |   |       |   |   |   |             |   |   |   |            |   |      |      |                            |   |   |   |                                  |  |  |  |            |   |      |       |            |   |   |   |            |    |   |   |              |     |      |      |          |     |      |       |                          |     |      |      |              |   |   |   |         |  |  |  |               |    |   |   |             |   |      |       |         |  |  |  |                        |    |   |   |                    |    |   |   |                                 |   |      |       |                 |   |      |       |        |  |  |  |  |  |   |   |  |  |   |   |  |  |   |   |  |  |   |   |                                |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-----------------------------------------------------------------------------------------------------------|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------|------------------------------|-----------------|---------------|---------|---|------|-------|----------------|----|---|---|-------|---|---|---|-------------|---|---|---|------------|---|------|------|----------------------------|---|---|---|----------------------------------|--|--|--|------------|---|------|-------|------------|---|---|---|------------|----|---|---|--------------|-----|------|------|----------|-----|------|-------|--------------------------|-----|------|------|--------------|---|---|---|---------|--|--|--|---------------|----|---|---|-------------|---|------|-------|---------|--|--|--|------------------------|----|---|---|--------------------|----|---|---|---------------------------------|---|------|-------|-----------------|---|------|-------|--------|--|--|--|--|--|---|---|--|--|---|---|--|--|---|---|--|--|---|---|--------------------------------|--|
| <b>General Information</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                              |                                                                                                           |               | <p>This meter sizing calculation is based on the AWWA M22 Fixture Value Methodology. Applicant's Engineers are expected to purchase and use the <i>AWWA Manual of Water Supply Practices M22 Sizing Water Service Lines and Meters</i> when completing this methodology.</p> <p>This section includes general information about the customer and proposed development.</p> <p>A 30 unit townhouse complex has been chosen as an example to demonstrate the use of this sizing methodology.</p>                                                                                                                                                                                     |  |         |                              |                 |               |         |   |      |       |                |    |   |   |       |   |   |   |             |   |   |   |            |   |      |      |                            |   |   |   |                                  |  |  |  |            |   |      |       |            |   |   |   |            |    |   |   |              |     |      |      |          |     |      |       |                          |     |      |      |              |   |   |   |         |  |  |  |               |    |   |   |             |   |      |       |         |  |  |  |                        |    |   |   |                    |    |   |   |                                 |   |      |       |                 |   |      |       |        |  |  |  |  |  |   |   |  |  |   |   |  |  |   |   |  |  |   |   |                                |  |
| Customer Name: <u>Example</u> File No. <u>Example</u><br>Address / Legal Description: <u>Example</u> Building Permit No. <u>Example</u><br>Occupancy Type: Industrial <input type="checkbox"/> Commercial <input type="checkbox"/> Institutional <input type="checkbox"/><br>Multifamily <input checked="" type="checkbox"/> Agricultural <input type="checkbox"/> Other <input type="checkbox"/><br>Is this a phased development? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Calculations pertain to: Buildout <input checked="" type="checkbox"/> Phase <input type="checkbox"/> Phase No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                              |                                                                                                           |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |         |                              |                 |               |         |   |      |       |                |    |   |   |       |   |   |   |             |   |   |   |            |   |      |      |                            |   |   |   |                                  |  |  |  |            |   |      |       |            |   |   |   |            |    |   |   |              |     |      |      |          |     |      |       |                          |     |      |      |              |   |   |   |         |  |  |  |               |    |   |   |             |   |      |       |         |  |  |  |                        |    |   |   |                    |    |   |   |                                 |   |      |       |                 |   |      |       |        |  |  |  |  |  |   |   |  |  |   |   |  |  |   |   |  |  |   |   |                                |  |
| <b>Step 1: Calculate Total Domestic Fixture Value</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                              |                                                                                                           |               | <p>In this example, the following fixtures are identified for each of the 30 units in the proposed development:</p> <ul style="list-style-type: none"><li>- 1 bathtub</li><li>- 1 shower</li><li>- 3 toilets (tank type)</li><li>- 3 bathroom sinks</li><li>- 1 dishwasher</li><li>- 1 kitchen sink</li><li>- 1 washing machine</li><li>- 1 laundry sink</li><li>- 1 hose bib (1/2 inch)</li></ul> <p>These fixtures yield a Total Domestic Fixture Value of 1386 GPM.</p> <p>Note: If a fixture is proposed that is not on the list then the peak flow value (fixture value) can be included on one of the blank lines under "Other" based on the manufacturer's information.</p> |  |         |                              |                 |               |         |   |      |       |                |    |   |   |       |   |   |   |             |   |   |   |            |   |      |      |                            |   |   |   |                                  |  |  |  |            |   |      |       |            |   |   |   |            |    |   |   |              |     |      |      |          |     |      |       |                          |     |      |      |              |   |   |   |         |  |  |  |               |    |   |   |             |   |      |       |         |  |  |  |                        |    |   |   |                    |    |   |   |                                 |   |      |       |                 |   |      |       |        |  |  |  |  |  |   |   |  |  |   |   |  |  |   |   |  |  |   |   |                                |  |
| <table border="1"><thead><tr><th>Fixture</th><th>Fixture Value (GPM @ 60 psi)</th><th>No. of Fixtures</th><th>Fixture Value</th></tr></thead><tbody><tr><td>Bathtub</td><td>8</td><td>x 30</td><td>= 240</td></tr><tr><td>Bedpan Washers</td><td>10</td><td>x</td><td>=</td></tr><tr><td>Bidet</td><td>2</td><td>x</td><td>=</td></tr><tr><td>Dental Unit</td><td>2</td><td>x</td><td>=</td></tr><tr><td>Dishwasher</td><td>2</td><td>x 30</td><td>= 60</td></tr><tr><td>Drinking Fountain - Public</td><td>2</td><td>x</td><td>=</td></tr><tr><td>Hose Bibs (c/w 50 ft wash down):</td><td></td><td></td><td></td></tr><tr><td>- 1/2 inch</td><td>5</td><td>x 30</td><td>= 150</td></tr><tr><td>- 5/8 inch</td><td>9</td><td>x</td><td>=</td></tr><tr><td>- 3/4 inch</td><td>12</td><td>x</td><td>=</td></tr><tr><td>Kitchen Sink</td><td>2.2</td><td>x 30</td><td>= 66</td></tr><tr><td>Lavatory</td><td>1.5</td><td>x 90</td><td>= 135</td></tr><tr><td>Showerhead (Shower Only)</td><td>2.5</td><td>x 30</td><td>= 75</td></tr><tr><td>Service Sink</td><td>4</td><td>x</td><td>=</td></tr><tr><td>Toilet:</td><td></td><td></td><td></td></tr><tr><td>- Flush Valve</td><td>35</td><td>x</td><td>=</td></tr><tr><td>- Tank Type</td><td>4</td><td>x 90</td><td>= 360</td></tr><tr><td>Urinal:</td><td></td><td></td><td></td></tr><tr><td>- Pedestal Flush Valve</td><td>35</td><td>x</td><td>=</td></tr><tr><td>- Wall Flush Valve</td><td>16</td><td>x</td><td>=</td></tr><tr><td>Wash Sink (Each Set of Faucets)</td><td>4</td><td>x 30</td><td>= 120</td></tr><tr><td>Washing Machine</td><td>6</td><td>x 30</td><td>= 180</td></tr><tr><td>Other:</td><td></td><td></td><td></td></tr><tr><td></td><td></td><td>x</td><td>=</td></tr><tr><td></td><td></td><td>x</td><td>=</td></tr><tr><td></td><td></td><td>x</td><td>=</td></tr><tr><td></td><td></td><td>x</td><td>=</td></tr><tr><td colspan="3">Total Domestic Fixture Value =</td><td>1386 GPM (A)</td></tr></tbody></table> |                              |                                                                                                           |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | Fixture | Fixture Value (GPM @ 60 psi) | No. of Fixtures | Fixture Value | Bathtub | 8 | x 30 | = 240 | Bedpan Washers | 10 | x | = | Bidet | 2 | x | = | Dental Unit | 2 | x | = | Dishwasher | 2 | x 30 | = 60 | Drinking Fountain - Public | 2 | x | = | Hose Bibs (c/w 50 ft wash down): |  |  |  | - 1/2 inch | 5 | x 30 | = 150 | - 5/8 inch | 9 | x | = | - 3/4 inch | 12 | x | = | Kitchen Sink | 2.2 | x 30 | = 66 | Lavatory | 1.5 | x 90 | = 135 | Showerhead (Shower Only) | 2.5 | x 30 | = 75 | Service Sink | 4 | x | = | Toilet: |  |  |  | - Flush Valve | 35 | x | = | - Tank Type | 4 | x 90 | = 360 | Urinal: |  |  |  | - Pedestal Flush Valve | 35 | x | = | - Wall Flush Valve | 16 | x | = | Wash Sink (Each Set of Faucets) | 4 | x 30 | = 120 | Washing Machine | 6 | x 30 | = 180 | Other: |  |  |  |  |  | x | = |  |  | x | = |  |  | x | = |  |  | x | = | Total Domestic Fixture Value = |  |
| Fixture                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Fixture Value (GPM @ 60 psi) | No. of Fixtures                                                                                           | Fixture Value |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |         |                              |                 |               |         |   |      |       |                |    |   |   |       |   |   |   |             |   |   |   |            |   |      |      |                            |   |   |   |                                  |  |  |  |            |   |      |       |            |   |   |   |            |    |   |   |              |     |      |      |          |     |      |       |                          |     |      |      |              |   |   |   |         |  |  |  |               |    |   |   |             |   |      |       |         |  |  |  |                        |    |   |   |                    |    |   |   |                                 |   |      |       |                 |   |      |       |        |  |  |  |  |  |   |   |  |  |   |   |  |  |   |   |  |  |   |   |                                |  |
| Bathtub                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 8                            | x 30                                                                                                      | = 240         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |         |                              |                 |               |         |   |      |       |                |    |   |   |       |   |   |   |             |   |   |   |            |   |      |      |                            |   |   |   |                                  |  |  |  |            |   |      |       |            |   |   |   |            |    |   |   |              |     |      |      |          |     |      |       |                          |     |      |      |              |   |   |   |         |  |  |  |               |    |   |   |             |   |      |       |         |  |  |  |                        |    |   |   |                    |    |   |   |                                 |   |      |       |                 |   |      |       |        |  |  |  |  |  |   |   |  |  |   |   |  |  |   |   |  |  |   |   |                                |  |
| Bedpan Washers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 10                           | x                                                                                                         | =             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |         |                              |                 |               |         |   |      |       |                |    |   |   |       |   |   |   |             |   |   |   |            |   |      |      |                            |   |   |   |                                  |  |  |  |            |   |      |       |            |   |   |   |            |    |   |   |              |     |      |      |          |     |      |       |                          |     |      |      |              |   |   |   |         |  |  |  |               |    |   |   |             |   |      |       |         |  |  |  |                        |    |   |   |                    |    |   |   |                                 |   |      |       |                 |   |      |       |        |  |  |  |  |  |   |   |  |  |   |   |  |  |   |   |  |  |   |   |                                |  |
| Bidet                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 2                            | x                                                                                                         | =             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |         |                              |                 |               |         |   |      |       |                |    |   |   |       |   |   |   |             |   |   |   |            |   |      |      |                            |   |   |   |                                  |  |  |  |            |   |      |       |            |   |   |   |            |    |   |   |              |     |      |      |          |     |      |       |                          |     |      |      |              |   |   |   |         |  |  |  |               |    |   |   |             |   |      |       |         |  |  |  |                        |    |   |   |                    |    |   |   |                                 |   |      |       |                 |   |      |       |        |  |  |  |  |  |   |   |  |  |   |   |  |  |   |   |  |  |   |   |                                |  |
| Dental Unit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2                            | x                                                                                                         | =             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |         |                              |                 |               |         |   |      |       |                |    |   |   |       |   |   |   |             |   |   |   |            |   |      |      |                            |   |   |   |                                  |  |  |  |            |   |      |       |            |   |   |   |            |    |   |   |              |     |      |      |          |     |      |       |                          |     |      |      |              |   |   |   |         |  |  |  |               |    |   |   |             |   |      |       |         |  |  |  |                        |    |   |   |                    |    |   |   |                                 |   |      |       |                 |   |      |       |        |  |  |  |  |  |   |   |  |  |   |   |  |  |   |   |  |  |   |   |                                |  |
| Dishwasher                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 2                            | x 30                                                                                                      | = 60          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |         |                              |                 |               |         |   |      |       |                |    |   |   |       |   |   |   |             |   |   |   |            |   |      |      |                            |   |   |   |                                  |  |  |  |            |   |      |       |            |   |   |   |            |    |   |   |              |     |      |      |          |     |      |       |                          |     |      |      |              |   |   |   |         |  |  |  |               |    |   |   |             |   |      |       |         |  |  |  |                        |    |   |   |                    |    |   |   |                                 |   |      |       |                 |   |      |       |        |  |  |  |  |  |   |   |  |  |   |   |  |  |   |   |  |  |   |   |                                |  |
| Drinking Fountain - Public                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 2                            | x                                                                                                         | =             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |         |                              |                 |               |         |   |      |       |                |    |   |   |       |   |   |   |             |   |   |   |            |   |      |      |                            |   |   |   |                                  |  |  |  |            |   |      |       |            |   |   |   |            |    |   |   |              |     |      |      |          |     |      |       |                          |     |      |      |              |   |   |   |         |  |  |  |               |    |   |   |             |   |      |       |         |  |  |  |                        |    |   |   |                    |    |   |   |                                 |   |      |       |                 |   |      |       |        |  |  |  |  |  |   |   |  |  |   |   |  |  |   |   |  |  |   |   |                                |  |
| Hose Bibs (c/w 50 ft wash down):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                              |                                                                                                           |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |         |                              |                 |               |         |   |      |       |                |    |   |   |       |   |   |   |             |   |   |   |            |   |      |      |                            |   |   |   |                                  |  |  |  |            |   |      |       |            |   |   |   |            |    |   |   |              |     |      |      |          |     |      |       |                          |     |      |      |              |   |   |   |         |  |  |  |               |    |   |   |             |   |      |       |         |  |  |  |                        |    |   |   |                    |    |   |   |                                 |   |      |       |                 |   |      |       |        |  |  |  |  |  |   |   |  |  |   |   |  |  |   |   |  |  |   |   |                                |  |
| - 1/2 inch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 5                            | x 30                                                                                                      | = 150         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |         |                              |                 |               |         |   |      |       |                |    |   |   |       |   |   |   |             |   |   |   |            |   |      |      |                            |   |   |   |                                  |  |  |  |            |   |      |       |            |   |   |   |            |    |   |   |              |     |      |      |          |     |      |       |                          |     |      |      |              |   |   |   |         |  |  |  |               |    |   |   |             |   |      |       |         |  |  |  |                        |    |   |   |                    |    |   |   |                                 |   |      |       |                 |   |      |       |        |  |  |  |  |  |   |   |  |  |   |   |  |  |   |   |  |  |   |   |                                |  |
| - 5/8 inch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 9                            | x                                                                                                         | =             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |         |                              |                 |               |         |   |      |       |                |    |   |   |       |   |   |   |             |   |   |   |            |   |      |      |                            |   |   |   |                                  |  |  |  |            |   |      |       |            |   |   |   |            |    |   |   |              |     |      |      |          |     |      |       |                          |     |      |      |              |   |   |   |         |  |  |  |               |    |   |   |             |   |      |       |         |  |  |  |                        |    |   |   |                    |    |   |   |                                 |   |      |       |                 |   |      |       |        |  |  |  |  |  |   |   |  |  |   |   |  |  |   |   |  |  |   |   |                                |  |
| - 3/4 inch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 12                           | x                                                                                                         | =             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |         |                              |                 |               |         |   |      |       |                |    |   |   |       |   |   |   |             |   |   |   |            |   |      |      |                            |   |   |   |                                  |  |  |  |            |   |      |       |            |   |   |   |            |    |   |   |              |     |      |      |          |     |      |       |                          |     |      |      |              |   |   |   |         |  |  |  |               |    |   |   |             |   |      |       |         |  |  |  |                        |    |   |   |                    |    |   |   |                                 |   |      |       |                 |   |      |       |        |  |  |  |  |  |   |   |  |  |   |   |  |  |   |   |  |  |   |   |                                |  |
| Kitchen Sink                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 2.2                          | x 30                                                                                                      | = 66          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |         |                              |                 |               |         |   |      |       |                |    |   |   |       |   |   |   |             |   |   |   |            |   |      |      |                            |   |   |   |                                  |  |  |  |            |   |      |       |            |   |   |   |            |    |   |   |              |     |      |      |          |     |      |       |                          |     |      |      |              |   |   |   |         |  |  |  |               |    |   |   |             |   |      |       |         |  |  |  |                        |    |   |   |                    |    |   |   |                                 |   |      |       |                 |   |      |       |        |  |  |  |  |  |   |   |  |  |   |   |  |  |   |   |  |  |   |   |                                |  |
| Lavatory                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1.5                          | x 90                                                                                                      | = 135         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |         |                              |                 |               |         |   |      |       |                |    |   |   |       |   |   |   |             |   |   |   |            |   |      |      |                            |   |   |   |                                  |  |  |  |            |   |      |       |            |   |   |   |            |    |   |   |              |     |      |      |          |     |      |       |                          |     |      |      |              |   |   |   |         |  |  |  |               |    |   |   |             |   |      |       |         |  |  |  |                        |    |   |   |                    |    |   |   |                                 |   |      |       |                 |   |      |       |        |  |  |  |  |  |   |   |  |  |   |   |  |  |   |   |  |  |   |   |                                |  |
| Showerhead (Shower Only)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 2.5                          | x 30                                                                                                      | = 75          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |         |                              |                 |               |         |   |      |       |                |    |   |   |       |   |   |   |             |   |   |   |            |   |      |      |                            |   |   |   |                                  |  |  |  |            |   |      |       |            |   |   |   |            |    |   |   |              |     |      |      |          |     |      |       |                          |     |      |      |              |   |   |   |         |  |  |  |               |    |   |   |             |   |      |       |         |  |  |  |                        |    |   |   |                    |    |   |   |                                 |   |      |       |                 |   |      |       |        |  |  |  |  |  |   |   |  |  |   |   |  |  |   |   |  |  |   |   |                                |  |
| Service Sink                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 4                            | x                                                                                                         | =             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |         |                              |                 |               |         |   |      |       |                |    |   |   |       |   |   |   |             |   |   |   |            |   |      |      |                            |   |   |   |                                  |  |  |  |            |   |      |       |            |   |   |   |            |    |   |   |              |     |      |      |          |     |      |       |                          |     |      |      |              |   |   |   |         |  |  |  |               |    |   |   |             |   |      |       |         |  |  |  |                        |    |   |   |                    |    |   |   |                                 |   |      |       |                 |   |      |       |        |  |  |  |  |  |   |   |  |  |   |   |  |  |   |   |  |  |   |   |                                |  |
| Toilet:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                              |                                                                                                           |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |         |                              |                 |               |         |   |      |       |                |    |   |   |       |   |   |   |             |   |   |   |            |   |      |      |                            |   |   |   |                                  |  |  |  |            |   |      |       |            |   |   |   |            |    |   |   |              |     |      |      |          |     |      |       |                          |     |      |      |              |   |   |   |         |  |  |  |               |    |   |   |             |   |      |       |         |  |  |  |                        |    |   |   |                    |    |   |   |                                 |   |      |       |                 |   |      |       |        |  |  |  |  |  |   |   |  |  |   |   |  |  |   |   |  |  |   |   |                                |  |
| - Flush Valve                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 35                           | x                                                                                                         | =             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |         |                              |                 |               |         |   |      |       |                |    |   |   |       |   |   |   |             |   |   |   |            |   |      |      |                            |   |   |   |                                  |  |  |  |            |   |      |       |            |   |   |   |            |    |   |   |              |     |      |      |          |     |      |       |                          |     |      |      |              |   |   |   |         |  |  |  |               |    |   |   |             |   |      |       |         |  |  |  |                        |    |   |   |                    |    |   |   |                                 |   |      |       |                 |   |      |       |        |  |  |  |  |  |   |   |  |  |   |   |  |  |   |   |  |  |   |   |                                |  |
| - Tank Type                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 4                            | x 90                                                                                                      | = 360         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |         |                              |                 |               |         |   |      |       |                |    |   |   |       |   |   |   |             |   |   |   |            |   |      |      |                            |   |   |   |                                  |  |  |  |            |   |      |       |            |   |   |   |            |    |   |   |              |     |      |      |          |     |      |       |                          |     |      |      |              |   |   |   |         |  |  |  |               |    |   |   |             |   |      |       |         |  |  |  |                        |    |   |   |                    |    |   |   |                                 |   |      |       |                 |   |      |       |        |  |  |  |  |  |   |   |  |  |   |   |  |  |   |   |  |  |   |   |                                |  |
| Urinal:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                              |                                                                                                           |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |         |                              |                 |               |         |   |      |       |                |    |   |   |       |   |   |   |             |   |   |   |            |   |      |      |                            |   |   |   |                                  |  |  |  |            |   |      |       |            |   |   |   |            |    |   |   |              |     |      |      |          |     |      |       |                          |     |      |      |              |   |   |   |         |  |  |  |               |    |   |   |             |   |      |       |         |  |  |  |                        |    |   |   |                    |    |   |   |                                 |   |      |       |                 |   |      |       |        |  |  |  |  |  |   |   |  |  |   |   |  |  |   |   |  |  |   |   |                                |  |
| - Pedestal Flush Valve                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 35                           | x                                                                                                         | =             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |         |                              |                 |               |         |   |      |       |                |    |   |   |       |   |   |   |             |   |   |   |            |   |      |      |                            |   |   |   |                                  |  |  |  |            |   |      |       |            |   |   |   |            |    |   |   |              |     |      |      |          |     |      |       |                          |     |      |      |              |   |   |   |         |  |  |  |               |    |   |   |             |   |      |       |         |  |  |  |                        |    |   |   |                    |    |   |   |                                 |   |      |       |                 |   |      |       |        |  |  |  |  |  |   |   |  |  |   |   |  |  |   |   |  |  |   |   |                                |  |
| - Wall Flush Valve                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 16                           | x                                                                                                         | =             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |         |                              |                 |               |         |   |      |       |                |    |   |   |       |   |   |   |             |   |   |   |            |   |      |      |                            |   |   |   |                                  |  |  |  |            |   |      |       |            |   |   |   |            |    |   |   |              |     |      |      |          |     |      |       |                          |     |      |      |              |   |   |   |         |  |  |  |               |    |   |   |             |   |      |       |         |  |  |  |                        |    |   |   |                    |    |   |   |                                 |   |      |       |                 |   |      |       |        |  |  |  |  |  |   |   |  |  |   |   |  |  |   |   |  |  |   |   |                                |  |
| Wash Sink (Each Set of Faucets)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 4                            | x 30                                                                                                      | = 120         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |         |                              |                 |               |         |   |      |       |                |    |   |   |       |   |   |   |             |   |   |   |            |   |      |      |                            |   |   |   |                                  |  |  |  |            |   |      |       |            |   |   |   |            |    |   |   |              |     |      |      |          |     |      |       |                          |     |      |      |              |   |   |   |         |  |  |  |               |    |   |   |             |   |      |       |         |  |  |  |                        |    |   |   |                    |    |   |   |                                 |   |      |       |                 |   |      |       |        |  |  |  |  |  |   |   |  |  |   |   |  |  |   |   |  |  |   |   |                                |  |
| Washing Machine                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 6                            | x 30                                                                                                      | = 180         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |         |                              |                 |               |         |   |      |       |                |    |   |   |       |   |   |   |             |   |   |   |            |   |      |      |                            |   |   |   |                                  |  |  |  |            |   |      |       |            |   |   |   |            |    |   |   |              |     |      |      |          |     |      |       |                          |     |      |      |              |   |   |   |         |  |  |  |               |    |   |   |             |   |      |       |         |  |  |  |                        |    |   |   |                    |    |   |   |                                 |   |      |       |                 |   |      |       |        |  |  |  |  |  |   |   |  |  |   |   |  |  |   |   |  |  |   |   |                                |  |
| Other:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                              |                                                                                                           |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |         |                              |                 |               |         |   |      |       |                |    |   |   |       |   |   |   |             |   |   |   |            |   |      |      |                            |   |   |   |                                  |  |  |  |            |   |      |       |            |   |   |   |            |    |   |   |              |     |      |      |          |     |      |       |                          |     |      |      |              |   |   |   |         |  |  |  |               |    |   |   |             |   |      |       |         |  |  |  |                        |    |   |   |                    |    |   |   |                                 |   |      |       |                 |   |      |       |        |  |  |  |  |  |   |   |  |  |   |   |  |  |   |   |  |  |   |   |                                |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                              | x                                                                                                         | =             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |         |                              |                 |               |         |   |      |       |                |    |   |   |       |   |   |   |             |   |   |   |            |   |      |      |                            |   |   |   |                                  |  |  |  |            |   |      |       |            |   |   |   |            |    |   |   |              |     |      |      |          |     |      |       |                          |     |      |      |              |   |   |   |         |  |  |  |               |    |   |   |             |   |      |       |         |  |  |  |                        |    |   |   |                    |    |   |   |                                 |   |      |       |                 |   |      |       |        |  |  |  |  |  |   |   |  |  |   |   |  |  |   |   |  |  |   |   |                                |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                              | x                                                                                                         | =             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |         |                              |                 |               |         |   |      |       |                |    |   |   |       |   |   |   |             |   |   |   |            |   |      |      |                            |   |   |   |                                  |  |  |  |            |   |      |       |            |   |   |   |            |    |   |   |              |     |      |      |          |     |      |       |                          |     |      |      |              |   |   |   |         |  |  |  |               |    |   |   |             |   |      |       |         |  |  |  |                        |    |   |   |                    |    |   |   |                                 |   |      |       |                 |   |      |       |        |  |  |  |  |  |   |   |  |  |   |   |  |  |   |   |  |  |   |   |                                |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                              | x                                                                                                         | =             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |         |                              |                 |               |         |   |      |       |                |    |   |   |       |   |   |   |             |   |   |   |            |   |      |      |                            |   |   |   |                                  |  |  |  |            |   |      |       |            |   |   |   |            |    |   |   |              |     |      |      |          |     |      |       |                          |     |      |      |              |   |   |   |         |  |  |  |               |    |   |   |             |   |      |       |         |  |  |  |                        |    |   |   |                    |    |   |   |                                 |   |      |       |                 |   |      |       |        |  |  |  |  |  |   |   |  |  |   |   |  |  |   |   |  |  |   |   |                                |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                              | x                                                                                                         | =             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |         |                              |                 |               |         |   |      |       |                |    |   |   |       |   |   |   |             |   |   |   |            |   |      |      |                            |   |   |   |                                  |  |  |  |            |   |      |       |            |   |   |   |            |    |   |   |              |     |      |      |          |     |      |       |                          |     |      |      |              |   |   |   |         |  |  |  |               |    |   |   |             |   |      |       |         |  |  |  |                        |    |   |   |                    |    |   |   |                                 |   |      |       |                 |   |      |       |        |  |  |  |  |  |   |   |  |  |   |   |  |  |   |   |  |  |   |   |                                |  |
| Total Domestic Fixture Value =                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                              |                                                                                                           | 1386 GPM (A)  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |         |                              |                 |               |         |   |      |       |                |    |   |   |       |   |   |   |             |   |   |   |            |   |      |      |                            |   |   |   |                                  |  |  |  |            |   |      |       |            |   |   |   |            |    |   |   |              |     |      |      |          |     |      |       |                          |     |      |      |              |   |   |   |         |  |  |  |               |    |   |   |             |   |      |       |         |  |  |  |                        |    |   |   |                    |    |   |   |                                 |   |      |       |                 |   |      |       |        |  |  |  |  |  |   |   |  |  |   |   |  |  |   |   |  |  |   |   |                                |  |



### For Non-Fire Service Meters

### Example

### Step 2: Calculate Probable Peak Domestic Demand

Refer to Figure 4-2 or 4-3

**Probable Peak Domestic Demand** = 65 **GPM (B)**

For this example, Figure 4-3 applies since the Total Domestic Fixture Value is in the "high range". The "Apartments" curve indicates that a Total Domestic Fixture Value of 1386 GPM corresponds to a Probable Peak Domestic Demand of 65 GPM.

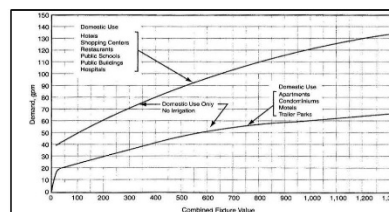


Figure 4-2 Water flow demand per fixture value—low range

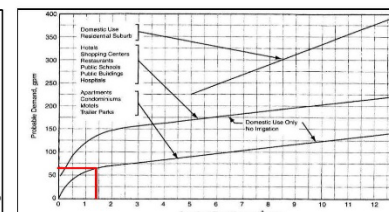


Figure 4-3 Water flow demand per fixture value—high range

### Step 3: Apply Pressure Adjustment Factor

City Water System Pressure (not to exceed 80 psi) = 70 psi

$$\text{Pressure Factor from Table 4-1} = \frac{\quad}{1.09} \quad (C)$$

**Adjusted Peak Domestic Demand (B x C) = 70.85 GPM (D)**

For this example, the pressure downstream of the meter is identified as 70 psi. From Table 4-1, the pressure adjustment factor is 1.09 and the Adjusted Peak Domestic Demand is 70.85 GPM.

Note that for the purpose of this sizing methodology, the maximum pressure for which to apply an adjustment is 80 psi.

Table 4-1 Pressure adjustment factors\*

| Working Pressure at Meter Diameter (psi) | Average Flow from 50 ft of 3/8-in. Hose and Sprinkler (gpm) | Pressure Adjustment Factor |
|------------------------------------------|-------------------------------------------------------------|----------------------------|
| 35                                       | 6.7                                                         | 0.74                       |
| 40                                       | 7.2                                                         | 0.80                       |
| 45                                       | 8.1                                                         | 0.90                       |
| 60                                       | 9.0                                                         | 1.00                       |
| 75                                       | 9.8                                                         | 1.09                       |
| 80                                       | 10.5                                                        | 1.17                       |
| 90                                       | 11.2                                                        | 1.25                       |
| 100                                      | 12.1                                                        | 1.34                       |

\*derived from Table 4-1 and 4-2 of Manual M22 (1975)

NOTE: To convert psi to kPa:  $\text{psi} \times 6.89476$ ; to convert gpm to  $\text{m}^3/\text{hr}$ :  $\text{gpm} \times 0.227$

| <div><b>Water Meter Sizing Calculation Sheet</b><br/>For Non-Fire Service Meters<br/>AWWA M22 Fixture Value Methodology</div>                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <div><b>Example</b></div> <div>Page 3 of 3</div> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| <div><b>Step 4: Identify Irrigation Demand</b></div> <div>Total Irrigation Demand = <u>23.2</u> GPM (E)</div> <div>For irrigation demands greater than 35 GPM, a detailed irrigation plan shall be provided with appropriately designed zones.</div>                                                                                                                                           | <div>The Total Irrigation Demand is identified in this step. The AWWA Manual M22 provides guidance for calculating irrigation demands. However, the Applicant's Engineer may refer to an irrigation system design flow specified by the manufacturer or identified by the irrigation system designer.</div> <div>For this example, an area of 2000 ft<sup>2</sup> is irrigated by a spray irrigation system. The AWWA M22 Manual indicates that for spray irrigation each "section" represents a flow of 1.16 GPM. A "section" is defined as 100 ft<sup>2</sup>. So the calculation yields:<br/><br/>Total Irrigation Demand = 2000 ft<sup>2</sup> / 100 ft<sup>2</sup> = 20 sections x 1.16 GPM = 23.2 GPM</div> |                                                  |
| <div><b>Step 5: Calculate Total Peak Demand</b></div> <div>Total Peak Demand (D + E) = <u>94.05</u> GPM (F)</div>                                                                                                                                                                                                                                                                              | <div>The Adjusted Peak Domestic Demand of 70.85 GPM from Step 3 is combined with the Total Irrigation Demand of 35 GPM from Step 4 to yield a Total Peak Demand of 105.85 GPM.</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                  |
| <div><b>Step 6: Select Water Meter</b></div> <div>Water Meter Make / Model: = <u>Sensus OMNI C<sup>2</sup></u></div> <div>Water Meter Size * = <u>1.5</u> inches</div> <div>Water Service Connection Size = <u>2</u> inches</div> <div>* Total Peak Demand (F) not to exceed 80% of Meter Rated Peak Instantaneous Flow<br/>* Pressure Loss at Total Peak Demand (F) not to exceed 5 psi</div> | <div>The selected meter is a 1.5" Sensus OMNI C<sup>2</sup>.</div> <div>The manufacturer specified maximum intermittent flow rating for this meter is 200 GPM.<br/>80% of 200 GPM = 160 GPM &gt; 94.05 GPM</div> <div>The manufacturer specified pressure loss for this meter (with strainer) at 94.05 GPM is approximately 4 psi (&lt; 5 psi).</div>                                                                                                                                                                                                                                                                                                                                                             |                                                  |
| <div><b>Professional Certification</b></div> <div><div><br/>Seal</div><div>Name: <u>Example</u><br/>Company: <u>Example</u><br/>Date: <u>Example</u><br/>Comments: _____<br/>_____<br/>_____<br/>_____</div></div>                                                                                           | <div>This section is for the Applicant's Engineer to certify the water meter sizing calculation.</div> <div>The comments space is provided to explain any unique aspects of the development that impact the proposed meter sizing.</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                  |

© INFRASTRUCTURE PLANNING STANDARDS & PRODUCTS SIMO EDITION NO.13 MAY 2020/2016-09-15 BCDLINE INCORPORATION - WORKING SECTIONS APPENDICES SHT-1



STOP  
RA 1  
600mm x 600mm



YIELD  
RA 2  
750mm x 750 x mm 750mm



SCHOOL CROSSWALK  
RA 3L/R  
600mm x 750mm



PEDESTRIAN CROSSWALK  
RA 4L/R  
600mm x 750mm



CROSS BUCK  
RA 6  
CROSS LENGTHS 1200 x 200mm



RAILWAY CROSSING SIGN  
RA 6S  
700mm X 450mm



ROUNDAABOUT YIELD  
RA 7  
750mm x 750mm x 750mm



MAXIMUM SPEED  
RB 1  
600mm x 750mm



NO TURN  
RB-11 L/R  
600mm X 600mm



TURN ONLY  
RB-14 L/R  
600mm x 600mm

- NOTES:
1. THIS HANDBOOK IS FOR GENERAL REFERENCE ONLY.
  2. REFER TO SECTION 9.14 STREET NAME AND TRAFFIC SIGNS.

10-16-2019



CITY OF NANAIMO'S FIELD HANDBOOK  
OF GENERAL SIGNS

Scale: N.T.S.  
Created: JUNE 2013  
Rev Date: MAY 2020  
Dwg No: SHT-1

Effective April 2023

G:\INFRASTRUCTURE PLANNING\STANDARDS & PRODUCTS\MOES9\EDITION NC13 MAY 2020\2019-09-15 REDLINE INCORPORATION - WORKING\2020 DRAWING SECTIONS\APPENDICES\SH-T-2



ONE WAY  
RB 21  
900mm x 300mm



DO NOT ENTER  
RB 23  
600mm x 600mm



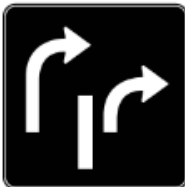
KEEP RIGHT  
RB 25  
600mm x 750mm



TURN ONLY LANE  
RB-41 L/R  
600mm x 600mm



THRU OR TURN LANE  
RB-42 L/R  
600mm x 600mm



DOUBLE TURN ONLY  
RB-46 L/R  
600mm x 600mm



STRAIGHT OR DOUBLE TURN LANE  
RB-47 L/R  
600mm x 600mm



STOP LINE  
RC-4 L/R  
600mm x 750mm

NOTES:

1. THIS HANDBOOK IS FOR GENERAL REFERENCE ONLY.
2. REFER TO SECTION 9.14 STREET NAME AND TRAFFIC SIGNS.



10.18.2019

CITY OF NANAIMO'S FIELD HANDBOOK  
OF GENERAL SIGNS

Scale: N.T.S.  
Created: JUN 2013  
Rev Date: MAY 2020  
Dwg No: SHT-2

Effective April 2023

© INFRASTRUCTURE PLANNING STANDARDS & PRODUCTS INC. EDITION NO.15 MAY 2020/2015-08-15 REDLINE INCORPORATION - WORKING 2020 DRAWING SECTION/APPENDICES/SH-3



TWO WAY LEFT TURN LANE  
RB-48  
900mm x 900mm



CENTER LANE  
RB-48S  
600mm x 300mm



NO PARKING ANYTIME  
RB-52  
300mm x 450mm



NO STOPPING  
RB-57  
300mm x 450mm



RESERVED BIKE LANE  
RB-91  
600mm x 750mm



RESERVED BIKE LANE ENDS  
RB 92  
600mm x 750mm



LEFT TURN SIGNAL  
RB-18  
600mm x 750mm



YIELD ON GREEN  
R-110  
450mm X 600mm (MOTI)



CURVE 90°  
WA-1 L/R  
600mm x 600mm



SHARP CURVE  
WA-2 L/R  
600mm x 600mm



CURVE  
WA-3 L/R  
600mm x 600mm



REVERSE TURN  
WA-4 L/R  
600mm x 600mm

NOTES:

1. THIS HANDBOOK IS FOR GENERAL REFERENCE ONLY.
2. REFER TO SECTION 9.14 STREET NAME AND TRAFFIC SIGNS.

10-15-2019



CITY OF NANAIMO'S FIELD HANDBOOK  
OF GENERAL SIGNS

Scale: N.T.S.  
Created: JUN 2013  
Rev Date: MAY 2020  
Dwg No: SHT-3

Effective April 2023

G:\INFRASTRUCTURE PLANNING\STANDARDS & PRODUCTS\MOOSE\EDITION NO13 MAY 2020\2015-09-15 REDLINE INCORPORATION - WORKING\2022 DRAWING SECTIONS\APPENDICES\BHT-4



REVERSE CURVE  
WA-5L/R  
600mm x 600mm



WINDING ROAD  
WA-6L/R  
600mm x 600mm



CHECKERBOARD  
WA-8B  
750mm x 750mm



CHEVRON ALIGNMENT  
WA-9  
450mm x 600mm



CONCEALED INTERSECTION  
WA-11  
600mm x 600mm



ACUTE ANGLE CONCEALED INTERSECTION  
WA-12L/R  
600mm x 600mm



90 ANGLE CONCEALED INTERSECTION  
WA-13L/R  
600mm x 600mm



RAILWAY CROSSING STRAIGHT  
WA-18  
750mm x 750mm



RAILWAY CROSSING ANGLED  
WA-18L/R  
750mm x 750mm



LANE ENDS  
WA-33L/R  
750mm x 750mm



OBJECT MARKER  
WA-36  
450mm x 900mm

NOTES:

1. THIS HANDBOOK IS FOR GENERAL REFERENCE ONLY.
2. REFER TO SECTION 9.14 STREET NAME AND TRAFFIC SIGNS.

10/10/2019



CITY OF NANAIMO'S FIELD HANDBOOK  
OF GENERAL SIGNS

Scale: N.T.S.  
Created: JUN 2013  
Rev Date: MAY 2020  
Dwg No: SHT-4

Effective April 2023

G:\INFRASTRUCTURE PLANNING\STANDARDS & PRODUCTS\MODES\EDITION NO.13 MAY 2020\15-08-15 REDLINE INCORPORATION - WORKING\2020 DRAWING SECTIONS\APPENDICES\SHI-5



OBJECT MARKER  
WA-36L  
300mm x 900mm



ROUNDBOUT DIRECTION  
WA-38  
60mm x 1660mm



ROUNDBOUT AHEAD  
WA-39  
900mm x 900mm



NEIGHBOURHOOD SPEED HUMP  
WA-50  
600mm x 600mm



STOP AHEAD  
WB-1  
750mm x 750mm



YIELD AHEAD  
WB-2  
750mm x 750mm



SIGNAL AHEAD  
WB-4  
600mm x 600mm



BIKE LANE AHEAD  
WB-10  
750mm x 750mm



SCHOOL CROSSWALK AHEAD  
WB-16L/R  
600mm x 600mm



PEDESTRIAN CROSSWALK AHEAD  
WC-2L/R  
600mm x 600mm



PLAYGROUND AHEAD  
WC-3R/L  
600mm x 600mm



BICYCLE CROSSING AHEAD  
WC-7  
600mm x 600mm

NOTES:

1. THIS HANDBOOK IS FOR GENERAL REFERENCE ONLY.
2. REFER TO SECTION 9.14 STREET NAME AND TRAFFIC SIGNS.

10-15-2019



CITY OF NANAIMO'S FIELD HANDBOOK  
OF GENERAL SIGNS

Scale: N.T.S.

Created: JUN 2013

Rev Date: MAY 2020

Dwg No: SHI-5

Effective April 2023

© INFRASTRUCTURE PLANNING STANDARDS & PRODUCTS INC. EDITION NO.13 MAY 2020/2019-09-15 REDLINE INCORPORATION - WORKING SECTION/APPENDICES/8



FIRE TRUCK ENTRANCE  
WC-17L/R  
750mm x 750mm



BIKE PEDESTRIAN CROSSING AHEAD  
WC-46L/R  
600mm x 600mm



BIKES ON ROADWAY  
WC-19  
600mm x 600mm



CUL-DE SAC SIGN  
ID-31  
600mm x 600mm



PEDESTRIAN PUSHBUTTON SIGN  
ID-21L/R  
130mm x 200mm

NOTES:

1. THIS HANDBOOK IS FOR GENERAL REFERENCE ONLY.
2. REFER TO SECTION 9.14 STREET NAME AND TRAFFIC SIGNS.

10.16.2019



CITY OF NANAIMO'S FIELD HANDBOOK  
OF GENERAL SIGNS

Scale: N.T.S.  
Created: JUN 2013  
Rev Date: MAY 2020  
Dwg No: SHT-6

Effective April 2023



## SAMPLE - BC Hydro SLIM Connection Form – Ornamental Lights

Development Title:

Date: \_\_\_\_\_

Comments:

**Request:**

Request Type:

Reason Type:

Lamp Type:

Wattage:

Lens Type:

Request Details:

*(# of lights, wattages, etc.)***Electrician:**

Name:

Company:

Phone #:

Permit #:

*\*\*provided by electrician*SLIM  
ID#: \_\_\_\_\_

Effective April 2023