Chapter 11
BUILDING REGULATIONS

11.1 International Building Code

The International Building Code 2024 Edition as published by the International Code Council, 4051 West Flossmoor Road, Country Club Hills, IL 60478. Chapters 1 through 33 inclusive and Appendix Chapter I, is hereby adopted by reference as the Town of Berthoud Building Code as if fully set out in this ordinance with the additions deletions insertions and changes as follows:

IBC Section 101.1 (Title) is amended by the addition of the term "Town of Berthoud" where indicated.

IBC Section 101.4.3 (Plumbing) is amended by the deletion of the last sentence.

IBC Section 101.4.5 (Fire prevention) is amended by replacing "International Fire Code" with "adopted fire code".

IBC Section 101.4.6 (Energy) is amended by replacing the words "International Energy Conservation Code" with " 2024 International Energy Conservation Code".

IBC Section 103.1 IBC Section 103.1 (Creation of Enforcement Agency) is amended by adding “Town of Berthoud” where indicated.

IBC Section 105.1 (Required) is amended by replacing the words "building official" with 'Town".

IBC Section 105.2 (Work exempt from permit) is amended by:

Building Exception #1 is deleted in its entirety and replaced with "One-Story detached accessory structures used as tool and storage sheds, playhouses and similar uses, provided the floor area does not exceed 120 square feet and the roof height does not exceed 10 feet above grade measured from a point directly outside the exterior walls of the structure."

Exception #2 is deleted in its entirety and replaced with “Fences not over 6 feet (2134mm) high. Swimming pool barriers of any height are not exempt from permits.

Building Exception #14 is added to read "Shingle repair or replacement work not exceeding one square (100 square feet in area) of covering per building.

IBC Section 105.5 (Expiration) is amended by the deletion of this section in its entirety and replaced with the following:

"Every permit issued by the building official under the provisions of this code shall expire by limitation and become null and void if the building or work authorized by such permit is not commenced within 180 days from the date of such permit, or if the building or work authorized by such permit, by verification through the inspection process, is suspended or abandoned at any time after the work is commenced for a period of 180 days. Before such work can be recommenced, a new permit shall be first obtained to do so, and the fee therefor shall be one half the amount of the original permit fee, exclusive of any taxes or other fees already accessed, provided no changes have been made or will be made in the original plans and specifications for such work, and provided further that such suspension or abandonment has not exceeded one year. In order to renew action on a permit after expiration, the permittee shall pay a new full permit fee."

IBC Section 109.4 (Work commencing before permit issuance) is amended by the deletion of this section in its entirety and replaced with the following:

"Any person who commences any work on a building, structure, electrical, gas, mechanical or plumbing system before obtaining the necessary permits may be subject to an investigation fee as well as a

violation fee as established by the town. The amount of the investigation fee may be based on the hourly rate for time spent investigating the violation, preparing documentation and notices. The amount of the violation fee may be in the amount up to the amount of the permit fee that would normally be accessed for the specific type of construction activity, with any such investigation fee being in addition to all other required permit fees. The investigation fee shall be collected whether or not a permit is then subsequently issued.

Section 109.6 (Refunds) is amended by the deletion of this section in its entirety and replaced with the following:

"The town may authorize refunding of any fee paid hereunder which was erroneously paid or collected. The town may authorize refunding of not more than 80 percent (80%) of the permit fee paid when no work has been done under a permit issued in accordance with this code. The town may authorize refunding of not more than 80 percent (80%) of the plan review fee paid when an application for a permit for which a plan review fee has been paid is withdrawn or cancelled before any plan reviewing is done. The town shall not authorize refunding of any fee paid except on written application filed by the original permittee not later than 180 days after the date of fee payment."

IBC Section 111.3 (Temporary occupancy) is amended by deleting the words "building official" in the first and second sentence and replacing it with 'Town".

IBC Section 113.1 (General) is amended by the deletion of the last two sentences and replaced with the following:

"The members of the Board of Appeals shall be comprised of the members of the Town Council."

IBC Section 113.3 (Qualifications) is amended by the deletion of this section in its entirety.

IBC Section 114.2 (Notice of Violation) is amended by adding “Notice of Violations shall be delivered in accordance with section 109.4 through 109.4.2 of the 2024 IPMC” after the last paragraph.

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IBC Section 202 (Definitions) is amended by addition of the following:

"Sleeping Room" (Bedroom) is any enclosed habitable space within a dwelling unit, which complies with the minimum room dimension requirements of IBC Section 1208, contains a closet, an area that is useable as a closet, or an area that is readily convertible for use as a closet, and contains an emergency escape and rescue opening. Living rooms, family rooms, offices, exercise rooms and other similar habitable areas that are so situated and designed so as to clearly indicate these intended uses, shall not be interpreted as sleeping rooms.

IBC Section 915.2.1 (Dwelling units) is amended by the deletion of the first sentence and replaced with the following:

"Carbon monoxide detection shall be installed in dwelling units within 15 feet of each separate sleeping area and on every level."

IBM Section 1015.2 (Where required) is amended by the addition of a second paragraph inserted before the exceptions as follows:

"All area wells, stair wells, window wells and light wells attached to any building that are located less than 36 inches (914.4 mm) from the nearest intended walking surface and deeper than 30 inches (762 mm) below the surrounding ground level, creating an opening greater than 24 inches (610 mm) measured perpendicular from the building, shall be protected with guardrails conforming to this section around the entire opening, or be provided with an equivalent barrier.

IBC Section 1031.3.1 (Minimum size) is amended by the deletion of the exception.

IBC Section 1301.1.1 (Criteria) is amended by replacing "International Energy Conservation Code" with the " 2024 International Energy Conservation Code".

IBC Section 1608 to read as follows:

The design ground snow load PG shall be 35 pfs for the Town of Berthoud per the Colorado Design Snow Loads, published by the Structural Engineers Association of Colorado (dated April 2016, https:www.seacolorado.org/publications.php). The design roof snow load values shall be determined from Chapter 7, ASCE 7-16, including all applicable factors, and loading and drifting considerations. In no case shall the final design roof snow load be less that a uniformly distributed load of 30 psf.

IBC Section 1609.3 (Basic Design Wind Speed) is amended to read as follows The basic design wind speed, V, in mph, for the determination of site wind loads shall comply with the Colorado Front Range Gust Map - ASCE 7-10 Compatible, published by the Structural Engineers Association of Colorado (dated November 18, 2013) or the Larimer County Basic Design Wind Speed Map

IBC Section 1612.3 (Establishment of flood hazard areas) is amended by the insertion of "Town of Berthoud" where indicated in [Name of Jurisdiction] and the date of the latest flood insurance study for the Town of Berthoud, where indicated in [Date of Issuance].

"Violation of the provisions of this code, as adopted in this ordinance, may be punished in accordance with Section 20.2 of the Berthoud municipal code in addition to any relief at equity to prevent continuing violation"

11.2 International Residential Code

The International Residential Code 2024 Edition as published by the International Code Council, 4051 West Flossmoor Road, Country Club Hills, IL 60478, Chapters 1 through 43 inclusive and Appendix AB hereby adopted by reference as the Town of Berthoud Residential Building Code as if fully set out in this ordinance with the additions deletions insertions and changes as follows.

IRC Section R101.1 (Title) is amended by the addition of the term "Town of Berthoud" where indicated.

IRC Section R103.1 IRC Section 103.1 (Creation of Agency) is amended by adding “Town of Berthoud” where indicated.

IRC Section R105.1 (Required) is amended by replacing the words "building official" with 'Town".

IRC Section R105.2 (Work Exempt from Permit) is amended by:

Building Exception #1 is deleted in its entirety and replaced with "One-Story detached accessory structures used as tool and storage sheds, playhouses and similar uses, provided the floor area does not exceed 120 square feet and the roof height does not exceed 10 feet above grade measured from a point directly outside the exterior walls of the structure."

Building Exception #10 is deleted in its entirety and replaced with: "Shingle repair or replacement work not exceeding one square (100 square feet in area) of covering per building.

IRC Section 105.5 (Expiration) is amended by the deletion of this section in its entirety and replaced with the following:

"Every permit issued by the building official under the provisions of this code shall expire by limitation and become null and void if the building or work authorized by such permit is not commenced within 180 days from the date of such permit, or if the building or work authorized by such permit, by verification through the inspection process, is suspended or abandoned at any time after the work is commenced for a period of 180 days. Before such work can be recommenced, a new permit shall be first obtained to do so, and the fee therefor shall be one half the amount required for a new permit for such work, provided no changes have been made or will be made in the original plans and specifications for such work, and provided further that such suspension or abandonment has not

exceeded one year. In order to renew action on a permit after expiration, the permittee shall pay a new full permit fee."

IRC Section R108.5 (Refunds) is amended by the deletion of this section in its entirety and replaced with the following:

"The town may authorize refunding of any fee paid hereunder which was erroneously paid or collected. The town may authorize refunding of not more than 80 percent (80%) of the permit fee paid when no work has been done under a permit issued in accordance with this code. The town may authorize refunding of not more than 80 percent (80%) of the plan review fee paid when an application for a permit for which a plan review fee has been paid is withdrawn or cancelled before any plan reviewing is done.

The town shall not authorize refunding of any fee paid except on written application filed by the original permittee not later than 180 days after the date of fee payment."

IRC Section R108.6 (Work commencing before permit issuance) is amended by the deletion of this section in its entirety and replaced with the following:

Any person who commences any work on a building, structure, electrical, gas, mechanical or plumbing system before obtaining the necessary permits may be subject to an investigation fee as well as a violation fee as established by the town. The amount of the investigation fee may be based on the hourly rate for time spent investigating the violation, preparing documentation and notices. The amount of the violation fee may be in the amount up to the amount of the permit fee that would normally be accessed for the specific type of construction activity, with any such investigation fee being in addition to all other required permit fees. The investigation fee shall be collected whether or not a permit is then subsequently issued. IRC Section R109.1.5 (Other inspections) is amended by the addition of a new subsection as follows:

IRC Section R109.1.5.2 Insulation Inspection of the structure shall be made following installation of the wall, ceiling and floor insulation and exterior windows and before wall coverings are installed.

IRC Section R110.4 (Temporary occupancy) is amended by the deletion of the words "building official" in the first and second sentence and replaced with 'Town".

IRC Section R112.1 (General) is amended by the deletion of the last three sentences and replaced with the following:

"The members of the Board of Appeals shall be comprised of the members of the Town Council."

IRC Section R112.3 (Qualifications) is amended by the deletion of this section in its entirety.

IRC Section R113.2 (Notice of Violation) is amended by the addition of "Notice of Violations shall be delivered in accordance with section 107 of the IPMC" after the last paragraph.

IRC Section R202 (Definitions) is amended by the addition of the following:

"Sleeping Room" (Bedroom) is any enclosed habitable space within a dwelling unit, which complies with the minimum room dimension requirements of IRC Sections R304 and R305, contains a closet, an area that is useable as a closet, or an area that is readily convertible for use as a closet and contains an emergency escape and rescue opening. Living rooms, family rooms, offices, exercise rooms and other similar habitable areas that are so situated and designed so as to clearly indicate these intended uses, shall not be interpreted as sleeping rooms.

IRC Table R301.2 (1) IRC Table R301.2 (1) is filled to provide the following:

Table R301.2 (1)
Climatic and Geographic Design Criteria

Ground Snow Load	Wind Design		Seismic Design Category	Subject to Damage From			Winter Design Temp Deg. F	Ice barrier Underlayment Required	Flood Hazard	Air Freezing Index	Mean Annual Temp
	Speed (V)ult	Topo-graphic effects		Weathering	Frost Line	Termite					
35psf	115-140	Yes	B	Severe	30 in.	Slight to Moderate	1	YES	26713	1000	43F

*Special Wind Region

Footnotes to Table 301.2 are hereby amended to read as follows:

d. The Ultimate Design Wind Speed (Vult) for the determination of site wind loads shall comply with the Colorado Front Range Gust Map - ASCE 7-10 Compatible, published by the Structural Engineers Association of Colorado (dated November 8, 2013, https://seacolorado.org/publications.php). Wind Load design values shall be determined from Section 1609 of the IBC. Wind exposure category shall be Exposure C unless designated otherwise by the design professional based on site-specific conditions and approved by the building official.

o. The design ground snow load pg shall be 35 pfs for the Town of Berthoud per the Colorado Design Snow Loads, published by the Structural Engineers Association of Colorado (dated April 2016, https:www.seacolorado.org/publications.php). The design roof snow load values shall be determined from Chapter 7, ASCE 7-16, including all applicable factors, and loading and drifting considerations. In no case shall the final design roof snow load be less that a uniformly distributed load of 30 psf, except greenhouses may take full load reductions allowed per ASCE 7.

IRC Section R309 (Fire sprinklers) is amended by the deletion of this section in its entirety.

IRC Section R319.1 (Emergency escape and rescue opening required) is amended by adding the following after the first paragraph:

"All windows located in basements, habitable attics and sleeping rooms shall meet all the requirements of section R319.1 through R319.2.4."

IRC Section R319.4 (Area wells) is amended by the addition of the following;

"All windows in basements shall be an escape and rescue window, if requiring a window (area) well pursuant to the International Residential Code, it shall comply with the dimension requirements set forth in this section."

IRC Section R319.4.2 (Ladder and steps) is amended by the addition of the following exception to read as follows:

"Exception: Only one window well ladder shall be required in an unfinished basement."

IRC Section R321.1.1 (Where required) is amended by the addition of a third paragraph as follows:

"All area wells, stair wells, window wells and light wells attached to any building that are located less than 36 inches (914 mm) from the nearest intended walking surface and deeper than 30 inches (762 mm) below the surrounding ground level, creating an opening greater than 24 inches (610 mm) measured perpendicular from the building, shall be protected with guardrails conforming to this section around the entire opening, or be provided with an equivalent barrier.

Exceptions:

The access side of stairways need not be protected.

Area and window wells provided for emergency escape and rescue windows may be protected with approved grates or covers that comply with Section R319.4.4 of this code.

Covers and grates may be used over stairways and other openings used exclusively for service access or for admitting light or ventilation."

IRC Section 311.3(Location) is amended by the addition of the following after the first paragraph.

"Carbon monoxide detection shall be installed in dwelling units within 15 feet of each separate sleeping area and on each level."

IRC Section R401.2 (Requirements) is amended by the addition of the following after the first paragraph:

"Foundations shall be designed, and the construction drawings stamped by a Colorado registered design professional. The foundation design must be based on an engineer's soils report. The drawings must be noted with the engineering firm name, specific location for design and soils report number. A site certification prepared by State of Colorado registered design professional is required for setback verification on all new Group R Division 3 occupancies."

IRC Section R405.1 (Concrete or masonry foundations) is amended with the addition of the following after the first sentence: All foundation drains shall be designed and inspected by a State of Colorado registered design professional.

IRC Section R905.2.4. (Impact resistance of asphalt shingles) is amended with the addition of the following after the first sentence:

Asphalt shingles shall be Class 4 impact resistant, tested in accordance with UL2218, and installed in accordance with the manufacturer's installation instructions.

Exceptions

1. When an owner wishes to replace existing asphalt shingles that are less than class 4 impact resistant with tiles of a similar color or style, and there are no class 4 impact resistance shingles available of similar color or style, the building official may approve alternate materials that are less than class 4 impact resistant, so long as the replacement shingles are the highest class of impact resistant shingles available that match the color or style of the existing shingles. If no impact resistant materials are available, the building official may approve non-impact resistant materials that meet all other applicable requirements of this Code.

2. For repairs or additions to existing asphalt singles that are less than class 4 impact resistant, the owner may use the same or similar materials regardless of impact resistance of the new shingles.

IRC Chapter 11 (Energy Efficiency) is amended by the deletion of this chapter in its entirety and replaced with the 2024 International Energy Conservation Code.

IRC Section G2415.12 (Minimum burial depth) is amended by the addition of the following: All plastic fuel gas piping shall be installed a minimum of 18 inches (457 mm) below grade.

IRC Section G2415.12.1 (Individual outdoor appliances) is amended by the deletion of this section in its entirety.

IRC Section G2417.4.1 (Test pressure) is amended by replacing 3 psig with 10 psig.

IRC Section P2503.5.1 (Rough plumbing) is amended by the deletion of the first sentence and replaced with "DWV systems shall be tested on completion of the rough piping installation by water or air without evidence of leakage."

IRC Section P2603.5.1 (Sewer depth) is amended by filling in both areas where indicated to read "12 inches (305 mm)".

IRC Section P3103.1.1 (Roof extension) is amended by replacing "6 inches" with "12 inches".

"Violation of the provisions of this code, as adopted in this ordinance, may be punished in accordance with Section 20.2 of the Berthoud municipal code in addition to any relief at equity to prevent continuing violation"

11.3 International Existing Building Code

The International Existing Building Code, 2024 Edition as published by the International Code Council, 4051 West Flossmoor Road, Country Club Hills, IL 60478, Chapters 1 through 16 inclusive, is hereby adopted by reference as the Town of Berthoud Existing Building Code as if fully set out in this ordinance with the additions, deletions, insertions and changes as follows.

International Existing Building Code is amended by replacing all references to "International Fire Code" with "Adopted Fire Code".

IEBC Section 101.1 (Title) is amended by the addition of the term "Town of Berthoud" where indicated.

IEBC Section 1401.2 (Conformance) is amended by the deletion of this section in its entirety and replaced with the following: "Structures moved into or within the jurisdiction shall comply with the provision of this code for new structures."

"Violation of the provisions of this code, as adopted in this ordinance, may be punished in accordance with Section 20.2 of the Berthoud municipal code in addition to any relief at equity to prevent continuing violation"

11.4 International Energy Code.

The International Energy Conservation Code, 2024 Edition as published by the International Code Council, 4051 West Flossmoor Road, Country Club Hills, IL 60478, Chapters 1 through 6 Commercial, Chapters 1 through 6 Residential including Appendix CK Colorado Model Electric and Solar Ready Code-Commercial and Appendix RM Colorado Model Electric and Solar Ready Code-Residential is hereby adopted by reference as the Town of Berthoud Energy Conservation Code as if fully set out in this ordinance with the additions, deletions, insertions and changes as follows.

IECC Section C101.1 IECC Section C101.1 (Title) is amended by the addition of the term “Town of Berthoud” where indicated.

IECC Section 103.1 IECC Section 103.1 (Creation of Agency) is amended by adding “Town of Berthoud” where indicated.

IECC Section 109.1 IECC Section 109.1 (General) is amended by deleting the last three paragraphs and inserting the following:

“The members of the Board of Appeals shall be comprised of the members of the Town Council.”

IECC Section 109.3 IECC Section 109.3 (Qualifications) is amended by the deletion of this section in its entirety.

SECTION R202 GENERAL DEFINITIONS is hereby retained except the following addition:

Dwelling Unit Enclosure Area: The sum of all the boundary surfaces that define the dwelling unit, including top/ceiling, bottom/floor, and the sides of all walls. This does not include interior partition walls within the dwelling unit. Wall height should be measured from the finished floor of the dwelling unit to the underside of the floor above (rather than stopping at the finished ceiling).

Section R402.5.1.3 Testing: Single family detached buildings or dwelling units shall be tested and verified as having an air leakage rate of not exceeding three air changes per hour in Climate Zones 1 through 8, or 0.24 cubic feet per minute at 50 Pascals/square feet of dwelling unit enclosure area. Attached single family or multifamily buildings or dwelling units shall be tested and verified as having an air leakage rate of five or less air changes per hour in Climate Zones 1 through 8 or 0.30 cubic feet per minute at 50 Pascals/square feet of dwelling unit enclosure area.

Section R403.3.7 Duct testing (Mandatory). Ducts shall be pressure tested to determine air leakage by one of the following methods: and shall not leak more than 4 cubic feet per minute (113.3 L/min) per 100 square feet (9.29 m2) of conditioned floor area served, (4cfm/100sqft), when the air handler is installed at the time of the test. When the air handler is not installed at the time of the test, the total leakage shall be less than or equal to 3 cubic feet per minute (85 L/min) per 100 square feet (9.29 m2) of conditioned floor area; (3cfm/100sqft). Registers shall be taped or otherwise sealed during the test.

Rough-in test: Total leakage shall be measured with a pressure differential of 0.1 inch w.g. (25 Pa) across the system, including the manufacturer's air handler enclosure if installed at the time of the test. All registers shall be taped or otherwise sealed during the test.

2. Postconstruction test: Total leakage shall be measured with a pressure differential of 0.1 inch w.g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure. Registers shall be taped or otherwise sealed during the test.

   Exception:

   a. A duct air leakage test shall not be required where the ducts and air handlers are located entirely within the building thermal envelope.

   b. If the HVAC duct system is serving less than or equal to 1,200 square feet of conditioned floor area, the allowable duct leakage shall be 60 cubic feet per minute or less.

   A written report of the results of the test shall be signed by the party conducting the test and provided to the code official.

Appendix CK Colorado Model Electric and Solar Ready Code-Commercial

Chapter 1 Scope and Administration

SECTION 101 SCOPE AND GENERAL REQUIREMENTS.

101.1 Title. This code shall be known as the **Electric Ready and Solar Ready Code** of Town of Berthoud and shall be cited as such. It is referred to herein as “this code”.

101.2 Scope. This code applies to all buildings and dwelling units, and the buildings’ sites and associated systems and equipment.

101.3 Intent. This code shall regulate the design and construction of buildings to prepare new buildings for solar photovoltaic or solar thermal, electric vehicle charging infrastructure, and electrification of building systems. This code is intended to provide flexibility and balance upfront construction costs with the future cost to retrofit buildings to accommodate these systems. This code is not intended to abridge safety, health or environmental requirements contained in other applicable codes or ordinances.

101.4. Applicability. Where, in any specific case, different sections of this code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall govern.

101.4.1 Residential Buildings. *Residential buildings* must comply with the Residential Chapters of this code.

101.4.2 Commercial Buildings. *Commercial buildings* must comply with the Commercial Chapters of this code.

SECTION 102 WAIVER AND VARIANCE.

102.1 Scope. The following waivers shall be permitted to be requested if buildings meet the following requirements.

102.1.1 Commercial Buildings Greater than 10,000 sq. ft. *Commercial buildings* that have a gross floor area greater than 10,000 sq. ft. shall be eligible to request a partial waiver to the requirements of this code if they meet the requirements of Section **102.2**.

102.1.2 Buildings Impacted by a Natural Disaster. Town of Berthoud is permitted to authorize, upon appeal in specific cases, a waiver from the requirements of this code where, owing to a declared natural disaster that has destroyed buildings or resulted in other exceptional and extraordinary circumstances as determined by Town of Berthoud, and Town of Berthoud determines enforcement of the provisions of this code will result in unnecessary hardship.

102.2 Substantial Cost Differential Waiver. Town of Berthoud shall be permitted to authorize, upon appeal, a waiver from the requirements of this code for an applicant that asserts that compliance with this code will result in a substantial cost differential. Town of Berthoud, when authorizing such a waiver, shall be permitted to waive certain requirements of this code only until the cost differential for compliance with the remaining requirements reaches one percent or less. The burden of proof is upon the applicant to provide substantiation of a cost differential, such as quotes or other licensed design professional analyses as *approved* by Town of Berthoud.

102.2.1 Substantial Cost Differential. For the purposes of Section **102.2**, "substantial cost differential" means costs incurred as a result of compliance with the requirements of this code would exceed one percent of total mechanical, electrical, and plumbing construction costs inclusive of materials and labor.

SECTION 103 CONSTRUCTION DOCUMENTS.

103.1 General. Construction documents and other supporting data shall be submitted in one or more sets, or in a digital format where allowed by the *code official*, with each application for a permit. The construction documents shall be prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed. Where special conditions exist, the *code official is* authorized to require necessary construction documents to be prepared by a registered design professional.

Exception: The *code official* is authorized to waive the requirements for construction documents or other supporting data if the *code official determines* they are not necessary to confirm compliance with this code.

103.2 Information on Construction Documents. Construction documents shall be drawn to scale on suitable material. Electronic media documents are permitted to be submitted where *approved* by the *code official*. Construction documents shall be of sufficient clarity to indicate the location, nature, and extent of the work proposed, and show in sufficient detail pertinent data and features of the building, systems, and equipment as herein governed. Details shall include, but are not limited to, the following as applicable:

1. Location and size of the *solar-ready zone.*

2. Structural design loads of roof dead load and roof live load.

3. Pathways for routing of conduit from the *solar-ready zone* to the electrical service panel.

4. Number and location of *EV capable light spaces.*

5. Number and location of *EV capable spaces.*

6. Number and location of *EV ready spaces.*

7. Number and location of *EVSE installed spaces.*

8. Locations of conduit and termination points serving the aforementioned parking spaces.

9. Location for condensate drainage where *combustion equipment* for space heating and water heating is installed.

103.3 Examination of Documents. The *code official* shall examine or cause to be examined the accompanying documents and shall ascertain whether the construction indicated and described is in accordance with the requirements of this code and other pertinent laws or ordinances. The *code official* is authorized to utilize a registered design professional, or other *approved* entity not affiliated with the building design or construction, in conducting the review of the plans and specifications for compliance with the code.

103.3.1 Approval of Construction Documents. When the *code official* issues a permit where construction documents are required, the construction documents shall be endorsed in writing and stamped "Reviewed for Code

Compliance". Such *approved* construction documents shall not be changed, modified, or altered without authorization from the *code official*. Work shall be done in accordance with the *approved* construction documents.

One set of "Reviewed for Code Compliance" construction documents shall be retained by the *code official*. The other set shall be returned to the applicant, kept at the site of work, and shall be open to inspection by the *code official* or a duly authorized representative.

103.3.2 Previous Approvals. This code shall not require changes in the construction documents, construction, or designated occupancy of a structure for which a lawful permit has been heretofore issued or otherwise lawfully authorized, and the construction of which has been pursued in good faith within

180 days after the effective date of this code and has not been abandoned; except that the *code official* is authorized to grant one or more extensions of time for additional periods not exceeding 180 days each.

103.3.3 Phased Approval. The *code official* shall have the authority to issue a permit for the construction of part of a solar ready, EV ready, or electric ready installation before the construction documents for the entire system have been submitted or *approved*, provided that adequate information and detailed statements have been filed complying with all pertinent requirements of this code. The holders of such permit shall proceed at their own risk without assurance that the permit for the entire solar ready, EV ready, or electric ready installation will be granted.

103.4 Amended Construction Documents. Changes made during construction that are not in compliance with the *approved* construction documents shall be resubmitted for approval as an amended set of construction documents.

103.5 Retention of Construction Documents. One set of *approved* construction documents shall be retained by the *code official* for a period of not less than 180 days from the date of completion of the permitted work, or as required by state or local laws.

103.6 Building Documentation and Closeout Submittal Requirements. The construction documents shall specify that the documents described in this section be provided to the building owner or owner's authorized agent within 90 days of the date of receipt of the certificate of occupancy.

Exception: *Residential buildings.*

103.6.1 Record Documents. Construction documents shall be updated to convey a record of the completed work. Such updates shall include mechanical, electrical, and control drawings that indicate all changes to size, type, and location of components, equipment, and assemblies.

103.6.2 Compliance Documentation. Compliance documentation and supporting calculations shall be delivered in one document to the building owner as a part of the project record documents or manuals, or as a standalone document. This document shall include the specific energy code edition utilized for compliance determination for each system.

SECTION 104 INSPECTIONS.

104.1 General. Construction or work for which a permit is required shall be subject to inspection by the *code official*, his or her designated agent or an *approved agency*, and such construction or work shall remain visible and able to be accessed for inspection purposes until *approved*. Approval as a result of an inspection shall not

be construed to be an approval of a violation of the provisions of this code or of other ordinances of the jurisdiction. Inspections presuming to give authority to violate or cancel the provisions of this code or of other ordinances of the jurisdiction shall not be valid. It shall be the duty of the permit applicant to cause the work to remain visible and/or able to be accessed for inspection purposes. Neither the *code official* nor the jurisdiction shall be liable for expenses entailed in the removal or replacement of any material, product, system or building component required to allow an inspection to validate compliance with this code.

104.2 Required Inspections. The *code official*, his or her designated agent or an *approved agency*, upon notification, shall make the inspections set forth in Sections **104.2.1** through **104.2.4**.

104.2.1 Solar Ready. Inspections shall verify all of the following as required by this code, *approved* plans, and specifications:

1. The location and size of the *solar-ready zone* or the capacity of an installed on-site renewable energy system.

2. Electrical capacity and reserved physical space for circuit breakers in the main electrical service panel that are properly labeled.

104.2.2 Electric Vehicle Ready. Inspections shall verify all of the following as required by this code, *approved* plans, and specifications:

1. *EV* power transfer infrastructure requirements.

2. Electrical equipment associated with each parking space type, including branch circuits, conduit and/or raceway, junction boxes, receptacles, and *EVSE* are properly labeled and installed.

3. Electrical capacity and reserved physical space for circuit breakers in the main electrical service panel are properly labeled, if applicable.

104.2.3 Electric Ready. Inspections shall verify all of the following as required by this code, *approved* plans, and specifications:

1. Branch circuits, conduit and/or raceway, wiring, junction boxes, and receptacles for *future electric equipment* or appliances are properly labeled and installed, as applicable.

2. Reserved physical space for *future electric equipment* or appliances. 3. Electrical capacity and reserved physical space for circuit breakers in the main electrical service panel are properly labeled.

104.2.4 Final Inspection. The final inspection shall include verification of the installation and proper labeling of all requirements of this code.

104.3 Reinspection. A building shall be reinspected where determined necessary by the *code official*.

104.4 Approved Inspection Agencies. The *code official* is authorized to accept reports of third-party inspection agencies not affiliated with the building design or construction, provided that such agencies are *approved* as to qualifications and reliability relevant to the building components and systems that they are inspecting.

104.5 Inspection Requests. It shall be the duty of the holder of the permit or their duly authorized agent to notify the *code official* when work is ready for inspection. It shall

be the duty of the permit holder to provide access to and means for inspections of such work that are required by this code.

104.6 Reinspection and Testing. Where any work or installation does not pass an initial test or inspection, the necessary corrections shall be made to achieve compliance with this code. The work or installation shall then be resubmitted to the *code official* for inspection and testing.

SECTION 105 NOTICE OF APPROVAL.

105.1 Approval. After the prescribed inspections indicate that the work complies in all respects with this code, a notice of approval shall be issued by the *code official*.

105.2 Revocation. The *code official* is authorized to suspend or revoke, in writing, a notice of approval issued under the provisions of this code wherever the certificate is issued in error, or on the basis of incorrect information supplied, or where it is determined that the building or structure, premise, or portion thereof is in violation of

any ordinance or regulation or any of the provisions of this code.

SECTION 106 VALIDITY.

106.1 General. If a portion of this code is held to be illegal or void, such a decision shall not affect the validity of the remainder of this code.

SECTION 107 REFERENCED STANDARDS.

107.1 General. The codes and standards referenced in this code shall be listed in Section **107.2**, and such codes and standards shall be considered as part of the requirements of this code to the prescribed extent of each such reference.

107.2 Referenced Codes and Standards. The codes and standards referenced in this code are as follows:

1. International Building Code

a. Chapter 3

b. Chapter 11

2. International Energy Conservation Code

3. International Fire Code

4. International Residential Code

5. National Electrical Code Article 625

6. UL2202 and 2594

107.2.1 Conflicts. Where conflicts occur between provisions of this code and referenced codes and standards, the provisions of this code shall apply.

107.2.2 Provisions in Referenced Codes and Standards. Where the extent of the reference to a referenced code or standard includes subject matter that is within the scope of this code, the provisions of this code, as applicable, shall take precedence over the provisions in the referenced code or standard.

107.3 Applications of References. References to chapter or section numbers, or to provisions not specifically identified by number, shall be construed to refer to such chapter, section, or provision of this code.

107.4 Other Laws. The provisions of this code shall not be deemed to nullify any provisions of local, state, or federal law.

SECTION 108 STOPWORK ORDER.

108.1 Authority. Where the *code official* finds any work regulated by this code being performed in a manner contrary to the provisions of this code or in a dangerous or unsafe manner, the *code official* is authorized to issue a stop work order.

108.2 Issuance. The stop work order shall be in writing and shall be given to the owner of the property, the owner's authorized agent, or the person performing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order and the conditions under which the cited work is authorized to resume.

108.3 Emergencies. Where an emergency exists, the *code official* shall not be required to give a written notice prior to stopping the work.

108.4 Failure to Comply. Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be subject to fines established by Town of Berthoud.

SECTION 109 BOARD OF APPEALS.

109.1 General. In order to hear and decide appeals of orders, decisions, or determinations made by the *code official* relative to the application and interpretation of this code, there shall be and is hereby created a board of appeals. The *code official* shall be an ex officio member of said board but shall not have a vote on any matter before the board. The board of appeals shall be the Town Council. The board shall adopt rules of procedure for conducting its business and shall render all decisions and findings in writing to the appellant with a duplicate copy to the *code official*.

109.2 Limitations on Authority. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted thereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an equally good or better form of construction is proposed. The board shall not have the authority to waive the requirements of this code.

Chapter 2 Definitions

SECTION 201 GENERAL.

201.1 Scope. Unless stated otherwise, the following words and terms in this code shall have the meanings indicated in this chapter.

201.2 Interchangeability. Words used in the present tense include the future; words in the masculine gender include the feminine and neuter; the singular number includes the plural and the plural includes the singular.

201.3 Terms Defined in Other Codes. Terms that are not defined in this code but are defined in the International Building Code, International Fire Code, International Fuel Gas Code, International Mechanical Code, International Plumbing Code, International Energy Conservation Code, or International Residential Code shall have the meanings ascribed to them in those codes.

201.4 Terms not Defined. Terms not defined by this chapter or the codes listed under 201.3 shall have ordinarily accepted meanings such as the context implies.

SECTION 202 GENERAL DEFINITIONS.

APPROVED. Acceptable to the *code official*.

APPROVED AGENCY. An established and recognized agency that is regularly engaged in conducting tests or furnishing inspection services, or furnishing product certification, where such agency has been approved by the *code official.*

CODE OFFICIAL. The officer or other designated authority charged with the administration and enforcement of this code, or a duly authorized representative.

COMBUSTION EQUIPMENT. For this code, any equipment or appliance used for space heating, service water heating, cooking, clothes drying or lighting that uses *fuel gas* or *fuel oil*.

COMMERCIAL BUILDING. For this code, all commercial buildings and R-Occupancies that are covered by the International Building Code.

CORE AND SHELL. The first phase of a commercial project that has the outer building envelope constructed and may contain interior lighting and heating and has not received a permanent Certificate of Occupancy.

DIRECT CURRENT FAST CHARGER (DCFC) EVSE. Equipment 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*.

ELECTRIC VEHICLE (EV). An automotive-type vehicle for on-road use, including but not limited to, passenger automobiles, buses, trucks, vans, neighborhood electric vehicles, and electric motorcycles, primarily powered by

an electric motor that draws current from a building electrical service, *EVSE*, a rechargeable storage battery, a fuel cell, a photovoltaic array, or another source of electric current. Off-road, self-propelled electric mobile equipment, including but not limited to, industrial trucks, hoists, lifts, transports, golf carts, airline ground support equipment, tractors, and boats are not considered electric vehicles.

ELECTRIC VEHICLE CAPABLE LIGHT SPACE (EV CAPABLE LIGHT SPACE). A designated vehicle parking space that has conduit and/or raceway installed to support future implementation of *electric vehicle* charging installation, and has sufficient physical space adjacent to the existing electrical equipment for future electric upgrades.

ELECTRIC VEHICLE CAPABLE SPACE (EV CAPABLE SPACE). A designated vehicle parking space that has the electric panel capacity and conduit and/or raceway installed to support future implementation of *electric vehicle* charging.

ELECTRIC VEHICLE READY SPACE (EV READY SPACE). A designated vehicle parking space that has the electric panel capacity, raceway wiring, receptacle, and circuit overprotection devices installed to support future implementation of *electrical vehicle* charging.

ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE). An *electric vehicle* charging system or device that is used to provide electricity to a plug-in *electric vehicle* or *plug-in hybrid electric vehicle*, is designed to ensure that a safe connection has been made between the electrical grid and the vehicle, and is able to communicate with the vehicle's control system so that electricity flows at an appropriate voltage and current level.

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

FIRST TENANT FINISH. The first tenant finish(es) in a new structure or *core and shell* building that is credited towards meeting the requirements of this Chapter.

FUEL GAS. A natural gas, manufactured gas, liquefied petroleum gas, or mixtures of these gasses.

FUEL OIL. Kerosene or any hydrocarbon oil having a flash point of not less than 100°F (38°C).

FUTURE ELECTRIC EQUIPMENT. Equipment or appliances necessary to support future all-electric space and water heating, cooking, or clothes drying.

PLUG-IN HYBRID ELECTRIC VEHICLE. An *electric vehicle* having a second source of motive power.

RESIDENTIAL BUILDING. For this code, one- and two-family dwellings and townhouses as defined in the International Residential Code.

SOLAR-READY ZONE. A section or sections of the roof or building overhang designated and reserved for future installation of a solar photovoltaic system or solar thermal system.

Chapter 3 Electric Ready

PART 1 RESIDENTIAL ELECTRIC READY

SECTION RE301 SCOPE

RE301.1 General. These provisions shall be applicable for all new buildings, and major renovations and additions.

SECTION RE302 ADDITIONAL ELECTRIC INFRASTRUCTURE

RE302.1 Additional Electric Infrastructure. *Combustion equipment* in *residential buildings* must meet the requirements of Sections **RE302.2** through **RE302.6**.

Exceptions:

1. Interior fireplaces that do not serve as a primary source of heating.

2. Exterior fireplaces and firepits.

RE302.2 Combustion Equipment. *Combustion equipment* shall be provided with all of the following:

1. A dedicated, appropriately phased branch circuit sized to accommodate *future electric equipment* or appliances to serve a comparable capacity to meet the heating load.

2. An electric receptacle or junction box that meets the requirements of Section **RE302.5**, and is connected to the electrical panel through the branch circuit. Each electrical receptacle or junction box shall have reasonable access to the *combustion equipment* or dedicated physical space for *future electric equipment* with no obstructions other than the current *combustion equipment*.

3. Where *combustion equipment* is used for space or water heating, dedicated physical space shall be provided for *future electric equipment,* including an electric resistance backup coil for ducted systems, if applicable.

Exception: Dwelling units with installed air conditioning systems are not required to provide additional dedicated physical space for an outdoor heat pump.

RE302.3 Electrical Panel Space. The electrical panel shall have a reserved space for a minimum two-pole circuit breaker for each branch circuit provided for *future electric equipment* or appliances.

RE302.4 Labeling. The junction box or receptacle and the dedicated circuit breaker space serving *future electric equipment* or appliances in the electrical panel shall be labeled for their intended use.

RE302.5 Adjacency. The electrical receptacle or junction box must be provided within 3 feet of the *combustion equipment* or appliances, or within 3 feet of the dedicated physical space for *future electric equipment* or appliances.

Exception: For *combustion equipment* dedicated to space or water heating, the electrical receptacle or junction box shall be located not more than 6 feet from the *combustion equipment* or the dedicated physical space for *future electric equipment*.

RE302.6 Condensate Drain. Where *combustion equipment* for space heating and water heating is installed, a location shall be provided for condensate drainage.

PART 2 COMMERCIAL ELECTRIC READY

SECTION CE301 SCOPE

CE301.1 General. These provisions shall be applicable for all new buildings, additions, and *first tenant finish* permits.

CE301.1.1 First Tenant Finishes. In the case that a *first tenant finish* to a commercial *core and shell* building or unfinished space is credited towards meeting the requirements of this Chapter, the *code official* shall not issue a

Certificate of Occupancy to the tenant until the requirements of Section **CE302** are met.

SECTION CE302 ADDITIONAL ELECTRIC INFRASTRUCTURE

CE302.1 Additional Electric Infrastructure. *Combustion equipment* in *commercial buildings* shall meet the electric infrastructure requirements of Sections **CE302.2** or **CE302.3**.

Exceptions:

1. Interior fireplaces that do not serve as a primary source of heating.

2. Exterior fireplaces and fire pits.

3. Additions to buildings that do not provide new space-heating equipment will not be required to provide additional electrical infrastructure to the existing space-heating equipment.

CE302.2 Commercial Buildings Less than 10,000 sq. ft. and all R-Occupancies. *Commercial buildings* that have a gross floor area of less than 10,000 sq. ft., and all R occupancies of any size, shall comply with Sections **CE302.2.1** through **CE302.2.5**.

CE302.2.1 Combustion Equipment. *Combustion equipment* shall be provided with all of the following:

1. A dedicated, appropriately phased branch circuit sized to accommodate *future electric equipment* or appliances to serve a comparable capacity to meet the heating load.

2. An electric receptacle or junction box that meets the requirements of Section **CE302.2.5**, and is connected to the electrical panel through the branch circuit. Each electrical receptacle or junction box shall have reasonable access to the *combustion equipment* or dedicated physical space for *future electric equipment* with no obstructions other than the current *combustion equipment*.

3. Where *combustion equipment* is used for space or water heating, dedicated space shall be provided for all *future electric equipment*, including an electric resistance backup coil for ducted systems if applicable.

Exception: Buildings with installed air conditioning systems are not required to provide additional dedicated physical space for an outdoor heat pump.

CE302.2.2 Electrical Panel Space. The electrical panel shall have reserved physical space for a minimum two-pole or three-pole circuit breaker for each branch circuit provided for *future electric equipment* or appliances. The physical space in the electrical panel for each circuit breaker shall be sized with sufficient breaker capacity to meet the electrical demand of the *future electric equipment* or appliance that is sized to serve a comparable capacity to meet the heating load.

CE302.2.3 Labeling. The junction box or receptacle and the dedicated circuit breaker space serving *future electric equipment* or appliances in the electrical panel shall be labeled for their intended use.

CE302.2.4 Adjacency. The electrical receptacle or junction box must be provided within 3 feet of the *combustion equipment* or appliances or within 3 feet of the dedicated physical space for *future electric equipment* or appliances.

Exception: For *combustion equipment* dedicated to space or water heating, the electrical receptacle or junction box shall be located not more than 6 feet from the *combustion equipment* or the dedicated physical space for *future electric equipment*.

CE302.2.5 Condensate Drain. Where *combustion equipment* dedicated to space heating and water heating is installed, a location shall be provided for condensate drainage.

CE302.3 Commercial Buildings 10,000 sq. ft. or Greater. All *commercial buildings* that have a gross floor area of 10,000 sq. ft. or greater shall comply with the following requirements.

Exception: R-occupancies.

CE302.3.1 Combustion Equipment or Appliances. All *combustion equipment* shall be provided with the following:

1. A junction box that is located in the same physical space as the *combustion equipment* and is reasonably accessible, and that is connected to the electrical panel by continuous conduit and/or raceways.

2. Dedicated electrical panel space for an appropriately phased branch circuit sized to accommodate *future electric equipment* or appliances to serve a comparable capacity to meet the heating load.

3. Where *combustion equipment* is used for space and water heating, dedicated physical space shall be provided for all *future electric equipment*.

CE302.3.2 Electrical Panel Space. The electrical panel shall have reserved physical space for a minimum two-pole or three-pole circuit breaker for each branch circuit provided for *future electric equipment* or appliances. The physical space in the electrical panel for each circuit breaker shall be sized with sufficient breaker capacity to meet the electrical demand of the *future electric equipment* or appliance that is sized to serve a comparable capacity to meet the heating load.

CE302.3.3 Labeling. The dedicated circuit breaker space serving *future electric equipment* or appliances in the electrical panel shall be labeled ”For future electric equipment”.

CE302.3.4 Physical Space. Dedicated physical space shall be provided for additional electric equipment, including but not limited to transformers and cabinets, necessary for electrical service to *future electric equipment* or appliances.

Chapter 4 Solar Ready

PART 1 RESIDENTIAL SOLAR READY.

SECTION RS401 SCOPE.

RS401.1 General. These provisions shall be applicable for new buildings, and major renovations and additions.

SECTION RS402 SOLAR READY ZONE.

RS402.1 General. New *residential buildings* with not less than 600 square feet of roof area oriented between 110 degrees and 270 degrees of true north or that is a low sloped roof, shall comply with Sections **RS402.2** through **RS402.8**.

Exceptions:

1. New residential dwelling units with a permanently installed on-site renewable energy system that provides electricity to the dwelling unit's electrical system.

2. A building where all areas of the roof that would otherwise meet the requirements of Section **RS402** are in full or partial shade for more than 70 percent of daylight hours annually.

RS402.2 Construction Document Requirements for Solar-Ready Zone. Construction documents shall indicate the *solar-ready zone*.

RS402.3 Solar-Ready Zone Areas. The total *solar-ready zone* area for each dwelling unit shall be not less than 300 square feet exclusive of mandatory access or setback areas as required by the International Fire Code. The *solar-ready zone* shall be composed of areas not less than 5 feet in width and not less than 80 square feet exclusive of access or setback areas as required by the International Fire Code.

Exception: New townhouses three stories or less in height above grade plane and with a total floor area less than or equal to 2,000 square feet of conditioned space per townhouse unit shall have a *solar-ready zone* area of not less than 150 square feet.

RS402.4 Obstructions. *Solar-ready zones* shall be free from obstructions, including but not limited to, vents, chimneys, and roof-mounted equipment.

RS402.5 Shading. The *solar-ready zone* shall be set back from any existing or new permanently affixed object on the building or site that is located south, east, or west of the *solar-ready zone* a distance not less than two times the object's height above the nearest point on the roof surface. Such objects include, but are not limited to, taller portions of the building itself, parapets, chimneys, antennas, signage, rooftop equipment, trees, and roof plantings either existing at the time of permit application or planned for on the construction documents.

RS402.6 Roof Load Documentation. The structural design loads of roof dead load and roof live load shall be clearly indicated on the construction documents.

RS402.7 Interconnection Pathway. Construction documents shall indicate at least one potential pathway for routing of conduit and/or raceway from the *solar-ready zone* to the electrical service panel and shall be labeled as "Potential Pathway" on the construction documents.

RS402.8 Electrical Service Reserved Space. The main electrical service panel shall have sufficient reserved space to allow the installation of a dual pole circuit breaker for future solar electric installation and shall be labeled "For Future Solar Electric." The reserved space shall be positioned at the opposite (load) end from the input feeder location or main circuit location.

RS402.9 Construction Documentation Certificate. A permanent certificate, indicating the *solar-ready zone* and other requirements of this Part, shall be posted near the electrical distribution panel, water heater, or other conspicuous location.

PART 2 COMMERCIAL SOLAR READY

SECTION CS401 SCOPE

CS401.1 General. These provisions shall be applicable for new buildings, and major renovations and additions.

SECTION CS402 SOLAR-READY ZONE

CS402.1 General. A *solar-ready zone* shall be located on the roof of all new *commercial buildings* that are oriented between 110 and 270 degrees of true north or have low-sloped roofs. *Solar-ready zones* shall comply with Sections **CS402.2** through **CS402.7**.

Exceptions:

1. A building with a permanently-installed, on-site renewable energy system that meets the following criteria.

a. The system produces the energy output equivalent to covering 40 percent of the net roof area with solar photovoltaic calculated as the horizontally projected gross roof area less the area covered by skylights, occupied roof decks, vegetative roof areas, and mandatory access or set back areas as required by the International Fire Code.

b. The system is located on the roof or overhang of the building or on the roof or overhang of another structure located within 250 feet of the building, on the building premises, on covered parking, or another *approved* location installed with the building project and under the same property ownership.

2. A building with a *solar-ready zone* that is shaded for more than 70 percent of daylight hours annually.

3. A building where a licensed design professional certifies that the incident solar radiation available to the building is not suitable for a *solar-ready zone*.

4. A building where a licensed design professional certifies that the *solar ready zone* area required by Section **CS402.3** cannot be met because of extensive rooftop equipment, skylights, vegetative roof areas, or other obstructions.

CS402.2 Construction Document Requirements for a Solar-Ready Zone. Construction documents shall indicate the *solar-ready zone*.

CS402.3 Solar-Ready Zone Area. The total *solar-ready zone* area shall not be less than 40 percent of the roof area calculated as the horizontally projected gross roof area less the area covered by skylights, occupied roof decks, vegetative roof areas, and mandatory access or set back areas as required by the International Fire Code. The *solar-ready zone* shall be a single area or smaller, separated sub-zone areas. Each sub-zone area shall be not less than 5 feet in width in the narrowest dimension.

The *solar-ready zone* shall be located on the roof or overhang of the building or on the roof or overhang of another structure located within 250 feet of the building, on the building premises, on covered parking, or another *approved* location installed with the building project and under the same property ownership.

CS402.4 Obstructions. *Solar-ready zones* shall be free from obstructions, including pipes, vents, ducts, HVAC equipment, skylights, and roof-mounted equipment.

CS402.5 Roof Loads and Documentation. The structural design loads for roof dead load and roof live load shall be indicated on the construction documents.

CS402.6 Interconnection Pathway. Construction documents shall indicate at least one potential pathway for routing of conduit and/or raceway from the *solar-ready zone* to an electrical service panel and shall be labeled as "Potential Pathway" on the construction documents.

CS402.7 Electrical Service Reserved Space. The main electrical service panel shall have a minimum bus bar rating of not less than 200 amps. The main electrical service panel shall have a reserved space to allow installation of a dual-pole circuit breaker for future solar electric. This space shall be labeled "For Future Solar Electric." The reserved space shall be positioned at the end of the panel that is opposite from the panel supply conductor connection.

PART 3 RESIDENTIAL SOLAR PANEL CAPACITY

SECTION RS410 SCOPE

RS410.1 General. These provisions shall be applicable for all new buildings, and major renovations and additions.

RS410.2 Electric Service Reserved Space. The main electrical service panel shall have sufficient reserved space to allow installation of a dual pole circuit breaker for future solar electric installation and shall be labeled "For Future Solar Electric." The reserved space shall be positioned at the opposite (load) end from the input feeder location or main circuit location.

Exception: A dwelling unit that already must comply with the solar ready provisions in Chapter 4 or that has a permanently installed on-site renewable energy system that provides electricity to the dwelling unit's electrical system.

PART4 COMMERCIAL SOLAR PANEL CAPACITY

SECTION CS410 SCOPE

CS410.1 General. These provisions shall be applicable for new buildings, and major renovations and additions.

CS410.2 Electric Service Reserved Space. The main electrical service panel shall have a minimum bus bar rating of not less than 200 amps. The main electrical service panel shall have sufficient reserved space to allow installation of a dual pole circuit breaker for future solar electric installation and shall be labeled "For Future Solar Electric." The reserved space shall be positioned at the opposite (load) end from the input feeder location or main circuit location.

Exception: A building that already must comply with the solar ready provisions in Chapter 4 or that has a permanently installed on-site renewable energy system that provides electricity to the building's electrical system.

Chapter 5 Electric Vehicle Ready

PART 1 RESIDENTIAL ELECTRIC VEHICLE READY

SECTION RV501 SCOPE

RV501.1 General. These provisions shall be applicable for all new buildings, and major renovations and additions.

SECTION RV502 ELECTRIC VEHICLE POWER TRANSFER INFRASTRUCTURE

RV502 Electric Vehicle Power Transfer Infrastructure. New vehicle parking spaces for *residential buildings* shall be provided in accordance with Sections **RV502.1** and **RV502.3**.

RV502.1 One- and Two-family Dwellings and Townhouses. Each dwelling unit with a dedicated attached or detached garage or other onsite designated parking provided for the dwelling unit shall be provided with one *EV ready space* per dwelling unit.

RV502.2 EV Ready Spaces. Each *EV ready space* shall have a branch circuit that complies with all of the following:

1. Terminates at a receptacle, located within 3 feet of each *EV ready space* it serves. *EV ready* includes two adjacent parking spaces if the receptacle for the electrical facilities of this section is installed adjacent to and between both parking spaces.

2. Has a minimum circuit capacity of 8.3 kVA (40A 208/240V).

3. The electrical panel, electrical distribution equipment directory, and all outlets or enclosures shall be marked "For future electric vehicle supply equipment".

Exception: A receptacle need not be provided if a hard-wired *EVSE* is installed.

RV502.3 Identification. Construction documents shall designate the *EV ready space* and indicate the locations of raceway and/or conduit and the termination points serving them. The circuits or spaces reserved in the electrical panel for *EV ready spaces* shall be clearly identified in the panel or subpanel directory.

PART 2 COMMERCIAL ELECTRIC VEHICLEREADY

SECTION CV501 SCOPE

CV501.1 General. These provisions shall be applicable for all new buildings, and major renovations and additions.

SECTION CV502 ELECTRIC VEHICLE POWER TRANSFER INFRASTRUCTURE

CV502 Electric Vehicle Power Transfer Infrastructure. Where new parking is provided for *commercial buildings,* it shall be provided with *electric vehicle* power transfer infrastructure in compliance with Sections **CV502.1** through **CV502.9**.

CV502.1 Quantity. The number of required *EVSE installed spaces, EV ready spaces, EV capable spaces,* and *EV capable light spaces* shall be determined in accordance with this Section and **Table CV502.1** based on the total number of provided vehicle parking spaces and shall be rounded up to the nearest whole number. This includes all covered parking under carports or detached garages.

CV502.1.1 Where more than one parking lot is provided on a building site, the number of provided vehicle parking spaces required to have *EV* power transfer infrastructure shall be calculated separately for each parking lot.

CV502.1.1.1 R-2 Occupancies, as defined in Chapter 3 of the International Building Code, shall use the total parking requirement for the entire development to determine the *EV* power transfer infrastructure requirements using **Table CV502.1**.

CV502.1.2 For *commercial buildings* that install a *DCFC EVSE,* each *DCFC EVSE* installed shall be permitted to be substituted for other space types as follows:

1. *Commercial buildings* other than R-2 Occupancies shall be permitted to substitute up to 10 spaces when the building provides a minimum of 20 percent of parking spaces as a combination of *EV Capable*, *EV ready*, or *EVSE installed spaces*.

2. R-2 Occupancies shall be permitted to substitute up to 5 spaces when the building provides a minimum of 60 percent of parking spaces as a combination of *EV Capable light, EV Capable, EV ready*, or *EVSE installed spaces*.

CV502.1.3 *EVSE installed spaces* that exceed the minimum requirements of this section are permitted to be used to meet minimum requirements for *EV ready spaces*, *EV capable spaces*, and *EV capable light spaces*.

CV502.1.4 E*V ready spaces* that exceed the minimum requirements of this section are permitted to be used to meet minimum requirements for *EV capable spaces* and *EV capable light spaces*.

CV502.1.5 *EV capable spaces* that exceed the minimum requirements of this section are permitted to be used to meet the minimum requirements for *EV capable light spaces*.

CV502.1.6 All attached garages with direct connection to a dwelling unit will be required to have one *EV ready space*.

Table CV502.1: EV Power Transfer Infrastructure Requirements

Building Type/Space Type	***EVSE Installed Space***	***EV Ready Space***	***EV Capable Space***	***EV Capable Light Space***
All *commercial buildings*, except for R-2 occupancies, with 10 or less parking spaces.	0	2 spaces	0	0

***Commercial buildings*, except for R-2 occupancies, with greater than 10 parking spaces.**	2% of spaces	8% of spaces	10% of spaces	10% of spaces
R-2 occupancies with 10 or less parking spaces	0	15% of spaces	10% of spaces	10% of spaces
R-2 occupancies with greater than 10 parking spaces.	5% of spaces	15% of spaces	10% of spaces	30% of spaces

CV502.2 EV Capable Light Spaces. Each *EV capable light space* shall comply with all of the following:

1. A continuous raceway and/or conduit shall be installed between a suitable electrical panel or other electrical distribution equipment and terminate within 3 feet of the *EV capable light space* and shall be capped. *EV capable light* includes two adjacent parking spaces if the raceway and/or conduit terminates adjacent to and between both parking spaces.

2. Installed raceway and/or conduit shall be sized and rated to supply a minimum of 208 volts and a minimum of 40-ampere rated circuits.

3. Dedicated physical space to accommodate all equipment necessary for electrical service to future *EVSE*.

4. The routing of the raceway and/or conduit must be noted on the construction documents and the raceway shall be permanently and visibly marked "EV CAPABLE" at the load center and termination point locations.

CV502.3 EV Capable Spaces. Each *EV capable space* shall comply with all of the following:

1. A continuous raceway and/or conduit shall be installed between a suitable electrical panel or other electrical distribution equipment and terminate within 3 feet of the *EV capable space* and shall be capped. *EV capable* includes two adjacent parking spaces if the raceway and/or conduit terminates adjacent to and between both parking spaces.

2. The installed raceway and/or conduit shall be sized and rated to supply a minimum of 208 volts and a minimum of 40-ampere rated circuits.

3. The electrical panel or other electrical distribution equipment to which the raceway and/or conduit connects shall have sufficient dedicated space and spare electrical capacity to supply a minimum of 208 volts and a minimum of 40-ampere rated circuits.

4. The termination point of the conduit and/or raceway and the electrical distribution equipment directory shall be marked: "For future electric vehicle supply equipment (EVSE)."

5. Reserved capacity shall be no less than 8.3 kVA (40A 208/240V) for each *EV capable space*.

CV502.4 EV Ready Spaces. Each *EV ready space* shall have a branch circuit that complies with all of the following:

1. Terminates at a receptacle or junction box located within 3 feet of each *EV ready space* it serves. *EV ready* includes two adjacent parking spaces if the receptacle is installed adjacent to and between both parking spaces.

2. Has a minimum circuit capacity of 8.3 kVA (40A 208/240V).

3. The electrical panel, electrical distribution equipment directory, and all outlets or enclosures shall be marked "For future electric vehicle supply equipment (EVSE)."

CV502.5 Electric Vehicle Supply Equipment (EVSE). All *EVSE* shall meet all of the following requirements:

1. The installed *EVSE* shall meet one of the following requirements:

a. A power capacity of at least 6.2 kVa (or 30A at 208/240V) and has the ability to connect to the internet.

b. An inductive charging system for battery-powered *electric vehicles* that:

i. Is ENERGY STAR certified; and

ii. Has the ability to connect to the internet.

2. An *electric vehicle* charging system shall be wall-mounted or pedestal style and may provide multiple cords to connect with *electric vehicles*.

3. An *electric vehicle* charging system shall be listed and labeled for *EV* charging and must comply with the current version of Article 625 of the National Electrical Code.

CV502.6 EVSE Installed Spaces. An installed *EVSE* with multiple output connections shall be permitted to serve multiple *EVSE installed spaces*. Each *EVSE* installed serving either a single *EVSE installed space* or multiple *EVSE installed spaces*, shall comply with all of the following:

1. Have a minimum charging rate in accordance with Section **CV502.7**.

2. Be located within 3 feet of each *EVSE installed space* it serves.

3. Be installed in accordance with Section **CV502.8**.

4. Have a minimum circuit capacity of 8.3 kVA (40A 208/240V).

5. Must meet the requirements of Section **CV502.5**.

CV502.7 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 installed spaces* and controlled by an energy management system providing load management, be capable of simultaneously sharing each *EVSE installed space* at a minimum charging rate of no less than 3.3 kVA.

CV502.8 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. When serving an accessible parking space, *EVSE* shall be accessible in accordance with the International Building Code Chapter 11.

CV502.9 Identification. Construction documents shall designate all *EVSE installed spaces, EV ready spaces, EV capable spaces,* and *EV capable light spaces,* and indicate the locations of raceway and/or conduit and termination points serving them. The circuits or spaces reserved for *EVSE installed spaces, EV ready spaces,* and *EV capable spaces* shall be clearly identified in the panel or subpanel directory. The raceway and/or conduit for *EV ready spaces, EV capable spaces* and *EV capable light spaces* shall be clearly identified at both the panel or subpanel and the termination point at the parking space.

11.5 The National Electrical Code, 2023 Edition

The 2023 Edition of NFPA 70, National Electrical Code, ("NEC") published by the National Fire Protection Association, 1 Batterymarch Park, Quincy, Massachusetts, 02169-7471, is hereby adopted by reference as the Town of Berthoud with the additions, deletions, insertions and changes as follows:

"Violation of the provisions of this code, as adopted in this ordinance, may be punished in accordance with Section 20.2 of the Berthoud municipal code in addition to any relief at equity to prevent continuing violation."

11.10 International Plumbing Code

The International Plumbing Code 2024 Edition as published by the International Code Council, 4051 West Flossmoor Road, Country Club Hills, IL 60478, Chapters 1 through 13 inclusive, is hereby adopted by reference as the Town of Berthoud Plumbing Code as if fully set out in this ordinance with the additions, deletions, insertions and changes as follows.

IPC Section 101.1 (Title) is amended by the addition of the term "Town of Berthoud" where indicated.

IPC Section 103.1 IPC Section 103.1 (Creation of Agency) is amended by adding “Town of Berthoud” where indicated.

IPC Section 305.4.1 (Sewer depth) is amended by filling in both areas where indicated to read "12 inches (305 mm)".

IPC Section 312.3 (Drainage and vent air test) is amended by the deletion of the first sentence.

IPC Section 903.1.1 (Roof extension) is amended by inserting the number "12" (152.4 mm) where indicated in the second sentence.

"Violation of the provisions of this code, as adopted in this ordinance, may be punished in accordance with Section 20.2 of the Berthoud municipal code in addition to any relief at equity to prevent continuing violation."

11.16 International Mechanical Code

The International Mechanical Code 2024 Edition as published by the International Code Council, 4051 West Flossmoor Road, Country Club Hills, IL 60478, Chapters 1 through 15 inclusive, is hereby adopted by reference as the Town of Berthoud Mechanical Code as if fully set out in this ordinance with the additions, deletions, insertions and changes as follows.

IMC Section 101.1 (Title) is amended by the addition of the term "Town of Berthoud" where indicated.

IMC Section 101.1 IMC Section 101.1 (Title) is amended by the addition of the term “Town of Berthoud” where indicated.

"Violation of the provisions of this code, as adopted in this ordinance, may be punished in accordance with Section 20.2 of the Berthoud municipal code in addition to any relief at equity to prevent continuing violation."

11.17 International Fuel Gas Code

The International Fuel Gas Code 2024 Edition as published by the International Code Council, 4051 West Flossmoor Road, Country Club Hills, IL 60478 , Chapters 1 through 8 inclusive, is hereby adopted by reference as the Town of Berthoud Fuel Gas Code as if fully set out in this ordinance with the additions, deletions, insertions and changes as follows.

IFGC Section 101.1 (Title) is amended by the addition of the term "Town of Berthoud" where indicated.

IFGC Section 103.1 IFGC Section 103.1 (Creation of Agency) is amended by adding “Town of Berthoud” where indicated.

IFGC Section 404.12 (Minimum burial depth) is amended by the addition of the following: All plastic fuel gas piping shall be installed a minimum of 18 inches (457 mm) below grade.

IFGC Section 404.12.1 (Individual outside appliances) is amended by the deletion of this section in its entirety.

IFGC Section 406.4.1 (Test pressure) is amended by replacing 3 psig with 10 psig.

"Violation of the provisions of this code, as adopted in this ordinance, may be punished in accordance with Section 20.2 of the Berthoud municipal code in addition to any relief at equity to prevent continuing violation."

11.18 Graywater Systems—Control Regulation 86

Requirement. Graywater systems shall comply with the minimum requirements of Colorado State Regulation 86, as well as any and all other applicable state and local requirements.

The Town of Berthoud is the local agency responsible for oversight and implementation of all graywater regulatory activities in the Town limits of Berthoud as required by Colorado State Regulation 86.

The Town of Berthoud's graywater control program meeting the requirements of Colorado State Regulation 86 is as follows:

The Town of Berthoud shall determine any graywater system fee structure, maintain a record of the locations where graywater systems are installed, and review and approve design criteria for any system consistent with Colorado State Regulation 86. Graywater systems are only allowed in new homes where plumbing systems have been designed for the graywater system.

Upon issuance of a certificate of occupancy and the sale of a new home, the legal responsibility including operation and maintenance of approved graywater recycling systems transfers similar to other residential household appliances to the homeowner. The transfer of property ownership must include the transfer of records and operating manuals related to the graywater system and is accomplished by paper or electronic records transferring with a graywater system.

Appropriate graywater space allocation is required for graywater systems and system location must be identified on permit drawings. These drawings should indicate all plumbing connections to ensure compliance with local code requirements. Graywater system specifications are to be included with permit drawings. In the process of inspecting for the certificate of occupancy, if an inspection is adequately conducted and the inspector is knowledgeable of the NSF 350 Standards, Colorado State Regulation 86, and the applicable plumbing code, the final inspection is used to verify that a graywater system meets regulatory requirements.

"Violation of the provisions of this code, as adopted in this ordinance, may be punished in accordance with Section 20.2 of the Berthoud municipal code in addition to any relief at equity to prevent continuing violation."

11.19 International Swimming Pool and Spa Code

The International Swimming Pool and Spa Code. 2024 Edition as published by the International Code Council, 4051 West Flossmoor Road, Country Club Hills, IL 60478, Chapters 1 through 11 inclusive, is hereby adopted by reference as the Town of Berthoud Swimming Pool and Spa Code as if fully set out in this ordinance with the additions, deletions, insertions and changes as follows.

ISPSC Section 103.1 ISPSC Section 103.1 (Creation of Agency) is amended by adding “Town of Berthoud” where indicated.

"Violation of the provisions of this code, as adopted in this ordinance, may be punished in accordance with Section 20.2 of the Berthoud municipal code in addition to any relief at equity to prevent continuing violation."

11.20 International Property Maintenance Code

The International Property Maintenance Code, 2024 Edition as published by the International Code Council, 4051 West Flossmoor Road, Country Club Hills, IL 60478, Chapters 1 through 8 inclusive, is hereby adopted by reference as the Town of Berthoud Property Maintenance Code as if fully set out in this ordinance with the additions, deletions, insertions and changes as follows.

11.20-1 Amendments

IPMC Section 101.1 IPMC Section 101.1 (Title) is amended by the addition of the term “Town of Berthoud” where indicated.

IPMC Section 102.3 IPMC Section 102.3 (Application of Other Codes) is amended by the deletion of the last paragraph.

IPMC Section 103.1 IPMC Section 103.1 (Creation of Agency) is amended by the addition of the term “Town of Berthoud” where indicated.

IPMC Section 106.1 IPMC Section 106.1 (General) is amended by deleting the second paragraph and inserting;

“The members of the Board of Appeals shall be comprised of the members of the Town Council”

IPMC Section 106.3 IPMC Section 106.3 (Qualifications) is amended by deleting the section in its entirety.

IPMC Section 302.3 IPMC Section 302.3 (Sidewalks and Driveways) is amended by the deletion of this section in its entirety.

IPMC Section 302.4 IPMC Section 302.4 (Weeds) is amended by deleting this section in its entirety.

IPMC Section 302.8 IPMC Section 302.8 (Motor Vehicles) is amended by deleting this section in its entirety.

IPMC Section 304.3 IPMC Section 304.3 (Premises Identification) is amended by deleting the 4th paragraph and replacing with “Numbers shall be a minimum 4 inches in height with a minimum stroke width of .5 inch.”

IPMC Section 304.14 IPMC Section 304.14 (Insect Screens) is amended by the deletion of this section in its entirety.

IPMC Section 308 IPMC Section 308 (Rubbish and Garbage) is amended by the deleting this section in its entirety.

IPMC Section 309 IPMC Section 309 (Pest Elimination) is amended by the deletion of this section in its entirety.

11.20-2 Penalties for Violation of International Property Maintenance Code

(a) Any person who violates a provision of this code or fails to comply with any of the requirements thereof shall be subject to penalties as set forth in Section 20.2 of the Municipal Code of the Town of Berthoud. Each day that a violation continues after due notice has been served shall be deemed a separate offense. Such violation is also deemed a nuisance and may be abated as such.

(b) The imposition of additional penalties shall not preclude the Town from instituting an appropriate action for injunction, mandamus or abatement to prevent, enjoin, abate or remove any unlawful act, erection, construction, reconstruction, alteration, remodeling or use, or to require the removal or termination of the unlawful occupancy of the building or structure in violation of the provisions of this code or of the order or direction made pursuant thereto.

11.20-3 Notice of Violation of International Property Maintenance Code

When the code official determines that there has been a violation of this code or has grounds to believe that a violation has occurred, notice shall be given in the manner prescribed below. Failure to provide notice shall not constitute waiver of the violation by the Town.

(a) Form. Notice shall be in accordance with the following:

1. Be in writing.
2. Include a description of the real estate sufficient for identification.
3. Include a statement of the violation or violations and why the notice is being issued.
4. Include a correction order allowing a period of 10 days from the date of the receipt of the notice in which to correct or appeal the alleged violations before further enforcement action shall be taken.
5. Inform the property owner or owner's authorized agent of the right to appeal.

(b) Method of Service. Such notice shall be deemed to be properly served where a copy thereof is served in accordance with one of the following methods:

1. A copy is delivered personally.
2. A copy is sent by certified or registered mail addressed to the owner at the last known address, as determined by the address on file in the records of the applicable County Assessor's office, with the return receipt requested.
3. A copy is posted in a conspicuous place in or about the structure affected by such notice.
4. A copy is delivered in any other manner prescribed by local law.