**Revision batch V2019.1.003**

**CF1R-ALT-01**

* A13 – revised pseudo code
  + << user select as many as are applicable from list: \*Insulation (Show tables B, C & D) \*Roof Replacement >50% (Show table E and possibility B) \*Kitchen ~~remodel~~ **Range Hood installation (new or replacement)**
  + ResHvac.xsd change: replaced KitchenRemodelAlteration value with KitchenHoodNewReplace with new display term
* Section A – added note on bottom
  + **Note: If \*Kitchen Range Hood installation (new or replacement) is selected in A13, HERS verification and a CF2R/3R-MCH-32 is required.**
* B10 – revised field name
  + U-Factor **or R-value** ~~from Table 150.1-A or B~~
  + Required changing field to choice between B10\_UnFactorLimit and B10\_InsulationRValue
* C10 – revised field name
  + U-Factor **or R-value** ~~from Table 150.1-A or B~~
  + Required changing field to choice between B10\_UnFactorLimit and B10\_InsulationRValue
* Section J – fully revised table
* J01 – new field
  + **Is natural gas connected to the existing water heater?**
  + **<<User selects from yes or no>>**
  + ResHvac.xsd: Added new property WaterHeaterHasNaturalGas
* J04 - J05 – delete fields
  + J04 System Options assigned different property, WaterHeatingSystemAlteredOption
  + ResCompliance.xsd: added property WaterHeatingSystemAlteredOption for J04 System Options:
* J06 – revised pseudo code
  + <<User input; **if J05 = Consumer Instantaneous, value = NA**>>
* J10 - J14 – delete fields

**CF1R-ALT-02**

* B09 – revised field text
  + Installing entirely new ~~ducted~~ SC system?
* D03 – revised pseudo code (make list same as C03 on MCH-01b)
  + <<user pick one from list: \*central gas furnace; \*central split HP; \*central packaged HP; \*central large packaged HP; \*ductless **mini**-split HP; \*room HP; \*boiler; \*hydronic; \*combined hydronic; \*hydronic+forced air; \*combined hydronic+forced air; \*hydronic HP, \*hydronic HP+forced air; \*gas wall furnace; \*gas space heater; \*electric; **\*non-air-source heat pump;** \*Wood Heat; ~~\*N/A (no heating)~~ \***no heating**; \*Small duct high velocity HP; **\*Ductless VRF HP;** \*Packaged gas furnace **\*multisplit HP-ducted \*multisplit HP-ductless \*multisplit HP-ducted+ductless \*VCHP-ducted \*VCHP-ductless \*VCHP-ducted+ductless \*ducted mini-split HP**>>
  + Remove choice with N/A
* D07 – revised pseudo code (make list same as C07 on MCH-01b)
  + <<user pick one from list: \*central split AC; \*central split HP; \*central packaged AC; \*central packaged HP; \* central large packaged AC; \*central large packaged HP; \*ductless **mini-**split AC; \*ductless **mini-**split HP; \*gas absorption AC; \*room AC; \*room HP; \*hydronic HP; \*hydronic HP+forced air \*evaporative – direct; \*evaporative – indirect; \*evaporative – indirect/direct; \*evaporatively cooled condenser; \*Ice Storage AC; **\*non-air-source heat pump; \*non-air-cooled air conditioner;** \*no cooling **\*Small duct high velocity HP; \*Small duct high velocity AC; \*Ductless VRF HP; \*Ductless VRF AC; \*multisplit AC-ducted \*multisplit AC-ductless \*multisplit AC-ducted+ductless \*multisplit HP-ducted \*multisplit HP-ductless \*multisplit HP-ducted+ductless \*VCHP-ducted \*VCHP-ductless \*VCHP-ducted+ductless \*ducted mini-split AC \*ducted mini-split HP** >>
* E03 and F03: Remove choice with N/A
* E07 and F07 revised CalculationsAndRules which said “same list as D07” but D07 was revised and these fields were not, so now schema lists equipment and matches word doc pseudo code list
* F04: revised pseudo code: replaced test with NA to test with NoHeating

**CF1R-NCB-01**

* K02 – revised pseudo code
  + <<User selects from list: Boiler, Central gas furnace, … small duct high velocity, **VCHP-ducted, VCHP-ductless, VCHP-ducted+ductless**>>
* K05 – revised pseudo code
  + <<User selects from list: Central large packaged AC, … Room HP, **VCHP-ducted, VCHP-ductless, VCHP-ducted+ductless**>>
* M09 – revised field name
  + # of Water Heaters**/Compressors** in System
* N06 – new field
  + **Primary Tank Volume**
  + **<<** **use N03 to lookup Section M record. if M03 = C1 or C2, value = 80 \* M09; else value = NA>>**
* N07 – new field
  + **Loop Tank Volume**
  + **<<** **use N03 to lookup Section M record. if M03 = C1 or C2, then: if A06 ≤ 7, then value = 40; Elseif 8 ≤ A06 ≤ 11, then value = 80; Elseif 12 ≤ A06 ≤ 23, then value = 96; Elseif 24 ≤ A06 ≤ 47, then value = 168; elseif 48 ≤ A06 ≤ 95, then value = 288; Elseif A06 ≥ 96, then value = 480; Else value = NA>>**
* N08 – new field
  + **Loop Tank Heater Type**
  + **<<** **use N03 to lookup Section M record. if M03 = C1 or C2, then value = electric resistance; else value = NA>>**

**CF2R-LTG-01**

* C01 – revised schema
  + "AdditionalRequirements">150.0(k)1Cv: Do not contain screw **based** sockets.</xsd:documentation>

**CF2R-MCH-01a**

* B03 – revised pseudo code
  + **<<if on the CF1R, Y02\_ResidentialHeatingSystemType=VCHP, then allow user to select from list: \*VCHP-Ducted, \*VCHP-Ductless, \*VCHP-Ducted+Ductless; else autofill from CF1R>>** ~~<<auto filled text: referenced from CF1R>>~~
* B04 – revised pseudo code
  + **<<if on the CF1R, Y02\_ResidentialHeatingSystemType=VCHP, then allow user to select from list: \*VCHP-Ducted, \*VCHP-Ductless, \*VCHP-Ducted+Ductless; else autofill from CF1R>>** ~~<<auto filled text: referenced from CF1R>>~~
* B05 – revised pseudo code
  + <<if on the CF1R, Central Fan Vent Cooling credit is not claimed for this system **or if value is not available from CF1R**, then value=N/A, else autofill value from CF1R. allowed values are: \*variable flow \*fixed flow>>
* B06 – revised schema
  + Allow NA
* B08 – revised pseudo code
  + <if on CF1R LowLkgAH=true, then value= \*Has Low Leakage Air Handler, elseif LowLkgAH=false or **if value is not available from CF1R**, then value= \*None>>
* B09 – revised pseudo code
  + <if on CF1R HasBypasss Duct=true, then value= \*Has Bypass Duct, else value= \*None; **Elseif value is not available from CF1R, value = none** >>
* D05 - revised pseudo code
  + <<reference value from B04 as default~~; if B04 = No Cooling, then allow user to override default and pick: \*central split AC. flag non-default values and report in project status notes field; a revised CF1R may be required~~>>
* J12 – revised pseudo code
  + <<**if system type in D04 or D05 is one of the following system types: \*multisplit HP-ducted \*multisplit HP-ducted+ductless \*multisplit AC-ducted \*multisplit AC-ducted+ductless then value=no,** **else**if system type in D04 or D05 is one of the following system types: \*central split AC; \*central split HP \*central packaged AC ; \*central packaged HP \*central large packaged AC \*central large packaged HP, then value=Yes, else user pick one of the following two values from list: \*\*yes \*\*no…>>
* J13 – revised pseudo code
  + <<if D04 or D05 = one of the following two types: 1:[VCHP-Ducted] 2:[VCHP-Ducted+Ductless] then text value=[Exempt System Type], **elseif system type in D04 or D05 is one of the following system types: \*multisplit HP-ducted \*multisplit HP-ducted+ductless \*multisplit AC-ducted \*multisplit AC-ducted+ductless then value=no**…>>

**CF2R-MCH-01b**

* C03 – revised schema and pseudo code
  + Schema – remove WoodHeat (listed twice)
    - xsd:documentation source="CalculationsAndRules"> Reference value from CF1R as default; allow user to override the default and pick one from list: CentralGasFurnace, CentralSplitHP, CentralPackagedHP, CentralLargePackagedHP, DuctlessSplitHP (display term Ductless mini-split HP), RoomHP, Boiler, Hydronic, CombinedHydronic, Hydronic ForcedAir, CombinedHydronicForcedAir, HydronicHP, HydronicHP\_ForcedAir, GasPackagedFurnace, GasWallFurnace , GasSpaceHeater, Electric, NonAir SourceHP, WoodHeat, SmallDuctHighVelocityHP, DuctedMultiSplitHP, Ductless MultiSplitHP, DuctedDuctlessMultiSplitHP, DuctlessVRF\_HP, ~~WoodHeat~~, VCHP\_IndoorUnitDucted …
  + Pseudo code – Remove N/A (has both N/A and No Heating, which are the same)
    - << reference value from CF1R as default; allow user to override the default and pick one from list: … \*electric; \*non-air-source heat pump; \*Wood Heat; ~~\*N/A (no heating);~~ \*Small duct high velocity HP, \*Small duct high velocity HP; \*Ductless VRF HP; \*Packaged gas furnace, \*multisplit HP-ducted \*multisplit HP-ductless \*multisplit HP-ducted+ductless \*VCHP-ducted \*VCHP-ductless \*VCHP-ducted+ductless \*ducted mini-split HP \*no heating … >>
* F04 – revised pseudo code
  + <<user pick one of the following four text values: **\*Both Supply and Return** ~~\*yes~~ \*No **\*Supply only \*Return only**>>
  + ResCompliance.xsd: NewDuctingInstalled redefined as enumeration with 4 values
* F06 – revised pseudo code
  + <<if F04=**\***no **or \*Return only**, then value=n/a**;**~~,~~ **elseif F04=\*Supply only or \*Both Supply and Return, then require** user **to** pick one from the following list: … >>
* F07 – revised pseudo code
  + <<if F04=**\***no **or \*Return only**, then value=n/a**;**~~,~~ **elseif F04=\*Supply only or \*Both Supply and Return, then require** ~~else~~ user **to** pick one from the following list: … >>
* F08 – revised pseudo code
  + <<if F04=**\***no **or \*Supply only**, then value=n/a**;**~~,~~ **elseif F04=\*Return only or \*Both Supply and Return, then require** ~~else~~ user **to** pick one from the following list: … >>
* F09 – revised pseudo code
  + <<if F04=**\***no **or \*Supply only**, then value=n/a**;**~~,~~ **elseif F04=\*Return only or \*Both Supply and Return, then require** ~~else~~ user **to** pick one from the following list: … >>
* F11 – revised pseudo code
  + <<**if system type in C03 or C07 is one of the following four system types: \*multisplit HP-ducted \*multisplit HP-ducted+ductless \*multisplit AC-ducted \*multisplit AC-ducted+ductless, then value=no, else**if system type in C03 or C07 is one of the following system types: \*central split AC; \*central split HP \*central packaged AC ; \*central packaged HP \*central large packaged AC \*central large packaged HP, then value=Yes…>>
* G13 – revised pseudo code
  + <<**if system type in C03 or C07 is one of the following four system types: \*multisplit HP-ducted \*multisplit HP-ducted+ductless \*multisplit AC-ducted \*multisplit AC-ducted+ductless, then value=no, else**if system type in C03 or C07 is one of the following system types: \*central split AC; \*central split HP \*central packaged AC ; \*central packaged HP \*central large packaged AC \*central large packaged HP, then value=Yes…>>
* G14 – revised pseudo code
  + <<**if system type in C03 or C07 is one of the following four system types: \*multisplit HP-ducted \*multisplit HP-ducted+ductless \*multisplit AC-ducted \*multisplit AC-ducted+ductless, then value=no, else**if system type in C03 or C07 is one of the following system types: \*central split AC; \*central split HP \*central packaged AC ; \*central packaged HP \*central large packaged AC \*central large packaged HP, then value=Yes…>>

**CF2R-MCH-01c**

* I11 – revised pseudo code
  + << **if system type in C04 or C05 is one of the following four system types: \*multisplit HP-ducted \*multisplit HP-ducted+ductless \*multisplit AC-ducted \*multisplit AC-ducted+ductless, then value=no, else**if system type in C04 or C05 is one of the following system types: \*central split AC; \*central split HP \*central packaged AC ; \*central packaged HP \*central large packaged AC \*central large packaged HP, then value=Yes…>>
* I12 – revised pseudo code
  + << **if system type in C04 or C05 is one of the following four system types: \*multisplit HP-ducted \*multisplit HP-ducted+ductless \*multisplit AC-ducted \*multisplit AC-ducted+ductless, then value=no, else**if system type in C04 or C05 is one of the following system types: \*central split AC; \*central split HP \*central packaged AC; \*central packaged HP \*central large packaged AC \*central large packaged HP, then value=Yes, else user pick one of the following two values from list: \*\*yes \*\*no…>>

**CF2R-MCH-01d**

* B03 – revised pseudo code
  + **<<if on the CF1R, Y02\_ResidentialHeatingSystemType=VCHP, then allow user to select from list: \*VCHP-Ducted, \*VCHP-Ductless, \*VCHP-Ducted+Ductless; else autofill from CF1R>>** ~~<<auto filled text: referenced from CF1R>>~~
* B04 – revised pseudo code
  + **<<if on the CF1R, Y02\_ResidentialHeatingSystemType=VCHP, then allow user to select from list: \*VCHP-Ducted, \*VCHP-Ductless, \*VCHP-Ducted+Ductless; else autofill from CF1R>>** ~~<<auto filled text: referenced from CF1R>>~~
* B05 – revised pseudo code
  + <<if on the CF1R, Central Fan Vent Cooling credit is not claimed for this system **or if value is not available from CF1R**, then value=N/A, else autofill value from CF1R. allowed values are: \*variable flow \*fixed flow>>
* B06 – revised schema
  + Allow NA
* B07 – revised schema
  + Allow NA
* B10 – revised pseudo code
  + <<if on CF1R LowLkgAH= true, then value= \*Has Low Leakage Air Handler,elseif LowLkgAH= false **or if value is not available from CF1R**, then value= \*None>>
* B12 – revised pseudo code
  + <<calculated field: if B06= DuctsNone, then value=N/A, else reference value from CF1R for this system name. allowed values are: \*\*new \*\*altered \*\*existing \*\*existing+new; **Elseif value is not available from CF1R, value = N/A** >>
* E06 – revised pseudo code
  + <<as default: If value from CF1R= [>40ft]; then value=yes, elseif value from CF1R=one of the following 2: \*≤40ft; \*N/A - no ducts then value=no elseif value is not available from CF1R ~~and D07=DuctsNone~~, then value=no … >>
* K04 – revised pseudo code
  + <<if E06=yes, **then allow user to pick one of the following values: \*Both Supply and Return; \*Supply only; \*Return only;** else user pick one…>>
* K06 – revised pseudo code
  + <<if K04=**\***no **or \*Return only**, then value=n/a**;**~~,~~ **elseif K04=\*Supply only or \*Both Supply and Return, then require** ~~else~~ user **to** pick one from the following list: … >>
* K07 – revised pseudo code
  + <<if K04=**\***no **or \*Return only**, then value=n/a**;**~~,~~ **elseif K04=\*Supply only or \*Both Supply and Return, then require** ~~else~~ user **to** pick one from the following list: … >>
* K08 – revised pseudo code
  + <<if K04=**\***no **or \*Supply only**, then value=n/a**;**~~,~~ **elseif K04=\*Return only or \*Both Supply and Return, then require** ~~else~~ user **to** pick one from the following list: … >>
* K09 – revised pseudo code
  + <<if K04=**\***no **or \*Supply only**, then value=n/a**;**~~,~~ **elseif K04=\*Return only or \*Both Supply and Return, then require** ~~else~~ user **to** pick one from the following list: … >>
* K11 – revised pseudo code
  + << **if system type in D04 or D05 is one of the following system types: \*multisplit HP-ducted \*multisplit HP-ducted+ductless \*multisplit AC-ducted \*multisplit AC-ducted+ductless then value=no, else**if system type in D04 or D05 is one of the following system types: \*central split AC; \*central split HP \*central packaged AC ; \*central packaged HP \*central large packaged AC \*central large packaged HP, then value=Yes…>>
* L13 – revised pseudo code
  + << **if system type in D04 or D05 is one of the following system types: \*multisplit HP-ducted \*multisplit HP-ducted+ductless \*multisplit AC-ducted \*multisplit AC-ducted+ductless then value=no,** if system type in D04 or D05 is one of the following system types: \*central split AC; \*central split HP; \*central packaged AC; \*central packaged HP; \*central large packaged AC; \*central large packaged HP; then value=Yes…>>
* L14 – revised pseudo code
  + <<if D04 or D05 = one of the following two types: 1:[VCHP-Ducted] 2:[VCHP-Ducted+Ductless] then text value=[Exempt System Type] **elseif system type in D04 or D05 is one of the following system types: \*multisplit HP-ducted \*multisplit HP-ducted+ductless \*multisplit AC-ducted \*multisplit AC-ducted+ductless then value=no**…>>
  + <<…\*central large packaged HP; then value=Yes, **~~elseif D04 or D05 = one of the following two types: \*VCHP – Ducted; \*VCHP – Ducted+ductless, then value=no,~~** else user pick one of the following two values from list…>>
* O07 – revised pseudo code
  + <<calculated field: IF L14 = **Exempt System Type**, then result=no…>>

**CF2R/3R-MCH-25**

* E02 (a, b, & e ), D02 (c & CF2R-d only), C02 (CF2R-f only), – revised pseudo code
  + **<calculated field, numeric xxxx.: reference value from applicable MCH-23 field for the indoor unit in E01 according to the following list: MCH-23a field D02 MCH-23b field E03 MCH-23c field E02 (MCH-23d is not applicable) MCH-23e field D02 MCH-23f field D02>>**

~~if A10= New or Replacement, and the system type on the MCH-01 is one of the following two: \*small duct high velocity AC \*small duct high velocity HP then value =A05\*250; elseif A10= New or Replacement, then display numeric value =A05\*350; elseif A10=Alteration, then display numeric value =A05\*300;~~

**CF2R-MCH-25a**

* A14 – revised schema
  + <xsd:element name="A14\_RefrigerantChargeVerificationDate" type="comp:RefrigerantChargeVerificationDate"> xsd:annotation  
    <xsd:documentation source="FieldText">Date of Refrigerant Charge Verification for this **~~s~~System**</xsd:documentation>  
    <xsd:documentation source="CalculationsAndRules">user input: date: use validated date format</xsd:documentation>  
    </xsd:annotation>  
    </xsd:element>

**CF2R/3R-MCH-27**

* A08 – revised pseudo code
  + <<…\*\*27c – Scheduled or Real-Time Control Ventilation System;

Else if “Building Type” (A02) = Multifamily and “Ventilation System Type” (A06) = **Supply, Exhaust, Balanced, Balanced – ERV, Balanced – HRV, Central Fan Integrated (CFI),** Central Ventilation System – Supply, Central Ventilation System – Exhaust, or Central Ventilation System – Balanced , then display method: \*\*27b – Multifamily Ventilation…>>

**CF2R/3R-MCH-27b-d**

* A09 – revised pseudo code
  + Add row to be consistent with MCH-27a
  + **Climate Zone (this row is not visible to the user)**
  + **<<value from CF1R>>**

**CF2R/3R-MCH-27b and d**

* A08 – revised pseudo code (correct in schema)
  + <<calculated field: if “Building Type” (A02) = Single Family Detached or Single Family Attached and “Ventilation System Type” (A06) = Supply, Exhaust, Balanced, Balanced – ERV, Balanced – HRV, or Central Fan Integrated and “Ventilation Operation Schedule (A07) = Continuous, or Short-Term Average then display method: \*\*27a – Single Family Attached/Detached Ventilation; Else if “Building Type” (A02) = Single Family Detached, Single Family Attached, or Multifamily and “Ventilation System Type” (A~~12~~**06**) = Supply…>>

**CF2R/3R-MCH-32**

* A03 – revised pseudo code
  + Remove NA
    - <<User Entered Value; (XX.XX) ~~or N/A~~>>
* A04 – revised pseudo code
  + Remove NA
    - <<User Entered Value; (XX.XX) ~~or N/A~~>>
* A05 – revised pseudo code
  + Remove NA
    - <<calculated value, “Kitchen Floor Area (A03)” \* “Kitchen Average Ceiling Height” (A04); (XX.XX)~~; Allow N/A only if A03 and A04 = N/A~~>>

**CF2R/3R-MCH-33**

* G04 – revised pseudo code
  + <<If B05=1, then autofill value referenced in B06, elseif B05>1, then reference values from: \*MCH-01a K06 \*MCH-01d M06

\*Require the sum of the values in this column for each indoor unit in G01 to be **greater than or** equal to the value in B06 as condition of completion of this doc>>

**CF2R-PLB-01b**

* Section B. header – revised pseudo code
  + <<require one row of data for each water heater identified on the CF1R~~-PRF~~>>
* B02 – revised schema and pseudo code
  + Schema: ***HeatPumpWaterHeaterBrand*** instead of  *~~HeatPumpWaterHeaterModel~~* 
    - **Add enumeration ‘Colmac” to *HeatPumpWaterHeaterBrand***
  + Pseudo code: <<Reference values from CF1R-PRF-01; else ~~user input~~ **if prescriptive, report default value = Sanden**>>
* B03 – revised field name
  + Number of Water Heaters**/Compressors**
* B04 – new field and revised schema
  + **Primary Tank Volume**
  + **<<Reference value from CF1R ~~(N06)~~>>**
  + **Allow NA**
* B05 – new field and revised schema
  + **Loop Tank Volume**
  + **<<Reference value from CF1R ~~(N07)~~>>**
  + **Allow NA**
* B06 – new field and revised schema
  + **Loop Tank heater Type**
  + **<<Reference value from CF1R ~~(N08)~~>>**
  + **Allow NA**
* B09 – Delete field
  + ~~Simulated Equipment Make and Model~~
* Section C. – header
  + <<require one row of data for each water heater identified on the CF1R~~-PRF~~>>
* C02 – modify schema and revised pseudo code
  + Schema: ***HeatPumpWaterHeaterBrand*** instead of *~~HeatPumpWaterHeaterModel~~*
  + Pseudo code: <<~~If performance, reference value from B02 as default, and allow user to override with an equivalent system based on the simulated equipment in B06; elseif prescriptive, allow user to enter any Tier 3 model~~ **Reference values from B02**>>
* C03 – revised field name
  + Number of Water Heaters**/Compressors**
* C04 – new field and revised schema
  + **Primary Tank Volume**
  + **<<User input, must be ≥ value from B04>>**
  + **Allow NA**
* C05 – new field and revised schema
  + **Loop Tank Volume**
  + **<<User input, must be ≥ value from B05>>**
  + **Allow NA**
* C06 – new field and revised schema
  + **Loop Tank Heater Type**
  + **<<Reference value from B06>>**
  + **Allow NA**
* **C**07 – revised pseudo code
  + <<reference value from B0**7**~~4~~ (allow NA if B0**7**~~4~~ = NA)>>
* C08 – revised pseudo code
  + << User Input must ≥ Reference Value from B0**8**~~5~~; Else = NA >>

**CF2R-PLB-02a**

* Section A header – revised pseudo code
  + <<~~require one row of data for each Central DHW System or Dwelling Unit DHW System name identified on the CF1R report that has one of the Dwelling Unit DHW System Distribution types identified in the following list: Standard Distribution System, or Parallel Piping, or Recirculation System Non-Demand Control, or Demand Recirculation Manual Control, or Demand Recirculation Sensor Control).~~ **require one row of data for each non-HERS water heater identified on the CF1R~~-PRF~~**>>
* A02 – revised pseudo code
  + <<reference value from CF1R **~~(see rule in header)~~**>>
* A09 – revised pseudo code
  + <<…Else if prescriptive, Allowed values are \*Standard Distribution System \*Demand Recirculation \* Demand Recirculation Manual Control; **Else if CF1R-ALT, then value = NA**>>
* A10 – revised pseudo code
  + <<reference values from CF1R. Allowed values are \*Basic \*None; **If CF1R-ALT, then value = NA**>>
* Section B header – revised pseudo code
  + **<<require one row of data for each non-HERS water heater identified on the CF1R~~-PRF~~>>**
* B09 and B10 added NA choice to match A09 and A10
* Section C header – revised pseudo code
  + **<<require one row of data for each water heater identified in Section B.>>**
* Section D header – revised pseudo code
  + **<<require one row of data for each water heater identified in Section B.>>**
* Section E header – revised pseudo code
  + **<<require one row of data for each water heater identified in Section B.>>**
* Section G header – revised pseudo code
  + << ~~Require one row for each dwelling identified in Table A with A10 = Basic. If no dwelling in A10 = Basic, then display section does not apply message~~ **require one row of data, reporting the longest distances, for each dwelling unit identified in Section B. with B10 = Basic. If no dwelling in B10 = Basic, then display section header and standard “This section does not apply” message**>>

**CF2R-PLB-02b**

* Section A header – revised pseudo code
  + << **require one row of data for each non-HERS water heater identified on the CF1R~~-PRF~~** ~~require one row of data for each Dwelling Unit Water Heating System name identified on the CF1R report~~ >>
* A06 – revised schema
  + <xsd:element name="A**0**6\_ExteriorTankInsulation" type="hvac:ExteriorTankInsulation">
* A07 – revised pseudo code
  + <<…Else if prescriptive, Allowed values are \*Standard Distribution System \*Demand Recirculation \* Demand Recirculation Manual Control; **Else if CF1R-ALT, then value = NA>>**
* A08 – revised pseudo code
  + <<reference values from CF1R. Allowed values are \*Basic \*None; **If CF1R-ALT, then value = NA**>>
* Section B header – revised pseudo code
  + **<<require one row of data for each non-HERS water heater identified on the CF1R~~-PRF~~>>**
* B07 and B08: added NA choice to match A07 and A08
* Section D header – revised pseudo code
  + <<**require one row of data, reporting the longest distances, for each dwelling unit identified in Section B. with B08 = Basic. If no dwelling in B08 = Basic, then display section header and standard “This section does not apply” message** ~~Require one row for each dwelling identified in Table A with A08 = Basic. If no dwelling in A08 = Basic, then display section does not apply message~~>>

**CF2R-PVB-01**

* B05 – revised pseudo code
  + <<From CF1R-PRF-01 **(Da06\_CFI\_PV), value = Yes (true) if CFI1 or CFI2 is chosen, else value = No (false)**; Else **if prescriptive,** value = NA>>
* B06 – revised pseudo code
  + <<If performance and CFI = **Yes**, then **if CF1R-PRF Da07AzimuthRange = 150 to 270,** user input between 150 and 270; **elseif CF1R-PRF Da07\_AzimuthRange = 105 to 300, then user input between 105 and 300;** if performance and CFI=**No**, then pull from CF1R (between 0 and 359); if prescriptive, then user input between 90 and 300>>
* B07 – revised schema
  + Allow NA
* B08 – revised pseudo code and schema
  + Allow NA
  + ~~<<If prescriptive and B07=Deg, then user input and 0 ≤B08≤ 10; if prescriptive and B07=Pitch, then user input 0 ≤B08≤ 2; if performance and CFI = Yes, then value from CF1R-PRF and B08 ≤ 7; if performance and CFI = No, then value from CF1R-PRF>>~~
* B09 – new field
  + **Annual Solar Access (%)**
  + **<<From CF1R-PRF-01; Else value = 100>>**
* B11 – renumbered to **B12**
* C03 – revised schema
  + Allow NA
* C04 – revised pseudo code
  + <<If B05=No, then autofill from B06; **elseif B05=Yes, then if CF1R-PRF Da07\_AzimuthRange = 150 to 270, user input between 150 and 270; Elseif CF1R-PRF Da07\_AzimuthRange = 105 to 300, then user input between 105 and 300;** Else user input (value must be > 0 and **≤** 359>>
* C05 – revert to original pseudo code
* C06 – revert to original pseudo code
* C07 – new field
  + **Annual Solar Access**
  + **<<reference value from B09 as default, but allow user to override only if ≥ B09>>**
* C08 – renumber to C09
* Section D – revised static text and pseudo code
  + << Shading Requirement Compliance Path B10 = “Minimal Shading Criterion”, then display row “Minimal Shading Criterion” below; Else display row “~~PV Array Geometries Performance~~ **Annual Solar Access** Input”>>
  + ~~PV Array Geometries Performance~~ **Annual Solar Access** Input
  + The shading condition of the PV array must be properly ~~input~~ **accounted for** in the performance calculation **by the annual solar access input** ~~and attach a copy of the design to the CF1R~~
  + Report generator will allow both conditions in Section D to be displayed
* Section E – static text
  + The installer shall provide documentation that demonstrates the shading condition of the actual installation of the PV module is consistent with the shading requirement in Table D. The verification must be done ~~with~~ by measurements from an approved solar assessment tool or other CEC approved alternative methods. **The satellite, drone or other digital image of the obstructions that cast shadows on the PV array must be created and dated after the installation of the photovoltaic system.**
* Section H. – revised pseudo code
  + <<calculated field: if C08 ≥ **B12** or A05 = …>>

**CF2R-STH-01**

* A06 – revised pseudo code
  + <<**From CF1R-PRF; elseif prescriptive, f**~~F~~rom CF1R-STH-01; else user input if SRCC Certification Type = OG-300>>
* A07 – new field and revised schema
  + **Collector Brand**
  + **<<From CF1R-PRF; elseif prescriptive, from CF1R-STH-01; else user input if SRCC Certification Type = OG-300>>**
  + **Schema: Allow NA**
* A08 (was A07) – revised pseudo code
  + <<**From CF1R-PRF; elseif prescriptive, f**~~F~~rom CF1R-STH-01; else user input if SRCC Certification Type = OG-300>>
* A09 (was A08) – revised field name and pseudo code
  + ~~Certification~~ **SRCC/IAPMO** Number
  + <<**From CF1R-PRF; elseif prescriptive, f**~~F~~rom CF1R-STH-01; else user input if SRCC Certification Type = OG-300>>
* A10 (was A09) – revised pseudo code
  + <<**From CF1R-PRF; elseif prescriptive, f**~~F~~rom CF1R-STH-01; else user input if SRCC Certification Type = OG-300>>
* A10 – Reinstate row
  + Required Solar Savings Fraction
* A12 (was A11) - revised pseudo code
  + <<**From CF1R-PRF; elseif prescriptive, f**~~F~~rom CF1R-STH-01; else user input if SRCC Certification Type = OG-300>>
* A12 – Delete row
  + ~~Collector Area~~
* A13 – revised pseudo code
  + <<**From CF1R-PRF; elseif prescriptive, f**~~F~~rom CF1R-STH-01; else user input if SRCC Certification Type = OG-300>>
* A14 – Delete row
  + ~~Secondary Storage Tank Volume (gallons)~~
* A14 (was A15) – revised pseudo code
  + <<**From CF1R-PRF; elseif prescriptive, f**~~F~~rom CF1R-STH-01; else user input if SRCC Certification Type = OG-300>>
* A15 (was A16) – revised pseudo code
  + <<**From CF1R-PRF; elseif prescriptive, f**~~F~~rom CF1R-STH-01; else user input if SRCC Certification Type = OG-300>>
* A16 – revised pseudo code
  + <<If **A10** ≥ **A11**, show “Solar water heating system complies”, else…>>

**CF3R-EXC-20**

* D07 – Revised schema
  + Allow NA as an option

**CF3R-MCH-23c**

* D09 – revised pseudo code
  + <<calculated Field: if Value=pass in all rows in Range D01-D07, Then display result=System Complies; **elseif D08 has an explanation, then display result=System Complies;** else display result=System Does Not Comply: one or more applicable remedial actions were not completed as required. Enter reason(s) for non-compliance in corrections notes field below>>

**CF3R-MCH-25**

* A18 – revised pseudo code
  + <<If A11 = “no FID” and A15 = “Superheat”, then list = Superheat

Else, If A11 = “no FID” and A15 = “Subcooling”, then list = Subcooling, ~~Winter Setup~~

Else, If A11 = “no FID” and A15 = “Weigh-In with Installer independent”, then list = Superheat, Subcooling, ~~Winter Setup~~

Else if A11 = “no FID” and A15 = “Weigh-in with HERS Rater observation”, then list =

Weigh-In Observation

Else, If A11 = “factory installed FID” or “field installed FID”, then list = FID Verification

~~Else, If A11 = “no FID” and A15 = “Winter Setup”, then list = Subcool, Winter Setup~~

Else, If A15 = “New Package Unit Factory Charge”, then do not proceed. A CF3R-MCH-25 is not required when a CF2R-MCH-25f is used.

Else, If A12 = “No”, or A13 = “No”, then list = Weigh-In Observation>>

**NRCV-PLB-22**

* H10 – revised pseudo code
  + <<if performance, reference value from H04; if prescriptive, user input, range check: 0<**H10**≤100>>