

| CSA STANDARD F280-12 COMPLIANCE                                                                                             |                                                                                                                                                                                                                                                                                      |                                                                                                                               |  | CSA F280-12<br>Form Set Ver 24.10                                                                                                       |                                  |
|-----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| NBC 2015: 9.33.5.1.; 9.36.3.2. & 9.36.5.15; NBC 2020; 9.33.5.1.; 9.36.3.2.; 9.36.5.15 (5); 9.36.8.9. (1);                   |                                                                                                                                                                                                                                                                                      |                                                                                                                               |  |                                                                                                                                         |                                  |
| These documents issued for the use of <b>BC MINISTRY OF HOUSING</b>                                                         |                                                                                                                                                                                                                                                                                      |                                                                                                                               |  | <b>PROJECT #</b>                                                                                                                        |                                  |
| and may not be used by any other persons without authorization. Documents for permit and/or construction are signed in red. |                                                                                                                                                                                                                                                                                      |                                                                                                                               |  | 1                                                                                                                                       | TOWN1-U1-WEST                    |
| BUILDING LOCATION                                                                                                           |                                                                                                                                                                                                                                                                                      |                                                                                                                               |  |                                                                                                                                         |                                  |
| Model: TOWN-01-UNIT 1                                                                                                       |                                                                                                                                                                                                                                                                                      | 3 Site: WEST                                                                                                                  |  | 6                                                                                                                                       |                                  |
| Address:                                                                                                                    |                                                                                                                                                                                                                                                                                      | 4 Lot:                                                                                                                        |  | 7                                                                                                                                       |                                  |
| City & Province: PRINCE RUPERT, BC                                                                                          |                                                                                                                                                                                                                                                                                      | 5 Postal Code:                                                                                                                |  | 8                                                                                                                                       |                                  |
| COMPLIANCE <span style="float: right;">(See page 2 for input summary and page 3 for room by room values)</span>             |                                                                                                                                                                                                                                                                                      |                                                                                                                               |  |                                                                                                                                         |                                  |
| Submittal is for:                                                                                                           |                                                                                                                                                                                                                                                                                      | <input type="checkbox"/> Whole house <span style="margin-left: 20px;"><input checked="" type="checkbox"/> Room by Room</span> |  | Units: <input checked="" type="checkbox"/> Imperial <input type="checkbox"/> Metric                                                     |                                  |
| HEATING                                                                                                                     |                                                                                                                                                                                                                                                                                      |                                                                                                                               |  |                                                                                                                                         |                                  |
| <b>Minimum Heating Capacity:</b>                                                                                            |                                                                                                                                                                                                                                                                                      | <b>12,441</b>                                                                                                                 |  | <b>BTUH</b> (total building heat loss as per 5.2.7)                                                                                     |                                  |
| 5.3.1                                                                                                                       | The total heat output capacity of all heating systems installed in a building shall not be less than 100% of the total building heat loss as determined in Clause 5.2.7.                                                                                                             |                                                                                                                               |  |                                                                                                                                         |                                  |
| 5.3.2                                                                                                                       | The combined heating delivery of the heating systems that serve a room or space shall not be less than 100% of the space heat loss, as determined in Clause 5.2.6.. (If room by room submittal, see page 2 for individual space heating requirements)                                |                                                                                                                               |  |                                                                                                                                         |                                  |
| COOLING                                                                                                                     |                                                                                                                                                                                                                                                                                      |                                                                                                                               |  |                                                                                                                                         |                                  |
| <b>Nominal Cooling Capacity:</b>                                                                                            |                                                                                                                                                                                                                                                                                      | <b>11,966</b>                                                                                                                 |  | <b>BTUH</b> (Nominal Cooling Capacity as per 6.3.1)                                                                                     |                                  |
| <b>Minimum Cooling Capacity:</b>                                                                                            |                                                                                                                                                                                                                                                                                      | <b>9,573</b>                                                                                                                  |  | <b>BTUH</b>                                                                                                                             | <b>Maximum Cooling Capacity:</b> |
| <b>9,573</b>                                                                                                                |                                                                                                                                                                                                                                                                                      | <b>14,958</b>                                                                                                                 |  | <b>BTUH</b>                                                                                                                             |                                  |
| 6.3.2                                                                                                                       | Except as provided in Clause 6.3.3., the cooling system capacity shall not be less than 80% of the nominal cooling capacity for the building, as determined in Clause 6.3.1.. In no case shall it be less than the nominal cooling capacity of the building minus 1800 W (0.51 tons) |                                                                                                                               |  |                                                                                                                                         |                                  |
| 6.3.3                                                                                                                       | Where the cooling system is added to an existing heating system, it's capacity in Watts shall not exceed 18 times the capacity of the air-handling capacity of the existing system in L/s. (Cooling capacity in Tons not more than 1.0 per 400 CFM of air handling capacity)         |                                                                                                                               |  |                                                                                                                                         |                                  |
| 6.3.4                                                                                                                       | Except for ground-source and water source heat pumps used for cooling, and as permitted in Clause 6.3.5, the installed cooling capacity shall not exceed 125% of the nominal cooling capacity for the building, as determined in Clause 6.3.1.                                       |                                                                                                                               |  |                                                                                                                                         |                                  |
| 6.3.5                                                                                                                       | If the nominal cooling system capacity for the building, as determined in Clause 6.3.1. is less than 6,000 W (1.7 tons), the installed cooling system capacity may exceed the nominal cooling system capacity for the building by up to 1750 W (0.49 tons).                          |                                                                                                                               |  |                                                                                                                                         |                                  |
| ATTACHED DOCUMENTS                                                                                                          |                                                                                                                                                                                                                                                                                      |                                                                                                                               |  |                                                                                                                                         |                                  |
| <input checked="" type="checkbox"/> Design Summary                                                                          |                                                                                                                                                                                                                                                                                      | <input checked="" type="checkbox"/> Room by Room Results                                                                      |  | Other:                                                                                                                                  |                                  |
| Other:                                                                                                                      |                                                                                                                                                                                                                                                                                      |                                                                                                                               |  |                                                                                                                                         |                                  |
| Notes:                                                                                                                      |                                                                                                                                                                                                                                                                                      |                                                                                                                               |  |                                                                                                                                         |                                  |
| CALCULATIONS PERFORMED BY                                                                                                   |                                                                                                                                                                                                                                                                                      |                                                                                                                               |  |                                                                                                                                         |                                  |
| Name: TODD BACKUS                                                                                                           |                                                                                                                                                                                                                                                                                      | Designers Signature, Stamp Imprint<br>or other certification mark                                                             |  | I, _____                                                                                                                                |                                  |
| Company: TECA                                                                                                               |                                                                                                                                                                                                                                                                                      |                                                                                                                               |  | have reviewed and take responsibility for the design work described in this document & I am qualified in the appropriate categories. 63 |                                  |
| Address: PO BOX 73105, EVERGREEN RO                                                                                         |                                                                                                                                                                                                                                                                                      |                                                                                                                               |  | Accreditation Reference 1                                                                                                               |                                  |
| City & Prov.: SURREY, BC                                                                                                    |                                                                                                                                                                                                                                                                                      |                                                                                                                               |  | Accreditation Reference 2                                                                                                               |                                  |
| Postal Code: V3R 0J2                                                                                                        |                                                                                                                                                                                                                                                                                      |                                                                                                                               |  | Issued for: (date)                                                                                                                      |                                  |
| Phone: 604-594-5956                                                                                                         |                                                                                                                                                                                                                                                                                      |                                                                                                                               |  | Issued for: (date)                                                                                                                      |                                  |
| Fax: -                                                                                                                      |                                                                                                                                                                                                                                                                                      |                                                                                                                               |  |                                                                                                                                         |                                  |
| E-mail: TBACKUS@TECA.CA                                                                                                     |                                                                                                                                                                                                                                                                                      |                                                                                                                               |  |                                                                                                                                         |                                  |
| <b>TECA HEAT LOSS &amp; HEAT GAIN CALCULATOR</b>                                                                            |                                                                                                                                                                                                                                                                                      |                                                                                                                               |  | <b>HVAC DESIGNERS OF CANADA</b><br><b>VERIFIED F280 SOFTWARE</b>                                                                        |                                  |

| CSA F280-12 INPUT SUMMARY                                                                                                                                                                                                                                                                                                                                              |  |                                                            |                               |                                                                                                                                                                                                                                                                    |                | CSA F280-12<br>Form Set Ver 24.10 |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------------------------------|--|
| These documents issued for the use of <u>BC MINISTRY OF HOUSING</u>                                                                                                                                                                                                                                                                                                    |  |                                                            |                               |                                                                                                                                                                                                                                                                    |                | PROJECT #:                        |  |
| and may not be used by any other persons without authorization. Documents for permit and/or construction are signed in red.                                                                                                                                                                                                                                            |  |                                                            |                               |                                                                                                                                                                                                                                                                    |                | TOWN1-U1-WEST                     |  |
| BUILDING LOCATION                                                                                                                                                                                                                                                                                                                                                      |  |                                                            |                               |                                                                                                                                                                                                                                                                    |                |                                   |  |
| Model: TOWN-01-UNIT 1                                                                                                                                                                                                                                                                                                                                                  |  |                                                            | Site: WEST                    |                                                                                                                                                                                                                                                                    | Lot:           |                                   |  |
| Address:                                                                                                                                                                                                                                                                                                                                                               |  |                                                            | City/ Prov: PRINCE RUPERT, BC |                                                                                                                                                                                                                                                                    | Post. Code:    |                                   |  |
| CALCULATION BASED ON (See Following Page For Results)                                                                                                                                                                                                                                                                                                                  |  |                                                            |                               |                                                                                                                                                                                                                                                                    |                |                                   |  |
| Dimensional Info Based On:                                                                                                                                                                                                                                                                                                                                             |  | drawings done by: Leckie Studio Architecture + Design Inc. |                               |                                                                                                                                                                                                                                                                    |                |                                   |  |
| Attachment: Row House - End Unit                                                                                                                                                                                                                                                                                                                                       |  |                                                            | Front Facing: E               |                                                                                                                                                                                                                                                                    | Assumed? Yes   |                                   |  |
| # of Stories: 2 (3 total floors)                                                                                                                                                                                                                                                                                                                                       |  |                                                            | Air Tightness: 1.5            |                                                                                                                                                                                                                                                                    | Assumed? Yes   |                                   |  |
| Weather Location: Prince Rupert                                                                                                                                                                                                                                                                                                                                        |  |                                                            | Internal Shading: No          |                                                                                                                                                                                                                                                                    | Assumed? Yes   |                                   |  |
| Wind Exposure, Site: Low crops, x/H > 20                                                                                                                                                                                                                                                                                                                               |  |                                                            | Occupants: 3                  |                                                                                                                                                                                                                                                                    | Assumed? Yes   |                                   |  |
| Wind Sheltering, Building: Light local shielding                                                                                                                                                                                                                                                                                                                       |  |                                                            | Ventilated? Non-dedicated HRV |                                                                                                                                                                                                                                                                    | HRV/ERV? Yes   |                                   |  |
| Units: <input checked="" type="checkbox"/> Imperial <input type="checkbox"/> Metric                                                                                                                                                                                                                                                                                    |  |                                                            | HRV ASE %: 65%                |                                                                                                                                                                                                                                                                    | HRV ATRE %: 0% |                                   |  |
| HEATING DESIGN CONDITIONS                                                                                                                                                                                                                                                                                                                                              |  |                                                            |                               | COOLING DESIGN CONDITIONS                                                                                                                                                                                                                                          |                |                                   |  |
| Outdoor Temp: -13°C, 8.6°F                                                                                                                                                                                                                                                                                                                                             |  | Indoor Temp: 22°C, 71.6°F                                  |                               | Mean Soil Temp: 10°C, 50°F                                                                                                                                                                                                                                         |                | Outdoor Temp: 19°C, 66.2°F        |  |
| Soil Cond. Normal conductivity: dry sand, loam, clay                                                                                                                                                                                                                                                                                                                   |  | Water Table Depth: Normal (7-10m, 23-33ft)                 |                               | Slab Fluid Temp: None                                                                                                                                                                                                                                              |                | Range: 6°C, 42.8°F                |  |
| Indoor Temp: 24°C, 75.2°F                                                                                                                                                                                                                                                                                                                                              |  |                                                            |                               | Latitude: 54.32                                                                                                                                                                                                                                                    |                |                                   |  |
| ABOVE GRADE WALLS                                                                                                                                                                                                                                                                                                                                                      |  |                                                            |                               | BELOW GRADE WALLS                                                                                                                                                                                                                                                  |                |                                   |  |
| ID 1: 1/ (TYP. EXT. WALL: R-22), inside wall, // 1/2" GWB, // framing w/ cavity insulation: softwood (default), 2x6 framing @ 16"OC, R20 (5.5"), // Sheathing materials, Softwood plywood, // Insulation, Mineral wool and glass fibre, // Cladding materials, Vinyl siding, outside air; 22.42R-VALUE                                                                 |  |                                                            |                               | ID 1:                                                                                                                                                                                                                                                              |                |                                   |  |
| FLOOR HEADERS                                                                                                                                                                                                                                                                                                                                                          |  |                                                            |                               | CEILINGS                                                                                                                                                                                                                                                           |                |                                   |  |
| ID 1: 1/ (TYP. HEADER: R-22); 22R-VALUE                                                                                                                                                                                                                                                                                                                                |  |                                                            |                               | ID 1: 1/ (TYP. ROOF: R-32), inside ceilings, // 1/2" GWB, // framing w/ cavity insulation: softwood (default), 2x6 framing @ 24"OC, custom insulation, // Sheathing materials, Softwood plywood, // Roofing materials, Built-up roofing, outside air; 32.01R-VALUE |                |                                   |  |
| WINDOWS                                                                                                                                                                                                                                                                                                                                                                |  |                                                            |                               | EXPOSED FLOORS                                                                                                                                                                                                                                                     |                |                                   |  |
| ID 1: 1/ (Windows (Energy Modelling Requirements)) custom, USI: 1.3, SHGC: 0.25                                                                                                                                                                                                                                                                                        |  |                                                            |                               | ID 1: 1/ (TYP. EXPOSED FLOOR), inside floor, // Finished floor w/ underlay, // 3/4" ply, // framing w/ cavity insulation: softwood (default), 2x12 joists @ 16"OC, R35 (9.25") // Exterior finished material // outside air: 30.98R-VALUE                          |                |                                   |  |
| SKYLIGHTS                                                                                                                                                                                                                                                                                                                                                              |  |                                                            |                               | DOORS                                                                                                                                                                                                                                                              |                |                                   |  |
| ID 1: 1/ (SKYLIGHT) double glazed, Fixed — Wood/Vinyl, insulating, low-E, 13mm Air, USI: 1.96, SHGC: 0.47                                                                                                                                                                                                                                                              |  |                                                            |                               | ID 1: 1/ (EXT. DOOR) Insulated metal — Polyurethane core, without storm door, USI: 0.91                                                                                                                                                                            |                |                                   |  |
| FOUNDATIONS                                                                                                                                                                                                                                                                                                                                                            |  |                                                            |                               |                                                                                                                                                                                                                                                                    |                |                                   |  |
| ID 1: 1/ [Heated Crawlpace] Concrete Slab & Walls, insulation: below slab = 2.64RSI, interior wall = 2.11RSI, exterior wall = 2.11RSI (configuration #69) // any first storey construction type, interior surface of wall insulated over full-height, exterior surface of wall insulated over full-height, sub-surface of floor slab fully insulated but no insulation |  |                                                            |                               |                                                                                                                                                                                                                                                                    |                |                                   |  |
| Issued: August 22, 2025                                                                                                                                                                                                                                                                                                                                                |  |                                                            |                               | Page: 2-2 of 3                                                                                                                                                                                                                                                     |                |                                   |  |
|  <b>TECA HEAT LOSS &amp; HEAT GAIN CALCULATOR</b>                                                                                                                                                                                                                                    |  |                                                            |                               |  <b>HVAC DESIGNERS OF CANADA</b><br><b>VERIFIED F280 SOFTWARE</b>                                                                                                             |                |                                   |  |

|                                                                                                                                   |                        |        |                     |                                                                                                                                                      |                                                 |                                   |               |
|-----------------------------------------------------------------------------------------------------------------------------------|------------------------|--------|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|-----------------------------------|---------------|
| CSA F280-12 INPUT SUMMARY                                                                                                         |                        |        |                     |                                                                                                                                                      |                                                 | CSA F280-12<br>Form Set Ver 24.10 |               |
| These documents issued for the use of <u>BC MINISTRY OF HOUSING</u> 1                                                             |                        |        |                     |                                                                                                                                                      |                                                 | PROJECT #: <u>TOWN1-U1-WEST</u> 2 |               |
| and may not be used by any other persons without authorization. Documents for permit and/or construction are signed in red.       |                        |        |                     |                                                                                                                                                      |                                                 |                                   |               |
| Model: <u>TOWN-01-UNIT 1</u>                                                                                                      |                        |        | 3 Site: <u>WEST</u> |                                                                                                                                                      |                                                 | 6                                 |               |
| Address:                                                                                                                          |                        |        | 4 Lot:              |                                                                                                                                                      |                                                 | 7                                 |               |
| City & Province: <u>PRINCE RUPERT, BC</u>                                                                                         |                        |        | 5 Postal Code:      |                                                                                                                                                      |                                                 | 8                                 |               |
| CALCULATION RESULTS - ROOM BY ROOM (BTUH)                                                                                         |                        |        |                     |                                                                                                                                                      |                                                 |                                   |               |
| #                                                                                                                                 | ROOM NAME              | 71     | HEATING             | 72                                                                                                                                                   | TOTAL COOLING                                   | 73                                |               |
| 1                                                                                                                                 | (#1)HEATED CRAWL - U1  |        | 2,724               |                                                                                                                                                      | 0                                               |                                   |               |
| 2                                                                                                                                 | (#2)100-ENTRY          |        | 1,049               |                                                                                                                                                      | 658                                             |                                   |               |
| 3                                                                                                                                 | (#3)101-POWDER ROOM    |        | 113                 |                                                                                                                                                      | 0                                               |                                   |               |
| 4                                                                                                                                 | (#4)102-LIVING ROOM    |        | 1,186               |                                                                                                                                                      | 3,158                                           |                                   |               |
| 5                                                                                                                                 | (#5)103-KITCHEN/DINING |        | 3,000               |                                                                                                                                                      | 5,238                                           |                                   |               |
| 6                                                                                                                                 | (#6)200-BEDROOM 1      |        | 1,521               |                                                                                                                                                      | 918                                             |                                   |               |
| 7                                                                                                                                 | (#7)201-BEDROOM 2      |        | 1,521               |                                                                                                                                                      | 918                                             |                                   |               |
| 8                                                                                                                                 | (#8)202-WASHROOM       |        | 90                  |                                                                                                                                                      | 27                                              |                                   |               |
| 9                                                                                                                                 | (#9)203-LANDING        |        | 1,238               |                                                                                                                                                      | 1,049                                           |                                   |               |
| Ventilation Loss (if separate):                                                                                                   |                        | 1,065  | BTUH                | 74                                                                                                                                                   | Latent Gain (if separate, value or multiplier): |                                   | 2,761 BTUH 75 |
| Total Building Heat Loss (5.2.7):                                                                                                 |                        | 12,441 | BTUH                |                                                                                                                                                      | Nominal Cooling System Capacity (6.3.1):        |                                   | 11,966 BTUH   |
| See page 1 for heating & Cooling System Capacity Limits                                                                           |                        |        |                     | Issued: August 22, 2025                                                                                                                              |                                                 | 76 Page: 3 of 3                   |               |
|  <b>TECA HEAT LOSS &amp; HEAT GAIN CALCULATOR</b> |                        |        |                     |  <b>HVAC DESIGNERS OF CANADA</b><br><b>VERIFIED F280 SOFTWARE</b> |                                                 |                                   |               |