Amendments to the
2021 International Energy Conservation Code

The following sections, paragraphs, and sentences of the *2021 International Energy Conservation Code* (IECC) are hereby amended as follows: Standard type is text from the IECC. Underlined type is text inserted. ~~Lined through type is deleted text from IECC.~~

COMMERCIAL REQUIREMENTS

Section C101.1; amend to insert the Department Name

C101.1 Title. These regulations shall be known as the *Energy Conservation Code* of The Town of Eagle Department hereinafter referred to as "this code".

Section C103.2 Information on Construction Documents; amend Section C103.2 modifying item 6 and adding items 14, 15, and 16 to read as follows:

6. Mechanical and service water heating systems and equipment types, sizes, fuel source, and efficiencies.
14. Details of additional electric infrastructure, including branch circuits, conduit, or pre-wiring, and panel capacity in compliance with the provisions of this code.
15. Location of pathways for routing of raceways or cable from the solar ready zone to the electrical service panel.
16. Location of designated EVSE spaces, EVSE Universal spaces, EV-Ready spaces, and EV-Capable spaces in parking facilities.

Section C105.2.5 Electrical System; amend Section C105.2.5 to read as follows:

C105.2.5 Electrical System Inspections shall verify lighting system controls, components, meters, and additional electric infrastructure, as required by the code, approved plans and specifications.

Section C104.5 Refunds; amend Section C104.5 to read as follows:

The Building Official may authorize the refund of any fee paid which was erroneously paid or collected. The Building Official may authorize a refund of not more than eighty percent (80%) of the permit fee paid when no work has been performed under an active permit. The Building Official may authorize a refund of not more than eighty percent (80%) of the plan review fee paid if withdrawn or cancelled before any plan review has been performed. Any request for a refund of any fee shall be filed in writing by the original applicant and shall not be more than one hundred eighty (180) days after the date of fee payment.

(Reason: Provides specific refund policy)

Section C104 Fees; add Section C104.6 to read as follows:

104.6 Re-inspection Fee. A fee as established by Town Council resolution may be charged when:

1. The inspection called for is not ready when the inspector arrives;

2. The building address is not clearly posted;

3. Town-approved plans are not on the job site available to the Inspector;

4. The building is locked or work otherwise not available for inspection when called;

5. A correction notice has been issued more than once for the same item(s);

6. Failure to maintain erosion control, trash control or site disturbance fence protection.

Any re-inspection fees assessed shall be paid before any more inspections are made on that job site.

(Reason: This fee is not a fine or penalty but is designed to compensate for time and trips when inspections are requested but result in wasted time due to lack of supervision.)

Section C105.2.5 Electrical System Inspections; amend Section C105.2.5 to read as follows:

C105.2.5 Electrical System Inspections. Electrical System Inspections shall verify lighting system controls, components, meters, and additional electric infrastructure, as required by the code, approved plans and specifications.

(Reason: provides added inspection requirements for above-code provisions)

Section C110.1; insert a sentence after the first sentence of the section to read as follows:

C110.1 General. In order to hear and decide appeals of orders, decisions, or determinations made by the building official relative to the application and interpretation of this code, there shall be and is hereby created a board of appeals. The Planning and Zoning Commission shall serve as the board of appeals. …(remainder of paragraph left unchanged)

(Reason: The existing Commission shall act as an appellate body to hear appeals)

Section C110.3; add a phrase to the first sentence to read as follows:

C110.3 Qualifications. The board of appeals shall consist of members who are qualified by experience, general knowledge and training to pass on matters pertaining to building construction and are not employees of the jurisdiction.

(Reason: Adds qualification consideration aligned with experience and training)

Section C111 Violations; add a new Section 111 to read as follows:

C111 Violations. The

C111.1 Unlawful Acts. It shall be unlawful for any person, firm or corporation to erect, construct, enlarge, alter, repair, move, improve, remove, convert or demolish, equip, use, occupy or maintain any building or structure in the Town or cause or permit the same to be done, contrary to or in violation of any of the provisions of this Code.

C111.2 Notice of Violation. The Building Official is authorized to serve a notice of violation or order on the person responsible for the erection, construction, alteration, extension, repair, moving, removal, demolition or occupancy of a building or structure in violation of the provisions of the Internal Energy Conservation Code, or in violation of a permit or certificate issued under the provisions of this Code. Such order shall direct the discontinuance of the illegal action or condition and the abatement of the violation.

C111.3 Prosecution of Violation. If the notice of violation is not complied with promptly, the Building Official is authorized to request the legal counsel of the jurisdiction to institute the appropriate proceeding at law or in equity to restrain, correct or abate such violation of the provisions of this Code or of the order or direction made pursuant thereto.

C111.4 Violation Penalties. Any person, firm or corporation violating any of the provisions of the International Energy Conservation Code, 2021 Edition, or who fails to comply with any of the requirements thereof, or who shall erect, install, alter or repair mechanical work in violation of the approved construction documents or directive of the Building Official, or of a permit or certificate issued under the provisions of this Code, shall be deemed guilty of a Class A municipal offense and each person shall be deemed guilty of a separate offense for each and every day or portion thereof during which any violation of any of the provisions of this Code is committed, continued or permitted. Any municipal offense under this Section shall be deemed one of "strict liability".

(Reason: Provides language to address violation penalties)

Section C202 GENERAL DEFINITIONS; amend to add or revise the following definitions in alphabetical order:

ALL-ELECTRIC BUILDING. A *building* and building site that contains no *combustion equipment*, or plumbing for *combustion equipment*, and that uses heat pump technology as the primary supply for heating, cooling, and service water heating loads.

CHANGE OF OCCUPANCY. Any of the following shall be considered as a change of occupancy….

3. Any change in the business occupant
4. Any change in the business name
5. Any change in the business owner

Exception: Individual Office occupancies (excluding medical/dental care occupancies) leased as executive suites (as defined by ordinance) which are not part of a mixed-use occupancy such as office/warehouse and/or there is no change in electric or gas meter accounts.

COMBUSTION EQUIPMENT: Any equipment or appliances used for space heating, cooling, water heating (including pools and spas), cooking, clothes drying or lighting that uses natural gas, propane, other fuel gas, or fuel oil.

ELECTRIFICATION RETROFIT BID means a contractor bid showing the cost of replacing *combustion equipment* with an electric heat pump-based system.

MIXED-FUEL BUILDING. A *building* and building site that contains *combustion equipment* or plumbing for *combustion equipment*.

Section C401.2.1 International Energy Conservation Code, item 2 is amended to read as follows:

2. **Total Building Performance.** The Total Building Performance option requires compliance with Section C407 and, for *mixed fuel buildings*, Section C405.13 and 10 credits from Tables C406.1(1) through C406.1(5).

Section C401.2.2 ASHRAE 90.1, is amended to read as follows:

C401.2.2 ASHRAE 90.1. Commercial buildings shall comply with the requirements of ANSI/ASHRAE/IESNA 90.1 and, for *mixed fuel buildings*, Section C405.13 and 10 credits from Tables C406.1(1) through C406.1(5).

TABLE C402.1.3 Opaque Thermal Envelope Insulation Component Minimum Requirements, R-Value Method is amended as follows:

The "Wood Framed and Other" category aligned with Climate Zone 6 is amended to add "or 25 + 0".

Section C402.5.2 Dwelling and sleeping unit enclosure testing. Added the underlined to read as follows

C402.5.2 Dwelling and sleeping unit enclosure testing. The building thermal envelope shall be tested in accordance with ASTM E779. ANSI/RESNET/ICC 380, ASTM E1827 or an equivalent method approved by the code official. The measured air leakage shall not exceed 0.30 cfm/ft2 (1.5 Us m2) of the testing unit enclosure area at a pressure differential of 0.2 inch water gauge (50 Pa). Where multiple dwelling units or sleeping units or other occupiable conditioned spaces are contained within one building thermal envelope, each unit shall be considered an individual testing unit, and the building air leakage shall be the weighted average of all testing unit results, weighted by each testing unit's enclosure area. Units shall be tested separately with an unguarded blower door test as follows:

1. Where buildings have fewer than eight testing units, each testing unit shall be tested.
2. For buildings with eight or more testing units, the greater of seven units or 20 percent of the testing units in the building shall be tested, including a top floor unit, a ground floor unit, a middle floor unit, and a unit with the largest testing unit enclosure area. For each tested unit that exceeds the maximum air leakage rate, an additional ~~two~~ three units shall be tested, including a mixture of testing unit types and locations.

Section C403.13.3, is added to read as follows:

C403.13.3 Roof and gutter deicing controls. Roof and gutter deicing systems, including but not limited to self-regulating cable, shall include automatic controls configured to shut off the system when the outdoor temperature is above 40°F (4.8°C) maximum and shall include one of the following:

1. A moisture sensor configured to shut off the system in the absence of moisture; or
2. A programmable timer configured to shut off the system for 8 hours minimum during the day.

Section C404.2.1, is amended to read as follows:

C404.2.1 High input service water-heating systems.

Exceptions:

1. Where not less than 50 percent of the annual *service water heating* requirement is provided by *on-site renewable energy* or site-recovered energy, not including any capacity used for compliance with Section C406 of this code or the Exterior Energy Offset Program, the minimum thermal efficiency requirements of this section shall not apply.

Section C404.10, is added to read as follows:

C404.10 Water heating equipment location. Water heaters with *combustion equipment* shall be located in a space with the following characteristics:

1. Minimum dimensions of 3 feet by 3 feet by 7 feet high.
2. Minimum volume of 760 cubic feet, or the equivalent of one 16-inch by 24-inch grill to a heated space and one 8-inch duct of no more than 10 feet in length for cool exhaust air.
3. Contains a condensate drain that is no more than 2 inches higher than the base of the installed water heater and allows natural draining without pump assistance, installed within 3 feet of the water heater.

Exceptions:

1. Instantaneous water heaters located within 10 feet of the point of use.
2. Water heaters with an input capacity of more than 300,000 Btu/h.

Section C405.5.3 is amended to read as follows:

C405.5.3 Gas lighting. Gas fired lighting appliances are not permitted.

Table C405.12.2 is amended to add a new line at the end:

Table C405.12.2 ENERGY USE CATEGORIES

Electric vehicle charging	*Electric vehicle* charging loads.

Section C405.13 is added to read as follows:

C405.13 Additional electric infrastructure. All *combustion equipment* shall be provided with a junction box that is connected to an electrical panel by continuous raceways that meet the following requirements:

1. The junction box, raceway, and bus bar in the electric panel and conductors serving the electric panel shall be sized to accommodate electric equipment that is sized to serve the same load as the *combustion equipment*.
2. The panel shall have reserved physical space for a three-pole circuit breaker.
3. The junction box and electrical panel directory entry for the dedicated circuit breaker space shall have labels stating “For future electric equipment.”
4. The junction box shall allow for the electric equipment to be installed within the same place of the *combustion equipment* that it replaces.

Exceptions:

1. Warm air furnaces serving spaces that also have space cooling.
2. Water heating equipment with an input capacity more than 300,000 Btu/h
3. Industrial, manufacturing, laboratory, and high hazard occupancy combustion equipment.

Section C406.1 Additional energy efficiency credit requirements, first sentence, is amended to read as follows with the other parts of the paragraph and section to remain:

C406.1 Additional energy efficiency credit requirements. New *all-electric buildings* shall achieve a total of 10 credits and new *mixed-fuel buildings* shall achieve a total of 20 credits from Tables C406.1(1) through C406.1(5) where the table is selected based on the use group of the building and from credit calculations as specified in relevant subsections of C406.

Table C406.1(2) ADDITIONAL ENERGY EFFICIENCY CREDITS FOR GROUP R AND I OCCUPANCIES is retained in its entirety, except Sections C406.7.3 and C406.7.4 in Climate Zone 6B are amended to read as follows:

TABLE C406.1(2)
ADDITIONAL ENERGY EFFICIENCY CREDITS FOR GROUP R AND I OCCUPANCIES

SECTION	CLIMATE ZONE 6B
C406.7.3: Efficient fossil fuel water heater [b]	3
C406.7.4: Heat pump water heater [b]	9

Table C406.1(3) ADDITIONAL ENERGY EFFICIENCY CREDITS FOR GROUP E OCCUPANCIES is retained in its entirety, except Sections C406.7.3 and C406.7.4 in Climate Zone 6B are amended to read as follows:

TABLE C406.1(3)
ADDITIONAL ENERGY EFFICIENCY CREDITS FOR GROUP E OCCUPANCIES

SECTION	CLIMATE ZONE 6B
C406.7.3: Efficient fossil fuel water heater [a]	1
C406.7.4: Heat pump water heater [a]	3

a. For schools with showers or full-service kitchens.

Table C406.1(5) ADDITIONAL ENERGY EFFICIENCY CREDITS FOR OTHER OCCUPANCIES is retained in its entirety, except Sections C406.7.3 and C406.7.4 in Climate Zone 6B are amended to read as follows:

TABLE C406.1(5)
ADDITIONAL ENERGY EFFICIENCY CREDITS FOR OTHER[a] OCCUPANCIES

SECTION	CLIMATE ZONE 6B
C406.7.3: Efficient fossil fuel water heater [b]	3
C406.7.4: Heat pump water heater [b]	9

a. Other occupancies include all groups except Groups B, E, I, M, and R.
b. For occupancy groups listed in Section 406.7.1

Table C407.2 REQUIREMENTS FOR TOTAL BUILDING PERFORMANCE is retained in its entirety and amended to add the following items:

TABLE C407.2
REQUIREMENTS FOR TOTAL BUILDING PERFORMANCE

SECTION	TITLE
Envelope	

C401.3	Thermal envelope certificate
C402.2.4	Slabs-on-grade
C402.2.6	Insulation of radiant heating system

Section C501.6 Energy audit is added as follows:

C501.6 Energy audit. An ASHRAE Level II energy audit or equivalent shall be performed and provided to the code official prior to a permit application for any *alteration*, *addition*, or change of occupancy, in order to baseline the efficiency of the existing building and offer opportunities for cost-effective energy upgrades.

Section C501.7 Thermostatic controls is added as follows:

C501.7 Thermostatic controls. *Alterations*, *additions*, and changes of occupancy that involve replacing or expanding a heating or cooling system shall comply with section C403.4.1 Thermostatic controls.

Section C501.8 Replacement of electric equipment is added as follows:

C501.8 Replacement of electric equipment. Combustion equipment shall not be permitted to be installed to replace electric equipment, unless an Energy Audit is performed in accordance with C501.6 and at least one efficiency measure identified in the audit is completed.

Section C503.3.2 Electrification retrofit feasibility report is added as follows:

C503.3.3 Electrification retrofit bid. Where a gas-fired warm-air furnace is replaced with a gas-fired warm-air furnace, or when a unitary air conditioner or condensing unit serving a heated space is replaced with another unitary air conditioner or condensing unit, an *Electrification Retrofit Bid* shall be obtained and submitted.

Section C503.3.4 Mechanical system acceptance testing is added as follows:

C503.3.4 Mechanical system acceptance testing. Where an alteration requires compliance with Section C403 or any of its subsections, mechanical systems that serve the alteration shall comply with Sections C408.2.2, C408.2.3 and C408.2.5.

Exceptions:

1. Mechanical systems and service water heater systems in buildings where the total mechanical equipment capacity is less than 480,000 Btu/h (140.7 kW) cooling capacity and 600,000 Btu/h (175.8 kW) combined service water-heating and space-heating capacity.
2. Systems included in Section C403.5 that serve individual dwelling units and sleeping units.

Section C503.4.1 Service hot water system acceptance testing is added as follows:

C503.4.1 Service hot water system acceptance testing. Where an alteration requires compliance with Section C404 or any of its subsections, service hot water systems that serve the alteration shall comply with Sections C408.2.3 and C408.2.5.

Exceptions:

1. Service water heater systems in buildings where the total mechanical equipment capacity is less than 600,000 Btu/h (175.8 kW) combined service water-heating and space-heating capacity.
2. Systems included in Section C403.5 that serve individual dwelling units and sleeping units.

Section C503.5 Lighting Systems is amended by deleting the exception as follows:

C503.5 Lighting systems. New lighting systems that are part of the alteration shall comply with Sections C405 and C408.

~~**Exception:** Alterations that replace less than 10 percent of the luminaires in a space, provided that such alterations do not increase the installed interior lighting power.~~

Appendix CB103.1 General is amended as follows, with the exceptions to remain:

CB103.11 General. A solar-ready zone shall be located on the roof of all new buildings that are subject to the commercial provisions of the IECC and that are oriented between 110 degrees and 270 degrees of true north or have low-slope roofs. Solar-ready zones shall comply with Sections CB103.2 through CB103.9.

Appendix CD is added as follows:

APPENDIX CD
EV READINESS - COMMERCIAL

CD101. Purpose and intent. The purpose and intent of this Appendix CD is to accommodate the growing need for EV charging infrastructure. Including these measures during initial commercial construction substantially reduces the costs and difficulty of installing EV infrastructure at a later date.

CD102. Applicability. This Appendix CD shall apply to all new commercial construction to which the current International Building Code applies.

Section CD103. Definitions.

AUTOMOBILE PARKING SPACE. A space within a building or private or public parking lot, exclusive of driveways, ramps, columns, office, and work areas, for the parking of an automobile.

DIRECT CURRENT FAST CHARGING (DCFC) EVSE: EV power transfer infrastructure capable of fast charging on a 100A or higher 480VAC three-phase branch circuit. AC power is converted into a controlled DC voltage and current within the *EVSE* that will then directly charge the *electric vehicle*.

EV LOAD MANAGEMENT SYSTEM: A system designed to allocate charging capacity among multiple *EVSE* and that complies with the current National Electric Code.

ELECTRIC VEHICLE (EV). An automotive-type vehicle for on-road use, such as passenger automobiles, buses, trucks, vans, neighborhood *electric vehicles*, and electric motorcycles, primarily powered by an electric motor that draws current from an electric source.

ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE). Equipment for plug-in power transfer including the ungrounded, grounded, and equipment grounding conductors, and the *electric vehicle* connectors, attachment plugs, personal protection system and all other fittings, devices,

power outlets or apparatus installed specifically for the purpose of transferring energy between the premises wiring and the *electric vehicle*.

ELECTRIC VEHICLE SUPPLY EQUIPMENT INSTALLED SPACE (EVSE space). An automobile parking space that is provided with a dedicated *EVSE* connection.

ELECTRIC VEHICLE CAPABLE SPACE (EV CAPABLE SPACE). A designated automobile parking space that is provided with electrical infrastructure, such as, but not limited to, raceways, cables, electrical capacity, and panelboard or other electrical distribution equipment space, necessary for the future installation of an *EVSE*.

ELECTRIC VEHICLE READY SPACE (EV READY SPACE). An automobile parking space that is provided with a branch circuit and a ground fault circuit interrupter (GFCI/GFI) outlet, junction box, or receptacle, that will support an installed *EVSE*.

UNIVERSAL VEHICLE CHARGING STATION. A charging station installed in a parking space for a minimum vehicle width of 120 inches (3048 mm) with 36-inch access aisles (915 mm) on each side.

CD104 Electric vehicle power transfer infrastructure. New parking facilities shall be provided with *electric vehicle* power transfer infrastructure in compliance with Sections CD104.1 through CD104.6, CD105, and CD106.

CD104.1 Quantity. The number of required *EVSE spaces*, *EV ready spaces*, and *EV capable spaces* shall be determined in accordance with this Section and Table CD104.1 based on the total number of *automobile parking spaces* and shall be rounded up to the nearest whole number. For multifamily buildings, the Table requirements shall be based on the total number of dwelling units or the total number of *automobile parking spaces*, whichever is less.

1. Where more than one parking facility is provided on a building site, the number of required *automobile parking spaces* required to have EV power transfer infrastructure shall be calculated separately for each parking facility.
2. Where one shared parking facility serves multiple building occupancies, the required number of spaces shall be determined proportionally based on the floor area of each building occupancy.
3. Installed *EVSE spaces* that exceed the minimum requirements of this section may be used to meet minimum requirements for *EV ready spaces* and *EV capable spaces*.
4. Installed *EV ready spaces* that exceed the minimum requirements of this section may be used to meet minimum requirements for *EV capable spaces*.
5. Where the number of *EV ready spaces* allocated for multifamily occupancies is equal to the number of dwelling units or to the number of *automobile parking spaces*, whichever is less, requirements for *EVSE spaces* shall not apply.
6. In multifamily complexes that contain multiple buildings, required EV spaces shall be dispersed throughout parking areas so that each building has access to a similar number of spaces per dwelling unit.
7. Direct Current Fast Charging. The number of *EVSE* spaces may be reduced by up to ten per *DCFC EVSE* provided that the building includes not less than one parking space equipped with a *DCFC EVSE* and not less than one *EV ready space*. A maximum of fifty spaces may be reduced from the total number of *EVSE spaces*.

Exception: Parking facilities, serving occupancies other than multifamily, with fewer than 10 *automobile parking spaces*.

TABLE CD104.1
REQUIRED EV POWER TRANSFER INFRASTRUCTURE

BUILDING TYPE	MINIMUM EV INSTALLED SPACES	MINIMUM EV READY SPACES	MINIMUM EV CAPABLE SPACES
Multifamily [a]	**5%**	**10%**	**40%**
All Other Commercial	**5%**	**0%**	**40%**

a. Where all (100%) parking serving multifamily are EV ready spaces, requirements for *EVSE* spaces shall not apply.

CD104.2 EV capable spaces. Each *EV capable space* used to meet the requirements of Section CD104.1 shall comply with all of the following:

1. A continuous raceway or cable assembly shall be installed between an enclosure or outlet located within 3 feet (914 mm) of the *EV capable space* and a suitable panelboard or other onsite electrical distribution equipment.
2. Installed raceway or cable assembly shall be sized and rated to supply a minimum circuit capacity in accordance with CD104.5
3. The electrical distribution equipment to which the raceway or cable assembly connects shall have sufficient dedicated space and spare electrical capacity for a 2-pole circuit breaker or set of fuses.
4. The electrical enclosure or outlet and the electrical distribution equipment directory shall be marked: "For future electric vehicle supply equipment (EVSE)."
5. Reserved capacity shall be no less than 4.1 kVA (20A 208/240V) for each *EV capable space*.

CD104.3 EV ready spaces. Each branch circuit serving *EV ready spaces* used to meet the requirements of Section CD104.1 shall comply with all of the following:

1. Terminate at an outlet or enclosure, located within 3 feet (914 mm) of each *EV ready space* it serves.
2. Have a minimum circuit capacity in accordance with CD104.5.
3. Branch circuit on the panelboard or other electrical distribution equipment directory designated as "For electric vehicle supply equipment (EVSE)" and the outlet or enclosure marked "For electric vehicle supply equipment (EVSE)."

CD104.4 EVSE spaces. An installed *EVSE* with multiple output connections shall be permitted to serve multiple *EVSE spaces*. Each *EVSE* installed to meet the requirements of Section CD104.1, serving either a single *EVSE space* or multiple *EVSE spaces*, shall comply with all of the following:

1. Have a minimum circuit capacity in accordance with CD104.5.
2. Have a minimum charging rate in accordance with CD104.4.1.
3. Be located within 3 feet (914 mm) of each *EVSE* space it serves.
4. Be installed in accordance with Section CD104.6 and CD104.7.

CD104.4.1 EVSE minimum charging rate. Each installed *EVSE* shall comply with one of the following:

1. Be capable of charging at a minimum rate of 6.2 kVA (or 30A at 208/240V).
2. When serving multiple *EVSE spaces* and controlled by an energy management system providing load management, be capable of simultaneously charging each *EVSE space* at a minimum rate of no less than 3.3 kVA.
3. When serving *EVSE spaces* allowed to have a minimum circuit capacity of 2.7 kVA in accordance with CD104.5.1 and controlled by an energy management system providing load management, be capable of simultaneously charging each *ESVE space* at a minimum rate of no less than 2.1 kVA.

CD104.5 Circuit capacity. The capacity of electrical infrastructure serving each *EV capable space*, *EV ready space*, and *EVSE space* shall comply with one of the following:

1. A branch circuit with a rated capacity not less than 8.3 kVA (or 40A at 208/240V) for each *EV ready space* or *EVSE space* it serves.
2. The requirements of CD104.5.1.

CD104.5.1 Circuit capacity management. The capacity of each branch circuit serving multiple *EVSE spaces*, *EV ready spaces* or *EV capable spaces* designed to be controlled by an energy management system providing load management in accordance with NFPA 70, shall comply with one of the following:

1. Have a minimum capacity of 4.1 kVA per space.
2. Have a minimum capacity of 2.7 kVA per space when serving *EV ready spaces* or *EVSE spaces* for a building site where all (100%) of the automobile parking spaces are designed to be *EV ready* or *EVSE spaces*.

CD104.6 EVSE installation. *EVSE* shall be installed in accordance with NFPA 70 and shall be listed and labeled in accordance with UL 2202 or UL 2594.

CD104.7. EVSE ENERGY STAR. All *EVSE* shall be ENERGY STAR certified.

CD105. Universal vehicle charging stations. Where *electric vehicle* charging stations are provided for public use, or where *electric vehicle* charging stations are shared by multiple multifamily dwelling units, the number of universal vehicle charging stations shall be provided in accordance with Table CD104.1. When multiple stalls are required, access aisles may be shared.

TABLE CD105.1
UNIVERSAL EV SPACE REQUIREMENTS

TOTAL # OF EV CHARGING STATIONS	MINIMUM # OF UNIVERSAL VEHICLE CHARGING STATIONS
1 or more	**25%**

CD106. Identification. Construction documents shall designate all *EV capable spaces*, *EV ready spaces,* and *EVSE spaces* and indicate the locations of conduit and termination points serving them. The circuit breakers or circuit breaker spaces reserved for the *EV capable spaces*, *EV ready spaces*, and *EVSE spaces* shall be clearly identified in the panel board directory. The conduit for *EV capable spaces* shall be clearly identified at both the panel board and the termination point at the parking space.

Appendix CE is added as follows:

APPENDIX CE
EXTERIOR ENERGY OFFSET PROGRAM - COMMERCIAL

CE101.1. Intent and Purpose. The purpose of the Exterior Energy Offset Program ("EEOP") Chapter is to encourage sustainable, energy efficient, exterior heating solutions that conserve energy and natural resources, as well as, to offset the greenhouse gas impact of exterior energy use in residential and commercial buildings.

CE101.2. Applicability. The standards in this Chapter apply to all new residential buildings and commercial buildings and their exterior energy uses, as defined in the IECC, including snowmelt, spas, pools and outdoor fire pits/fireplaces.

CE101.3. Scope. The scope of this document includes Exterior Energy uses, and energy production to offset exterior energy use. Compliance with this section will be documented via the free Public Domain tool "EEOP Calculation Sheet" in the most current version at the time of permit application. Projected energy use, associated energy offset required, fees and credits are defined within this tool.

CE103.1. Exterior Energy Uses. Residential, Commercial, and Governmental exterior energy uses (per list below) may be installed only if the building project meets the requirements of this Appendix. The completed "EEOP Calculation Sheet" must be submitted along with the subject building permit application. Exception: Mobile Home units that are approved by the Colorado Department of Housing are exempt.

1. Snowmelt (ie: driveways, patios, walkways, or similar surfaces). Exception: Snowmelt systems 200 square feet or less.
2. Exterior pools.
3. Exterior spas. Exception: Exterior spas 64 square feet or less.
4. Outdoor gas fireplaces and firepits.

CE103.2. Snowmelt Systems. All snowmelt systems shall be installed in accordance with the following provisions. The first 200 square feet of snowmelt are exempt from the requirements of this section.

1. The maximum area of snowmelt is capped at 6,000 square feet per parcel.
2. R-15 insulation shall be installed under all areas of snowmelt.
3. Automated controls that have the following capabilities:
    a. Limit operation to only when moisture is present.
    b. Limit operation to when outdoor air temperature is between 20 and 40 degrees F.
    c. Configured to shut the system off when surface temperature is above 50 degrees F.
    d. Idling shall only be permitted for commercial applications where public safety is shown to be a factor.
4. Snowmelt heating appliances such as, but not limited to, condensing boilers will have a minimum efficiency of 92% AFUE. Electric resistance and heat pump heaters shall be permitted. Where condensing boilers are used, the boiler supply water temperature shall be a maximum of 130 F to allow for efficient boiler operation.

CE103.3. Exterior Pools. All exterior pools shall be installed in accordance with the following provisions.

1. Pool covers are required for all pools, with a minimum R-value of 2.
2. Pool heating appliances shall have a minimum efficiency of 92% AFUE. Electric resistance and heat pump heaters are permitted. Where condensing boilers are used, the boiler supply water temperature shall be a maximum of 130 F to allow for efficient boiler operation.

CE103.4. Exterior Spas. All exterior spas shall be installed in accordance with the following provisions:

1. Spa covers are required for all spas, with a minimum R-value of 12.
2. Spa heating appliances shall have a minimum efficiency of 92% AFUE. Electric resistance and heat pump heaters shall be permitted. Where condensing boilers are used, the boiler supply water temperature shall be a maximum of 130 F to allow for efficient boiler operation.

3. The first 64 square feet of spa, as measured from the perimeter edge, are exempt from this Section.

CE103.5. Credits for Exterior Energy Use. This EEOP payment option is voluntary. Applicants interested in exterior energy use systems can alternatively choose to produce on-site renewable energy or use all-electric energy efficient technology via an air source heat pump or ground source heat pump to earn credit towards their exterior energy use offset. Credits for renewable energy production and high efficiency all-electric heating systems shall be calculated and applied per "EEOP Calculation Sheet" for energy generated and systems installed onsite. Renewable energy methods listed in the calculator include: solar photovoltaic panels, solar thermal arrays, and hydroelectric and wind power. High efficiency heating systems listed in the calculator include: ground source heat pumps (GSHPs), and air source heat pumps (ASHP). Provision for alternative method calculations, including off site renewable energy methods, is also provided, and will require specific review and approval by the Building Official.

CE103.6. Solar Photovoltaic Systems. System designer/installer shall be certified by COSEIA (Colorado Solar Energy Industries Association) or NABCEP, (North American Board of Certified Energy Practitioners), or a licensed Professional Engineer in the State of Colorado.

CE103.7. Solar Hot Water. The size of solar hot water systems is limited to 500 square feet of collector area unless otherwise approved by the Building Official. Systems larger than this limit will be considered, but will require documentation showing year-round utilization of this larger system.

CE103.8. Ground Source Heat Pump. To use a GSHP for on-site renewable credit the GSHP system must supply at least 20% of the peak load for heating the building and all the exterior energy uses. Each ground source heat pump system shall be tested and balanced and the design engineer shall certify in writing that it meets or exceeds a design coefficient of performance of 3.0 inclusive of source pump power. Design conditions for determining COP will be: 30F ground loop temperature measured at the GSHP inlet, and 110F GSHP load side outlet. The ground loop system shall be designed by a CGD (Certified Geo-Exchange Designer certified by the Association of Energy Engineers) or a Professional Engineer licensed in the State of Colorado or an IGSHPA (International Ground Source Heat Pump Association) certified designer. The mechanical system must be installed by a certified IGSHPA contractor.

CE103.9. EEOP Fees. The EEOP fees shall be paid at the time of Building Permit. All fees shall be calculated through the "EEOP Calculation Sheet". No refund of fee payment shall be made to an applicant for installation of renewable energy production that exceeds the on-site renewable credits required pursuant to this section.

CE103.10 EEOP Fund Created.

1. Fees collected at Building Permit are placed in the Town's EEOP fund to create financial assistance, rebates, and incentives to promote energy efficient projects elsewhere within the Town.
2. The Town's EEOP Fund will be managed by the Town Manager or designee. Expenditures of EEOP funds shall be used for the following purposes:
    a. To provide educational materials and outreach for Town residents, businesses, employees and building owners including but not necessarily limited to printed guides, efficient building educational events, a webpage with available resources, links, and information.
    b. Planning, design and implementation of renewable energy generation projects.
    c. Providing a community grant and/or rebate program for energy efficiency enhancements or renewable energy generation projects.

d. Funding other resources and administrative costs associated with green building and environmental sustainability oriented efforts.
e. Special consideration is given to projects that positively affect occupants of local affordable housing or low income residents in the Town.

RESIDENTIAL REQUIREMENTS

Section R101.1; amend to insert the Department Name

R101.1 Title. These regulations shall be known as the *Energy Conservation Code* of The Town of Eagle Building Inspections Department hereinafter referred to as "this code".
]
(Reason: Amends section to identify the jurisdiction in Section R101.1.)

Section R103.2 Information on construction documents is amended by modifying item 6 and adding items 10, 11, and 12 to read as follows:

R103.2 Information on construction documents.

6. Mechanical and service water heating systems and equipment types, sizes, fuel source, and efficiencies.
10. Details of additional electric infrastructure, including branch circuits, conduit, or pre-wiring, and panel capacity in compliance with the provisions of this code.
11. Location of pathways for routing of raceways or cable from the solar ready zone to the electrical service panel.
12. Location of designated EVSE spaces, EVSE Universal spaces, EV-Ready spaces, and EV-Capable spaces in parking facilities, as applicable.

Section R104.5 Refunds; amend Section R104.5 to read as follows:

The Building Official may authorize the refund of any fee paid which was erroneously paid or collected. The Building Official may authorize a refund of not more than eighty percent (80%) of the permit fee paid when no work has been performed under an active permit. The Building Official may authorize a refund of not more than eighty percent (80%) of the plan review fee paid if withdrawn or cancelled before any plan review has been performed. Any request for a refund of any fee shall be filed in writing by the original applicant and shall not be more than one hundred eighty (180) days after the date of fee payment.

(Reason: Provides specific refund policy)

Section 104 Fees; add Section R104.6 to read as follows:

R104.6 Re-inspection Fee. A fee as established by Town Council resolution may be charged when:

1. The inspection called for is not ready when the inspector arrives;

2. The building address is not clearly posted;

3. Town-approved plans are not on the job site available to the Inspector;

4. The building is locked or work otherwise not available for inspection when called;

5. A correction notice has been issued more than once for the same item(s);

6. Failure to maintain erosion control, trash control or site disturbance fence protection.

Any re-inspection fees assessed shall be paid before any more inspections are made on that job site.

(Reason: This fee is not a fine or penalty but is designed to compensate for time and trips when inspections are requested but result in wasted time due to lack of supervision.)

Section R110.1; insert a sentence after the first sentence of the section to read as follows:

R110.1 General. In order to hear and decide appeals of orders, decisions, or determinations made by the building official relative to the application and interpretation of this code, there shall be and is hereby created a board of appeals. The Planning and Zoning Commission shall serve as the board of appeals. …(remainder of paragraph left unchanged)

(Reason: The existing Commission shall act as an appellate body to hear appeals)

Section R110.3; add a phrase to the first sentence to read as follows:

R110.3 Qualifications. The board of appeals shall consist of members who are qualified by experience, general knowledge and training to pass on matters pertaining to building construction and are not employees of the jurisdiction.

(Reason: Adds qualification consideration aligned with experience and training)

Section R111 Violations; add a new Section R111 to read as follows:

R111 Violations.

R111.1 Unlawful Acts. It shall be unlawful for any person, firm or corporation to erect, construct, enlarge, alter, repair, move, improve, remove, convert or demolish, equip, use, occupy or maintain any building or structure in the Town or cause or permit the same to be done, contrary to or in violation of any of the provisions of this Code.

R111.2 Notice of Violation. The Building Official is authorized to serve a notice of violation or order on the person responsible for the erection, construction, alteration, extension, repair, moving, removal, demolition or occupancy of a building or structure in violation of the provisions of the Internal Energy Conservation Code, or in violation of a permit or certificate issued under the provisions of this Code. Such order shall direct the discontinuance of the illegal action or condition and the abatement of the violation.

R111.3 Prosecution of Violation. If the notice of violation is not complied with promptly, the Building Official is authorized to request the legal counsel of the jurisdiction to institute the appropriate proceeding at law or in equity to restrain, correct or abate such violation of the provisions of this Code or of the order or direction made pursuant thereto.

R111.4 Violation Penalties. Any person, firm or corporation violating any of the provisions of the International Energy Conservation Code, 2021 Edition, or who fails to comply with any of the requirements thereof, or who shall erect, install, alter or repair mechanical work in violation of the approved construction documents or directive of the Building Official, or of a permit or certificate issued under the provisions of this Code, shall be deemed guilty of a Class A municipal offense and each person shall be deemed guilty of a separate offense for each and every day or portion thereof during which any violation of any of the provisions of this Code is committed, continued or permitted. Any municipal offense under this Section shall be deemed one of "strict liability".

Section R202 GENERAL DEFINITIONS is amended to add the following definitions in alphabetical order:

ALL-ELECTRIC BUILDING. A *building* and building site that contains no *combustion equipment*, or plumbing for *combustion equipment*, and that uses heat pump technology as the primary supply for heating, cooling, and service water heating loads.

COMBUSTION EQUIPMENT: Any equipment or appliances used for space heating, cooling, water heating (including pools and spas), cooking, clothes drying or lighting that uses natural gas, propane, other fuel gas, or fuel oil.

MIXED-FUEL BUILDING. A *building* and building site that contains *combustion equipment*, or plumbing for *combustion equipment*.

Section R401.2.5 Additional energy efficiency is amended to read as follows:

R401.2.5 Additional energy efficiency. This section establishes additional requirements applicable to all compliance approaches to achieve additional energy efficiency.

1. For buildings complying with Section R401.2.1, the building shall meet one of the following:
    1.1. For *all-electric buildings,* **one** of the additional efficiency package options shall be installed according to Section R408.2.
    2.2. For *mixed-fuel buildings,* **three** of the additional efficiency packages shall be installed, at least one of which addresses the envelope.

2. For buildings complying with Section R401.2.2, the building shall meet one of the following:
    2.1. For *all-electric buildings,* **one** of the additional efficiency package options in Section R408.2 shall be installed without including such measures in the proposed design under Section R405.
    2.2. For *mixed-fuel buildings,* **three** of the additional efficiency packages shall be installed, at least one of which addresses the envelope, without including such measures in the proposed design under Section R405.
    2.3. For *all-electric buildings,* the proposed design of the building under Section R405.3 shall have an annual energy cost that is less than or equal to 95 percent of the annual energy cost of the standard reference design.
    2.4. For *mixed-fuel buildings,* the proposed design of the building under Section R405.3 shall have an annual energy cost that is less than or equal to 80 percent of the annual energy cost of the standard reference design.

3. For buildings complying with the Energy Rating Index alternative Section R401.2.3, the Energy Rating Index value shall be at least 5 percent less than the Energy Rating Index target specified in Table R406.5.

The options selected for compliance shall be identified in the certificate required by Section R401.3.

Section R401.3 Certificate, item 4, is amended and new items 8, 9, and10 are added to read as follows:

R401.3 Certificate. A permanent certificate shall be completed by the builder or other approved party and posted on a wall in the space where the furnace is located, a utility room or an approved location inside the building. Where located on an electrical panel, the certificate shall not cover or obstruct the visibility of the circuit directory label, service disconnect label or other required labels. The certification shall indicate the following:

4. The types, sizes, fuel sources, and efficiencies of heating, cooling and service water heating equipment. Where a gas-fired unvented room heater, electric furnace or baseboard electric heater is installed in the residence, the certificate shall indicate “gas-fired unvented room heater,” “electric furnace” or “baseboard electric heater,” as appropriate. An efficiency shall not be indicated for gas-fired unvented room heaters, electric furnaces and electric baseboard heaters.
8. The fuel sources for cooking and clothes drying equipment.
9. Where *combustion equipment* is installed, the certificate shall indicate information on the installation of additional electric infrastructure including which equipment and/or appliances include additional electric infrastructure, capacity reserved on the electrical service panel for replacement of each piece of *combustion equipment* and/or appliance.
10. Where a solar-ready zone is provided, the certificate shall indicate the location, dimensions, and capacity reserved on the electrical service panel.

TABLE R402.1.3 Insulation Minimum R-Values and Fenestration Requirements by Component is amended as follows:

The “Wood Frame Wall R-Value” column aligned with Climate Zone 6 is amended to add “or 25 + 0”.

Section R402.4.1 Building thermal envelope; add section R402.4.1.4 to read as follows:

R402.4.1.4 Sampling options for R2 multifamily dwelling units. For buildings with eight or more testing units that must be tested as required by R402.4.1.2 or R402.4.1.3, the greater of seven units or 20 percent of the testing units in the building shall be tested, including a top floor unit, a ground floor unit, a

middle floor unit, and a unit with the largest testing unit enclosure area. For each tested unit that exceeds the maximum air leakage rate, an additional three units shall be tested, including a mixture of testing unit types and locations. Where buildings have fewer than eight testing units, each testing unit shall be tested.

Section R403.3 Ducts; add section R403.3.8 to read as follows:

R403.3.8 Sampling options for R2 multifamily dwelling units. For buildings with eight or more testing units that must be tested as required by R403.3.5, the greater of seven units or 20 percent of the testing units in the building shall be tested, including a top floor unit, a ground floor unit, a middle floor unit, and a unit with the largest testing unit floor area. For each tested unit that exceeds the maximum duct leakage rate, an additional three units shall be tested, including a mixture of testing unit types and locations. Where buildings have fewer than eight testing units, each testing unit shall be tested.

Section R403.5 Service hot water systems is amended to read as follows:

R403.5 Service hot water systems. Energy conservation measures for service hot water systems shall be in accordance with Sections R403.5.1 through R403.5.4.

Section R403.5.2 Hot water pipe insulation, item 1, is amended to read as follows:

R403.5.2 Hot water pipe insulation.

1. Piping located inside the conditioned space, unless completely encapsulated by insulation which serves the cavity or space.

Section R403.5.4 Water heating equipment location is added to read as follows:

R403.5.4 Water heater equipment location. Water heaters with *combustion equipment* shall be located in a space with the following characteristics:

1. Minimum dimensions of 3 feet by 3 feet by 7 feet high.
2. Minimum volume of 760 cubic feet, or the equivalent of one 16-inch by 24-inch grill to a heated space and one 8-inch duct of no more than 10 feet in length for cool exhaust air.
3. Contains a condensate drain that is no more than 2 inches higher than the base of the installed water heater and allows natural draining without pump assistance, installed within 3 feet of the water heater.

Exception:

1. Water heaters with an input capacity of greater than 300,000 Btu/h that serve multiple *dwelling units* or *sleeping units.*

Section R403.6 Mechanical Ventilation; add section R403.6.4 to read as follows:

R403.6.4 Sampling options for R2 multifamily dwelling units. For buildings with eight or more testing units that must be tested as required by R403.6.3, the greater of seven units or 20 percent of the testing units in the building shall be tested, including a top floor unit, a ground floor unit, a middle floor unit, and a unit with the largest testing unit floor area. For each tested unit that does not meet the minimum ventilation rate, an additional three units shall be tested, including a mixture of testing unit types and locations. Where buildings have fewer than eight testing units, each testing unit shall be tested.

Section R403.10 Roof and gutter de-icing controls is added to read as follows:

R403.10. Roof and gutter de-icing controls. Roof and gutter deicing systems, including but not limited to self-regulating cable, shall include automatic controls configured to shut off the system

when the outdoor temperature is above 40°F (4.8°C) maximum and shall include one of the following:

1. A moisture sensor configured to shut off the system in the absence of moisture, or
2. A programmable timer configured to shut off the system for 8 hours minimum during the day.

Section R404.1.1 Fuel gas lighting is amended to read as follows:

R404.1.1. Fuel gas lighting. Fuel gas lighting systems are prohibited.

Section R404.1.4 Additional electric infrastructure is added to read as follows:

R404.1.4. Additional electric infrastructure. All *combustion equipment* shall be installed in accordance with Section R403.5.4 and shall be provided with a junction box that is connected to an electrical panel by continuous raceways that meet the following requirements:

1. The junction box, raceway, and bus bar in the electric panel and conductors serving the electric panel shall be sized to accommodate electric equipment that is sized to serve the same load as the *combustion equipment*.
2. The panel shall have reserved physical space for a dual-pole circuit breaker.
3. The junction box and electrical panel directory entry for the dedicated circuit breaker space shall have labels stating: “For future electric equipment.”
4. The junction box shall allow for the electric equipment to be installed within the same place as the *combustion equipment* that it replaces.

Exceptions:

1. Fossil fuel space heating equipment where a 208/240-volt electrical circuit with a minimum capacity of 40 amps exists for space cooling equipment.
2. Water heating equipment with an input capacity greater than 300,000 Btu/h that serves multiple dwelling units or sleeping units.

Table R405.2 Requirements for Total Building Performance adds a new row under Mechanical and a new row under Electrical Power and Lighting Systems as follows:

TABLE R405.2 REQUIREMENTS FOR TOTAL BUILDING PERFORMANCE

SECTION	TITLE
Mechanical	
R403.5.4	Water heating equipment location
Electrical Power and Lighting Systems	
R404.4	Additional electric infrastructure

Table R406.2 Requirements for Energy Rating Index adds a new row under Mechanical and a new row under Electrical Power and Lighting Systems as follows:

TABLE R406.2 REQUIREMENTS FOR ENERGY RATING INDEX

SECTION	TITLE

Mechanical	
R403.5.4	Water heating equipment
Electrical Power and Lighting Systems	
R404.4	Additional electric infrastructure

Table R406.5 ERI-based compliance is amended as follows:

R406.5 ERI-based compliance. Compliance based on an ERI analysis requires that the rated proposed design and confirmed built dwelling be shown to have an ERI less than or equal to the appropriate value for the proposed all-electric or mixed-fuel building as indicated in Table R406.4 when compared to the ERI reference design.

TABLE R406.5 MAXIMUM ENERGY RATING INDEX

CLIMATE ZONE	ALL-ELECTRIC BUILDING	MIXED FUEL BUILDING
6	54	49

Section R501.7 Energy audit is added to read as follows:

R501.7. Energy Audit. A RESNET, Building Performance Institute, or other approved energy audit shall be performed and provided to the code official prior to a permit application for any *addition* or *alteration,* in order to baseline the efficiency of the existing building and offer opportunities for cost-effective energy upgrades. The audit must include a blower door test and a thermographic scan.

Section R501.8 Programmable thermostat is added to read as follows:

R501.8. Programmable thermostat. *Alterations*, *additions*, and changes of occupancy that involve replacing or expanding a heating or cooling system shall comply with section R403.1.1 Programmable thermostat.

Section R501.9 Replacement of electric equipment is added to read as follows:

R501.9. Replacement of electric equipment. *Combustion equipment* shall not be permitted to be installed to replace electric equipment, unless an Energy Audit is performed in accordance with R501.7 and at least one efficiency measure identified in the audit is completed.

Section R501.10 Electrification retrofit bid is added to read as follows:

R501.10. Electrification retrofit bid. Where a gas-fired warm-air furnace is replaced with a gas-fired warm-air furnace, or when a unitary air conditioner or condensing unit serving a heated space is replaced with another unitary air conditioner or condensing unit, an *Electrification Retrofit Bid* shall be obtained and submitted.

Section R503.1.4 Lighting is amended by deleting the exception as follows:

R503.1.4 Lighting systems. New lighting systems that are part of the alteration shall comply with Sections R404.1.

~~**Exception:** Alterations that replace less than 10 percent of the luminaires in a space, provided that such alterations do not increase the installed interior lighting power.~~

Appendix RB Title is amended to read: "Appendix RB Solar Ready Provisions."

Appendix RB 103.1, first sentence, is amended as follows, with the rest of the section remaining:

RB103.1 General. New *residential buildings* with not less than 600 square feet (55.74 m 2) of roof area oriented between 110 degrees and 270 degrees of true north shall comply with Sections RB103.2 through RB103.8.

Appendix RD is added as follows:

APPENDIX RD
EV READINESS - RESIDENTIAL

RD101. Purpose and intent. The purpose and intent of this Appendix RD is to accommodate the growing need for EV charging infrastructure, in particular meeting preferences for charging at home. Including these measures during initial construction substantially reduces the costs and difficulty of installing EV infrastructure at a later date.

RD102. Applicability. This Appendix RD shall apply to all new residential construction to which the International Residential Code applies.

RD103. Definitions.
AUTOMOBILE PARKING SPACE. A space within a building or private or public parking lot, exclusive of driveways, ramps, columns, office, and work areas, for the parking of an automobile.

DIRECT CURRENT FAST CHARGING (DCFC) EVSE. EV power transfer infrastructure capable of fast charging on a 100A or higher 480VAC three-phase branch circuit. AC power is converted into a controlled DC voltage and current within the *EVSE* that will then directly charge the *electric vehicle*.

EV LOAD MANAGEMENT SYSTEM. A system designed to allocate charging capacity among multiple *EVSE* and that complies with the current National Electric Code.

ELECTRIC VEHICLE (EV). An automotive-type vehicle for on-road use, such as passenger automobiles, buses, trucks, vans, neighborhood *electric vehicle*s, and electric motorcycles, primarily powered by an electric motor that draws current from an electric source.

ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE). Equipment for plug-in power transfer including the ungrounded, grounded, and equipment grounding conductors, and the *electric vehicle* connectors, attachment plugs, personal protection system and all other fittings, devices, power outlets or apparatus installed specifically for the purpose of transferring energy between the premises wiring and the *electric vehicle*.

ELECTRIC VEHICLE SUPPLY EQUIPMENT INSTALLED SPACE (EVSE space). An automobile parking space that is provided with a dedicated *EVSE* connection.

ELECTRIC VEHICLE CAPABLE SPACE (EV CAPABLE SPACE). A designated automobile parking space that is provided with electrical infrastructure, such as, but not limited to, raceways, cables, electrical capacity, and panelboard or other electrical distribution equipment space, necessary for the future installation of an *EVSE*.

ELECTRIC VEHICLE READY SPACE (EV READY SPACE). An automobile parking space that is provided with a branch circuit and receptacle that will support an installed *EVSE*.

UNIVERSAL VEHICLE CHARGING STATION. A charging station installed in a parking space for a minimum vehicle width of 120 inches (3048 mm) with 36 inch access aisles (915 mm) on each side.

RD104 One- and two- family dwellings and townhouses. One *EV ready* space shall be provided for each dwelling unit. The branch circuit shall be identified as *EV ready* in the service panel or subpanel directory, and the termination location shall be marked as *EV ready*.

Exceptions:
1. Dwelling units where no parking spaces are either required or provided.
2. ADU dwelling units

RD105 Residential multifamily dwellings, 3-stories or less. New dwelling units for residential multifamily buildings, other than duplexes and townhomes, shall be provided with *electric vehicle* power transfer infrastructure in compliance with Sections RD105.1 through RD105.6 and Sections RD106 through RD107.

RD105.1 Quantity. The number of required *EVSE spaces*, *EV ready spaces*, and *EV capable spaces* shall be determined in accordance with this Section and Table RD105.1 based on the total number of *automobile parking spaces* and shall be rounded up to the nearest whole number. For multifamily buildings, the Table requirements shall be based on the total number of dwelling units or the total number of *automobile parking spaces*, whichever is less.

1. Where more than one parking facility is provided on a building site, the number of required *automobile parking spaces* required to have EV power transfer infrastructure shall be calculated separately for each parking facility.
2. Installed *EVSE spaces* that exceed the minimum requirements of this section may be used to meet minimum requirements for *EV ready spaces* and *EV capable spaces*.
3. Installed *EV ready spaces* that exceed the minimum requirements of this section may be used to meet minimum requirements for *EV capable spaces*.
4. Where the number of *EV ready spaces* allocated for multifamily occupancies is equal to the number of dwelling units or to the number of *automobile parking spaces* allocated to multifamily occupancies, whichever is less, requirements for *EVSE spaces* shall not apply.
5. In multifamily complexes that contain multiple buildings, required EV spaces shall be dispersed throughout parking areas so that each building has access to a similar number of spaces per dwelling unit.

TABLE RD105.1
REQUIRED EV POWER TRANSFER INFRASTRUCTURE FOR MULTIFAMILY

BUILDING TYPE	MINIMUM EV INSTALLED SPACES	MINIMUM EV READY SPACES	MINIMUM EV CAPABLE SPACES
Multifamily	**5%**	**10%**	**40%**

a. Where all (100%) parking serving multifamily occupancies are EV ready spaces, requirements for *EVSE* spaces shall not apply.

RD105.2 EV capable spaces. Each *EV capable space* used to meet the requirements of Section RD105.1 shall comply with all of the following:

1. A continuous raceway or cable assembly shall be installed between an enclosure or outlet located within 3 feet (914 mm) of the *EV capable space* and a suitable panelboard or other onsite electrical distribution equipment.
2. Installed raceway or cable assembly shall be sized and rated to supply a minimum circuit capacity in accordance with RD105.5
3. The electrical distribution equipment to which the raceway or cable assembly connects shall have sufficient dedicated space and spare electrical capacity for a 2-pole circuit breaker or set of fuses.
4. The electrical enclosure or outlet and the electrical distribution equipment directory shall be marked: “For future electric vehicle supply equipment (EVSE).”
5. Reserved capacity shall be no less than 4.1 kVA (20A 208/240V) for each *EV capable space*.

RD105.3 EV ready spaces. Each branch circuit serving *EV ready spaces* used to meet the requirements of Section RD105.1 shall comply with all of the following:

1. Terminate at a receptacle with overcurrent protection and GFCI protection as required by NFPA 70, located within 3 feet (914 mm) of each *EV ready space* it serves.
2. Have a minimum circuit capacity in accordance with RD105.5.
3. Have a branch circuit on the panelboard or other electrical distribution equipment directory designated as “For electric vehicle supply equipment (EVSE)” and the outlet or enclosure shall be marked “For electric vehicle supply equipment (EVSE).”

RD105.4 EVSE spaces. An installed *EVSE* with multiple output connections shall be permitted to serve multiple EVSE spaces. Each *EVSE* installed to meet the requirements of Section RD105.1, serving either a single *EVSE space* or multiple *EVSE spaces*, shall comply with all of the following:

1. Have a minimum circuit capacity in accordance with RD105.5.
2. Have a minimum charging rate in accordance with RD105.4.1.
3. Be located within 3 feet (914 mm) of each *EVSE* space it serves.
4. Be installed in accordance with Section RD105.6 and RD105.7

RD105.4.1 EVSE minimum charging rate. Each installed *EVSE* shall comply with one of the following:

1. Be capable of charging at a minimum rate of 6.2 kVA (or 30A at 208/240V).
2. When serving multiple *EVSE spaces* and controlled by an energy management system providing load management, be capable of simultaneously charging each *EVSE space* at a minimum rate of no less than 3.3 kVA.
3. When serving *EVSE* spaces allowed to have a minimum circuit capacity of 2.7 kVA in accordance with RD105.5.1 and controlled by an energy management system providing load management, be capable of simultaneously charging each *ESVE* space at a minimum rate of no less than 2.1 kVA.

RD105.5 Circuit capacity. The capacity of electrical infrastructure serving each *EV capable space*, *EV ready space*, and *EVSE space* shall comply with one of the following:

1. A branch circuit with a rated capacity not less than 8.3 kVA (or 40A at 208/240V) for each *EV ready* space or *EVSE* space it serves.
2. The requirements of RD105.5.1.

RD105.5.1 Circuit capacity management. The capacity of each branch circuit serving multiple *EVSE* spaces, *EV ready spaces* or *EV capable spaces* designed to be controlled by an energy management system providing load management in accordance with NFPA 70, shall comply with one of the following:

1. Have a minimum capacity of 4.1 kVA per space.
2. Have a minimum capacity of 2.7 kVA per space when serving *EV ready spaces* or *EVSE spaces* for a building site when all (100%) of the automobile parking spaces are designed to be *EV ready* or *EVSE spaces*.

RD105.6 EVSE installation. *EVSE* shall be installed in accordance with NFPA 70 and shall be listed and labeled in accordance with UL 2202 or UL 2594.

RD105.7. EVSE ENERGY STAR. All *EVSE* shall be ENERGY STAR certified.

RD106. Universal vehicle charging stations. Where *electric vehicle* charging stations are provided for public use, or where *electric vehicle* charging stations are shared by multiple multifamily dwelling units, the number of universal vehicle charging stations shall be provided in accordance with Table RD106.1. When multiple stalls are required, access aisles may be shared.

TABLE RD106.1
UNIVERSAL EV SPACE REQUIREMENTS

TOTAL # OF EV CHARGING STATIONS	MINIMUM # OF UNIVERSAL VEHICLE CHARGING STATIONS
1 or more	25%

RD107. Identification. Construction documents shall designate all *EV capable spaces*, *EV ready spaces*, and *EVSE spaces* and indicate the locations of conduit and termination points serving them. The circuit breakers or circuit breaker spaces reserved for the *EV capable spaces*, *EV ready spaces*, and *EVSE spaces* shall be clearly identified in the panel board directory. The conduit for *EV capable* spaces shall be clearly identified at both the panel board and the termination point at the parking space.

Appendix RE is added as follows:

APPENDIX RE
EXTERIOR ENERGY OFFSET PROGRAM - COMMERCIAL

RE101.1. Intent and Purpose. The purpose of the Exterior Energy Offset Program ("EEOP") Chapter is to encourage sustainable, energy efficient, exterior heating solutions that conserve energy and natural resources, as well as, to offset the greenhouse gas impact of exterior energy use in residential and commercial buildings.

RE101.2. Applicability. The standards in this Chapter apply to all new residential buildings and commercial buildings and their exterior energy uses, as defined in the IECC, including snowmelt, spas, pools and outdoor fire pits/fireplaces.

RE101.3. Scope. The scope of this document includes Exterior Energy uses, and energy production to offset exterior energy use. Compliance with this section will be documented via the free Public Domain tool "EEOP Calculation Sheet" in the most current version at the time of permit application. Projected energy use, associated energy offset required, fees and credits are defined within this tool.

RE103.1. Exterior Energy Uses. Residential, Commercial, and Governmental exterior energy uses (per list below) may be installed only if the building project meets the requirements of this Appendix. The completed "EEOP Calculation Sheet" must be submitted along with the subject building permit application. Exception: Mobile Home units that are approved by the Colorado Department of Housing are exempt.

1. Snowmelt (ie: driveways, patios, walkways, or similar surfaces). Exception: Snowmelt systems 200 square feet or less.

2. Exterior pools.
3. Exterior spas. Exception: Exterior spas 64 square feet or less.
4. Outdoor gas fireplaces and firepits.

RE103.2. Snowmelt Systems. All snowmelt systems shall be installed in accordance with the following provisions. The first 200 square feet of snowmelt are exempt from the requirements of this section.

5. The maximum area of snowmelt is capped at 6,000 square feet per parcel.
6. R-15 insulation shall be installed under all areas of snowmelt.
7. Automated controls that have the following capabilities:
   a. Limit operation to only when moisture is present.
   b. Limit operation to when outdoor air temperature is between 20 and 40 degrees F.
   c. Configured to shut the system off when surface temperature is above 50 degrees F.
   d. Idling shall only be permitted for commercial applications where public safety is shown to be a factor.
8. Snowmelt heating appliances such as, but not limited to, condensing boilers will have a minimum efficiency of 92% AFUE. Electric resistance and heat pump heaters shall be permitted. Where condensing boilers are used, the boiler supply water temperature shall be a maximum of 130 F to allow for efficient boiler operation.

RE103.3. Exterior Pools. All exterior pools shall be installed in accordance with the following provisions.

3. Pool covers are required for all pools, with a minimum R-value of 2.
4. Pool heating appliances shall have a minimum efficiency of 92% AFUE. Electric resistance and heat pump heaters are permitted. Where condensing boilers are used, the boiler supply water temperature shall be a maximum of 130 F to allow for efficient boiler operation.

RE103.4. Exterior Spas. All exterior spas shall be installed in accordance with the following provisions:

4. Spa covers are required for all spas, with a minimum R-value of 12.
5. Spa heating appliances shall have a minimum efficiency of 92% AFUE. Electric resistance and heat pump heaters shall be permitted. Where condensing boilers are used, the boiler supply water temperature shall be a maximum of 130 F to allow for efficient boiler operation.
6. The first 64 square feet of spa, as measured from the perimeter edge, are exempt from this Section.

RE103.5. Credits for Exterior Energy Use. This EEOP payment option is voluntary. Applicants interested in exterior energy use systems can alternatively choose to produce on-site renewable energy or use all-electric energy efficient technology via an air source heat pump or ground source heat pump to earn credit towards their exterior energy use offset. Credits for renewable energy production and high efficiency all-electric heating systems shall be calculated and applied per "EEOP Calculation Sheet" for energy generated and systems installed onsite. Renewable energy methods listed in the calculator include: solar photovoltaic panels, solar thermal arrays, and hydroelectric and wind power. High efficiency heating systems listed in the calculator include: ground source heat pumps (GSHPs), and air source heat pumps (ASHP). Provision for alternative method calculations, including off site renewable energy methods, is also provided, and will require specific review and approval by the Building Official.

E103.6. Solar Photovoltaic Systems. System designer/installer shall be certified by COSEIA (Colorado Solar Energy Industries Association) or NABCEP, (North American Board of Certified Energy Practitioners), or a licensed Professional Engineer in the State of Colorado.

RE103.7. Solar Hot Water. The size of solar hot water systems is limited to 500 square feet of collector area unless otherwise approved by the Building Official. Systems larger than this limit will be considered, but will require documentation showing year-round utilization of this larger system.

RE103.8. Ground Source Heat Pump. To use a GSHP for on-site renewable credit the GSHP system must supply at least 20% of the peak load for heating the building and all the exterior energy uses. Each ground source heat pump system shall be tested and balanced and the design engineer shall certify in writing that it meets or exceeds a design coefficient of performance of 3.0 inclusive of source pump power. Design conditions for determining COP will be: 30F ground loop temperature measured at the GSHP inlet, and 110F GSHP load side outlet. The ground loop system shall be designed by a CGD (Certified Geo-Exchange Designer certified by the Association of Energy Engineers) or a Professional Engineer licensed in the State of Colorado or an IGSHPA (International Ground Source Heat Pump Association) certified designer. The mechanical system must be installed by a certified IGSHPA contractor.

RE103.9. EEOP Fees. The EEOP fees shall be paid at the time of Building Permit. All fees shall be calculated through the "EEOP Calculation Sheet". No refund of fee payment shall be made to an applicant for installation of renewable energy production that exceeds the on-site renewable credits required pursuant to this section.

RE103.10 EEOP Fund Created.

3. Fees collected at Building Permit are placed in the Town's EEOP fund to create financial assistance, rebates, and incentives to promote energy efficient projects elsewhere within the Town.
4. The Town's EEOP Fund will be managed by the Town Manager or designee. Expenditures of EEOP funds shall be used for the following purposes:
    f. To provide educational materials and outreach for Town residents, businesses, employees and building owners including but not necessarily limited to printed guides, efficient building educational events, a webpage with available resources, links, and information.
    g. Planning, design and implementation of renewable energy generation projects.
    h. Providing a community grant and/or rebate program for energy efficiency enhancements or renewable energy generation projects.
    i. Funding other resources and administrative costs associated with green building and environmental sustainability oriented efforts.

Special consideration is given to projects that positively affect occupants of local affordable housing or low income residents in the Town.

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