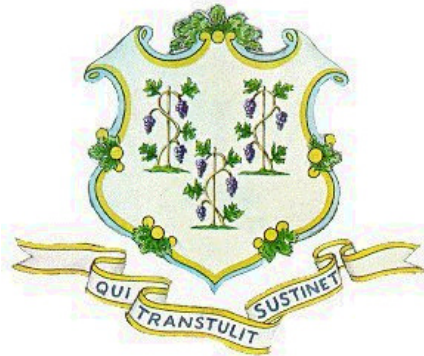




State of Connecticut

Substantial Amendment to the

**2016-2017 Action Plan
for
Housing and Community Development
for
National Housing Trust Fund
Allocation Plan**



Submitted to the

U.S. Department of Housing and Urban Development

by the
State of Connecticut
Revised November 2016

**National Housing Trust Fund -Allocation Plan
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I. EXECUTIVE SUMMARY

Overview

This Substantial Amendment to the 2016-2017 Annual Action Plan for Housing and Community Development (“Substantial Amendment”) for the National Housing Trust Fund (“NHTF”) is the first amendment to the state’s 2016-2017 Annual Action Plan for Housing and Community Development. The 2016-2017 Annual Action Plan For Housing and Community Development (“Action Plan”) is the second action plan under the State of Connecticut’s 2015-2019 Consolidated Plan for Housing and Community Development (“ConPlan”), the five-year plan addressing Connecticut’s housing and community development needs. The state submits the ConPlan to the U.S. Department of Housing and Urban Development (HUD) in order to be eligible to receive funding under the HOME Investment Partnerships (HOME), Small Cities Community Development Block Grant (SC/CDBG), Emergency Solutions Grant (ESG), Housing Opportunities for Persons with AIDS (HOPWA), and with this Substantial Amendment, the NHTF Program. The program year for the annual action plan is based on the state fiscal year, July 1 - June 30. The 2016-2017 Action Plan is for the state fiscal year July 1, 2016 to June 30, 2017.

The NHTF program was created by section 1131 of the Housing and Economic Recovery Act of 2008 (Public Law 110-289). Section 1131 amended the Federal Housing Enterprises Financial Safety and Soundness Act of 1992 (12 U.S.C. 4501 et seq.) to add a new section 1337 “Affordable Housing Allocation” and a new section 1338, “Housing Trust Fund.” NHTF provides formula grants to states to increase and preserve the supply of decent, safe, and sanitary affordable housing for extremely low-income and very low-income households, including homeless families.

HUD published an interim rule for NHTF (Interim Rule) on January 30, 2015. The rule, codified at 24 CFR Part 93, establishes both the program requirements and the formula for allocating grant funds to states.

The NHTF allocation plan is an annual submission to HUD that describes how the state will distribute the NHTF funds, including how it will use the funds to address its priority housing needs. The allocation plan also describes what activities may be undertaken with NHTF funds and how recipients and projects will be selected. This Substantial Amendment includes the requirements and criteria for the selection of applicants to meet the required funding priorities, as follows:

- Geographic Diversity;
- Applicant Capacity;
- Project-based Rental Assistance;
- Duration of Affordability Period;
- Priority Housing Needs of the State;
- Leveraging;
- Eligible Activities;
- Eligible Recipients;
- Performance Goals and Benchmarks;
- Maximum Per-unit Development Subsidy Limits; and
- Rehabilitation Standards.

The Action Plan, including this Substantial Amendment, provides a plan for expending FY 2016-17 funds for the following programs:

Table 1: Anticipated State and Federal Funding For Development and Housing Support			
Housing (DOH)	State FY 2016-17	HUD FY 2016-17	Total
HOME	\$ 0	\$ 6,570,671	\$ 6,570,671
SC/CDBG	\$ 0	\$ 12,162,864	\$ 12,162,864
Affordable Housing (Flex)	\$ 140,000,000	\$ 0	\$ 140,000,000
Energy Conservation Loan Program	\$ 0	\$ 0	\$ 0
Subsidized Assist Living Demonstration	\$ 2,198,146	\$ 0	\$ 2,198,146
Elderly Rental Registry & Counselor	\$ 1,054,087	\$ 0	\$ 1,054,087
Fair Housing	\$ 670,000	\$ 0	\$ 670,000
Housing Assistance and Counseling	\$ 369,376	\$ 0	\$ 369,376
Elderly/Congregate Rental Assistance	\$ 2,017,778	\$ 0	\$ 2,017,778
Congregate Operating Subsidy	\$ 7,517,798	\$ 0	\$ 7,517,798
Tax Abatement	\$ 1,087,450	\$ 0	\$ 1,087,450
Housing Trust Fund (State)	\$ 15,000,000	\$ 0	\$ 15,000,000
National Housing Trust Fund (Federal)	\$ 0	\$ 3,000,000	\$ 3,000,000
TOTAL	\$ 169,914,635	\$ 21,733,535	\$ 191,648,170

Source: DOH/OPM

Performance

The ConPlan is a five-year strategic plan that examines the housing market, describes the housing needs of extremely low-, low- and moderate-income residents, outlines strategies to meet these needs and lists all resources available to implement those strategies, and outlines goals, objectives and measures. The ConPlan sets a unified vision, long-term strategies and short-term action steps to meet priority needs.

The Consolidated Annual Performance Evaluation Report (CAPER) is the annual report submitted to HUD that details the progress DOH has made in carrying out the ConPlan and the annual Action Plan provisions with respect to the federal CPD formula grant programs for a given program year. The CAPER describes resources made available, the investment of those resources, the amount and source of leveraged funds, the source and use of program income, geographic distribution and location of investments, and the number of families and persons assisted and actions taken to affirmatively further fair housing. The CAPER is due within 90 days after the end of the state’s program year.

The most recent CAPER was submitted to HUD on 9/15/15. It contained performance data for the annual Action Plan program year ending June 30, 2015 and can be accessed on DOH’s website, www.ct.gov/doh, under Publications. It is expected that the CAPER containing performance data for the annual Action Plan for the program year ending June 30, 2016 with regard to the Small Cities Community Development Block Grant (SC/CDBG), HOME Investment Partnerships (HOME), Emergency Solutions Grant (ESG), and Housing Opportunities for Persons with AIDS (HOPWA) Programs will be submitted to HUD in September 2016.

Summary of federal funding anticipated for FY 2016-17:

Small Cities Community Development Block Grant (SC/CDBG)	\$ 12,162,864
HOME Investment Partnerships (HOME)	\$ 6,570,671
Emergency Solutions Grant (ESG)	\$ 2,179,417
Housing Opportunities for Persons with AIDS (HOPWA)	\$ 218,321
National Housing Trust Fund (NHTF)	\$ 3,000,000

This Substantial Amendment has been prepared per the federal NHTF allocation for Connecticut being funded at the State minimum allocation of \$3,000,000. These NHTF funds are subject to availability from the federal government. Although we do not currently anticipate any change, in the event that anticipated funding is reduced or increased, funds will be distributed in accordance with this Substantial Amendment. An increase in funding would simply allow more activities to be funded while a decrease in funding would require a reduction in funded activities.

Objectives and Outcomes

In this Substantial Amendment we have outlined the state’s proposed accomplishments for program year 2016-2017 based on the performance measurement system presented in the

2015-2019 ConPlan and the Action Plan which is consistent with HUD's Notice of Outcome Performance Measurement System for Community Planning and Development Formula Grant Programs published in the Federal Register on March 7, 2006. Please refer to "Section V. Program Activities, Sub-section K. Performance Measurement" of the Action Plan for more detail regarding those objectives and outcomes. It is expected that the CAPER containing performance data for the 2015-2016 Annual Action Plan program year with regard to the Small Cities Community Development Block Grant (SC/CDBG), HOME Investment Partnerships (HOME), Emergency Solutions Grant (ESG), and Housing Opportunities for Persons with AIDS (HOPWA) Programs will be submitted to HUD in September 2016.

Citizen Participation

In regard to Connecticut's Citizen Participation Plan, when DOH solicited public input into the 2016-2017 Annual Action Plan for Housing and Community Development, we included the opportunity for people to provide input on the NHTF during the citizen participation process. At that time, DOH did not receive comments or feedback regarding the NHTF. NHTF formula allocations and guidance on the required content of the allocation plan had not been published at that time. As a result, the State of Connecticut developed this Substantial Amendment.

DOH held on July 18, 2016, one Public/Community Partner's Meeting with public and private housing (and related) agencies to: 1) solicit input into the development of the Substantial Amendment and 2) solicit feedback and comments on the drafted sections of the Substantial Amendment. Legal notice for the public meeting was published in two newspapers across the state, including one in Spanish. The Legal Notices were also posted on DOH's website, forwarded to all 169 municipal chief elected officials, all public housing authorities and the regional planning organizations (new councils of government). An email blast containing the Legal Notice was distributed to our Community Partners, with a request to further disseminate the Notice to their constituency.

DOH also solicited input on the draft Substantial Amendment through a 30-day public comment period from Thursday, July 7, 2016 to Monday, August 8, 2016. The legal notice and related documents were available on DOH's website. All comments received were summarized and responded to in Attachment A of this document.

Other Outreach

There are other ways in which DOH gathered information and input on what needs to consider in developing the Action Plan and this Substantial Amendment. For example, there are meetings of approximately 70 state boards and commissions throughout the year that the Commissioner of DOH or designated staff (on behalf of the Commissioner) attends. Some of the more relevant commissions include the CT BOS/CoC Steering Committee; the Homeless Management Information System (HMIS) Steering Committee; CT Opening Doors Steering Committee; CT Opening Doors- Crisis Re-tooling Workshop; CT Opening Doors- Standards subcommittee; Performance Measurement Committee and the Interagency Council for Supportive Housing and Homelessness, and the Interagency Committee on Affordable Housing.

II. INTRODUCTION

This Substantial Amendment to the 2016-2017 Annual Action Plan for Housing and Community Development (“Substantial Amendment”) for the National Housing Trust Fund (“NHTF”) is the first amendment to the state’s 2016-2017 Annual Action Plan for Housing and Community Development. The 2016-2017 Annual Action Plan For Housing and Community Development (“Action Plan”) is the second action plan under the State of Connecticut’s 2015-2019 Consolidated Plan for Housing and Community Development (“ConPlan”), the five-year plan addressing Connecticut’s housing and community development needs. The state submits the ConPlan to the U.S. Department of Housing and Urban Development (HUD) in order to be eligible to receive funding under the HOME Investment Partnerships (HOME), Small Cities Community Development Block Grant (SC/CDBG), Emergency Solutions Grant (ESG), Housing Opportunities for Persons with AIDS (HOPWA), and with this Substantial Amendment, the NHTF Program. The program year for the annual action plan is based on the state fiscal year, July 1 - June 30. The 2016-2017 Action Plan is for the state fiscal year July 1, 2016 to June 30, 2017.

References to sections of the ConPlan are made throughout this document. Not all of these sections are duplicated within this document. The ConPlan and Action Plans are available from the Connecticut Department of Housing (“DOH”) and can be viewed or downloaded by visiting the Publications section of the DOH’s website at www.ct.gov/DOH.

HUD published an interim rule for NHTF (Interim Rule) on January 30, 2015. The rule, codified at 24 CFR Part 93, establishes both the program requirements and the formula for allocating grant funds to states. The activities, programs and resources discussed in this Substantial Amendment will be administered by DOH.

The NHTF allocation plan (this Substantial Amendment) is an annual submission to HUD that describes how the state will distribute the NHTF funds, including how it will use the funds to address its priority housing needs. The allocation plan also describes what activities may be undertaken with NHTF and how recipients and projects will be selected.

This Substantial Amendment includes the following requirements and criteria for the selection of applicants to meet the following required funding priorities:

- Geographic Diversity – The NHTF allocation plan must provide priority for funding based on geographic diversity, as defined by the state. The state’s geographic

distribution priorities must be consistent with the state's certification that it will affirmatively further fair housing and any applicable Analysis of Impediments to Fair Housing Choice.

- Applicant Capacity – The applicant's ability to obligate NHTF funds and undertake eligible activities in a timely manner.
- Project-based Rental Assistance – The NHTF allocation plan must include a funding priority that considers the extent to which the project has federal, state, or local project-based rental assistance so that rents are affordable to extremely low-income families.
- Duration of Affordability Period – In accordance with 24 CFR 93.302(d) (citations refer to Section 24 of the CFR unless otherwise stated), all NHTF units in rental housing projects, must have affordability requirements for a minimum of 30 years. The funding priority in the NHTF allocation plan should consider how project underwriting supports the financial feasibility of the project beyond the required 30-year period.
- Priority Housing Needs of the State – The plan must provide priority for funding based on the merits of the application in meeting the priority needs established by the state.
- Leveraging – The priorities must include the extent to which the application makes use of non-federal funding sources.
- Eligible Activities – If the state plans to select applications submitted by eligible recipients, the NHTF allocation plan must require the application to describe the eligible activities to be conducted with NHTF funds (as provided in 93.200) and contain a certification by the eligible recipient that NHTF –assisted units will comply with all NHTF requirements.
- Eligible Recipients – The NHTF allocation plan must describe eligibility requirements for recipients specified by the definition of recipient at 93.2).
- Performance Goals and Benchmarks – the NHTF allocation plan must establish the performance goals and benchmarks against which progress will be measured. The performance goals and measures must be consistent with the goals established in the affordable housing section of the strategic plan (91.315(b)(2)).
- Maximum Per-unit Development Subsidy Limits – The plan must establish the maximum per-unit development subsidy limit for housing assisted with NHTF funds, adjusted for the number of bedrooms and based upon the geographic location of the units. If the state chooses to use subgrantees, the subgrantees must use the maximum per-unit development subsidy amounts established the state.

- Rehabilitation Standards – The plan must include the state’s rehabilitation standards (required by 93.301(b)(1)) for the NHTF-assisted housing. The standards must be described in sufficient detail to determine the required rehabilitation work, including methods and materials.
- Summary of Public Comments - Comments made on Substantial Amendment and DOH responses.
- Applications for Assistance - HUD Form SF-424 for the NHTF.
- Certifications - General and program specific certifications as required by HUD.
- SF 1199 A – Direct Deposit (pending completion by bank)

III. CITIZEN PARTICIPATION

In regard to Connecticut's Citizen Participation Plan, when DOH solicited public input into the Action Plan, we included the opportunity for people to provide input on the NHTF during the citizen participation process. At that time, DOH did not receive comments or feedback regarding the NHTF. NHTF formula allocations and guidance on the required content of the allocation plan had not been published at that time. As a result, the State of Connecticut developed this Substantial Amendment. Input and citizen participation were accepted and were considered part of the Substantial Amendment process.

In accordance with the attached Citizen Participation Plan for the NHTF (see Attachment A-1), DOH solicited public input with the development of the Substantial Amendment. DOH held on July 18, 2016, one Public/Community Partner's Meeting with public and private housing (and related) agencies to: 1) solicit input into the development of the Substantial Amendment and 2) solicit feedback and comments on the drafted sections of the Substantial Amendment. Legal notice for the public meeting was published in two newspapers across the state including one in Spanish. The Legal Notices were also posted on DOH's web site, forwarded to all 169 municipal chief elected officials, all public housing authorities and the regional planning organizations (new councils of government). An email blast containing the Legal Notice was distributed to our Community Partners, with a request to further disseminate the Notice to their constituency.

DOH also solicited input on the draft Substantial Amendment through a 30-day public comment period from Thursday, July 7, 2016 to Monday, August 8, 2016. The legal notice and related documents were available on DOH's website. All comments received were summarized and responded to in Attachment A of this document.

A. *Outline of Activity for Public Hearings/Public Comment:*

See Attachment A-2

B. *Other Outreach*

There are other ways in which DOH gathers information and input on what needs to consider in developing the Action Plan. For example, there are meetings of approximately 70 state boards and commissions throughout the year that the Commissioner of DOH or designated staff (on behalf of the Commissioner) attends. Some of the more relevant commissions include the CT BOS/CoC Steering Committee; the Homeless Management

Information System (HMIS) Steering Committee; CT Opening Doors Steering Committee; CT Opening Doors- Crisis Re-tooling Workshop; CT Opening Doors- Standards subcommittee; Performance Measurement Committee and the Interagency Council for Supportive Housing and Homelessness, and the Interagency Committee on Affordable Housing.

IV. NATIONAL HOUSING TRUST FUND (NHTF)

A. Program Summary

The State of Connecticut will continue its effort to strengthen the abilities of state and local governments to expand and preserve the supply of decent, safe, sanitary, and affordable housing with the use of NHTF. All NHTF Program assisted rental units will meet all program guidelines for income eligibility and accessibility.

DOH will invest in the production of affordable housing through new construction or substantial rehabilitation only when it determines that the units produced will remain affordable for the minimum required time period under the NHTF. DOH, at its discretion, may extend the affordability period beyond the minimum required by the NHTF. DOH views the NHTF as primarily a production program meant to add units to the supply of affordable housing for extremely low-income (ELI) (with incomes not greater than 30 percent of area median income (AMI)) and very low-income (VLI) (with incomes not greater than 50 percent of AMI) households. DOH will use NHTF funds in combination with State Bond Funds, federal HOME, federal Section 811 PRA and other funds to develop/rehabilitate ELI housing. In accordance with the program guidelines, all of the NHTF funds received in the first year will support the creation, preservation, rehabilitation, or production of affordable rental housing for ELI persons or families.

DOH seeks to expand access to affordable housing through the utilization of partnerships with stakeholders and other funding organizations that leverage non-state resources for development or preservation of affordable housing.

B. FY 2016-17 Resource Allocation Plan for the NHTF Program

The FY 2016-17 HUD allocation to DOH for the NHTF is \$3,000,000. Funds are subject to availability from the federal government. If changes to this distribution become necessary, procedures outlined below will be observed in making those changes. For the first year in which NHTF funds are made available, DOH is required to spend NHTF funds on housing for ELI families or families with incomes at or below the poverty line, whichever is greater. In addition, administrative costs cannot exceed 10 percent of the annual grant. The amount of

program income is expected to be \$0 as the awards will be structured as non-interest-bearing loans or advances, deferred payment loans, or grants.

FY 2016-17 Allocation	\$3,000,000
State Administration (10%)	\$ 300,000
Program Allocation	<u>\$2,700,000</u>
Estimated Program Income	\$ 0
Allocation available for eligible activities	<u>\$2,700,000</u>

C. NHTF Distribution

NHTF funds will be distributed using the following criteria:

1. Eligible Recipients

Applications will only be accepted from eligible recipients which include: units of general local government (including other PJ's: Participating Jurisdictions), for-profit and nonprofit entities (including CHDO's and local housing authorities), and joint ventures among various types of entities.

Every contract for construction or substantial rehabilitation shall comply with state and federal labor standards. Furthermore, every contract for the construction or rehabilitation of housing that includes 12 or more NHTF -assisted units must comply with the Davis Bacon Act, 40 USC 276a – 276a-5.

Eligible recipients must meet the following thresholds:

- Must have completed at least one affordable housing project using state (Flex, State Housing Trust Fund) or Federal (HOME, LIHTC) funds on time and within budget.
- Must have completed at least one affordability project of a similar size and scope to the proposed NHTF activity.
- Must have sufficient financial capacity or access to appropriate capital to obligate NHTF funds.
- Must operate at least one affordable housing project in accordance with state or federal obligations, or have contracted for management services with such experience.

- Must provide a certification that any housing units assisted will comply with NHTF requirements;
- Must provide a certification of compliance with all existing DOH assistance agreements and cannot be in default under any CHFA or HUD-administered program at the time of application; and
- Must provide a certification/demonstration of compliance with all fair housing and equal employment opportunities obligations/guidelines.

2. Geographic Diversity

Funding will be available in all 169 communities. Priority will be given to activities in higher opportunity areas as demonstrated through Opportunity Mapping at the DOH website in accordance with the most recent Analysis of Impediments to Fair Housing Choice. Priority will be given to applications for projects in the higher “opportunity areas” with points being distributed as follows: Very High = 10 points, High = 8 points, Moderate = 6 points, Low = 4 points, Very Low = 0 point.

3. Applicant Capacity

Capacity of eligible applicants will be evaluated in accordance with the applicant’s ability to obligate NHTF funds and undertake eligible activities in a timely manner.

Eligible applicants will be awarded priority points for each of the following categories:

- For each successfully completed project using state or federal funds within the last 10 years, applicants will be awarded 1 point up to a maximum of 5 points.
- For each affordable housing project operated in accordance with state or federal requirements and regulations, as demonstrated by the most recent compliance monitoring, 1 point shall be awarded up to a maximum of 5 points.

4. Project-based Rental Assistance

For each proposed NHTF unit that has a firm commitment for project-based state or project-based federal rental assistance, points will be awarded as follows: 1-4 units will receive 2 points, 5-8 units will receive 4 points, 9-12 units will receive 6 points, 13+ units will receive 8 points.

- An NHTF-assisted unit that has either project-based State or project-based Federal rental assistance attached to it may not also receive NHTF operating cost assistance;
- If project-based State or project-based Federal rental assistance is included as noted above, the applicable program requirements related to site and neighborhood standards will apply to an NHTF-assisted unit.

5. Duration of Affordability Period

Units that have an affordability period of less than thirty years will be deemed ineligible to receive NHTF funds.

- Units which provide for an affordability period in excess of 30 years shall be awarded points based on the following scale: 30-35 years will receive 0 points, between 35-40 years will receive 3 points, 40 + years will receive 5 points.

6. Priority Housing Needs

Priority consideration will be given to projects or activities that are consistent with priorities detailed in the most recent ConPlan. These priorities are determined as follows:

- Projects that preserve existing affordable housing for ELI shall receive 2 points;
- Projects that enhance suitable living environments that assist ELI families/individuals to remain in permanent housing shall receive 2 points;
- Projects that add to a continuum of affordable housing with support services for ELI families/individuals shall receive 5 points;
- Projects that create decent affordable housing for ELI families/individuals by supporting energy conservation/efficiency projects shall receive 3 points;
- Projects that enhance a suitable living environment affordable housing for ELI families/individuals through ensuring the availability of a healthy, safe, and decent housing supply that is free of lead-based paint, incorporates the healthy housing principles (dry, clean, pest-free, ventilated, safe, without contaminants, maintained and accessible), and measures radon and reduces elevated levels shall receive 3 points.

7. Eligible forms of Subsidy/Leveraging

Priority consideration will be given to those projects/activities that leverage non-federal funding sources.

- Commitments for financing are as follows:
 - Firm financial commitments equal or above 50% of total development costs will receive 5 points;
 - Firm financial commitments between 25%-49% of total development costs will receive 4 points;
 - Firm financial commitments between 10%- 24% of total development costs will receive 3 points;
 - Detailed soft commitment letters with rate and key terms identified will receive 2 points.
- Leveraging commitments are as follows:
 - The percentage of DOH's total financial commitment is 0-20% of total development cost then project will receive 7 points;
 - The percentage of DOH's total financial commitment is greater than 20% but less than or equal to 30% of total development cost then project will receive 5 points;
 - The percentage of DOH's total financial commitment is greater than 30% but less than or equal to 50% of total development cost then will receive 3 points;
 - The percentage of DOH's total financial commitment is greater than 50% of total development cost then will receive 0 points;

NHTF funds will be provided as non-interest-bearing loans or advances, deferred payment loans, or grants. Program income is not anticipated as a result of these subsidy types.

8. Eligible Activities

Projects which do not produce affordable units for ELI families/individuals will not be eligible to receive NHTF funds. NHTF funds will only be used to assist units that provide housing opportunities for ELI families/individuals:

- NHTF funds can be used for the production, preservation, and substantial rehabilitation of affordable rental housing; for operating costs of NHTF-assisted rental housing; and for reasonable administrative and planning costs;

- NHTF funds may be used for new construction or substantial rehabilitation of public housing units only in accordance with the following:
 - NHTF funds may be used for new construction of public housing as part of the Choice Neighborhoods (Choice) program under a HUD appropriation act or for new public housing units that have been allocated and will receive low-income housing tax credits under section 42 of the Internal Revenue Code of 1986 (26 U.S.C. 42).
 - NHTF funds may be used for the substantial rehabilitation of existing public housing units in which the public housing assistance will be converted and used at the properties under the Rental Assistance Demonstration (RAD) program under HUD's 2012 Appropriations Act (Pub. L. 112-55, 125 Stat. 552, approved November 18, 2011) or subsequent statutes.
 - NHTF funds may also be used for the substantial rehabilitation of existing public housing under the Choice program, and of existing public housing units that have been allocated and will receive low-income housing tax credits under section 42 of the Internal Revenue Code of 1986 (26 U.S.C. 42).
 - The public housing units constructed using funds under this part must replace units that were removed from a public housing agency's public housing inventory as part of a Choice program grant, or as part of a mixed financed development under section 35 of the 1937 Act. The number of replacement units cannot be more than the number of units removed from the public housing agency's inventory.
 - The public housing units constructed or substantially rehabilitated using funds under this part must receive Public Housing Operating Fund assistance (and may receive Public Housing Capital Fund assistance) under section 9 of the 1937 Act. These units cannot receive operating costs assistance or operating cost assistance reserves under this part.
 - NHTF-assisted housing may not receive Operating Fund or Capital Fund assistance under section 9 of the 1937 Act during the NHTF period of affordability.

- NHTF funds may be used for affordable housing in a project that also contains public housing units, provided that the NHTF funds are not used for the public housing units and NHTF funds are used only for eligible costs, in accordance with this part;
- NHTF-assisted housing must be permanent housing;
- Not more than one-third (1/3) of the annual grant may be used for operating cost assistance and operating cost reserves. Operating cost assistance may be provided only to rental housing acquired, rehabilitated, or newly constructed with NHTF funds;
- The cost of relocation payments and other relocation assistance to persons displaced by the NHTF-assisted units are eligible costs:
 - Relocation payments include replacement housing payments, payments for moving expenses, and payments for reasonable out-of-pocket costs incurred in the temporary relocation of persons.
- The activities and costs are eligible only if the housing meets the property standards in § 93.301, as applicable, upon project completion;
- Acquisition of vacant land or demolition must be undertaken only with respect to a particular housing project intended to provide affordable housing within the time frames established in the definition of “commitment” in § 93.2;

D. Other Requirements

1. Performance Goals and Bench Marks

Performance goals and measures for NHTF will be consistent with the goals established in the most current ConPlan as follows:

Objective 1:

Enhance suitable living environments for low- and moderate-income through Fair Housing and Housing Choice.

Output:

- Improve availability/accessibility by supporting the construction and/or rehabilitation of affordable housing.

Outcome:

- Increased opportunities for housing choice.

Indicator(s):

- Increased housing choice for low-and-moderate-income residents.

- Number of projects funded that promote fair housing and further the state's fair housing efforts.

Objective 2:

Enhance suitable living environments through the creation of decent affordable housing.

Output:

- Produce up to 20 newly constructed or rehabilitated rental units that serve households.
- Support energy conservation/efficiency activities that would primarily serve ELI.

Outcome:

Increased rental housing opportunities that serve ELI in a variety of geographies.

Indicators:

- Number of newly constructed rental units.
- Number of newly rehabilitated rental units.
- Number of new multifamily housing units created in areas of high opportunity.

2. Maximum Per Unit Subsidy Limit

The total amount of NHTF DOH may invest on a per-unit basis shall not exceed 210% of the statewide per-unit dollar limitations established under Section 234 Condominium Housing, elevator-type, basic mortgage limits, as dollar limitations are provided by the US HUD Hartford Field Office, and adjusted and published by DOH, periodically.

**NATIONAL HOUSING TRUST FUND
2016 STATEWIDE MAXIMUM PER-UNIT SUBSIDY AMOUNT**

BEDROOMS:	0 Bedroom	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
Non-elevator-type projects	\$55,474	\$63,962	\$77,140	\$98,742	\$110,002
NHTF Maximum Per-Unit Subsidy for non-elevator type projects	\$116,495	\$134,320	\$161,994	\$207,358	\$231,004
Elevator-type projects	\$58,378	\$66,923	\$81,377	\$105,276	\$115,560
NHTF Maximum Per-Unit Subsidy for elevator type projects	\$122,594	\$140,538	\$170,892	\$221,080	\$242,676

Effective July 1, 2016, until superseded

Source: US HUD Hartford Office

CT Maximum Mortgage Limits -- Section 234 Basic Elevator Type Unit -- 2015

The State is establishing the above single statewide maximum subsidy limit to be consistent with the administration of its other state-funded development programs. Cost per unit standards are published annually by DOH and the Connecticut Housing Finance Authority (“CHFA”). It is the intention of DOH to leverage state resources with the NHTF in order to produce units that are affordable to ELI. The current cost per unit standards are attached as Attachment E.

3. Rehabilitation Standard – Substantial Rehabilitation Only

DOH, in conjunction with CHFA has adopted detailed policies and requirements relative to new construction, rehabilitation and property maintenance. These policies and requirements are updated on an annual basis, and are available at both the DOH and CHFA websites.

For the purposes of NHTF, “rehabilitation” is limited to substantial rehabilitation, and funds will not be provided for minor repair, moderate repair or maintenance activities. Prior to occupancy, all newly constructed or substantially rehabilitated units must be in full compliance with all of the following policies, regulations, statutes and requirements shall apply:

- a. [Multifamily Design, Construction and Sustainability Standards](#) which are included as Attachment C. The standards are not intended to reduce or circumvent the requirements of law and current applicable codes. Although they apply primarily to new construction, they also apply to rehabilitation of existing structures as applicable to the proposed scope of work. These standards maybe modified only where the particular characteristics of the site or other local conditions make compliance impractical or undesirable. If an applicant is unable to comply with any of the items listed, the applicant must contact DOH to discuss; at which time, additional requirements may be necessary.
- b. [Construction Guidelines: Technical Services/Asset Management \(TSAM\) Capital Improvement Guide 2016](#) which are included as Attachment H. Individual building materials, components, fabrications, and equipment for all proposed repair, replacement and capital improvement projects shall comply with all Building Codes, State and Federal regulations and the applicable section(s) of the current “Multifamily Design, Construction and Sustainability

Standards”. However, when determining the scope of work for proposed repair, replacement and capital improvement projects, applicants are strongly encouraged to consider the interconnection of individual building materials, components, fabrications, and equipment that comprise a fully-functioning building. To determine the Technical Services process for reviewing specific Asset Management capital improvement, repair and replacement projects, consult the “Construction Guidelines: Technical Services/Asset Management (TSAM) Capital Improvement Project Review”.

- c. [Construction Guidelines: Project Planning & Technical Services Review 2016](#) which are included as Attachment I. DOH requires that all building materials, components, fabrications, and equipment for all proposed repair, replacement and capital improvement work be completed in accordance with all applicable Building Codes, State and Federal regulations and current “Multifamily Design, Construction and Sustainability Standards – CHFA” (the Standards). The “Construction Guidelines: Technical Services/Asset Management (TSAM) Capital Improvement Project Review” outline the Technical Services process for reviewing specific Asset Management capital improvement, as well as repair and replacement projects associated with the useful life of major systems. When determining the scope of work for proposed capital improvement, repair and replacement projects, consideration of the interconnection of the individual materials, components, fabrications, and equipment that comprise a fully-functioning building is strongly encouraged.
- d. [Construction Guidelines: Environmental & Hazardous Materials Review 2016](#) which are attached as Attachment J. The attached environmental/hazardous materials guidelines shall be followed for providing construction financing of multifamily developments pertaining to both new construction and the rehabilitation of existing buildings & properties. These guidelines provide specific guidance relevant to, but are not limited to the following: lead-based paint, asbestos, radon, mold, flood classification and/or flood zone.
- e. [2016 Connecticut State Building Code, effective October 1, 2016](#) which are attached as Attachment G. At a minimum, all activities using NHTF are required to comply with the current code, as attached.
- f. [Construction Guidelines: Energy Conservation 2016](#) which are attached as Attachment K.

4. Uniform Physical Condition Standard (UPCS)

The currently available UPCS standards are incorporated herein at Attachment F. As previously stated, DOH does not intend to provide NHTF funding for minor rehabilitation, moderate rehabilitation or maintenance activities. NHTF funding will only be provided for new construction or substantial rehabilitation, and all units will meet or exceed the attached UPCS inspectable standards at the time of funding. In addition, these standards are relevant to continued occupancy during the affordability period, and as such, all types and degrees of deficiency must be addressed as they arise. Note: these standards, or the most current standard, apply upon annual inspection.

E. Application Process for the NHTF Program

DOH will accept applications for the NHTF Program through one or more competitive application funding rounds. DOH will provide adequate advance notice of fund availability and reserves the right to cease accepting applications at any time that all available funds have been committed. Based on funding availability and other considerations, DOH may limit the number of applications that can be submitted by an eligible applicant in a funding round. Notification of such limitation will be included in DOH's notice of fund availability should DOH elect to set such a limitation.

- Applicants for NHTF must meet the minimum eligibility requirements as detailed above in Section IV.C.1.
- Applicants for NHTF funds are required to submit their requests in a completed format using the Consolidated Application developed jointly by DOH and CHFA and used as the application for all DOH housing development proposals. The application must contain a description of the eligible project to be funded with NHTF.
- Staff will review the Consolidated Application and any attached materials to determine if the project/activity meets minimum program eligibility and threshold requirements as described above in Section IV.C. Applications that do not meet basic eligibility and threshold requirements will be rejected for funding.
- Depending on the nature of the proposed activity, site inspections may be conducted by DOH staff. An evaluation of the site's feasibility will be completed and considered as part of the review process.

- Project selection will be made on a competitive basis in accordance with the Ranking and Rating Criteria. The Selection Criteria include: affordability, marketability and fair housing; applicant capacity; project feasibility and readiness to proceed; and responsible growth and livability initiatives.

Final recommendations to the Commissioner will be based on the overall quality of the application as well as fund availability. Approved applicants will receive notification from the Commissioner's office. If an application for NHTF funding is not approved, senior staff will advise the applicant of the rejection in writing and identify the reasons for the rejection.

F. Eligible Housing

Eligible housing shall consist of affordable housing that has maximum rent (including utilities) that is established at 30 percent of the annual income of a family whose income equals 30 percent of AMI or 30 percent of the poverty line, whichever is greater. HUD will publish the NHTF rent limits on an annual basis. NHTF maximum rents will not exceed the HUD published NHTF rents, on an annual basis.

- Income from all family members must be included when determining income eligibility. DOH will utilize the definition of annual income in 24 CFR 5.609 (Section 8 definitions).
- If the NHTF- assisted unit receives Federal or State project-based rental subsidy, the maximum rent is the rent allowable under the Federal or State project-based subsidy program.
- Utility Allowances – DOH will allow the use of any of the following relative to utility allowance schedules:
 - Published utility allowance schedules for the Section 8 Housing Choice Voucher Program, as calculated and published by administering entity;
 - Published utility allowance schedules for the state Rental Assistance Payments Program, as calculated and published by DOH; or
 - Results of a documented utility study consistent with industry standards on the same or similar units.
- DOH shall annually review and approve rents for NHTF units.
- In a project containing NHTF-assisted and other units, the grantee may designate fixed or floating NHTF units. This designation must be made at the time of project

commitment in the written agreement between the DOH and the recipient, and the NHTF units must be identified not later than the time of project completion.

- Fixed units must remain the same throughout the affordability period.
- Floating units must be changed to maintain conformity with NHTF requirements during the affordability period so that the total number of housing units meeting the requirements remains the same.

V. ATTACHMENTS TO THE SUBSTANTIAL AMENDMENT FOR NHTF

A. Attachment A – Citizen Participation

- Attachment A-1 – Citizen Participation Process
- Attachment A-2-Outline of Activity for Public Hearings/Public Comment
- Attachment A-3-summary of Public Comments Received and DOH Responses

B. Attachment B – Citizen Participation Documents

- B.1. Legal Notices/Email Notices for Public Hearings and Public Comment Periods for the development of the Substantial Amendment for the NHTF
- B.2. Public Hearing Transcripts
- B.3. Written Comments

C. Attachment C- 2016 Multifamily Design, Construction and Sustainability Standards

D. Attachment D – NHTF Rating and Ranking Criteria

E. Attachment E – Construction Guidelines – Construction Costs

F. Attachment F – UPCS Standard – Inspectable Items

G. Attachment G – 2016 Connecticut State Building Code

H. Attachment H – Construction Guidelines – Technical Services/Asset Management (TSAM) Capital Improvement Guide 2016

I. Attachment I – Construction Guidelines – Project Planning & Technical Services Guide 2016

J. Attachment J – Construction Guidelines – Environmental & Hazardous Materials Guide 2016

K. Attachment K – Construction Guidelines – Energy Conservation Guide 2016

Attachment A-1 – Citizen Participation Process

The following process will be used to solicit citizen input and make the state's consolidated plan and subsequent action plan priorities available for public review.

- Periodically throughout any given year, DOH staff will meet with major interest groups to discuss a variety of issues including, HOME, Small Cities, HOPWA, ESG and NHTF programs. These groups include, but are not limited to: Connecticut Community Development Association, which is composed of local community development professionals; Conn-NAHRO, made up of local housing authority directors; The Connecticut Housing Coalition, an association of nonprofit housing developers and advocates; Interagency Council on Affordable Housing; AIDS Connecticut (ACT), a group representing advocates for persons with AIDS; and emergency shelter service providers.
- These meetings will be part of continuous input into the departments' planning and policy development activities as they relate to annual action plans.
- The Connecticut Housing Finance Authority will be invited to participate in the drafting of the annual plan. Also, DOH will consult with the Department of Public Health concerning plans to remove lead based paint hazards. Local health and child welfare agencies will also be contacted for their input on lead based paint hazards and poisoning.
- During the planning process, the chief elected officials of any non-entitlement communities will be invited to discuss with and provide input to DOH as it prepares the portion of the annual plan relating to the Small Cities Community Development Block Grant program.
- Prior to the development of any annual action plan, the state will hold at least two public hearings on housing and community development needs in various locations. These hearings will be held at times and places convenient to citizens. Notices of these needs hearings will be published approximately 2 weeks in advance of the hearings, in at least 2 newspapers serving all regions of the state, as well as the state's minority communities. In addition, notices of the hearings will be emailed to the above referenced major interest groups, and/or other state agencies as well as all interested residents of Connecticut who have expressed an interest in receiving information on all activities of the Department, known as the "Community Partners" list.
- Staff will prepare a draft annual action plan, taking into consideration the input received from the above listed organizations, state agencies and interested parties. The action plan will include a discussion of the amount of assistance the state expects to receive, the

range of activities it will undertake with this assistance, and, to the extent possible, the benefit to low and moderate income people of these proposed activities.

- A notice summarizing the main elements of the plan, its availability and locations where it can be obtained, the dates and times of at least two public hearings on the draft plan will be published in at least 2 newspapers serving all regions of the state, as well as the state's minority communities. The draft action plan will be made available to anyone requesting a copy, either in print or on disk, during the 30-day comment period. Copies will be available at the DOH office. In addition, access to the draft will be available by visiting the DOH Home Page on the Internet at www.ct.gov/doh. Copies will be mailed to the above referenced major interest groups. As part of the notice, the state will tell citizens who have special needs how they can obtain the draft plan in a form which is accessible to them. Non-English speaking and hearing impaired citizens will be given a phone number to call so that special arrangements can be made to accommodate them at the public hearings. Public hearings will be held at convenient locations and times across the state.
- Any comments received, either at the public hearings or during the public comment period will be considered by the agency before the final action plan is prepared. A summary of the comments and the agency's responses will be one of the attachments to the final action plan.
- The procedures and actions discussed above will constitute the state's citizen participation plan for annual action plan submissions and any substantial amendments, which may need to be made in the course of the program year. A "substantial amendment" to the plan is one which implements a change the use and/or method of distributing those funds.
- This citizen participation plan will itself be made available to the public and any interest groups for review and comment as part of the annual action plan review.

A-2. Outline of Activity for Public Hearings/Public Comment

In accordance with the attached Citizen Participation Plan for the National Housing Trust Fund, DOH solicited public input with the development of the Substantial Amendment for the 2016-2017 Annual Action Plan for Housing and Community Development for the National Housing Trust Fund. DOH held on July 18, 2016, one Public/Community Partner's Meeting with public and private housing (and related) agencies to: 1) solicit input into the development of the substantial amendment and 2) solicit feedback and comments on the drafted sections of the substantial amendment. Legal notice for the public meeting was published in two newspapers across the state including one in Spanish. The Legal Notices were also posted on DOH's web site, forwarded to all 169 municipal chief elected officials, all public housing authorities and the regional planning organizations (new councils of government). An email blast containing the Legal Notice was also distributed to our Community Partners, with a request to further disseminate the Notice to their constituency.

After drafts of these documents were produced, DOH also solicited input on the draft Action Plan through a 30-day public comment period from Thursday, July 7, 2016 to Monday, August 8, 2016. DOH held a public hearing on the draft Action Plan in Hartford on July 18, 2016. A legal notice was published announcing the public hearing and comment period. The legal notice and related documents were available on DOH's website and can be found in Attachment B-1. All comments received were summarized and responded to in Attachment A-3 of this document.

DOH notified the chief elected officials of all 169 municipalities in the State and its Community Partners about the dates, times and locations of the public hearings and of the timing of the commentary periods. The state's regional Councils of Government were forwarded a copy of the legal notices and asked to post them on their websites.

There are other ways in which DOH gathered information and input on what needs to consider in developing the ConPlan and the Action Plan. For example, there are meetings of approximately 70 state boards and commissions throughout the year that the DOH attends. Some of the more relevant commissions include the CT BOS/CoC Steering Committee; the Homeless Management Information System (HMIS) Steering Committee; CT Opening Doors Steering Committee; CT Opening Doors- Standards subcommittee; Performance Measurement Committee and the

Interagency Committee for Supportive Housing and Homelessness, the Interagency Committee on Affordable Housing.

Public Hearings: A copy of the transcript from the public hearing can be found in Attachment B-2.

Written Comments: A copy of all written comments received during the development of the Substantial Amendment for the 2016-2017 Action Plan for Housing and Community Development for the National Housing Trust Fund can be found in Attachment B-3. A summary of these comments and responses follow in Attachment A-3.

A-3. Summary of Public Comments Received and DOH Responses

General Edits: A number of general edits not materially affecting the policies, priorities or allocations within the document were received.

Response: All relevant edits were made accordingly, including adjustments of awarded and anticipated funding.

General Policy Statements: A number of general policy statements supporting the policies and priorities that were identified in the Substantial Amendment were received.

Response: The Department appreciates the support for its policies and priorities as drafted and is committed to an inclusive and participatory process in the implementation of its programs and the expenditure of its funding.

Specific Comments:

Several comments were received in support of affirmatively furthering fair housing while acknowledging the existence of competing priorities.

Response: The Department appreciates the recommendations relative to affirmatively furthering fair housing and intends to fully comply with these requirements and will make every effort to leverage its limited funding to meet as many priorities as possible. No changes were made as a result of these comments at this time.

One comment was received recommending DOH make specific provisions within the NHTF Plan to outline affirmative marketing requirement for all recipients.

Response: The Department appreciates the recommendation to make specific provisions within the NHTF Plan to outline affirmative marketing requirements for all recipients. The Department intends to incorporate the necessary affirmative marketing requirements as part of the program implementation. No changes were made as a result of this comment at this time.

One comment was received that encouraged the Department to include requirements on tenant selection.

Response: The Department appreciates the recommendation to include requirements on tenant selection. The Department intends to incorporate the necessary tenant selection requirements as part of program implementation. No changes were made as a result of this comment at this time.

One comment was received that encouraged the Department to include a requirement for reporting data that would reflect efforts on affirmatively furthering fair housing.

Response: Although no changes were made as a result of this comment at this time, the Department will consider additional data collection efforts as part of program implementation.

Several comments were received concerning how the ordering of rating and ranking criteria were articulated in the written amendment.

Response: The Department appreciates the concern and reassures that the ordering of rating and ranking in this document does not indicate priority. No changes were made as a result of these comments at this time.

One comment was received encouraging the Department to include extremely low income in the indicators that refer to low income and moderate income.

Response: The Department appreciates the recommendation to include extremely low income families. The Department supports the comment and has clarified that NHTF funds will be used solely for projects/activities that provide housing opportunities for ELI families.

One comment was received encouraging the Department prioritize projects that serve families or individuals who have experienced homelessness.

Response: The Department appreciates the recommendation to target individuals and families that have experienced homelessness. However, it is the Department's position that

significant state and federal resources have been targeted to address the needs of this very deserving population group, and that insufficient resources have been targeted solely to address the needs of extremely low income families. No changes were made as a result of these comments at this time.

Attachment B – Citizen Participation Documents

- B.1. Legal Notices/Email Notices for Public Hearings and Public Comment Periods for the development of the Substantial Amendment for the NHTF
- B.2. Public Hearing Transcripts
- B.3. Written Comments

B-1 Legal Notices/Emails for Public Hearing and Public Comment Period for the development of the Substantial Amendment for the NHTF

NOTICE OF PUBLIC COMMENT PERIOD

The State of Connecticut Department of Housing DRAFT Substantial Amendment to the State of Connecticut FY 16-17 Annual Action Plan for Housing and Community Development for the National Housing Trust Fund

A thirty day public-examination and comment period will begin on Thursday, July 7, 2016 and end on August 8, 2016 for the [Substantial Amendment to the FY 16-17 Action Plan](#) for Housing and Community Development for the National Housing Trust Fund. The FY 16-17 Action Plan for Housing and Community Development is the second annual implementation plan under the State of Connecticut 2015-2019 Consolidated Plan for Housing and Community Development (ConPlan). The ConPlan is a five-year strategic plan that governs the administration of federal funding appropriated for housing and community development activities that benefit persons of low- and moderate- income. Such federal funding includes the following programs: HOME Investment Partnerships (HOME), Small Cities/Community Development Block Grant (SC/CDBG), Emergency Solutions Grants (ESG), Housing Opportunities for Persons with AIDS (HOPWA), and the newly created National Housing Trust Fund. The purpose of this public comment period and hearing is to solicit public comment on the Substantial Amendment to the FY 16-17 Action Plan for Housing and Community Development for the National Housing Trust Fund. National Housing Trust Fund will provide up to \$3,000,000 in the next fiscal year. The FY 16-17 Action Plan represents approximately \$24M in federal funding for those five programs. A Public Hearing will be held, as listed below, to solicit comment on the DRAFT Substantial Amendment to the FY 16-17 Action Plan for Housing and Community Development for the National Housing Trust Fund. Additionally, input on performance under the aforementioned programs is also welcomed.

Hartford

1:00 PM

July 18, 2016

CT Department of Housing

Room 466

505 Hudson Street

Hartford, CT 06106

State residents, local and state officials, and community partners are invited to attend the public hearing and provide oral or written comment on the DRAFT Substantial Amendment to the State of Connecticut FY 16-17 Action Plan for Housing and Community Development for the National Housing Trust Fund. Written comments may be sent to Michael C. Santoro, Community Development Specialist, CT Department of Housing, Second Floor, 505 Hudson Street, Hartford, CT 06106-7106 or ct.housing.plans@ct.gov through the close of business on August 8, 2016. All comments received will be responded to in the final version of the Substantial Amendment to the FY 16-17 Action Plan for Housing and Community Development for the National Housing Trust Fund. For copies of the substantial amendment and related documents, please refer to the Department of Housing's website, <http://www.ct.gov/doh> under POLICY & RESEARCH.

Department of Housing programs are administered in a nondiscriminatory manner, consistent with equal employment opportunities, affirmative action, and fair housing requirements. Questions, concerns, complaints or requests for information in alternative formats must be directed to the Irena Baj Wright, HR Specialist, Department of Administrative Services - Small Agency Resource Team 860-713-5391/860-270-8022. Locations for the public hearings are handicapped accessible.

Publication Date: April 21, 2016

B-2 Public Hearing Transcript

ORIGINAL

1

STATE OF CONNECTICUT
DEPARTMENT OF HOUSING

PUBLIC MEETING
SUBSTANTIAL AMENDMENT TO THE FY '16-'17
ACTION PLAN
FOR
HOUSING AND COMMUNITY DEVELOPMENT
FOR
THE NATIONAL HOUSING TRUST FUND

JULY 18, 2016

1:05 P.M.

CONNECTICUT DEPARTMENT OF HOUSING
ROOM 466
505 HUDSON STREET
HARTFORD, CONNECTICUT

POST REPORTING SERVICE
HAMDEN, CT (800) 262-4102

RE: SUBSTANTIAL AMENDMENT TO THE FY '16-'17 ACTION PLAN
JULY 18, 2016

1 . . .Verbatim proceedings of a hearing
2 before the State of Connecticut, Department of Housing,
3 in the matter of substantial amendment to the FY '16-'17
4 Action Plan for Housing and Community Development for the
5 National Housing Trust Fund, held at the Connecticut
6 Department of Housing, Room 466, 505 Hudson Street,
7 Hartford, Connecticut, on July 18, 2016 at 1:05 p.m. . .
8 .

9
10
11

12 SPEAKER LAURA WATSON: Hi. My name is
13 Laura Watson, and I'm here to open the public meeting for
14 the substantial amendment to the fiscal year '16-'17
15 Action Plan for Housing and Community Development for the
16 National Housing Trust Fund.

17 Today is Monday, July 18th, and it is a
18 little bit after 1:00, and I would like to go around the
19 room and just have everyone introduce themselves.

20 MS. ERIN BOGGS: I'm Erin Boggs with Open
21 Communities Alliance.

22 MS. FLORENCE VILLANO: Florence Villano
23 with the Connecticut Housing Coalition.

24 MS. CATHY BRANCH-STEBBINS: Cathy Branch-

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1 Stebbins for CONN-NAHRO.

2 MS. JUDE CARROLL: Jude Carroll,
3 Connecticut Housing Coalition.

4 SPEAKER WATSON: And I'm Laura Watson.

5 SPEAKER MICHAEL SANTORO: And I'm Mike
6 Santoro with the Department of Housing.

7 SPEAKER WATSON: Okay. Michael, would you
8 like to talk about the plan?

9 SPEAKER SANTORO: No, that's what you're
10 going to do.

11 SPEAKER WATSON: That's what I'm going to
12 do?

13 SPEAKER SANTORO: Yeah, and then you're
14 going to go down and read the list of who is speaking in
15 what order.

16 SPEAKER WATSON: Okay, so, the State of
17 Connecticut, Department of Housing, is receiving \$3
18 million from the federal government for the Federal
19 National Housing Trust Fund.

20 We anticipate using our funding for rental
21 housing, whether it's new construction or rehabilitation.
22 We will be updating our five-year strategic plan, as well
23 as our '16/'17 Action Plan, to accommodate the funding
24 and the way we anticipate utilizing the funding, and the

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1 purpose of this meeting is to gain public comment from
2 special interest groups and interested citizens, so what
3 we can do now I guess is go around the room, and if
4 somebody wants to start off?

5 Why don't we start with Erin?

6 MS. BRANCH-STEBBINS: Can I just
7 interrupt? Do we have a Wi-Fi password?

8 SPEAKER SANTORO: I do not. I'll try to
9 get one for you, though.

10 MS. BRANCH-STEBBINS: Either that, or I
11 left my copy --

12 SPEAKER SANTORO: Give me a second.

13 MS. BRANCH-STEBBINS: I left my copy of
14 the plan, so I'll just take a copy of that. Thank you,
15 sir. Sorry to disrupt.

16 MS. BOGGS: Should I go?

17 SPEAKER WATSON: Yeah, sure.

18 MS. BOGGS: Okay. My name is Erin Boggs,
19 as I said. I'm at the Open Communities Alliance, and I
20 have written comments, but I will just summarize them for
21 the purposes of this testimony.

22 So the National Housing Trust Fund, as
23 everyone here knows, is pretty small, being only \$3
24 million compared to other Federal Housing programs, but

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1 the intention is that it's going to grow and be a more
2 important part of the housing funding landscape across
3 the country and here in Connecticut, and, so, I think,
4 for that reason, it's very important that we start this
5 process and lay out requirements for it in a way that
6 affirmatively furthers fair housing from the get-go and
7 is designed to create greater housing choices for people
8 all across Connecticut.

9 I also want to just start by thanking the
10 Department of Housing for including opportunity mapping
11 as a criteria to judge applications through the program.
12 We appreciate that and appreciate that it's being used.

13 I want to note that there are, even within
14 the guidance from HUD, really internal tensions about
15 this program and the priorities, so I understand the DOH
16 has to navigate those, and point out that things like
17 priorities for project-based rental assistance,
18 leveraging, and even the Department's own priorities
19 could tend to drive the funding into lower opportunity
20 areas solely.

21 And, so, you know, we know from the
22 Analysis of Impediments to Fair Housing Choice where
23 project-based rental assistance is, where most of the
24 funding already goes, so if you're talking about

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1 leveraging and you're tied to those locations, then
2 you've got already two factors that are pulling you into
3 lower opportunity areas, and with focusing on
4 preservation of State priority, that also will compel
5 investments in lower opportunity areas if we don't figure
6 out some kind of balance.

7 So my comments suggest that we figure out
8 a way to include that balance, and that might mean some
9 kind of mechanism for increasing the priority for higher
10 opportunity areas.

11 And I note, also, that despite all of the
12 priorities laid out in this document, in the priorities,
13 the plan, all of those are superseded by the Fair Housing
14 Act, both State and Federal, that would require that we
15 affirmatively further Fair Housing and avoid having a
16 disparate impact from people of color.

17 So despite what I just said, the
18 priorities that are in there that I just highlighted are
19 important. I mean it is important to preserve. It is
20 important to leverage. It is important to have
21 subsidized, be working in concert with where project-
22 based Section 8 is located or rental assistance, and, so,
23 I think the challenge here is how to do that balance, and
24 one approach that I hope the Department will consider is

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1 actually having some targets for the program, based on a
2 percentage of the monies available that also considers
3 our history of where subsidized housing has been located
4 and the fact that, to affirmatively further Fair Housing,
5 we have to make up for that history, and that's sort of
6 hard.

7 In light of the need to preserve and the
8 other polls for different populations, like populations
9 that need supportive housing, I think there's a
10 perception that we need to do that only in certain areas,
11 which I think isn't necessarily true, but I would suggest
12 setting out some percentages.

13 I think 60 percent in higher opportunity
14 areas and 40 in lower and moderate opportunity areas is a
15 good target. If you don't get applications to meet those
16 percentages, the target percentages, then you just make
17 it available to the applications that come in, based on
18 non-geographical criteria.

19 So, you know, we've struggled with how to
20 deal with that, and that's just one proposal that we
21 would put forth.

22 When working in lower opportunity areas, I
23 would also suggest that the Department prioritize areas
24 that are lower opportunity, but gentrifying, so that we

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1 maintain affordable housing there, using the National
2 Housing Trust Funds in coordination with the concerted
3 plan for neighborhood revitalization, so if there's
4 already a plan and some other exciting things happen in
5 the neighborhood, let's make that, you know, let's have
6 the National Housing Trust Fund assist with that.

7 And we'd also encourage some kind of
8 priority for or de-priority, de-prioritization of places,
9 of projects that will actually increase poverty
10 concentration in a neighborhood.

11 In terms of higher opportunity area
12 priorities, some of the things to consider are, and we
13 believe these are permissible under the program, although
14 I think it would be worth some more research on that,
15 using the relocation expenditures are permissible, so
16 that could be used for mobility counseling when you have
17 projects like rehabilitation projects, where some people
18 want to move and have the ability to get Section 8 or RAP
19 as part of that, investment in land trust for mixed
20 income and affordable housing in higher opportunity
21 areas, and support potentially of the higher
22 administrative planning and pre-development costs
23 potentially associated with development in higher
24 opportunity areas.

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1 We'd also recommend, just as a structural
2 matter within the plan, itself, to add some requirements
3 for affirmative marketing plans. This may go along with
4 what the Department is already doing in its affirmatively
5 furthering regulation, so it might be that you can just
6 reference that, but it really is something that HUD is
7 requiring, so I think it would make a lot of sense.

8 Pay some attention to tenant selection.
9 Again, that might be already in what the Department is
10 doing. And, there, we're talking about, you know, making
11 sure that you don't have residency preferences, by and
12 large, you know, use in only limited circumstances, have
13 some guidance on weightless management, really be clear
14 about having some exceptions to credit score, using
15 credit scores for groups that have not been part of the
16 mainstream credit financial market, and then there's
17 guidance out from HUD on criminal records checks and
18 instances where those can have disparate impact on people
19 of color.

20 I think, if any of those can be
21 incorporated into the plan, it would be really helpful.

22 We also think that there's, you know,
23 laying out from the get-go data reporting for grantees
24 would be very good, including, you know, the funding

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1 sources that are going into the project, but, also, the
2 demographic makeup of people, who live there, so that we
3 have a sense of whether the program, as its judged going
4 forward, is affirmatively furthering Fair Housing.

5 There are some good guidances out on this.
6 One is from the Poverty & Race Research Action Council,
7 which provides much more detail that's sort of in line
8 with what I just said, and then HUD has put out this
9 guidance on criminal records checks, and I provide those
10 with my testimony, in case they're helpful. Thank you.

11 SPEAKER WATSON: Thank you, Erin. Okay.
12 Florence?

13 MS. VILLANO: Okay. Thank you, also, for
14 the opportunity to speak regarding the National Housing
15 Trust Fund.

16 I'm going to summarize, as well, and one
17 of the things that we remarked upon was finding a balance
18 between geographic diversity and deep income targeting,
19 and HTF dollars are available to fund housing in all 69
20 towns, 169. If it was 69, I guess that would make life a
21 little simpler.

22 Anyway, we believe that affordable housing
23 should be more available in every locality, as well, but
24 an equally, if not, more important provision of the

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1 legislation is the funding is intended to support the
2 families and households, who have the least access to
3 affordable housing, so those, who have been income
4 classified as extremely low income.

5 The U.S. census assures us that these
6 families are not currently found in large numbers in
7 those areas, which are called high opportunity areas, so
8 I understand the push/pull that we have.

9 And I understand what Erin is saying about
10 laying the foundation, but we also have a very limited
11 source of funds that we're dealing with, so we believe
12 it's imperative that the deep targeting mandate, that the
13 Department hold the deep targeting mandate above that of
14 geographic diversity, because, in a state like ours, both
15 priorities simultaneously will be a difficult task.

16 We understand that the dollars must be
17 combined with other Federal and State funding to build
18 affordable housing wherever successful applications are
19 found, however, during this first year of implementation,
20 particularly when the allocation is so limited, it is
21 important that the Department establish the precedent of
22 building the maximum amount of affordable housing
23 earmarked for ELI households.

24 Other Federal and State funding is

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1 available to expand the State's efforts to develop
2 affordable housing in those communities that have shown
3 little interest in embracing affordable housing.

4 With regard to the housing priority needs,
5 our only comment relates to the ordering of the nine
6 criteria. We understand this is -- the Action Plan is
7 not necessarily meant as a statement of priority
8 classifications, and we hope that the placement does not
9 reflect the Department's priorities in choosing eligible
10 applicants.

11 We hope that meeting underserved needs and
12 producing permanent supportive housing do not fall below
13 applicant capacity, commitments to project-based rental
14 assistance, and duration of affordability when the plan
15 is translated into rating and ranking criteria.

16 The list of eligible recipients reflects a
17 broad representation of sectors. It builds affordable
18 housing across the state. We feel strongly that
19 propriety should be given to -- priority should be given
20 to those entities that have a history of developing
21 affordable housing and have a mission of serving the
22 needs of extremely low income families.

23 Under performance goals and benchmarks,
24 the section of the substantial amendment that we feel

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1 might need some punching up are the objectives and
2 indicators that refer to low income and moderate income
3 should be rewritten to include extremely low income. We
4 saw no reference to extremely low income on those
5 performance goals and benchmarks.

6 Without those indicators reflecting the
7 true percentage of household and families earning 30
8 percent or less of the median income in a given area, we
9 wouldn't be able to measure progress.

10 All indicators used to measure NHTF
11 spending should reflect income, therefore, rather than
12 measuring the number of newly-constructed units or
13 rehabilitated units, it should be how many ELI households
14 were served and that the affordability requirement is a
15 minimum of 30 years.

16 And then we did have a request for a
17 clarification about the output statement under objective
18 two. If the State will receive 2.7 million for new or
19 rehabilitated affordable housing in the first year, why
20 are only 20 units anticipated? And it could be that, you
21 know, we just wanted to make sure how you had decided
22 that, whether there was using the maximum amount of
23 dollars per unit.

24 SPEAKER SANTORO: And this is Mike

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1 Santoro, and I can respond to that, just for clarity. If
2 you look at the maximum per subsidy, per unit
3 calculations, we use that as \$270,000, and, basically,
4 just 2.7 divided 270 is 10, so, at a minimum, we expect
5 to get 10 units.

6 In all likelihood, we will get more, and
7 our hope is certainly to get more, but we didn't want to
8 project a minimum when we are anticipating a maximum
9 subsidy of 270.

10 MS. VILLANO: That's what we thought. I
11 just wanted to make sure.

12 SPEAKER SANTORO: Plain and
13 straightforward.

14 MS. VILLANO: Okay and that's all I have
15 to say. Thank you very much for the opportunity.

16 SPEAKER WATSON: Thank you. Cathy?

17 COURT REPORTER: I'd just ask you to turn
18 the microphone.

19 MS. BRANCH-STEBBINS: Well I don't have an
20 awful lot to say. I'm here to listen.

21 SPEAKER SANTORO: That's okay.

22 MS. BRANCH-STEBBINS: I'm just here
23 basically to listen, and we're planning on submitting
24 some written at some point before the deadline.

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1 SPEAKER SANTORO: Okay.

2 MS. BRANCH-STEBBINS: I guess I do have a
3 personal question, that I'd like more clarification about
4 what are the high opportunity areas of Connecticut?

5 SPEAKER SANTORO: Sure, and I'll give you
6 the thumbnail description, if you will, which will then
7 refer you to the website.

8 MS. BRANCH-STEBBINS: Yup.

9 SPEAKER SANTORO: High opportunity areas
10 are those areas, which have, based on a concrete set of
11 evaluative criteria, those geographic portions of the
12 state that are perceived as being or having a higher
13 opportunity for growth, economic prosperity, education,
14 housing placement, transportation, and I'm missing a
15 couple other factors.

16 MS. BRANCH-STEBBINS: As measured by.

17 SPEAKER SANTORO: As measured by. All of
18 that is described in great detail at the website. If you
19 look for opportunity mapping at the DOH website, you can
20 do it a couple of different ways.

21 You can actually identify a geographic
22 area on the map, and it will tell you what the scores
23 are. There are overlay opportunities, where you can
24 actually see the raw data behind the calculation to

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1 determine what are low, very low, medium, high and very
2 high opportunity areas.

3 MS. BRANCH-STEBBINS: Are these the same
4 criteria that was being used for the QAP in describing
5 this?

6 SPEAKER SANTORO: No.

7 MS. BRANCH-STEBBINS: Okay.

8 SPEAKER SANTORO: Interesting that you
9 understand that. The high opportunity mapping at the
10 Department's website, which is we are using for all of
11 our programs, were generated as part of the production of
12 our most recent analysis of impediments to Fair Housing
13 choice.

14 That data was compiled by the Care One
15 Institute at the direction of the Department and the Fair
16 Housing Center.

17 The QAP, as you make note, developed some
18 additional criteria or overlaid additional data on top of
19 some of the same data used by the Care One Institute, but
20 it does, in fact, include other factors or modifications
21 of those data sources to identify slightly different
22 criteria.

23 If you look at the two what ultimately end
24 up being maps, they're very close and very similar.

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1 There is a little more further definition, especially in
2 the urban centers, when you look at the data put out by
3 the QAP, as opposed to the opportunity mapping available
4 at our website, okay? Erin? Certainly.

5 MS. BOGGS: So we were actually involved
6 in creating the opportunity mapping, too, and, if you
7 would like, I'd be happy to sit down with you and walk
8 you around it and talk through the criteria, too.

9 MS. BRANCH-STEBBINS: Great. Thank you.

10 SPEAKER SANTORO: Anybody else have
11 questions, concerns, or issues associated with the
12 National Housing Trust Fund and the Department's Action
13 Plan?

14 MS. BOGGS: Can you remind me of the --
15 you'll get comments on August 8th?

16 SPEAKER SANTORO: Sure. I will do that,
17 and then, unfortunately, I need to run to another
18 meeting, but here's the process.

19 We will take written public comment up
20 until close of business on Monday, August the 8th. All
21 comments written will be included and incorporated in the
22 submission to HUD, as well as the transcript from this
23 public hearing.

24 The Department will summarize all comments

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1 received and in the draft to HUD indicate whether we
2 accepted and took action on those comments or whether we
3 chose not to take action on any specific or summary
4 comments received.

5 We will attempt to give, again, a summary
6 response in the plan, so individual submitters of written
7 comments will not receive an independent response, but --

8 MS. VILLANO: It will be incorporated.

9 SPEAKER SANTORO: -- it will be
10 incorporated into the plan, okay? Our plan is due to be
11 submitted and must, in fact, be submitted to HUD
12 electronically on or before August the 16th, and we will
13 meet that deadline. Yes, Jude?

14 MS. CARROLL: This is Jude Carroll. When
15 you receive comments, how frequently has the Department
16 incorporated those into any plan?

17 SPEAKER SANTORO: Every time.

18 MS. CARROLL: Every time? Oh, okay.

19 SPEAKER SANTORO: Any time we receive
20 written comments as part of any Federal or State plan, we
21 actually include a copy of the actual comments received,
22 in addition to, as the Federal Government requires, a
23 summary of comments received and a response.

24 MS. CARROLL: What I meant was how

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1 frequently have you taken comments and altered, made
2 adjustments? I mean I'm sure it's dependent on, you
3 know, the type of comments, but I'm just wondering if it
4 happens.

5 SPEAKER SANTORO: It's going to be a very
6 generic response. Almost every time, we will make an
7 adjustment. It may be large. It may be small. In
8 particular, sometimes we get literally editing comments,
9 and, certainly, we take those into consideration every
10 time.

11 If there is a distinctive policy
12 recommendation, we will actively consider it if it has
13 not been addressed in the proposal, and, if it's not
14 addressed at that time, then understand this for us is a
15 building process, so just because you comment on this
16 year's plan, if we don't incorporate it, we, in fact, do
17 consider it as plans get generated in the future.

18 MS. CARROLL: Thank you.

19 SPEAKER SANTORO: Not every recommendation
20 gets implemented, obviously. Some of them are not
21 necessarily recommendations for changes in the plan.
22 Very often, we get comments on how the Department will
23 implement after the plan has been approved, and we'll
24 make those kinds of policy and guidance revisions to the

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1 supporting information or the way that we roll the
2 program out, as opposed to reflecting it in the plan.

3 MS. CARROLL: Thank you.

4 SPEAKER SANTORO: As an example, Erin
5 talked about specific tenant selection criteria that we
6 should employ or prevent from being employed when we
7 decide to fund a project. That's not something we are
8 likely to put in the plan, but it is something we are
9 likely to consider both upon award and as we move forward
10 with the occupancy of a project, okay?

11 MS. CARROLL: Yes.

12 SPEAKER SANTORO: I am going to step out.
13 I have another meeting. You ladies are welcome to stay,
14 in case anybody else shows up. You can pause, if you
15 would.

16 (Whereupon, the hearing adjourned at 1:45
17 p.m.)

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CERTIFICATE

I, Paul Landman, a Notary Public in and for the State of Connecticut, and President of Post Reporting Service, Inc., do hereby certify that, to the best of my knowledge, the foregoing record is a correct and verbatim transcription of the audio recording made of the proceeding hereinbefore set forth.

I further certify that neither the audio operator nor I are attorney or counsel for, nor directly related to or employed by any of the parties to the action and/or proceeding in which this action is taken; and further, that neither the audio operator nor I are a relative or employee of any attorney or counsel employed by the parties, thereto, or financially interested in any way in the outcome of this action or proceeding.

In witness whereof I have hereunto set my hand and do so attest to the above, this 19th day of July, 2016.



Paul Landman
President

Post Reporting Service
1-800-262-4102

B - 3 Written Comments



July 18, 2016

Michael C. Santoro
Community Development Specialist
CT Department of Housing, Second Floor
505 Hudson Street
Hartford, CT 06106-7106

RE: *Preliminary Comments on the Connecticut Department of Housing's Substantial Amendment to the 2016-2017 Annual Action Plan for Housing and Community Development for the National Housing Trust Fund*

Dear Mike:

Thank you for this opportunity to comment on the Connecticut Department of Housing's (DOH) Substantial Amendment to the 2016-2017 Annual Action Plan for Housing and Community Development for the National Housing Trust Fund. As you know, though initially small compared to other federal housing funding sources, it is anticipated that the National Housing Trust Fund will grow substantially, so it is critical that the administration of the program in Connecticut be designed, from the start, to affirmatively further fair housing and generate housing choice for low income residents who have not previously been offered a geographic range of housing options.

At the outset, Open Communities Alliance would like to thank DOH for employing Opportunity Mapping as a means of developing priorities for the program. We believe this is a critical tool to bring geographic diversity to affordable housing in the state.

Internal Tensions

It is important to note the potential internal conflict among NHTF priorities as found in the program's guidance, Guidance for HTF Grantees on the Fiscal Year 2016 Housing Trust Fund.¹ In this, HUD outlines a number of criteria to be used to determine winning projects in a competitive application-based allocation of HTF resources. Among these are priorities for geographic diversity and priorities for Project-Based Rental Assistance, Leveraging, and State Priorities.

¹ Available at <http://portal.hud.gov/hudportal/documents/huddoc?id=16-07cpdn.pdf>. See pg. 4.

In Connecticut, subsidized housing and funding for such housing is overwhelmingly located in and channeled towards lower opportunity areas. According to the 2015 Connecticut Analysis of Impediments to Fair Housing Choice, Project-Based Rental Assistance developments are already located predominately in lower opportunity areas² and would tend to steer NHTF to those locations. Likewise, other housing funding that might be used to justify Leveraging points is much more likely to be expended in lower opportunity areas.³ A similar consideration should be front and center when awarding points falling under the state's priority for preserving existing subsidized housing, which is overwhelmingly located in lower opportunity areas.⁴ In order to effectively affirmatively further fair housing and counterbalance these other priorities, the expenditure of NHTF resources must put a heavy emphasis on higher opportunity locations.

Critically, these priorities from HUD are all superseded by the duty to comply with state and federal fair housing laws, including the duties to affirmatively furthering fair housing and avoiding a disparate impact on protected classes, and considered in the context of Connecticut's historical track record of subsidized housing development reinforcing stark lines of segregation. This necessitates an emphasis on higher opportunity placements.

Developing Geographic Targets

Despite the concerns described above, the priorities outlined by HUD and the state that would tend to drive NHTF investments into areas of lower opportunity, leveraging and preservation, for example, are not unimportant. For this reason Open Communities Alliance recommends that DOH set, and share with the public, specific geographical targets for allocating NHTF dollars. We recommend a split of 60% to higher opportunity areas and 40% to lower/moderate opportunity areas, in acknowledgement of the current imbalance of subsidized housing in areas of lower opportunity. If appropriate project proposals within the designated geographical area are not received, the plan should outline a procedure for reallocating NHTF dollars based on non-geographical priorities to ensure all funds are utilized.

We would urge the expenditures in lower and moderate opportunity areas prioritize ensuring affordable housing options in gentrifying neighborhoods and where the use of the NHTF support is in coordination with a concerted plan for neighborhood revitalization. We also encourage DOH to avoid supporting projects in lower opportunity areas that increase poverty concentration.

² 2015 Connecticut Analysis of Impediments to Fair Housing Choice (AI), Chapter 13. The AI assessment is based on areas that are disproportionately minority and high poverty, but these correlate closely with lower opportunity areas as assessed by the Department of Housing.

³ Id.

⁴ Id.

Higher Opportunity Priorities

As OCA has worked to generate affordable housing in higher opportunity areas we have found a number of barriers that the NHTF could be employed to address. We believe these are within the uses permissible under the program. These include:

- Relocation expenditures in the form of mobility counseling associated with the rehabilitation of lower opportunity projects allowing those resident who so desire to move to housing in higher opportunity areas.
- Investments in land trusts for mixed income/affordable housing development in higher opportunity areas.
- Support for the higher administrative, planning, and pre-development costs potentially associated with development in higher opportunity areas.

Of course, if DOH receives a solid proposal to use NHTF support to construct or rehabilitate affordable housing in higher opportunity areas that is likely the most effective affirmatively furthering use of program dollars.

Recommendations for Structural Additions to the NHTF Plan

There are a number of other structural elements that OCA recommends be included in the NHTF plan that will enhance the affirmatively further capability of the NHTF as used in Connecticut. When completed, the state's new Affirmatively Furthering regulation may address these issues and the regulation could simply be incorporated by reference. These include:

1. Affirmative Marketing Plans

We would recommend specific provisions within the NHTF Plan that outline affirmative marketing requirements for all recipients. HUD's Affirmatively Furthering Fair Housing regulation requires that grantees:

Carry out an affirmative program to attract buyers or tenants, regardless of sex, handicap or familial status, of all minority and majority groups to the housing for initial sale or rental. An affirmative marketing program shall be in effect for each multifamily project throughout the life of the mortgage. Such a program shall typically involve publicizing to minority persons the availability of housing opportunities regardless of race, color, religion, sex, handicap or familial status or national origin, through the type of media customarily utilized by the applicant, including minority publications or other minority outlets which are available in the housing market area. All advertising shall include either the Department-approved Equal Housing Opportunity logo or slogan or statement and all advertising depicting persons shall depict persons of majority and minority

groups, including both sexes.

24 CFR 200.620(a). We recommend requirements adding specificity to this regulatory obligation be included in the NHTF Plan.

2. Tenant Selection

We also encourage the Department to include requirements on tenant selection. These should include:

- The use of local residency preferences only “where it can be shown (1) not to have a discriminatory effect and (2) not to conflict with AFHM (or other fair housing) objectives.”⁵
- Incorporation of HUD guidance on waitlist management including providing adequate notice of waitlist openings and allowing for a diversity of application avenues (online, in person, by mail, etc.).⁶
- Guidance on the use of credit scores that ensures that applicants for residency who may have low FICO scores simply from lack of access to mainstream credit-building resources are still competitive applicants.
- Guidance on the use of criminal records checks that are in line with HUD guidance.⁷ This includes an evaluation of whether the criminal records check policy has a discriminatory affect, consideration of whether such a policy is necessary to achieve a substantial, legitimate and non-discriminatory interest, and exploration of less discriminatory yet effective alternative policies. For example, it is inappropriate for a housing provider to use simply the existence of an arrest record to justify rejecting a potential tenant. As the Supreme Court has recognized, “[t]he mere fact that a man has been arrested has very little, if any, probative value in showing that he has engaged in any misconduct. An arrest shows nothing more than that someone probably suspected the person apprehended of an offense.”

Additional guidance and examples of problematic tenant selection policies can be found *The National Housing Trust Fund: Promoting Fair Housing in State Allocation Plans, Poverty and Race Research Action Council*, May 2016.⁸

⁵ Megan Haberle, Ebony Gayles, and Philip Tegeler, *Accessing Opportunity: Recommendations for Marketing and Tenant Selection in LIHTC and Other Housing Programs* (PRRAC, December 2012)

⁶ Notice PIH 2012-34, “Waiting List Administration,” (August 13, 2012): <http://1.usa.gov/NUkh08>. This guidance updates that available in HUD’s Multifamily Occupancy Handbook.

⁷ “Office of General Counsel Guidance on Application of Fair Housing Act Standards to the Use of Criminal Records by Providers of Housing and Real Estate-Related Transactions” (HUD, April 4, 2016), available at http://portal.hud.gov/hudportal/documents/huddoc?id=HUD_OGCGuidAppFHASandCR.pdf.

⁸ Available at http://www.prrac.org/pdf/Promoting_Fair_Housing_in_HTF_State_Allocation_Plans.pdf.

3. Data and Reporting

In order for an effective evaluation of the use of NHTF investments, we must have comprehensive data about the performance of the projects supported and the people who live there. We recommend an addition to the plan that outlines a requirement for such reporting. This should include:

- Reporting to DOH of the full array of funding sources supporting the project.
- Detailed demographic reporting to permit the state to assess whether the program is being used in a manner to further geographic diversity and residential integration over time, and whether any internal segregation is developing among the HTF developments within a given metropolitan area.

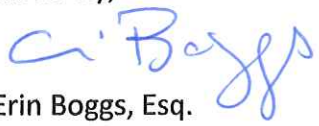
We recommend that DOH include an assessment of this data in publically available annual reporting.

The following guidance might also be helpful to DOH as it considers elements of the NHTF Plan:

- HUD Notice CPD-16-07, "Guidance for HTF Grantees on Fiscal Year 2016 Housing Trust Fund (HTF) Allocation Plans," April 26, 2016, <https://www.hudexchange.info/resources/documents/Notice-CPD-16-07-Guidance-for-HTF-Grantees-on-FY-2016-HTF-Allocation-Plans.pdf>.
- *The National Housing Trust Fund: Promoting Fair Housing in State Allocations Plans*, Poverty and Race Research Action Council, May 2016, http://www.prrac.org/pdf/Promoting_Fair_Housing_in_HTf_State_Allocation_Plans.pdf.

Thank you for this opportunity to comment on Connecticut Department of Housing's Substantial Amendment to the 2016-2017 Annual Action Plan for Housing and Community Development for the National Housing Trust Fund. We welcome the opportunity to discuss our recommendations with you in person if that is helpful.

Sincerely,


Erin Boggs, Esq.
Executive Director
Open Communities Alliance

The National Housing Trust Fund: Promoting Fair Housing in State Allocation Plans

The national Housing Trust Fund (HTF) is the newest federal low-income housing development program, and is particularly valuable for its focus on providing housing for extremely low-income families. Like the Low Income Housing Tax Credit (LIHTC), the HTF is allocated to state governments on a formula basis, and states are then responsible for allocating funds through a state allocation plan. And like the LIHTC and other federal housing programs, the HTF has the potential to perpetuate and even increase segregation and concentrated poverty if careful steps are not taken by state officials who implement the program. This policy brief will provide some guidelines for states and advocates to ensure that the HTF will fulfill the Fair Housing Act's goal that federal housing programs affirmatively further fair housing and expand housing choices for low-income families living in segregated, high-poverty neighborhoods.

Like the LIHTC and other federal housing programs, the HTF has the potential to perpetuate and even increase segregation and concentrated poverty if careful steps are not taken by state officials who implement the program.

AFFH and the HTF

The HTF was established in 2008 as part of the Housing and Economic Recovery Act of 2008, and is initially funded in 2016 with allocations from Fannie Mae and Freddie Mac. These initial allocations are small (with most states receiving \$3 million in the first year),¹ but the program is expected to grow in future years. The HTF is designed to address the severe shortage of affordable housing for the lowest-income Americans. The HTF is a federal program with a dedicated fund not subject to the annual appropriations process and primarily designed to provide revenue to produce, preserve, rehabilitate, and operate rental housing for extremely low-income individuals.² Generally, the purposes of the HTF are to: (1) increase and preserve the national supply of rental housing for extremely low-income (ELI) households (households with incomes of 30% or less of area median) and very low-income (VLI) households

1 See 81 Fed. Reg. 27165 (May 5, 2016).

2 12 U.S.C. §4568(c)(7) and §4568(c)(10)(A).

(households with incomes of 50% or less of area median), including homeless households; and (2) increase homeownership among ELI and VLI households.³ On January 30, 2015, the Department of Housing and Urban Development (HUD) issued interim regulations to implement the HTF, which are modeled on federal HOME program regulations.⁴ HUD subsequently published guidance to states to assist in the development of annual HTF Allocation Plans.⁵

Under the Fair Housing Act, the HTF must comply with the statutory directive that all federal housing programs affirmatively further fair housing (AFFH).⁶ Specifically, the AFFH provision of the Fair Housing Act, 42 U.S.C. 3608(d), provides that: "All executive departments and agencies shall administer their programs and activities relating to housing and urban development (including any Federal agency having regulatory or supervisory authority over financial institutions) in a manner affirmatively to further the purposes of this subchapter and shall cooperate with the Secretary [of HUD] to further such purposes." As a result, states that provide housing units through the HTF program must go beyond simply policing discriminatory activities to ensuring that their project actively advances housing integration and expanded housing choice.⁷

Last summer, HUD issued its final rule on Affirmatively Furthering Fair Housing, which requires jurisdictions to address levels of segregation, poverty concentration, disparities in access to opportunity across communities and neighborhoods, and disproportionate housing needs. The Assessment of Fair Housing (AFH) planning tool for state governments includes an analysis of the state's implementation of the HTF. Every state will be required to go through the AFFH process sometime over the next six years, on a five-year cycle coinciding with the state's Consolidated Plan (ConPlan) process. When this process takes place, states will be asked to "[d]escribe how the administration of CDBG, HOME, and the National Housing Trust Fund programs may affect patterns of segregation, R/ECAPs, disparities in access to opportunity and disproportionate housing needs." In addition to the AFH review, the HTF program itself will require states to certify their compliance with the AFFH duty, as a condition of receiving HTF funds.⁸

3 See http://nlihc.org/sites/default/files/NHTF_FAQ_4-12-13.pdf.

4 80 Fed. Reg 5200 (January 30, 2015), available at <http://www.gpo.gov/fdsys/pkg/FR-2015-01-30/pdf/2015-01642.pdf>.

5 HUD Notice CPD-16-07, "Guidance for HTF Grantees on Fiscal Year 2016 Housing Trust Fund (HTF) Allocation Plans," April 26, 2016, available at <http://portal.hud.gov/hudportal/documents/huddoc?id=16-07cpdn.pdf>.

6 42 U.S.C. §3608. The HTF statute is also subject to other federal civil rights laws that will not be covered in this policy brief, including nondiscrimination provisions of the Fair Housing Act, Title VI of the Civil Rights Act of 1964, the Age Discrimination Act of 1973, Section 504 of the Rehabilitation Act of 1973, Title II of the Americans with Disabilities Act, Section 3 of the Housing and Urban Development Act of 1968, the Uniform Relocation Act, and the lead-based paint regulations at 24 CFR part 35.

7 See also, for example, *Shannon v. HUD*, 436 F.2d 809 (3d Cir. 1970); *NAACP v. HUD*, 817 F.2d 149 (1st Cir. 1987).

8 See HUD Notice CPD-16-07, "Guidance for HTF Grantees on Fiscal Year 2016 Housing Trust Fund (HTF) Allocation Plans," April 26, 2016.

Incorporating AFFH Principles into the State HTF Allocation Plan

Unlike the HOME or Community Development Block Grant (CDBG) programs, HTF funding is not distributed directly to cities and counties. Under statute, each state must designate a state agency to receive and administer HTF funding.⁹ Additionally, each state must prepare an annual HTF Allocation Plan that delineates how the state will distribute HTF resources based upon the housing needs identified in the state's ConPlan.¹⁰ Under the interim rule, each state's HTF Allocation Plan must be included as a component of and integrated into the state's ConPlan.¹¹ Further, the HTF Allocation Plan must be made available to the public for comment and review.¹²

Under statute, each state HTF Allocation Plan must set forth requirements for selecting qualified applications from prospective recipients of HTF resources.¹³ Specifically, the state HTF Allocation Plan must prioritize the allocation of funds based upon the following factors: (1) geographic diversity, as reflected in the ConPlan; (2) the extent to which rental units are affordable, especially for ELI households; (3) the length of time rental units will remain affordable; (4) the merit of a project, which is elucidated by HUD with several examples that include housing that serves people with special needs, housing accessible to transit or employment centers, and housing that includes green building and sustainable development features; (5) the ability of the applicant to obligate the funding and to carry out the project in a timely manner; and (6) the extent to which the project incorporates other funding sources.¹⁴ The statute also requires that at least 90% of a state's HTF resources be used to produce, preserve, rehabilitate, or operate rental housing, while the remaining 10% is allocated toward homeownership activities.¹⁵ Further, at least 75% of states' HTF resources that are allocated to rental housing must benefit ELI households or households with incomes below the federal poverty line.¹⁶ The remaining 25% allocated to

Each state must prepare an annual NHTF Allocation Plan that delineates how the state will distribute NHTF resources based upon the housing needs identified in the state's ConPlan. Under the interim rule, each state's NHTF Allocation Plan must be included as a component of and integrated into the state's ConPlan. Further, the NHTF Allocation Plan must be made available to the public for comment and review.

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- 9 See National Low Income Housing Coalition (NLIHC), "How Can I Influence Where the Money Goes?" (A NHTF Policy Brief) available at http://nlihc.org/sites/default/files/04_NHTF_Influence-the-Money_0615.pdf; 12 U.S.C. § 1338(c)(2) statute; 24 CFR § 93.101(a).
- 10 *Id.*; 12 U.S.C. § 4568(c)(5)(A); 24 CFR § 93.2, § 93.100(b), and § 93.101(b), and ConPlan regs at 24 CFR § 91.220(l)(5) and § 91.320(k)(5).
- 11 *Id.*; 12 U.S.C. § 4568
- 12 *Id.*; 12 U.S.C. § 4568(c)(5)(B).
- 13 *Id.*; 12 U.S.C. § 4568(c)(5)(C).
- 14 *Id.*; 12 U.S.C. § 4568(c)(6) and § 4568(g)(2)(D); ConPlan regulations at 24 CFR § 91.220(l)(5) and § 91.320(k)(5).
- 15 See National Low Income Housing Coalition (NLIHC) "Focused on Extremely Low Income Renters" (A NHTF Policy Brief), available at http://nlihc.org/sites/default/files/03_NHTF_Focus-on-ELI-Renters_0615.pdf; 12 U.S.C. § 4568(c)(7) and § 4568(c)(10)(A).
- 16 *Id.*; 12 U.S.C. § 4568(c)(7)(A).

rental housing must benefit VLI households.¹⁷ All funding designated toward homeownership activities must benefit households with incomes less than 50% of the area median income.

The factors listed in the interim rule are all governed by the overarching affirmatively furthering fair housing mandate. When selecting projects and designing ranking criteria among eligible projects, states must also adhere to these fair housing mandates. For example, a proposal that undermines fair housing goals should not necessarily be eligible for state funding, even if it satisfies one of the other allocation factors in the HTF rule.

INCLUDING AFFH in the HTF State Allocation Plan

Site Selection

Under statute, each state HTF Allocation Plan must prioritize geographic diversity. In the context of AFFH, geographic diversity means a cross-section of communities, **including** higher-income areas of opportunity and non-racially concentrated communities and neighborhoods. HUD's April 26 guidance on HTF state allocation plans is explicit about this obligation, noting that "[t]he State's geographic distribution priorities must be consistent with the State's certification that it will affirmatively further fair housing..." Thus, each state plan should clarify how geographic diversity is to be achieved within the context of AFFH, and also incorporate a strategy for racial/ethnic deconcentration by prioritizing areas that currently have few affordable units.

Allocation plans that simply re-allocate NHTF units based on existing poverty population in each city or town are likely to violate the Fair Housing Act, where patterns of poverty concentration parallel patterns of racial concentration. These types of allocation plans are essentially using historical patterns of segregation as the basis to justify a policy of continuing segregation.

The state HTF Allocation Plan will play a critical role in ensuring that ELI and VLI households have equal access to fair and affordable housing opportunities in non-segregated communities. Allocation plans that simply re-allocate HTF units based on existing poverty population in each city or town are likely to violate the Fair Housing Act, where patterns of poverty concentration parallel patterns of racial concentration. In other words, these types of allocation plans are essentially using historical patterns of segregation as the basis to justify a policy of continuing segregation. For this reason, we strongly advise against state allocation plans that automatically re-allocate funds to HUD entitlement jurisdictions, which are by definition areas that already have significant populations of poor families. States should make their own policy choices for HTF allocation, including providing funds to appropriate housing developments in entitlement jurisdictions, consistent with the Fair Housing Act, rather than simply

17 Id.; http://nlihc.org/sites/default/files/03_NHTF_Focus-on-ELI-Renters_0615.pdf; 12 U.S.C. §4568(c)(7).

following HUD's existing funding structures, which can have the effect of limiting choice and perpetuating segregation.

State HTF plans should take account of the needs of low-income families with children for safe neighborhoods with high-performing schools. High-opportunity neighborhoods provide critical resources for families, such as jobs, health care, high-performing school systems, retail and commercial enterprises, and public amenities. To advance fair and affordable housing, state HTF Allocation Plans should incorporate siting standards related to: (1) racial and/or economic concentration/deconcentration; (2) proximity to high-quality schools, positive or negative neighborhood assets, and accessible transit networks; and (3) for developments in lower income neighborhoods, the presence of meaningful community revitalization plans.¹⁸ Based on HUD-sponsored research on state LIHTC Qualified Allocation Plans (QAPs), these types of fair-housing-based threshold requirements or point systems actually have the effect of providing more LIHTC housing in high-opportunity communities.¹⁹

State NHTF plans should take account of the need of low-income families with children for safe neighborhoods with high-performing schools. High-opportunity neighborhoods provide critical resources for families, such as jobs, health care, high-performing school systems, retail and commercial enterprises, and public amenities.

States can rely on model definitions of "opportunity areas" included in many state QAPs for the LIHTC. For example, in the 2014 Massachusetts QAP for the LIHTC, "opportunity area" is defined: "as part of a neighborhood or community with a relatively low concentration of poverty (poverty rates <15%) that also offers access to opportunities such as jobs, health care, high-performing school systems, higher education, retail and commercial enterprise, and public amenities."²⁰ Similarly, the 2013 Pennsylvania QAP awarded points in its scoring rubric "to developments in areas that demonstrate the following relative to the immediate market area: low poverty rates, limited affordable housing options (both subsidized and non), limited affordable housing production in the past 20 years, close proximity to employment, strong housing markets and high owner-occupied markets."²¹ Other states have also included deconcentration provisions in their QAPs for the LIHTC, such as awarding points for developments located in high-income census tracts and/or in nonqualified census tracts, or creating an actual set-aside for developments located in suburban areas. For example, the New Jersey 2013 QAP included a 60% pool of tax credits available for suburban (and rural) locations.²²

18 See *Building Opportunity II: A Fair Housing Assessment of State Low Income Housing Tax Credit Plans* (PRRAC, May 2015), available at www.prrac.org/pdf/BuildingOpportunityII.pdf.

19 See *Effect of QAP Incentives on the Location of LIHTC Properties* (U.S. Department of Housing and Urban Development, April 2015), available at www.huduser.org/portal/publications/pdf/QAP_incentive_mdr.pdf

20 MA QAP 2014, pg. 37.

21 PA QAP 2013, pg. 27.

22 See *Building Opportunity II* (2015), pg. 10.

Taking further insights from the LIHTC program, the 2013 North Carolina QAP for the LIHTC specified, as a general requirement, that “Projects cannot be in areas of minority and low-income concentration (measured by comparing the percentage of minority and low-income households in the site’s census tract with the community overall) though exceptions may be granted for economically distressed areas which have community revitalization plans with public funds committed to support the effort.”²³ Similarly, in various state QAPs for the LIHTC – including in Alabama, Ohio, North Carolina, and South Dakota – strong point scores/requirements are incorporated to encourage developments to be located away from detrimental land uses.²⁴

Finally, states should strive for geographic balance not just in the overall distribution of HTF units, but especially in the distribution of larger units for families with young children. Traditionally, it has been easier to site affordable housing for elderly residents in exclusionary white towns – however, this practice does little to affirmatively further fair housing, and can lead to a racially divided HTF system within a state.

Avoiding Local Opposition to HTF Developments

The HTF includes no requirement for local approval of HTF developments. Indeed, there are not even any provisions in the HTF statute for the notification of local officials. **The practice of local approval has been shown to be detrimental to the siting of LIHTC family developments in high-opportunity communities and neighborhoods,**²⁵ and the requirement of local contribution and approval for LIHTC developments has prompted a HUD fair housing complaint in at least one state.²⁶ For these reasons, state HTF allocation plans should avoid local approval requirements (or point incentives for local approval or contribution).

Affirmative Marketing

To promote fair housing for all low-income households, especially those families who have historically experienced the greatest discrimination, the **HTF allocation plan should ensure not only that affordable housing is available in high-opportunity communities, but also that these developments are accessible to families in low-income and underserved communities** through affirmative marketing strategies.²⁷ In other words, it is not enough to simply provide low-cost housing for families who already live in a lower-poverty community. Affirmative marketing strategies seek to “level the information playing field by

23 NC QAP 2013, pg. 23.

24 See *Building Opportunity II* (2015), pg. 10.

25 See *Effect of QAP Incentives on the Location of LIHTC Properties*, *Supra*.

26 *Baltimore Regional Housing Campaign v. State of Maryland and Raymond A. Skinner, Secretary of the Department of Housing and Community Development of the State of Maryland* (HUD Complaint, August 2011)

27 The HTF Interim Rule sets out requirements for affirmative marketing at 24 CFR §§93.350(b), 93.404(c)(2)(vii)

encouraging the entry of underrepresented racial groups to a community and making special outreach efforts to these groups.”²⁸

In LIHTC state QAPs, affirmative marketing provisions are frequently mandated. Likewise, affirmative marketing should be included in any HTF allocation plan as a fundamental project characteristic, and states should undertake responsibility for reviewing these plans and monitoring their implementation. Such affirmative fair housing marketing plans should include market studies from the applicant, and also explain how the prospective HTF project intends to affirmatively further fair housing and attract underserved populations to the project.²⁹

Affirmative marketing provisions from state QAPs provide some helpful examples; for example, the 2014 Georgia QAP states, “At a minimum, Marketing Plans must include: outreach efforts to service providers, homeless shelter, or local disability advocacy organizations in the country where project is located; strategy to affirmatively market to persons with disabilities and the homeless; strategy to establish/maintain relationships between management agent and community service providers; referral/screening process that will be used to refer tenants to the projects, the screening criteria to be used, and reasonable accommodations made to facilitate admittance of persons with disabilities and homeless persons; marketing of properties to underserved populations 2-4 months prior to occupancy; applications for affordable units shall be made available in public locations including at least one with night hours.”³⁰

In Massachusetts, the QAP for the LIHTC program is explicit about specific racial/ethnic groups that should be targeted through affirmative marketing strategies. The Massachusetts 2014 QAP for the LIHTC program states: “All [applicants] should include a detailed plan detailing how they intend to market and attract underserved populations to the project, indicating persons with disabilities and minority households.”³¹ The Massachusetts QAP further states: “DHCD requires that developers establish affirmative action goals for the percentage of minority participation in each project. Applications must include marketing plans to reach the identified minority groups that are least likely to apply for the housing project being provided.”³²

Researchers have noted that marketing plans must incorporate innovative strategies to reach the most underserved populations. Relying on word-of-mouth or newspaper ads is unlikely to

28 Mark W. Zimmerman, “Opening the Door to Race-Based Real Estate Marketing: South-Suburban Housing Center v. Greater South Suburban Board of Realtors,” 41 DEPAUL L.REV. 1271, 1316 (1992).

29 Megan Haberle, Ebony Gayles, and Philip Tegeler, *Accessing Opportunity: Recommendations for Marketing and Tenant Selection in LIHTC and Other Housing Programs* (PRRAC, December 2012)

30 Georgia 2014 QAP, pg. 41, available at http://www.prrac.org/pdf/BO2AppendixB/georgia_2014.pdf

31 MA QAP 2014, pg. 34, http://www.prrac.org/pdf/BO2AppendixB/massachusetts_2014.pdf

32 Id. pg. 50.

overcome existing stigmas and increase the familiarity of underserved populations with high-opportunity neighborhoods.³³

In order to maximize the long-term benefits of integrative moves for families and children, agencies allocating HTF funds can award points for tenant selection preferences on the basis of applicants' residency in low-performing school districts and high-poverty, segregated communities with low environmental quality and other characteristics that are improved in the receiving community.³⁴ These families potentially have the most to gain from a move to a high opportunity community.

According to a study conducted by the Fair Housing Justice Center on a number of successful affirmative marketing initiatives, "The affirmative marketing plan and rental criteria utilized by a developer for the initial rent-up of a mixed income housing site in a low-poverty area, as well as during the on-going management of the site, directly impacts whether the site is racially diverse. If a site's initial marketing plan includes a wide variety of media outlets and targets a broad geographic area, it is more likely that a racially diverse tenant applicant pool will be created."³⁵

Tenant Selection

In conjunction with affirmative marketing programs, nondiscriminatory tenant selection procedures are critical to ensuring equal access for low-income and underserved households, which will help ameliorate the legacy of exclusion that plague many low-income individuals who benefit from government-funded housing programs. Researchers have demonstrated that different racial and economic groups often have access to different knowledge about housing opportunities within a metropolitan area, often due to tenant selection policies that create racial blind spots.³⁶ Certain tenant selection procedures – such as tenant qualifications and screening criteria, the use of preferences, and waitlist management practices – can directly influence resident demographics in a development.³⁷

HUD program rules already require coordination between affirmative marketing and tenant selection policies, as noted in HUD's Affirmative Fair Housing Marketing (AFHM) regulation, which requires that program participants "shall pursue affirmative fair housing marketing policies in soliciting buyers and tenants, in determining their eligibility, and in concluding sales and rental transactions."³⁸

33 *Accessing Opportunity*, pg. 12.

34 *Accessing Opportunity*, pg. 36.

35 See Diane L. Houk, Erica Blake, and Fred Freiberg, "Increasing Access to Low-Poverty Areas by Creating Mixed-Income Housing," June 2007 (Fair Housing Justice Center).

36 See Maria Krysan and Michael Bader, "Racial Blind Spots: Black-White-Latino Differences in Community Knowledge," *Social Problems*, Vol. 56, Issue 4: 677–701 (2009).

37 *Accessing Opportunity*, pg. 34.

The most well-known examples of a discriminatory tenant selection policy is the local residency preference. As the Fair Housing Justice Center notes, "Since many neighborhoods are racially homogenous, especially low-poverty ones, the use of localized rental marketing techniques and criteria, such as residency preferences, limit access for prospective tenants."³⁹ For example, strict residency preferences in predominantly white communities tend to perpetuate racial segregation by excluding minorities seeking to move from other communities.⁴⁰ Residency preferences should be avoided because they unfairly harm those least likely to apply to development in high-opportunity neighborhoods. The use of residency preference should be made impermissible except "where it can be shown (1) not to have a discriminatory effect and (2) not to conflict with AFHM (or other fair housing) objectives."⁴¹

State HTF allocation plans should also be mindful of discriminatory application or waitlist management procedures. Best practices can be gleaned from the guidance provided by HUD regarding waitlist procedures for public housing and vouchers.⁴² Some recommendations included in the waitlist guidance include: providing adequate notice of waitlist openings and affirmative outreach to a broad range of communities, especially underserved communities that are least likely to apply to developments in high-opportunity neighborhoods due to a lack of awareness; expanding time for accepting applications and offering more diverse platforms for submitting applications (for example, not *requiring* people to go to a physical place to subscribe to the waiting list, accommodating persons with disabilities, etc); eliminating uneven eligibility standards for local and nonlocal residents, and other arbitrary rules that harm underserved communities; and avoiding discriminatory waitlist selection procedures, such as using local preferences, selecting applicants by lottery or selecting by the date and time of the application.⁴³

The screening criteria used by HTF grantees to select applicants are another area where proper guidance through the state HTF allocation plan can help prevent discrimination. It is customary for housing agencies and private landlords to utilize tenant screening criteria to limit financial risk and assess other potential risks, such as criminal history, history of drug use, and employment history.⁴⁴ However, many screening practices can have a discriminatory impact on

39 Diane Houk et al, *supra*

40 See Keaton Norquist, "Local Preferences in Affordable Housing: Special Treatment for Those Who Live or Work in A Municipality?" 36 B.C. *Envtl. Aff. L. Rev.* 207, 224 (2009).

41 *Accessing Opportunity*, pg. 38.

42 Notice PIH 2012-34, "Waiting List Administration," (August 13, 2012): <http://1.usa.gov/NUkh08>. This guidance updates that available in HUD's Multifamily Occupancy Handbook.

43 *Accessing Opportunity*, pg. 39.

44 See, e.g., description of Chicago Housing Authority Practices in Lisa T. Alexander, "Stakeholder Participation in New Governance: Lessons from Chicago's Public Housing Reform Experiment," 16 *Georgetown Journal on Poverty Law and Policy* 117: 161 (2009).

minority applicants.⁴⁵ For example, a reliance on conventional credit (FICO) scores as a screening method can disadvantage minority applicants, who may have limited access to mainstream credit-building resources. Additionally, the use of credit scores and criminal background scores can harm minority applicants because of frequent errors by reporting services and the inability of applicants to dispute mistaken records.⁴⁶ Some landlords reject applicants based on prior involvement in legal actions, which should not be viewed as a legitimate business justification for tenant screening.⁴⁷ Also, some landlords automatically exclude applicants based on criminal records, which has a disproportionate impact on minority households with family members who committed minor offenses or offenses unrelated to their tenancy or distant in time.⁴⁸ HUD's new guidance on the discriminatory impacts of indiscriminate criminal background screening⁴⁹ has reinforced this message: **state HTF allocation plans should not perpetuate automatic or overbroad exclusions in the tenant selection process.**

Minimizing the Segregative Impact of Federally Mandated Allocation Guidelines

Two of the six priority funding factors in the interim HTF rule parallel provisions of the HOME program, which have helped foster segregation in the HOME rental housing programs. These factors are "the ability of the applicant to obligate the funding and to carry out the project in a timely manner" and "the extent to which the project incorporates other funding sources."⁵⁰

It is important to recognize the role that these two factors have sometimes played in favoring projects that increase racial segregation and poverty concentration in neighborhoods that are already segregated. For example, **the existence of local funding support from other low-income housing funding sources, and the easy availability of a site for development, are often closely correlated with very low-opportunity, segregated neighborhoods.** While it may be appropriate to fund such projects in a rapidly gentrifying poor neighborhood, or in the

45 For example, researchers have noted that at various Chicago housing developments, "At some sites, any debt over 90 days past due could prevent an applicant from meeting the screening requirements. Some tenant plans look at criminal history indefinitely with regards to certain crimes. Some tenant plans are silent as to whether a conviction or merely an arrest is required to reject applicants." See Lisa T. Alexander, "Stakeholder Participation in New Governance: Lessons from Chicago's Public Housing Reform Experiment," 16 *Georgetown Journal on Poverty Law & Policy* 117: 162–63 (2009) (internal cites omitted).

46 Eric Dunn and Marina Grabchuk, "Background Checks and Social Effects: Contemporary Residential Tenant-Screening Problems in Washington State," 9 *Seattle Journal for Social Justice* 319: 328 (2010), listing common errors in background checks due to mistakes arising from similar names or birth dates, criminal identity theft, reports containing expunged records, clerical errors, and other issues.

47 *Accessing Opportunity*, pg. 41.

48 Merf Ehman, Columbia Legal Services, "Fair Housing Disparate Impact Claims Based on the Use of Criminal and Eviction Records in Tenant Screening Policies" (January 2011), <http://nhlp.org/files/PRRAC%20Disparate%20Impact%201-2011.pdf>

49 "Office of General Counsel Guidance on Application of Fair Housing Act Standards to the Use of Criminal Records by Providers of Housing and Real Estate-Related Transactions" (HUD, April 4, 2016), available at http://portal.hud.gov/hudportal/documents/huddoc?id=HUD_OGCGuidAppFHASandCR.pdf.

50 12 U.S.C. §4568(c)(6) and §4568(g)(2)(D); ConPlan regs at 24 U.S.C. §91.220(l)(5) and §91.320(k)(5).

context of a bona fide community revitalization plan, the preference in the allocation criteria is not a license to violate the Fair Housing Act – rather it means that, among otherwise eligible projects, the existing of other funding sources and the ability to carry out the project in a timely fashion will give the project an advantage in the competition for funds.

A number of QAPs in the LIHTC program favor developments in Qualified Census Tracts if they contribute to a “concerted community revitalization plan,” avoiding the placement of more low-income units in high-poverty areas with no other neighborhood investment strategy in place. For example, Pennsylvania requires that tax credits in the LIHTC program be used to support a “broader community revitalization program which has the capability of changing fundamentally the character of a neighborhood, enhancing the lives and amenities available to residents of the community...focused on implementing a mixed income strategy, and/or which seeks to counteract the pattern through which some metropolitan areas are being segregated by income or race.”⁵¹

Preservation, Acquisition, and New Construction: Achieving an Appropriate Balance

The HTF was intended to *increase* the supply of housing affordable to extremely low income families, so there should be an emphasis in most state plans favoring new construction. However, the preservation and acquisition of existing housing are also appropriate uses of HTF funds, as long as allocation policies do not drive segregation. Here are some suggested general principles:

- New construction should be focused on developments in lower-poverty areas of opportunity; investments in higher-poverty areas should focus on the preservation and rehabilitation of existing housing.
- Acquisition of existing housing (or portions of existing rental housing) for conversion to deed-restricted low-income housing should be limited to lower-poverty, higher-opportunity areas.
- Preservation of low-income housing should prioritize, but not be limited to, the preservation of assisted housing resources in lower-poverty, higher-opportunity areas.
- Funds allocated to housing preservation should not represent a disproportionate share of state HTF allocations; most funds should be allocated to new construction or new housing acquisition in lower-poverty areas of opportunity.

Other Incentives to Promote Racial Integration

State HTF Allocation Plans should also require detailed demographic reporting to permit the state to assess whether the program is being used in a manner to further geographic diversity and residential integration over time, and whether any internal segregation is developing among the HTF developments within a given metropolitan area.

51 PA QAP 2013, pg. 7; see *Building Opportunity II* (2015), pg. 17.

Acknowledgments

This Policy Brief was prepared by Philip Tegeler, Etienne Toussaint, and LaKeeshia Fox of the Poverty & Race Research Action Council. We are also grateful for the input of Ed Gramlich of the National Low Income Housing Coalition and the insights of our colleagues in the Housing Justice Network.

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April 4, 2016

**Office of General Counsel Guidance on
Application of Fair Housing Act Standards to the Use of Criminal Records by
Providers of Housing and Real Estate-Related Transactions**

I. Introduction

The Fair Housing Act (or Act) prohibits discrimination in the sale, rental, or financing of dwellings and in other housing-related activities on the basis of race, color, religion, sex, disability, familial status or national origin.¹ HUD's Office of General Counsel issues this guidance concerning how the Fair Housing Act applies to the use of criminal history by providers or operators of housing and real-estate related transactions. Specifically, this guidance addresses how the discriminatory effects and disparate treatment methods of proof apply in Fair Housing Act cases in which a housing provider justifies an adverse housing action – such as a refusal to rent or renew a lease – based on an individual's criminal history.

II. Background

As many as 100 million U.S. adults – or nearly one-third of the population – have a criminal record of some sort.² The United States prison population of 2.2 million adults is by far the largest in the world.³ As of 2012, the United States accounted for only about five percent of the world's population, yet almost one quarter of the world's prisoners were held in American prisons.⁴ Since 2004, an average of over 650,000 individuals have been released annually from federal and state prisons,⁵ and over 95 percent of current inmates will be released at some point.⁶ When individuals are released from prisons and jails, their ability to access safe, secure and affordable housing is critical to their successful reentry to society.⁷ Yet many formerly incarcerated individuals, as well as individuals who were convicted but not incarcerated, encounter significant barriers to securing housing, including public and other federally-subsidized housing,

¹ 42 U.S.C. § 3601 *et seq.*

² Bureau of Justice Statistics, U.S. Dep't of Justice, *Survey of State Criminal History Information Systems, 2012*, 3 (Jan. 2014), available at <https://www.ncjrs.gov/pdffiles1/bjs/grants/244563.pdf>.

³ Nat'l Acad. Sci., Nat'l Res. Couns., *The Growth of Incarceration in the United States: Exploring Causes and Consequences 2* (Jeremy Travis, et al. eds., 2014), available at: <http://www.nap.edu/catalog/18613/the-growth-of-incarceration-in-the-united-states-exploring-causes>.

⁴ *Id.*

⁵ E. Ann Carson, Bureau of Justice Statistics, U.S. Dep't of Justice, *Prisoners in 2014* (Sept. 2015) at 29, appendix tbls. 1 and 2, available at <http://www.bjs.gov/index.cfm?ty=pbdetail&iid=5387>.

⁶ Bureau of Justice Statistics, U.S. Dep't of Justice, *Reentry Trends in the United States*, available at <http://www.bjs.gov/content/pub/pdf/reentry.pdf>.

⁷ See, e.g., S. Metraux, et al. "Incarceration and Homelessness," in *Toward Understanding Homelessness: The 2007 National Symposium on Homelessness Research*, #9 (D. Dennis, et al. eds., 2007), available at: <https://www.huduser.gov/portal/publications/pdf/p9.pdf> (explaining "how the increasing numbers of people leaving carceral institutions face an increased risk for homelessness and, conversely, how persons experiencing homelessness are vulnerable to incarceration.").

because of their criminal history. In some cases, even individuals who were arrested but not convicted face difficulty in securing housing based on their prior arrest.

Across the United States, African Americans and Hispanics are arrested, convicted and incarcerated at rates disproportionate to their share of the general population.⁸ Consequently, criminal records-based barriers to housing are likely to have a disproportionate impact on minority home seekers. While having a criminal record is not a protected characteristic under the Fair Housing Act, criminal history-based restrictions on housing opportunities violate the Act if, without justification, their burden falls more often on renters or other housing market participants of one race or national origin over another (i.e., discriminatory effects liability).⁹ Additionally, intentional discrimination in violation of the Act occurs if a housing provider treats individuals with comparable criminal history differently because of their race, national origin or other protected characteristic (i.e., disparate treatment liability).

III. Discriminatory Effects Liability and Use of Criminal History to Make Housing Decisions

A housing provider violates the Fair Housing Act when the provider's policy or practice has an unjustified discriminatory effect, even when the provider had no intent to discriminate.¹⁰ Under this standard, a facially-neutral policy or practice that has a discriminatory effect violates the Act if it is not supported by a legally sufficient justification. Thus, where a policy or practice that restricts access to housing on the basis of criminal history has a disparate impact on individuals of a particular race, national origin, or other protected class, such policy or practice is unlawful under the Fair Housing Act if it is not necessary to serve a substantial, legitimate, nondiscriminatory interest of the housing provider, or if such interest could be served by another practice that has a less discriminatory effect.¹¹ Discriminatory effects liability is assessed under a three-step burden-shifting standard requiring a fact-specific analysis.¹²

The following sections discuss the three steps used to analyze claims that a housing provider's use of criminal history to deny housing opportunities results in a discriminatory effect in violation of the Act. As explained in Section IV, below, a different analytical framework is used to evaluate claims of intentional discrimination.

⁸ See *infra* nn. 16-20 and accompanying text.

⁹ The Fair Housing Act prohibits discrimination based on race, color, religion, sex, disability, familial status, and national origin. This memorandum focuses on race and national origin discrimination, although criminal history policies may result in discrimination against other protected classes.

¹⁰ 24 C.F.R. § 100.500; accord *Texas Dep't of Hous. & Cmty. Affairs v. Inclusive Cmty. Project, Inc.*, ___ U.S. ___, 135 S. Ct. 2507 (2015).

¹¹ 24 C.F.R. § 100.500; see also *Inclusive Cmty. Project*, 135 S. Ct. at 2514-15 (summarizing HUD's Discriminatory Effects Standard in 24 C.F.R. § 100.500); *id.* at 2523 (explaining that housing providers may maintain a policy that causes a disparate impact "if they can prove [the policy] is necessary to achieve a valid interest.").

¹² See 24 C.F.R. § 100.500.

A. Evaluating Whether the Criminal History Policy or Practice Has a Discriminatory Effect

In the first step of the analysis, a plaintiff (or HUD in an administrative adjudication) must prove that the criminal history policy has a discriminatory effect, that is, that the policy results in a disparate impact on a group of persons because of their race or national origin.¹³ This burden is satisfied by presenting evidence proving that the challenged practice actually or predictably results in a disparate impact.

Whether national or local statistical evidence should be used to evaluate a discriminatory effects claim at the first step of the analysis depends on the nature of the claim alleged and the facts of that case. While state or local statistics should be presented where available and appropriate based on a housing provider's market area or other facts particular to a given case, national statistics on racial and ethnic disparities in the criminal justice system may be used where, for example, state or local statistics are not readily available and there is no reason to believe they would differ markedly from the national statistics.¹⁴

National statistics provide grounds for HUD to investigate complaints challenging criminal history policies.¹⁵ Nationally, racial and ethnic minorities face disproportionately high rates of arrest and incarceration. For example, in 2013, African Americans were arrested at a rate more than double their proportion of the general population.¹⁶ Moreover, in 2014, African Americans comprised approximately 36 percent of the total prison population in the United States, but only about 12 percent of the country's total population.¹⁷ In other words, African Americans were incarcerated at a rate nearly three times their proportion of the general population. Hispanics were similarly incarcerated at a rate disproportionate to their share of the

¹³ 24 C.F.R. § 100.500(c)(1); *accord Inclusive Cmty. Project*, 135 S. Ct. at 2522-23. A discriminatory effect can also be proven with evidence that the policy or practice creates, increases, reinforces, or perpetuates segregated housing patterns. See 24 C.F.R. § 100.500(a). This guidance addresses only the method for analyzing disparate impact claims, which in HUD's experience are more commonly asserted in this context.

¹⁴ *Compare Dothard v. Rawlinson*, 433 U.S. 321, 330 (1977) (“[R]eliance on general population demographic data was not misplaced where there was no reason to suppose that physical height and weight characteristics of Alabama men and women differ markedly from those of the national population.”) with *Mountain Side Mobile Estates P’ship v. Sec’y of Hous. & Urban Dev.*, 56 F.3d 1243, 1253 (10th Cir. 1995) (“In some cases national statistics may be the appropriate comparable population. However, those cases are the rare exception and this case is not such an exception.”) (citation omitted).

¹⁵ *Cf. El v. SEPTA*, 418 F. Supp. 2d 659, 668-69 (E.D. Pa. 2005) (finding that plaintiff proved prima facie case of disparate impact under Title VII based on national data from the U.S. Bureau of Justice Statistics and the Statistical Abstract of the U.S., which showed that non-Whites were substantially more likely than Whites to have a conviction), *aff’d on other grounds*, 479 F.2d 232 (3d Cir. 2007).

¹⁶ See FBI Criminal Justice Information Services Division, *Crime in the United States, 2013*, tbl.43A, available at <https://www.fbi.gov/about-us/cjis/ucr/crime-in-the-u.s/2013/crime-in-the-u.s.-2013/tables/table-43> (Fall 2014) (reporting that African Americans comprised 28.3% of all arrestees in 2013); U.S. Census Bureau, Monthly Postcensal Resident Population by Single Year of Age, Sex, Race and Hispanic Origin: July 1, 2013 to December 1, 2013, available at <http://www.census.gov/popest/data/national/asrh/2014/2014-nat-res.html> (reporting data showing that individuals identifying as African American or Black alone made up only 12.4% of the total U.S. population at 2013 year-end).

¹⁷ See E. Ann Carson, Bureau of Justice Statistics, U.S. Dep’t of Justice, *Prisoners in 2014* (Sept. 2015) at tbl. 10, available at <http://www.bjs.gov/index.cfm?ty=pbdetail&iid=5387>; and U.S. Census Bureau, Monthly Postcensal Resident Population by Single Year of Age, Sex, Race and Hispanic Origin: July 1, 2014 to December 1, 2014, available at <http://www.census.gov/popest/data/national/asrh/2014/2014-nat-res.html>.

general population, with Hispanic individuals comprising approximately 22 percent of the prison population, but only about 17 percent of the total U.S. population.¹⁸ In contrast, non-Hispanic Whites comprised approximately 62 percent of the total U.S. population but only about 34 percent of the prison population in 2014.¹⁹ Across all age groups, the imprisonment rates for African American males is almost six times greater than for White males, and for Hispanic males, it is over twice that for non-Hispanic White males.²⁰

Additional evidence, such as applicant data, tenant files, census demographic data and localized criminal justice data, may be relevant in determining whether local statistics are consistent with national statistics and whether there is reasonable cause to believe that the challenged policy or practice causes a disparate impact. Whether in the context of an investigation or administrative enforcement action by HUD or private litigation, a housing provider may offer evidence to refute the claim that its policy or practice causes a disparate impact on one or more protected classes.

Regardless of the data used, determining whether a policy or practice results in a disparate impact is ultimately a fact-specific and case-specific inquiry.

B. Evaluating Whether the Challenged Policy or Practice is Necessary to Achieve a Substantial, Legitimate, Nondiscriminatory Interest

In the second step of the discriminatory effects analysis, the burden shifts to the housing provider to prove that the challenged policy or practice is justified – that is, that it is necessary to achieve a substantial, legitimate, nondiscriminatory interest of the provider.²¹ The interest proffered by the housing provider may not be hypothetical or speculative, meaning the housing provider must be able to provide evidence proving both that the housing provider has a substantial, legitimate, nondiscriminatory interest supporting the challenged policy and that the challenged policy actually achieves that interest.²²

Although the specific interest(s) that underlie a criminal history policy or practice will no doubt vary from case to case, some landlords and property managers have asserted the protection of other residents and their property as the reason for such policies or practices.²³ Ensuring

¹⁸ See *id.*

¹⁹ See *id.*

²⁰ E. Ann Carson, Bureau of Justice Statistics, U.S. Dep't of Justice, *Prisoners in 2014* (Sept. 2015) at table 10, available at <http://www.bjs.gov/index.cfm?ty=pbdetail&iid=5387>.

²¹ 24 C.F.R. § 100.500(c)(2); see also *Inclusive Cmty. Project*, 135 S. Ct. at 2523.

²² See 24 C.F.R. § 100.500(b)(2); see also 78 Fed. Reg. 11460, 11471 (Feb. 15, 2013).

²³ See, e.g., Answer to Amended Complaint at 58, *The Fortune Society, Inc. v. Sandcastle Towers Hsg. Dev. Fund Corp.*, No. 1:14-CV-6410 (E.D.N.Y. May 21, 2015), ECF No. 37 (“The use of criminal records searches as part of the overall tenant screening process used at Sand Castle serves valid business and security functions of protecting tenants and the property from former convicted criminals.”); *Evans v. UDR, Inc.*, 644 F.Supp.2d 675, 683 (E.D.N.C. 2009) (noting, based on affidavit of property owner, that “[t]he policy [against renting to individuals with criminal histories is] based primarily on the concern that individuals with criminal histories are more likely than others to commit crimes on the property than those without such backgrounds ... [and] is thus based [on] concerns for the safety of other residents of the apartment complex and their property.”); see also J. Helfgott, *Ex-Offender Needs Versus Community Opportunity in Seattle*, Washington, 61 Fed. Probation 12, 20 (1997) (finding in a survey of 196

resident safety and protecting property are often considered to be among the fundamental responsibilities of a housing provider, and courts may consider such interests to be both substantial and legitimate, assuming they are the actual reasons for the policy or practice.²⁴ A housing provider must, however, be able to prove through reliable evidence that its policy or practice of making housing decisions based on criminal history actually assists in protecting resident safety and/or property. Bald assertions based on generalizations or stereotypes that any individual with an arrest or conviction record poses a greater risk than any individual without such a record are not sufficient to satisfy this burden.

1. Exclusions Because of Prior Arrest

A housing provider with a policy or practice of excluding individuals because of one or more prior arrests (without any conviction) cannot satisfy its burden of showing that such policy or practice is necessary to achieve a substantial, legitimate, nondiscriminatory interest.²⁵ As the Supreme Court has recognized, “[t]he mere fact that a man has been arrested has very little, if any, probative value in showing that he has engaged in any misconduct. An arrest shows nothing more than that someone probably suspected the person apprehended of an offense.”²⁶ Because arrest records do not constitute proof of past unlawful conduct and are often incomplete (e.g., by failing to indicate whether the individual was prosecuted, convicted, or acquitted),²⁷ the fact of an arrest is not a reliable basis upon which to assess the potential risk to resident safety or property posed by a particular individual. For that reason, a housing provider who denies housing to persons on the basis of arrests not resulting in conviction cannot prove that the exclusion actually assists in protecting resident safety and/or property.

landlords in Seattle that of the 43% of landlords that said they were inclined to reject applicants with a criminal history, the primary reason for their inclination was protection and safety of community).

²⁴ As explained in HUD’s 2013 Discriminatory Effects Final Rule, a “substantial” interest is a core interest of the organization that has a direct relationship to the function of that organization. The requirement that an interest be “legitimate” means that a housing provider’s justification must be genuine and not false or fabricated. See 78 Fed. Reg. at 11470; see also *Charleston Hous. Auth. v. U.S. Dep’t of Agric.*, 419 F.3d 729, 742 (8th Cir. 2005) (recognizing that, “in the abstract, a reduction in the concentration of low income housing is a legitimate goal,” but concluding “that the Housing Authority had not shown a need for deconcentration in this instance, and in fact, had falsely represented the density [of low income housing] at the location in question in an attempt to do so”).

²⁵ HUD recently clarified that arrest records may not be the basis for denying admission, terminating assistance, or evicting tenants from public and other federally-assisted housing. See Guidance for Public Housing Agencies (PHAs) and Owners of Federally-Assisted Housing on Excluding the Use of Arrest Records in Housing Decisions, HUD PIH Notice 2015-19, (November 2, 2015), available at: <http://portal.hud.gov/hudportal/documents/huddoc?id=PIH2015-19.pdf>.

²⁶ *Schwartz v. Bd of Bar Examiners*, 353 U.S. 232, 241 (1957); see also *United States v. Berry*, 553 F.3d 273, 282 (3d Cir. 2009) (“[A] bare arrest record – without more – does not justify an assumption that a defendant has committed other crimes and it therefore cannot support increasing his/her sentence in the absence of adequate proof of criminal activity.”); *United States v. Zapete-Garcia*, 447 F.3d 57, 60 (1st Cir. 2006) (“[A] mere arrest, especially a lone arrest, is not evidence that the person arrested actually committed any criminal conduct.”).

²⁷ See, e.g., U.S. Dep’t of Justice, *The Attorney General’s Report on Criminal History Background Checks* at 3, 17 (June 2006), available at http://www.bjs.gov/content/pub/pdf/ag_bgchecks_report.pdf (reporting that the FBI’s Interstate Identification Index system, which is the national system designed to provide automated criminal history record information and “the most comprehensive single source of criminal history information in the United States,” is “still missing final disposition information for approximately 50 percent of its records”).

Analogously, in the employment context, the Equal Employment Opportunity Commission has explained that barring applicants from employment on the basis of arrests not resulting in conviction is not consistent with business necessity under Title VII because the fact of an arrest does not establish that criminal conduct occurred.²⁸

2. Exclusions Because of Prior Conviction

In most instances, a record of conviction (as opposed to an arrest) will serve as sufficient evidence to prove that an individual engaged in criminal conduct.²⁹ But housing providers that apply a policy or practice that excludes persons with prior convictions must still be able to prove that such policy or practice is necessary to achieve a substantial, legitimate, nondiscriminatory interest. A housing provider that imposes a blanket prohibition on any person with any conviction record – no matter when the conviction occurred, what the underlying conduct entailed, or what the convicted person has done since then – will be unable to meet this burden. One federal court of appeals held that such a blanket ban violated Title VII, stating that it “could not conceive of any business necessity that would automatically place every individual convicted of any offense, except a minor traffic offense, in the permanent ranks of the unemployed.”³⁰ Although the defendant-employer in that case had proffered a number of theft and safety-related justifications for the policy, the court rejected such justifications as “not empirically validated.”³¹

A housing provider with a more tailored policy or practice that excludes individuals with only certain types of convictions must still prove that its policy is necessary to serve a “substantial, legitimate, nondiscriminatory interest.” To do this, a housing provider must show that its policy accurately distinguishes between criminal conduct that indicates a demonstrable risk to resident safety and/or property and criminal conduct that does not.³²

²⁸ See U.S. Equal Emp’t Opportunity Comm’n, *EEOC Enforcement Guidance, Number 915.002*, 12 (Apr. 25, 2012), available at http://www.eeoc.gov/laws/guidance/arrest_conviction.cfm; see also *Gregory v. Litton Systems, Inc.*, 316 F. Supp. 401, 403 (C.D. Cal. 1970) (holding that defendant employer’s policy of excluding from employment persons with arrests without convictions unlawfully discriminated against African American applicants in violation of Title VII because there “was no evidence to support a claim that persons who have suffered no criminal convictions but have been arrested on a number of occasions can be expected, when employed, to perform less efficiently or less honestly than other employees,” such that “information concerning a ... record of arrests without conviction, is irrelevant to [an applicant’s] suitability or qualification for employment”), *aff’d*, 472 F.2d 631 (9th Cir. 1972).

²⁹ There may, however, be evidence of an error in the record, an outdated record, or another reason for not relying on the evidence of a conviction. For example, a database may continue to report a conviction that was later expunged, or may continue to report as a felony an offense that was subsequently downgraded to a misdemeanor. See generally SEARCH, *Report of the National Task Force on the Commercial Sale of Criminal Justice Record Information* (2005), available at <http://www.search.org/files/pdf/RNTFCSCJRI.pdf>.

³⁰ *Green v. Missouri Pacific R.R.*, 523 F.2d 1290, 1298 (8th Cir. 1975).

³¹ *Id.*

³² *Cf. El*, 479 F.3d at 245-46 (stating that “Title VII ... require[s] that the [criminal conviction] policy under review accurately distinguish[es] between applicants that pose an unacceptable level or risk and those that do not”).

A policy or practice that fails to take into account the nature and severity of an individual's conviction is unlikely to satisfy this standard.³³ Similarly, a policy or practice that does not consider the amount of time that has passed since the criminal conduct occurred is unlikely to satisfy this standard, especially in light of criminological research showing that, over time, the likelihood that a person with a prior criminal record will engage in additional criminal conduct decreases until it approximates the likelihood that a person with no criminal history will commit an offense.³⁴

Accordingly, a policy or practice that fails to consider the nature, severity, and recency of criminal conduct is unlikely to be proven necessary to serve a "substantial, legitimate, nondiscriminatory interest" of the provider. The determination of whether any particular criminal history-based restriction on housing satisfies step two of the discriminatory effects standard must be made on a case-by-case basis.³⁵

C. Evaluating Whether There Is a Less Discriminatory Alternative

The third step of the discriminatory effects analysis is applicable only if a housing provider successfully proves that its criminal history policy or practice is necessary to achieve its substantial, legitimate, nondiscriminatory interest. In the third step, the burden shifts back to the plaintiff or HUD to prove that such interest could be served by another practice that has a less discriminatory effect.³⁶

Although the identification of a less discriminatory alternative will depend on the particulars of the criminal history policy or practice under challenge, individualized assessment of relevant mitigating information beyond that contained in an individual's criminal record is likely to have a less discriminatory effect than categorical exclusions that do not take such additional information into account. Relevant individualized evidence might include: the facts or circumstances surrounding the criminal conduct; the age of the individual at the time of the conduct; evidence that the individual has maintained a good tenant history before and/or after the conviction or conduct; and evidence of rehabilitation efforts. By delaying consideration of criminal history until after an individual's financial and other qualifications are verified, a housing provider may be able to minimize any additional costs that such individualized assessment might add to the applicant screening process.

³³ Cf. *Green*, 523 F.2d at 1298 (holding that racially disproportionate denial of employment opportunities based on criminal conduct that "does not significantly bear upon the particular job requirements is an unnecessarily harsh and unjust burden" and violated Title VII).

³⁴ Cf. *El*, 479 F.3d at 247 (noting that plaintiff's Title VII disparate impact claim might have survived summary judgment had plaintiff presented evidence that "there is a time at which a former criminal is no longer any more likely to recidivate than the average person..."); see also *Green*, 523 F.2d at 1298 (permanent exclusion from employment based on any and all offenses violated Title VII); see Megan C. Kurlychek et al., *Scarlet Letters and Recidivism: Does an Old Criminal Record Predict Future Offending?*, 5 *Criminology and Pub. Pol'y* 483 (2006) (reporting that after six or seven years without reoffending, the risk of new offenses by persons with a prior criminal history begins to approximate the risk of new offenses among persons with no criminal record).

³⁵ The liability standards and principles discussed throughout this guidance would apply to HUD-assisted housing providers just as they would to any other housing provider covered by the Fair Housing Act. See HUD PIH Notice 2015-19 *supra* n. 25. Section 6 of that Notice addresses civil rights requirements.

³⁶ 24 C.F.R. § 100.500(c)(3); accord *Inclusive Cmty's. Project*, 135 S. Ct. 2507.

D. Statutory Exemption from Fair Housing Act Liability for Exclusion Because of Illegal Manufacture or Distribution of a Controlled Substance

Section 807(b)(4) of the Fair Housing Act provides that the Act does not prohibit “conduct against a person because such person has been convicted ... of the illegal manufacture or distribution of a controlled substance as defined in section 102 of the Controlled Substances Act (21 U.S.C. 802).”³⁷ Accordingly, a housing provider will not be liable under the Act for excluding individuals because they have been convicted of one or more of the specified drug crimes, regardless of any discriminatory effect that may result from such a policy.

Limitation. Section 807(b)(4) only applies to disparate impact claims based on the denial of housing due to the person’s *conviction* for drug manufacturing or distribution; it does not provide a defense to disparate impact claims alleging that a policy or practice denies housing because of the person’s *arrest* for such offenses. Similarly, the exemption is limited to disparate impact claims based on drug *manufacturing or distribution* convictions, and does not provide a defense to disparate impact claims based on other drug-related convictions, such as the denial of housing due to a person’s conviction for drug *possession*.

IV. **Intentional Discrimination and Use of Criminal History**

A housing provider may also violate the Fair Housing Act if the housing provider intentionally discriminates in using criminal history information. This occurs when the provider treats an applicant or renter differently because of race, national origin or another protected characteristic. In these cases, the housing provider’s use of criminal records or other criminal history information as a pretext for unequal treatment of individuals because of race, national origin or other protected characteristics is no different from the discriminatory application of any other rental or purchase criteria.

For example, intentional discrimination in violation of the Act may be proven based on evidence that a housing provider rejected an Hispanic applicant based on his criminal record, but admitted a non-Hispanic White applicant with a comparable criminal record. Similarly, if a housing provider has a policy of not renting to persons with certain convictions, but makes exceptions to it for Whites but not African Americans, intentional discrimination exists.³⁸ A disparate treatment violation may also be proven based on evidence that a leasing agent assisted a White applicant seeking to secure approval of his rental application despite his potentially disqualifying criminal record under the housing provider’s screening policy, but did not provide such assistance to an African American applicant.³⁹

³⁷ 42 U.S.C. § 3607(b)(4).

³⁸ *Cf. Sherman Ave. Tenants’ Assn. v. District of Columbia*, 444 F.3d 673, 683-84 (D.C. Cir. 2006) (upholding plaintiff’s disparate treatment claim based on evidence that defendant had not enforced its housing code as aggressively against comparable non-Hispanic neighborhoods as it did in plaintiff’s disproportionately Hispanic neighborhood).

³⁹ *See, e.g., Muriello*, 217 F. 3d at 522 (holding that Plaintiff’s allegations that his application for federal housing assistance and the alleged existence of a potentially disqualifying prior criminal record was handled differently than those of two similarly situated white applicants presented a prima facie case that he was discriminated against because of race, in violation of the Fair Housing Act).

Discrimination may also occur before an individual applies for housing. For example, intentional discrimination may be proven based on evidence that, when responding to inquiries from prospective applicants, a property manager told an African American individual that her criminal record would disqualify her from renting an apartment, but did not similarly discourage a White individual with a comparable criminal record from applying.

If overt, direct evidence of discrimination does not exist, the traditional burden-shifting method of establishing intentional discrimination applies to complaints alleging discriminatory intent in the use of criminal history information.⁴⁰ First, the evidence must establish a prima facie case of disparate treatment. This may be shown in a refusal to rent case, for example, by evidence that: (1) the plaintiff (or complainant in an administrative enforcement action) is a member of a protected class; (2) the plaintiff or complainant applied for a dwelling from the housing provider; (3) the housing provider rejected the plaintiff or complainant because of his or her criminal history; and (4) the housing provider offered housing to a similarly-situated applicant not of the plaintiff or complainant's protected class, but with a comparable criminal record. It is then the housing provider's burden to offer "evidence of a legitimate, nondiscriminatory reason for the adverse housing decision."⁴¹ A housing provider's nondiscriminatory reason for the challenged decision must be clear, reasonably specific, and supported by admissible evidence.⁴² Purely subjective or arbitrary reasons will not be sufficient to demonstrate a legitimate, nondiscriminatory basis for differential treatment.⁴³

While a criminal record can constitute a legitimate, nondiscriminatory reason for a refusal to rent or other adverse action by a housing provider, a plaintiff or HUD may still prevail by showing that the criminal record was not the true reason for the adverse housing decision, and was instead a mere pretext for unlawful discrimination. For example, the fact that a housing provider acted upon comparable criminal history information differently for one or more individuals of a different protected class than the plaintiff or complainant is strong evidence that a housing provider was not considering criminal history information uniformly or did not in fact have a criminal history policy. Or pretext may be shown where a housing provider did not actually know of an applicant's criminal record at the time of the alleged discrimination. Additionally, shifting or inconsistent explanations offered by a housing provider for the denial of an application may also provide evidence of pretext. Ultimately, the evidence that may be offered to show that the plaintiff or complainant's criminal history was merely a pretextual

⁴⁰ See, generally, *McDonnell Douglas Corp. v. Green*, 411 U.S. 792 (1973) (articulating the concept of a "prima facie case" of intentional discrimination under Title VII); see, e.g., *Allen v. Muriello*, 217 F.3d 517, 520-22 (7th Cir. 2000) (applying prima facie case analysis to claim under the Fair Housing Act alleging disparate treatment because of race in housing provider's use of criminal records to deny housing).

⁴¹ *Lindsay v. Yates*, 578 F.3d 407, 415 (6th Cir. 2009) (quotations and citations omitted).

⁴² See, e.g., *Robinson v. 12 Lofts Realty, Inc.*, 610 F.2d 1032, 1039-40 (2d Cir. 1979) ("A prima facie case having been established, a Fair Housing Act claim cannot be defeated by a defendant which relies on merely hypothetical reasons for the plaintiff's rejection.").

⁴³ See, e.g., *Muriello*, 217 F.3d at 522 (noting that housing provider's "rather dubious explanation for the differing treatment" of African American and White applicants' criminal records "puts the issue of pretext in the lap of a trier of fact"); *Soules v. U.S. Dep't of Hous. and Urban Dev.*, 967 F.2d 817, 822 (2d Cir. 1992) ("In examining the defendant's reason, we view skeptically subjective rationales concerning why he denied housing to members or protected groups [because] 'clever men may easily conceal their [discriminatory] motivations.'" (quoting *United States v. City of Black Jack, Missouri*, 508 F.2d 1179, 1185 (8th Cir. 1974)).

justification for intentional discrimination by the housing provider will depend on the facts of a particular case.

The section 807(b)(4) exemption discussed in Section III.D., above, does not apply to claims of intentional discrimination because by definition, the challenged conduct in intentional discrimination cases is taken because of race, national origin, or another protected characteristic, and not because of the drug conviction. For example, the section 807(b)(4) exemption would not provide a defense to a claim of intentional discrimination where the evidence shows that a housing provider rejects only African American applicants with convictions for distribution of a controlled substance, while admitting White applicants with such convictions.

V. Conclusion

The Fair Housing Act prohibits both intentional housing discrimination and housing practices that have an unjustified discriminatory effect because of race, national origin or other protected characteristics. Because of widespread racial and ethnic disparities in the U.S. criminal justice system, criminal history-based restrictions on access to housing are likely disproportionately to burden African Americans and Hispanics. While the Act does not prohibit housing providers from appropriately considering criminal history information when making housing decisions, arbitrary and overbroad criminal history-related bans are likely to lack a legally sufficient justification. Thus, a discriminatory effect resulting from a policy or practice that denies housing to anyone with a prior arrest or any kind of criminal conviction cannot be justified, and therefore such a practice would violate the Fair Housing Act.

Policies that exclude persons based on criminal history must be tailored to serve the housing provider's substantial, legitimate, nondiscriminatory interest and take into consideration such factors as the type of the crime and the length of the time since conviction. Where a policy or practice excludes individuals with only certain types of convictions, a housing provider will still bear the burden of proving that any discriminatory effect caused by such policy or practice is justified. Such a determination must be made on a case-by-case basis.

Selective use of criminal history as a pretext for unequal treatment of individuals based on race, national origin, or other protected characteristics violates the Act.

Helen R. Kanovsky, General Counsel



July 18, 2016

To: Mike Santoro
Connecticut Department of Housing

From: Florence Villano
Connecticut Housing Coalition

Re: Testimony on the Connecticut Department of Housing's Substantial Amendment to the State of Connecticut FY 16-17 Annual Action Plan Plan for Housing and Community Development

Thank you for this opportunity to submit comments on the Department's draft amendment for implementation of the National Housing Trust Fund (NHTF).

The Connecticut Housing Coalition represents a wide-ranging, vibrant network of community-based affordable housing activity across the state. Our more than 250 member organizations include nonprofit developers, human service agencies, resident associations, and diverse other housing practitioners and advocates. Founded in 1981, the Coalition's mission is to expand housing opportunity and to increase the quantity and quality of affordable housing in Connecticut.

For several years, the Coalition has worked with our affordable housing colleagues in Connecticut and across the country for the release of NHTF dollars as intended by President Bush and Congress when federal legislation was set in place in 2007. We are happy that the funding will soon be flowing to the states to expand access to affordable housing to the lowest income families.

Our comments focus on the importance of the Department's efforts to guarantee an increased number of affordable units to extremely low-income families.

1. Finding a Balance between Geographic Diversity and Deep Income Targeting.

The substantial amendment states that NHTF dollars will be available to fund housing development in all 169 towns of the state. The Coalition supports this provision in theory as

we believe affordable housing should be more available in every locality in Connecticut. However, an equally if not more important provision of the legislation is that the funding is intended to support the families and households who have the least access to affordable housing—those who have income classified as extremely low. The U.S. Census assures us that these families are not currently found in large numbers in those areas which have been called “high opportunity areas.”

We believe it is imperative that the Department hold the deep-targeting mandate above that of geographic diversity. In a state like ours, meeting both priorities simultaneously will be a difficult task. We understand that NHTF dollars must be combined with other federal and state funding to build affordable housing wherever successful applications are found. However, during this first year of implementation, particularly when the dollar amount of the allocation is so limited, it is important that the Department establish the precedent of building the maximum amount of affordable housing earmarked for ELI households. Other federal and state funding is available to expand the state’s efforts to develop affordable housing in those communities that have shown little interest in embracing affordable housing.

2. Housing Priority Needs.

Our concerns with this criterion are reflected above. Our only comment relates to ordering of the nine criteria. While we understand the action plan is not meant necessarily as a statement of priority classifications, we hope this placement does not reflect the Department’s priorities in choosing eligible applications. Particularly, we hope that “meeting underserved needs” and producing permanent supportive housing do not fall below applicant capacity, commitments to project-based rental assistance, and duration of affordability when the plan is translated into in rating and ranking criteria and point system.

3. Eligible Recipients.

The list of eligible recipients reflects the broad representation of sectors that build affordable housing across the state. We feel strongly that propriety should be given to those entities that have a history of developing affordable housing and have a mission of serving the needs of extremely low-income families.

4. Performance Goals and Bench Marks.

This is the section of the Substantial Amendment that we feel is the weakest in terms of articulating the Department’s intent to meet the full requirements of the law. Objectives and indicators that refer to low-income and moderate-income should be rewritten to include extremely low-income residents. Without indicators reflecting the true percentage of households/families earning 30 percent or less of the area/state median income in a given area, we will not be able to measure progress.

Additionally, all indicators used to measure success of NHTF spending should reflect income. Therefore, rather than measuring the number of newly constructed or rehabilitated rental units or new multifamily housing units created in areas of high opportunity, indicators should measure the percentage of those that are designated for extremely low income households and for which there is an affordability requirement of a minimum of 30 years.

Finally, we request clarification about how the output statement under Objective 2 was determined. If the state will receive \$2.7 million for new or rehabilitated affordable housing in the first year, why are only 20 units anticipated?

Thank you again for the opportunity to provide feedback to the Department on the Substantial Amendment to the Connecticut Action Plan. We hope our comments are of assistance to the Department and we look forward to working with you in the expansion of affordable housing under the National Housing Trust Fund investment.

Sincerely,

Florence Villano
Executive Director

Michael C. Santoro
Community Development Specialist
CT Department of Housing, Second Floor
505 Hudson Street, Hartford, CT 06106-7106

August 8, 2016

Re: Reaching Home Campaign Affordable and Supportive Housing Workgroup comments the “Substantial Amendment to the 2016-2017 Action Plan for Housing and Community Development for the National Housing Trust Fund”

On behalf of the Reaching Home Campaign Affordable and Supportive Housing Workgroup, we would like to thank you for the opportunity to submit comments on the “Substantial Amendment to the 2016-2017 Action Plan for Housing and Community Development for the National Housing Trust Fund”. Reaching Home is committed to implementing the Opening Doors- CT framework for accomplishing this goal. Under this framework, Reaching Home advances strategies that will enable us to end homelessness among key populations: Veterans, individuals experiencing chronic homelessness, families with children and youth.

First, we recognize that the NHTF is a relatively small, but important, financing tool. It is, in fact, the first new housing production program to come out of HUD since the 1990’s, and is a true Trust Fund, so is not tied to annual appropriations. As such, we hope and expect that it will become more substantial over time. The NHTF’s focus on creating housing for extremely low-income households is critical to meet the needs of families and individuals that are burdened by the punishing shortage of affordable housing in Connecticut. In fact, the Joint Center for Housing Studies at Harvard recently found more than half of all renters in our state are either severely or moderately burdened by housing costs. This burden leads to instability and, ultimately, contributes to homelessness.

We appreciate and support the statement in the Amendment that “DOH will use NHTF funds in combination with State Bond Funds, federal HOME, federal Section 811 and other funds to develop/rehabilitate extremely low-income housing. In accordance with the program guidelines, all of the NHTF funds received in the first year will support the creation of affordable rental housing for ELI persons or families.” This is certainly the best focus of these scarce resources, and the ability to utilize a portion of them (up to one-third) for operating subsidy should also be fully embraced as a financial mechanism to ensure project affordability and sustainability over time. We hope that this singular focus will sustain past this first year into future allocations and expenditures of the NHTF.

We acknowledge the Department's stated priorities for "higher opportunity areas", project-based rental assistance, and ConPlan priority housing needs. However, **we recommend that priority also be given to projects that serve families or individuals who have experienced homelessness.** The original goal of the NHTF is "to provide ongoing, permanent, dedicated, and sufficient sources of revenue to build, rehabilitate, and preserve housing for the lowest-income families, including people experiencing homelessness." In fact, as recently as March of this year, Ranking Member of the House Committee on Financial Services Maxine Waters introduced legislation to dramatically increase resources for the NHTF (and other programs) under "The Ending Homelessness Act of 2016" (H.R.4888). We fully support this goal, and ask that, in addition to supporting geographic and financial goals, priority for housing that serves families or individuals who are exiting homelessness be explicitly added to the special priorities for the NHTF in Connecticut.

Thank you and we would be happy to speak with you further on this matter.

Larry Oaks and Florence Villano
Co-Chairs, Affordable and Supportive Housing Workgroup
Reaching Home Campaign

**ATTACHMENT C – Multifamily Design, Construction and Sustainability Standards
- CHFA**



CONNECTICUT
HOUSING FINANCE
AUTHORITY

The Key To Affordable Housing

2016 Multifamily Design, Construction and Sustainability Standards – CHFA

**These Standards have been
adopted by the Connecticut
Department of Housing (DOH)**

These Standards are effective January 1, 2016

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INTRODUCTION

Multifamily Design, Construction and Sustainability Standards – CHFA (the Standards):

These Standards generally define the design process and the specific requirements for multifamily housing developments seeking construction funding administered through the Connecticut Housing Finance Authority (CHFA), and the Connecticut Department of Housing (DOH). These Standards are intended to facilitate the design and construction of housing with as much quality, durability and environmental sustainability as the marketplace, resources and need will permit. It is acknowledged that individual developments may face unique site, design, financing or market constraints, for which full compliance may be difficult or impossible. It is intended that such unique constraints are identified early in the design and underwriting review process, and that the developer or owner may request a modification of specific sections of the Standards. For other Construction Guidelines regarding CHFA Construction Cost, Energy Conservation, Environmental & Hazardous Materials Review, Project Planning & Technical Services Review and Technical Services/Asset Management (TSAM) Capital Improvement Project Review, see the CHFA website.

CSI Format: The Construction Specification Institute (CSI) has developed the standard filing system used by architectural, design, engineering, and construction professionals. The CSI MasterFormat 1995 provides a uniform approach to organizing specification text by establishing a structure consisting of 16 divisions (see table of contents), and each division is divided into articles, subordinate paragraphs, and subparagraphs, with standard, five-digit codes. Project manuals organized under MasterFormat 1995 are preferred, since the Project Cost Summary (Construction Schedule of Values) and Exploded Trade Payment Breakdown exhibits in the CHFA/DOH consolidation application, construction phase payment requisition and post-construction cost certification templates are organized by 16-divisions. Use of the 50-division, six-digit code 2014 MasterFormat filing system in project manuals is acceptable, provided all information is re-organized into 16-divisions for CHFA/DOH application exhibits and forms.

DESIGN STANDARDS

I. Standards, Regulations and Codes

A. Standards:

1. The Standards are not intended to reduce or circumvent the requirements of law and current applicable codes. Some of these Standards are general, and are intended to be guidelines that must be applied to the local situation. Although these Standards apply primarily to new construction, they also apply to the rehabilitation of existing structures as applicable to the proposed scope of work. These Standards may be modified only where the particular characteristics of the site or other local conditions make compliance impractical or undesirable. When such modifications are made, additional requirements may be required. It is highly recommended that if an applicant is unable to comply with any of the items listed in the Standards, the applicant contact CHFA and/or DOH to discuss.
2. The Standards are typically revised annually, and due to the evolving nature of such factors as construction means, methods, materials, technology, codes and laws, and CHFA/DOH multifamily financing program requirements, processes and procedures, they may be revised at any time. All applications must conform to the Standards current at the time they are submitted.

B. Regulations that may apply:

1. Flood Management Certification requirements of the Inland Water Resources Division (IWRD) of the Department of Energy and Environmental Protection (DEEP);
2. Section 504 of the Rehabilitation Act of 1973 (Section 504), the Department of Justice 2010 ADA Standards for Accessible Design and the Uniform Federal Accessibility Standards may apply;
3. HUD Minimum Property Standards (HUD MPS);
4. Federal Occupational Safety and Health Agency (OSHA) regulations; and
5. Fair Housing and Equal Opportunity (FHEO) including the barrier-free requirements of the Fair Housing Act (FHAct), Section 504, the Americans with Disabilities Act (ADA), the Architectural Barriers Act (ABA), and the Housing of Older Persons Act (HOPA).

C. Codes:

1. Connecticut State Building, Plumbing, Heating, Electrical and Energy Codes – current editions;
2. Connecticut Fire Safety Code (CSFSC) – current edition; and,
3. Connecticut Elevator Code (CSEC) – current edition.

II. Project Design Criteria

A proposal shall demonstrate that location, orientation, and design of vehicular ways, parking areas, pedestrian routes, public outdoor space, buildings, street furnishings, service facilities, and plantings respond appropriately to the following concerns:

A. Traditional Neighborhood Development (“TND”): TND is a comprehensive planning system that includes a variety of housing types and land uses in a defined area. Typical characteristics of TND include:

1. Housing Choice: Dwelling units differ in type and/or size, and serve different market segments/socio-economic categories.
2. Mixed Uses: In addition to residential, a variety of commercial, civic, institutional and personal activities are in close proximity (within ¼ mile). Uses may be mixed horizontally or vertically, and may include:
 - a. Everyday Retail (convenience and grocery stores, pharmacies and banks);
 - b. Discretionary Retail (restaurants, department stores and specialty shops);
 - c. Entertainment (movies, music and performance venues);
 - d. Education (public and private pre-, elementary and secondary schools, continuing/higher education);
 - e. Religious (churches, schools and cemeteries);
 - f. Government Services (post office, town/city hall, fire/police, courts, detention and motor vehicle);
 - g. Other Civic Buildings (transportation stations/terminals, community center, library and museum);
 - h. Offices (small professional/personal services);
 - i. Medical (hospital, clinic, and private offices);
 - j. Public Park or Community Recreation Center (playing courts/fields, walking/hiking trails and public gardens);
 - k. Light Industrial (auto repair, warehouses, and nurseries); and,
 - l. Lodging.
3. Connectivity: Efficiency/directness of travel between any two points within the development, and to destinations outside. Optimally, three separate routes, designed to accommodate a mix of travel modes, including motor vehicles, bicycles and pedestrians, should be provided.
4. Proximity: Neighborhood activity centers accessible by foot and mass transit.
5. Location: Placement of a development should relate to the greater metropolitan or regional context, may reflect smart growth. Types of development sites include brownfield (vacant, industrial site available for redevelopment), greyfield (paved parking area available for redevelopment), infill (balancing, completing, repairing existing urban fabric), and greenfield (site in an undeveloped/natural condition). Brownfield, greyfield and urban/suburban infill developments, which primarily use existing thoroughfares, schools, transit and other infrastructure, are generally preferable to greenfield developments in farmlands, woodlands, and any areas outside of designated growth areas not served by major transportation corridors.
6. Streetscape: Formal streetscape zones include private frontage (the privately-owned layer between building façade and property line), public frontage (publicly-owned layer between property line and the edge of vehicular lanes), and vehicular lanes (the space between curbs/pavement edges).
7. Civic Space: Publicly-accessible gathering areas may include plazas (major space enclosed by frontages, with durable pavement for parking and trees, requiring little maintenance), squares (large space enclosed by frontages at the intersection of important streets, with paved walks, lawns, trees and civic structures, requiring substantial maintenance), greens (medium space surrounded by building facades for

unstructured recreation, with grassy areas and trees, requiring little maintenance), and tot lots/playgrounds/gardens (small recreational spaces within urban blocks).

8. **Architectural Aesthetics:** Developments should provide/reflect accessible, safe environments (presence and arrangement of doors and windows - permeability vs. blank walls), facade elements which relate to residents and each other through proportion, massing, scale, rhythm and articulation, and patterns of light and shade. Iconography, ornamentation and symbolism should reflect building uses and purposes, and building materials should provide/reflect durability and permanence.
9. **Development Scale:** The design of Lot Scale Developments (smaller than three acres) should consider the possibilities for Housing Choice, Mixed Uses, Proximity, Location, Streetscape and Architectural Aesthetics. In addition to all of the characteristics of TND, the design of Block Scale Developments (more than three acres, but less than fifteen acres) should also consider the possibilities for Connectivity. The design of Neighborhood Scale Developments (fifteen acres or more) should also consider all of the characteristics of TND, including the possibilities for civic space.

B. Layout and Facilities: Buildings shall be planned and located so that the spaces between them become positive elements in the site plan, and not just leftover portions of the site which happen not to be occupied by buildings. Buildings, roads, parking areas, recreational facilities, paths and landscaping of plants and site furnishings shall be related properly to each other, to the sun, to natural features, to topography and to views on and off the site, in a well-designed assembly.

1. **Vehicular Routes and Parking:** Provide vehicular routes for inhabitants, visitors and service needs, and on-site parking for each dwelling. Parking areas shall be located and sized appropriately and shielded by topography or evergreen plantings. Large, open parking lots that dominate the overall site development are not acceptable. Sufficient numbers of deciduous trees in parking areas shall be planted to avoid heat island effect. Snow storage areas shall be provided for snow cleared from the drive, parking areas, and walkways.
2. **Pedestrian Routes and Recreation Areas:** Pedestrian routes and recreation areas shall be separated from vehicular ways to the fullest extent possible so as to provide safety to the inhabitants. Family housing developments shall be designed to provide routes which cross as few vehicular ways as possible and which are appropriate for children leading from dwellings to recreation areas, school bus stops and municipal streets. Sidewalks and pedestrian crossing(s) shall be made accessible to the handicapped, and shall be located so as to enhance neighborhood walk-ability.
3. **Outdoor Seating Areas:** Handicapped accessible outdoor seating areas shall be provided in locations and numbers appropriate for the size of the development which they will serve. Exterior seating and common area seating shall have back and arm rests. Seating shall be planned in family housing developments to relate to children's play areas for use of attending adults, and in elderly housing developments to observe centers of activity on and off the site.
4. **Outdoor Recreation Facilities:** Outdoor recreation facilities shall be provided consistent with the needs and size of each development, and its site characteristics. Tot and/or play lots shall be provided in family developments. All equipment shall be constructed for durability, resistance to vandalism and misuse, and low maintenance. Playgrounds shall be located to avoid hazards and to provide handicapped accessibility, opportunity for parental supervision, and protection of privacy of nearby inhabitants.
5. **Landscaping:** Tree species shall be selected for form, size and rate of growth to provide wind barriers, shading during the summer and sunshine in the winter. Non-invasive, native, drought-resistant plants shall be selected according to conditions of exposure and according to color, texture, and other features

that will enhance the aesthetics of the site. Root structures shall be considered for their required space, effects on nearby pavements, and possible interference with subsurface utilities

6. **Community Facilities:** Community facilities are required for clothes washing, social gathering, maintenance storage, management offices or other needs. Community facilities shall include a meeting room, toilet and kitchen facilities and (for elderly projects) recreation space for crafts.
7. **Garbage, Trash and Recycling Facilities:** Provide interior spaces or site-built enclosures for commercially-manufactured recycling containers for recyclable materials such as newspapers, magazines, junk mail, cardboard, glass, plastic, and aluminum, etc., in accordance with municipal recycling program requirements. Dumpsters and large bins shall be used for family housing if regular municipal collection service is not available. Dumpsters and bins shall be placed on concrete pads. Enclosures shall be provided for all collection areas to maintain orderly collection, neat appearance, and sanitary conditions, to deter access by animals, to minimize hazards to playing children, and to provide protection from rain and snow. Locations and numbers shall be convenient to the inhabitants served and accessible to the collecting vehicle, but shall be placed, screened or related to other facilities so as to be unobtrusive.
8. **Mailboxes:** Mailboxes, if provided in centralized, outdoor locations, shall be protected from weather, accessible to the mail carrier, convenient to the inhabitants, handicapped accessible, and located, screened or related to other facilities so as not to be obtrusive.
9. **Exterior Lighting:** Exterior lighting shall be provided for walkways and parking areas, independent of dwelling unit lighting and shall be integrated with features of the site to provide a coordinated, harmonious and uncluttered streetscape.
10. **Utilities:** Utilities shall be centralized wherever practicable to realize economies of efficiency in operation or maintenance. Electrical entrances shall be underground leading from a point where overhead service does not intrude upon the residential scale.

III. Building Design

Each dwelling unit shall be designed to be a private shelter with all the amenities possible within a development budget. Construction should provide the greatest durability and economy for the term of the mortgage. The following specific features must be considered in project development:

A. Building Form (Orientation, Shape and Materials):

1. Building access, public passageways, places for social gathering, common facilities, dwelling entrances, rooms and windows shall be related to sun direction, prevailing seasonal winds, views, nearby land uses, topography, natural features, vegetation, roads, drives, parking, recreation areas, other common facilities, walks, outdoor areas or any other features as may apply. Whenever possible, orient within 20° of north/south axis, with 90% of south-facing glazing shaded from the sun at noon on June 21st with overhangs, awnings, natural vegetation or automated shading devices, and un-shaded from the sun at noon on December 21st. All dwellings, especially elderly units, should be oriented on an east/west axis with daytime living portions related to the sun to capitalize on natural light and passive solar heat. They should also be oriented, wherever possible, to provide a daytime view, for the interior living spaces and covered exterior porches of each dwelling, of any areas on or off the site where interesting activity may be observed, consistent with maintaining privacy.
2. Buildings shall be designed and composed of materials appropriate to nearby existing development, to each other, to site improvements and to natural features. Sunlight, protection from winter winds,

exposure to summer breezes and views shall be considered. Incorporate natural cooling systems: shading from deciduous trees (for east and west-facing glass), screened operable windows and radiant heat-reflective barriers installed in attic spaces. Use materials that retain heat in the winter and remain cool in the summer.

B. General Building Arrangement:

1. Dwelling units shall be equipped with covered entryways that extend a minimum of three feet out from every exterior door, not located in basement spaces or where the finish floor of the habitable area is entirely below grade.
2. Efficiency units may be acceptable on a case-by-case basis.
3. Row-house units of three-bedroom or larger size shall have their entry at grade level. Their habitable spaces may be placed on a second floor level, but not at third floor level or above. Adequate sound insulation must be provided between units on separate floor levels and adjacent/abutting units.
4. Site plans shall not concentrate three and four bedroom units into one area. Concentrating units in such a manner has an adverse impact on parking and site maintenance. Designing for diverse family types by providing a mix of single and multi-bedroom units is encouraged.
5. In all buildings that are designed to include a multiple number of dwelling units, an enclosed access shall be provided to any of those units that are located above grade. This access may be individual stair enclosures or common stair enclosures; however, if the building is served by an elevator, the elevator must provide access to all units in the building.
6. Laundry facilities in each dwelling unit area preferred. At a minimum, units with three or more bedrooms shall have a clothes washer and dryer in the unit.
7. Provide a minimum of one and one half baths in units having three bedrooms, and two full baths in four bedroom units. In case of a townhouse type unit, a half bath (min.) shall be provided on the ground floor.

C. Common Space in Family Developments:

Family developments require community spaces for social activities, office space (including work areas) for rent up and continued property management, maintenance spaces and storage space, appropriately furnished for the intended users.

D. Buildings for Elderly Residents:

Physical limitations due to age and/or poor health shall be considered in the design of housing developments for elderly residents. Buildings designed for elderly residents shall have unit entries at grade, or a minimum of two elevators shall be provided to serve dwelling units on upper levels.

E. Handicapped Accessibility, Adaptability and Visitability:

1. Housing, programs and services for qualified individuals with disabilities shall be provided in settings that are not unnecessarily separate, segregated or restricted.

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2. Barrier-free (handicapped-accessible) and handicapped-adaptable units shall be provided in accordance with federal law, code and requirements from program and financing institutions; however, no less than 10% of the units shall be “Type A” barrier-free (handicapped-accessible).
3. Barrier-free units of different types and sizes shall be dispersed throughout the development.
4. All new ground floor residential spaces in multi-story units, and all new apartments in multi-story buildings shall be designed to be “visitable” – designed in such a way as to be visited by people with disabilities – with at least one no-step entrance, doors and hallways wide enough to navigate through, and a half bath (min.) sized for wheel chair access.

F. Universal Design Features: Consider providing universal design features in all dwelling units, to make them usable to the greatest extent by people of all ages and abilities, without the need for adaptation, including:

1. In dwelling units not required to be “Type A” (handicapped-accessible) units, comply with “Type B” (adaptable to handicapped-accessibility) dwelling unit requirements contained in ICC/ANSI A117.1 Accessible and Usable Buildings and Facilities (current edition).
2. Lever handles at all windows and doors; loop or lever pulls at cabinet doors/drawers.
3. Bathtub faucets/shower controls in an off-set location close to the outside rim of tubs and showers.
4. Adjustable shelves and hanging rods in closets.

G. Common Spaces: Management, mail pick-up and primary vertical circulation functions shall be grouped at the primary entrance.

1. All common facilities shall be accessible without passing directly through the lounge. If provided, medical and social services, central dining facilities and similar common facilities (including trash removal) shall be grouped in close proximity to the main circulation elements but in such a way that it is not necessary for a resident to pass through the lobby or the lounge to reach them.
2. The design shall provide easy “way finding” cues to distinguish location within a building. These cues can include clear organization in the design of space and circulation, plants, lighting, features, color (flooring, walls, and other features), furnishings, and consistent signs.
3. Proposed furnishings for Common Spaces shall be appropriate for the spaces to be furnished and for the intended residents.

H. Circulation: Common corridors shall be a minimum of 5 wide, with significant visual breaks or offsets to mitigate the apparent lengths of corridors. The length of travel from a unit to an elevator, and from the farthest unit to common dining and/or office facilities shall be minimized through building arrangement. No ramps shall be used in corridors.

I. Community rooms: Where provided, community rooms shall be handicapped-accessible, and shall be provided with a kitchen that shall have a double bowl sink, garbage disposal, dishwasher, microwave oven, range/oven, refrigerator, and a barrier-free workspace. Community room doors shall have integral glazing or sidelights, or immediately-adjacent interior windows shall be provided.

J. Craft rooms: Where provided, craft rooms shall be handicapped-accessible, shall include a large sink, with a gooseneck faucet and plaster trap, and shall have negative air pressure.

- K. Maintenance spaces:** Common maintenance space shall be provided for storage and work space. Heated and insulated maintenance buildings or maintenance spaces within residential buildings, with bathroom facilities, work benches and storage shelves for staff, shall be provided. Provision shall be made for the storage of flammable materials.
- L. Common laundry rooms:** Where provided, common laundry rooms shall be handicapped-accessible, and shall be provided with floor drains, a table for folding laundry, and a rod for hanging clothes. All laundry rooms shall have negative air pressure and, if feasible, a window to the outside. Common laundry rooms shall have a seating area within, immediately adjacent to, or in line of sight of the laundry room and doors shall have integral glazing or sidelights, or immediately-adjacent interior windows.
- M. Trash compactor rooms, trash chutes and trash rooms:** Trash compactor rooms shall be designed so that the trash gondola can be easily wheeled in and out of the space without sharp turns. A utility sink shall be provided in trash compactor areas/trash rooms for ease in cleaning. Wash-down sprayers shall be provided within the trash chute. Provide handicapped-accessible remote trash rooms as needed, so that disposal of trash is not through the main lobby. In multi-story apartment buildings, provide barrier-free resident access to the trash chute or trash room on each floor. All trash rooms shall have negative air pressure.
- N. Signs:** Interior signage at designated common permanent rooms and spaces shall be consistent with applicable codes and accessibility requirements.
- O. Dwelling unit design:** The adequacy of the design of dwelling units shall be measured by the dwelling units furnish ability, minimum room dimensions, handicapped-accessibility, and the inclusion of several key components listed below. Furniture layouts shall be provided for all unit floor plans. All units, unless otherwise noted, shall provide for:
1. Living Area (Minimum dimension of 11'-6") to accommodate: sofa: 36" x 84"; two chairs: 30" x 36" (one additional chair for three bedroom units); television on a table: 20" x 36"; Table: 18" x 30";
 2. Entrance Area (including a 2' x 3' coat closet) with 3' entry door;
 3. Secondary General Storage (near an exterior door; may be located within the dwelling unit, or in the same building accessible with sheltered passage)
 - a. Where no basement is provided: Single Room Occupancy (SRO)/one-bedroom: 15 sq. ft.; two-bedroom: 18 sq. ft.; three-bedroom: 22 sq. ft.
 - b. In buildings with multiple units for elderly residents, storage may be located in cubicles located in common area storage rooms;
 4. Dining Area (minimum of 42" from table edge to a wall or another piece of other furniture) to accommodate: Table 3'-6" x 3'-6" or 4'-6" diameter to accommodate four (accommodate six in three-bedroom units); Buffet or sideboard: 18" x 42";
 5. Kitchen (minimum of 60" between counters at dead ends) to accommodate:
 - a. Single bowl sink, with garbage disposal and 18" of counter space each side and task light above.
 - b. Dishwasher: 24" wide (18" wide acceptable for SRO/one bedroom units), adjacent to or in close proximity to the sink: Range/Oven: 30" wide (24" wide acceptable for SRO/one bedroom units), with 18" of counter space each side: Range Hood: 30" wide, re-circulating, with task light [Provide accessible controls, i.e., hard wired switches for the exhaust fan and task light where required]: Exhaust Fan: Recessed ceiling fans or ceiling grills ducted to in-line or roof-top exhaust fans for exhaust ventilation to the outside: Refrigerator/Freezer: Width as determined by

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dwelling unit type/storage requirements, with 18" minimum counter on latch side and cabinet above; side-by-side or bottom freezer refrigerators, or top freezer units specifically designed for accessibility in barrier-free designed units.

- c. Natural light shall be provided; borrowed light from pass-through openings and open areas over cabinets is acceptable.
 - d. Cabinets at a pass-through shall allow a vertical opening of 24" minimum.
 - e. In housing for elderly residents, overhead kitchen cabinets shall be placed 15" above the counter top, except as otherwise required for accessibility. Exceptions to this requirement shall be at pass-through openings and ranges, where cabinets shall be placed 24" above the work surface.
 - f. Appliance and cabinet doors and drawers shall not conflict when operated simultaneously.
 - g. Counter top work surface shall provide a minimum of 6 lineal feet with wall cabinets above and base cabinets below (split evenly between drawer bases and door bases).
 - h. In housing for elderly residents, counter space and an electrical outlet for a counter top microwave oven shall be provided.
 - i. Pantries are desirable, especially in barrier-free units.
6. Master Bedroom (Minimum dimension of 10'-6") to accommodate: queen bed: 60" x 80" (elderly housing: two twin beds: 39" x 78" each with 24" between); dresser: 18" x 52"; chair: 18" x 18"; two nightstands: 18" x 18" each; closet with six lineal feet of hanging rod;
 7. Secondary Bedroom – Elderly (Minimum dimension of 10'-0") to accommodate: double bed: 54" x 80"; dresser: 18" x 42"; chair: 18" x 18"; nightstand: 18" x 18"; closet with five lineal feet of hanging rod;
 8. Secondary Bedroom – Family (Minimum dimension of 10'-0") to accommodate: two twin beds: 39" x 78" each and 18" between; dresser: 18" x 42"; closet with four lineal feet of hanging rod; linen closet: near bathroom with two lineal feet and five shelves;
 9. Bathrooms (visitors shall have access to a water closet and lavatory without having to circulate through a bedroom in all dwelling units) to accommodate: water closet; bathtub and/or shower; lavatory in a 42" w. vanity base (vanity top in barrier-free units) with 12" w. drawer base; mirror; medicine cabinet; toilet paper holder; (2) towel bars; grab bars, as required; ENERGY STAR-qualified exhaust fan;
 10. Outdoor Space: Provide a patio of 80 ft² minimum (8'-0" least dimension) at all ground floor units in low-rise developments; and,
 11. Circulation: All interior dwelling unit doors within units designed for elderly residents shall be 36" wide. No "winders" shall be included in stair runs.
- P. Acoustical ratings:** Minimum acoustical or Sound Transmission Class (STC) ratings for wall and floor/ceiling assemblies shall be STC 34-39 (wood stud walls)/38-40 (steel-stud walls) within living units in bathrooms and bedrooms, STC 52 between living units, and between living units and public corridors. Acoustical or sound ratings for wall and floor/ceiling assemblies shall be STC 55 between living units and other noisy public spaces, such as lobbies, stairs, elevators, mechanical rooms, etc. Materials with adequate mass and sound isolation design shall be selected. Acoustical sealant shall be used to seal all joints. Sound "leakage" through openings for mechanical and electrical pipes, conduits or boxes shall be avoided. Sound isolators shall be used for mechanical equipment to prevent impact sound transmission.

CONSTRUCTION STANDARDS

02000 SITEWORK

02001 Site Design

Sites shall be designed to harmonize with the natural terrain, take advantage of positive site features and characteristics (and mitigate negative site features), and such that existing trees may be saved. Comply with all federal, State, and local government erosion control and tree protection measures. All sites for proposed new and gut rehab developments must comply with the “Water Quality Volume” (WQV) storm water management requirements in the CT DEEP “*Stormwater Quality Manual*” (current edition).

A. Low Impact Development: Low Impact Development (LID) for sustainable storm water management, to reuse storm water as a viable resource to control storm water and conserve rainwater, is encouraged.

1. LID site design strategies address the arrangement of buildings, roads, parking areas, site features, and storm water management holistically, to retain, detain, store, change the timing of, or filter runoff in a number of different configurations and combinations.
2. LID Technologies and Water Conservation: Depending on which level of on-site reuse and water conservation is consistent with project objectives, various LID technologies are suggested:
 - a. Level One – Distribution: Storm water runoff is distributed using open and vegetated areas to increase infiltration and reduce the amount of storm water that enters the storm drains, through sheet flow to rain gardens, bio-swales, bio-retention cells, tree box filters, soil amendments, structural soil, native and sustainable ornamental plants;
 - b. Level Two – Hardscape Materials and Curbs: Replace hardscape materials with permeable materials curb-less parking lot islands, porous concrete parking bays, and Level One technologies; and,
 - c. Level Three – Recycling Rainwater and Runoff: This level uses above-ground LID devices – disconnected roof drains, cisterns, sub-surface storm water retention facility (below parking lots), rooftop channels, rain barrels – to channel and collect rainwater from roofs, and uses sub-surface facilities to treat and collect runoff from roads and sidewalks, in conjunction with Level One and Level Two technologies. The recycled and stored water is used for irrigation and other non-potable purposes. The devices are integral with the buildings and infrastructure.

B. Erosion Control: Follow guidelines set forth in the current “Connecticut Guidelines for Soil Erosion and Sedimentation Control” and the “State of Connecticut Department of Transportation Standard Specifications for Roads, Bridges and Incidental Construction”, as amended and as applicable.

C. Plant Preservation: A tree expert (certified arborist, landscape architect, or individual with a professional degree in forestry or related field) shall be retained to create a Plant Preservation Site Plan which identifies and designates healthy trees and of different ages and sizes that to be protected during all construction activities, to coordinate with landscape architects, engineers and utility managers to place improvements where the impact on trees will be minimized, and to provide guidance for aftercare to help trees recover from the stress of construction.

1. The Plant Preservation Site Plan shall also identify healthy ornamental and native plants not included within tree-save or undisturbed areas of the site, which can be expected to survive being relocated, stored and replanted, or to be made available for relocation by others, prior to the area being disturbed, and provide notes and specifications for such relocation. In general, healthy trees 3½" in diameter or greater

in the path of proposed buildings and site construction features shall be considered for transplantation.

2. Trees that are marked to be preserved on the Plant Preservation Site Plan, and for which utilities must pass through their root zones, shall not have surface-dug trenches. The site engineer shall indicate tunnels to be dug through, or trenches around, root zones and provide details, notes and specifications.

D. Tree Planting, Landscaping, Lawn Areas and Maintenance Strips: Soils compacted during construction by materials and/or construction vehicles shall be rehabilitated with 6" of top soil or by tilling 6" down.

1. Site plan shall indicate new tree planting at a minimum rate of 12 trees per acre.
2. Plants shall be sized according to proper planting practice and shall be adequate to withstand normal abuse. Selected specimen flowering and shade trees should be of the largest caliber the project can afford, but in no case should the caliber be less than 3½". Evergreen trees shall have a minimum height of 5'-0", with an average height of 6'-0", and mass plantings of evergreen seedlings should be considered for use in screening objectionable views. Mulch all tree saucers with a minimum of 3" of finely processed shredded bark mulch.
3. Low-water landscape designs, such as xeriscaping, are encouraged. Select slow-growing, adaptable and drought-tolerant plants which withstand rainfall shortages and utilize less water for irrigation. Soil shall be tested and amended to improve the growth of plants and grasses.
4. Grades shall slope away from buildings at 6" in the first 10' (5%). Grades at lawns shall slope 2% (minimum) to 8.3% (maximum), swales and berms 33% (maximum), and "un-mowable" slopes with groundcover 50% (maximum).
5. A maintenance strip, not less than 18" in width, to protect siding from backsplash and mowing operations, shall be provided along all building facades. Provide maintenance strips with 4" to 6" (min.) of decorative stones over a weed barrier, and slope away from facades 5% (min.). Where gutters and downspouts are not provided, provide a ground gutter system in lieu of a maintenance strip. Ground gutters shall extend 12" (min.) beyond the roofline.

E. Parking Ratios, Lots and Collector Roads: Parking shall comply with local planning and zoning requirements. Unless otherwise required, parking for housing for elderly residents shall be provided at the minimum ratio of 1.2 spaces per unit or greater. Parking for developments for family residents shall be provided at the minimum ratio of 2.4 spaces per unit or greater. Parking layouts with dead ends, and parking spaces along collector roads, are discouraged.

F. Drives and Curbing: No gradients on drives shall be less than 1% or more than 8% (5% where traversed by pedestrians). Parking lots and areas shall have a cross slope or transverse slope no greater than 3%. All ADA, State of Connecticut Barrier-free, Uniform Federal Accessibility Standards, and Federal Fair Housing Act Amendment (FHAA) guidelines shall be met where applicable.

1. Drives shall comply with local planning and zoning requirements. Unless otherwise required, collector drives shall be a minimum of 22'-0" in width. Drives within parking areas shall be a minimum of 20'-0". Main drives and collector roads shall be crowned for drainage along curbs.
2. All drives, parking areas and planting islands shall be curbed. Curbing shall be concrete or granite, and curbs shall be profiled to accommodate snow plowing in identified areas.

G. Paving: Paving thickness shall be based on recommendations provided in a soils report prepared by a licensed Soils Engineer. Paving at and in front of waste disposal stations shall be designed to bear the weight of dumpster trucks, 6" thick concrete with reinforcing mesh, minimum. This paving shall be sufficiently large to provide a pad for the truck wheels (front or rear) at time of loading. The minimum width of the concrete paving shall be the width of the dumpster enclosure.

The use of pervious concrete pavement for walks and drives is encouraged, where appropriate. To mitigate heat-island effect, consider light-colored/high-albedo materials and/or open-grid pavement with a Solar-Reflective Index of 0.29 over at least 30% of the site's hard-scape areas.

H. Parking Spaces: Parking spaces shall comply with local planning and zoning requirements. Unless otherwise required, parking spaces within housing for elderly residents shall be a minimum of 10' wide x 20' long. Parking spaces within developments for family residents shall be a minimum of 9' wide x 20' long.

I. Walkways: There shall be an internal system of walkways. Barrier-free ramps shall be provided at curb crossings. In housing for elderly residents, walks shall provide easy access to secure interactions with human activity and natural surroundings. Walks shall be concrete. Asphalt bituminous "walking trails" may be provided. No gradients on walks shall be less than 0.5% or more than 5%. Cross slopes shall not exceed 2%. Accessible ramps shall be no less than 5% or more than 8.3% (landings 0.5%) Walkways along parking spaces where cars may overhang the walk shall be 6'-0" wide or as required by ADA, FHAA, or local ordinance, whichever is greater.

J. Site Lighting: Exterior lighting, including fixtures for required site development signs, drives, parking areas, walks, common entrances/exits, and grade-level unit entrance and patio doors, shall be controlled by photocells. Patios shall have a switched light with a shielded light-source to prevent glare. All exterior luminaires shall be "Dark Sky compliant" – designed with opaque housings, baffles, reflectors and/or refractors to prevent glare and reduce light trespass into unwanted areas, adjacent properties, buildings and windows, and the night sky – and shall bear the fixture seal of approval of International Dark Sky Association (IDA).

1. Building-mounted flood-lighting for lighting parking lots, and walks to or from parking, shall not be used. Pole-mounted and bollard lights of appropriate heights shall be used for such purposes. Aluminum poles and bollards with baked-enamel painted finishes are preferred. Pole bases shall be located no less than 3'-0" from curbs where cars will be parked head-in.
2. Exterior lamps may be of the compact/tubular fluorescent, LED or metal halide type. UL-wet-listed fluorescent fixtures should also be considered.
3. Exterior lighting levels for parking, roadways and walkways shall be a minimum of ½ foot candle (fc). Lighting shall be even, and "hot" spots are to be avoided. Light fixtures at unit entry doors shall be photocell-operated and controlled for use in conjunction with the development's street/parking/walk lighting. All designs should consider the character and location of the development. Consult the Illuminating Engineering Society of North America Recommended Practice Manual: "Lighting for Exterior Environments". Provide a separate Site Lighting Photometric Plan indicating conformance with required exterior illumination levels.

K. Retaining Walls: Unless an engineered wall, dry-stacked masonry (no mortar) or timber retaining walls shall be constructed such that the wall shall not exceed 4' in height without an equal horizontal setback. An adequate safety barrier shall be provided at retaining walls as required by code. Where the code is silent on retaining walls and the top of a retaining wall is 20" or greater above adjacent grade and a dangerous condition putting pedestrians at risk exists, an adequate safety barrier shall be provided.

- L. Road/Vehicle Protocols:** A vehicle washing station shall be provided in close proximity to each construction entrance and protocols describing appropriate use shall be clearly posted both at the on-site office and at the washing station (descriptions of washing station features and construction can be found in the National Pollutant Discharge Elimination System reference Green Book). Protocols for road sweeping and cleaning shall also be clearly posted at the on-site construction office.
- M. Waste Management Practices:** Dispose of construction debris only at a Connecticut or other state-approved construction and demolition landfill. No construction materials shall be burned or buried on-site.
1. The GC shall post a construction waste management plan on the job site, and each subcontractor shall be educated on the aspects of the plan that pertains to their work. Waste management plan must either provide for on-site grinding and re-use, or separation of materials to be recycled by clean-up or waste-hauling firms. Consult your local jurisdiction for allowable materials and appropriate practices.
 2. Construction waste includes plastics, wood, cardboard and paper, drywall and ceiling panels, metals, shingles, fluorescent bulbs, concrete and dirt - materials that may be reused or recycled if properly prepared. Identify the types and quantities of materials generated at the job site, and contact local recycling facilities and haulers to determine terms and conditions required for recycling them. Allocate space for recycling materials.

02810 Irrigation

Every effort shall be made in the design and plant specification for landscapes to prevent or minimize the need for irrigation. Where irrigation is provided, utilize techniques and systems designed to conserve water, including water-smart landscaping, drip and micro irrigation, high-efficiency dishwashers, faucets, and showerheads and clothes washing machines, alternative water sources, including on-site rainwater collection/retention, graywater collection/retention.

- A. Irrigation Design, Controls and Smart Water Application Technologies (SWAT):** If irrigation must be provided, the system shall be designed by an EPA WaterSense®-certified professional. The irrigation plan must conform to the landscape plan, as well as other site features. Appropriate equipment and design principles shall be practiced regarding terrain, planting materials, exposure and obstructions. As much as practical, provide separate zones for sun and shade, and limit daily total run-times and over-spray onto walks, public roads, parking areas, and buildings. Separately zone sprinklers with differing precipitation rates, such as drips, sprays and rotaries. Where it is not practical to separately zone full and part circle rotaries, use matched precipitation rate sprinklers, or increase the nozzle size of the full circle sprinklers to more nearly match the precipitation rate of the part circle sprinklers. Booster pumps shall be approved by the local municipality.
1. Irrigation controls shall not be located within residential units. Control timers located outdoors are to be in a weather-resistant locking metal enclosure; "hybrid"-type mechanical controllers with solid-state circuitry are preferred.
 2. "Smart", climate-based irrigation controllers, as recommended by the Irrigation Association SWAT initiative and the EPA WaterSense® Program, are encouraged in lieu of traditional "timer" controls. Program controllers to apply the right amount of water to maintain healthy growing conditions for specific plant materials, based on real-time weather data, soil types, slope, root zone storage, plant types, irrigation types, irrigation efficiency, precipitation rate, moisture, rain, and wind, etc.

02980 Site Signs

A. Construction Sign: A construction sign shall be erected on site and remain for the duration of construction work. The construction sign shall be constructed of $\frac{3}{4}$ " x 4'-0" x 8'-0" marine-grade AC plywood. Based on the funding program(s) under which the project has been underwritten the appropriate project sign design template will be provided that reflects the participating state financial institution(s), which will generally include the following information:

1. Development name, town and state;
2. Participating state finance organization(s) logo(s);
3. "State of Connecticut" with current Governor's name;
4. Participating finance organization(s) name(s) with Chairperson's/Commissioner's name(s);
5. "Equal Housing Opportunity" with logo(s); and,
6. "Equal Employment Opportunity" logo(s).

03000 CONCRETE

Where required, provide concrete in accordance with the following guidelines:

A. Footings: Concrete footings shall be constructed on undisturbed material unless approved contract documents indicate otherwise. All fill placed under footings must be engineered fill, designed, compacted and certified by a professional engineer before placement.

1. Apply a capillary break (damp-proofing or membrane) to the tops of concrete footings at all new basements and crawlspaces.
2. Footing drains shall be provided outside all new foundations surrounding basement and crawlspaces. Outside drains shall drain to daylight or a storm system where possible or to an engineered drywell. All daylight drains must have their outfalls screened and protected from erosion.
3. In renovations, footing drains may not be present, and retrofitting a new exterior drainage system may not be practical. In such cases, interior perimeter drainage may be used in conjunction with sump pumps. Sump pits must be fitted with airtight, gasketed covers to prevent soil gas entry.
4. Fill compaction and concrete testing shall be conducted by an approved independent testing agency.

B. Foundations: Concrete foundation walls shall be extended to 8" min. above exterior grade. Provide details for means to protect the building against moisture penetration and insect infestation where entry walks, ramps and platforms are less than 8" below the bottom edge of exterior finishes. Wood foundations will not be permitted.

C. Foundation Drains: Styrene or corrugated polyethylene piping shall not be suitable for foundation drains, leaching fields or other below grade applications, except as otherwise required by local authorities. PVC perforated pipe is permissible, provided the minimum wall thickness for 4" diameter pipe is 0.075", and for 6" diameter pipe 0.10". Drainage lines shall be sized and

pitched to provide velocities of at least 2.5 feet per second in storm drainage lines and 2.25 feet per second in sanitary lines. If cast iron pipes are not chosen for storm and sanitary lines, PVC schedule 40 (solid core) shall be specified.

D. Slabs: Crawlspace vermin barrier slabs shall be a minimum of 3" thick, and shall be finished with a top-side semi-permeable coating or chemical sealer. Floor slabs, patios provided as outdoor space for grade level dwelling units and walks shall be reinforced concrete a minimum of 4" thick. Concrete drives and aprons at the front of dumpster shall be a minimum of 6" thick reinforced concrete.

E. Concrete Materials:

1. Design, erect, support, brace and maintain formwork to support vertical and lateral loads that might be applied. Design formwork to be readily removable. Construct forms to sizes, shapes, lines and dimensions required to obtain accurate alignment, location, grades, level and plumb work in finished structures. Provide for openings, offsets, sinkages, keyways, recesses, moldings, rustications, reglets, chamfers, blocking, screeds, bulkheads, anchorages and inserts, and other features required.
 - a. Re-use Wood Form Boards: Where utilized, carefully remove and separate wood form boards for re-use.
 - b. Metal Forms: Consider utilizing metal forms to reduce wood use.
 - c. Insulated Concrete Forms (ICFs): Consider utilizing ICFs for poured concrete walls, which stay in place as a permanent part of the wall assembly.
2. Provide a polyethylene vapor barrier not less than 6 mils thick under all crawlspace vermin-barrier slabs. The Standards encourage drying mechanisms over wetting prevention mechanisms in the design of wall assemblies, i.e.: avoidance of using vapor barriers where vapor retarders will provide satisfactory performance, avoidance of using vapor retarders where vapor permeable materials will provide satisfactory performance, and avoidance of the installation of vapor barriers such as polyethylene vapor barriers, foil-faced batt insulation and reflective radiant barrier foil insulation on the interior of air-conditioned assemblies.
 - a. If basement or below-grade spaces in new developments are designed and constructed to be occupied, install a vapor retarder or continuous vapor-impermeable rigid insulation under floor slabs, or over floor slabs in conjunction with a floating floor. Carpeting in below-grade spaces in new developments is not acceptable. All pipe penetrations shall be sealed to prevent water infiltration.
 - b. In existing buildings, under-slab stone and/or a polyethylene vapor barrier may not be present and over-slab control of water vapor may be required. If basement or below-grade spaces in existing buildings to be renovated are intended to be occupied, install a vapor retarder or continuous vapor-impermeable rigid insulation over floor slabs in conjunction with a floating floor. Carpeting should not be installed in below-grade spaces in renovated developments. All pipe penetrations shall be sealed to prevent water infiltration.

F. Slab Edge Insulation and Insulation Under Slabs on Grade: Provide R-10 (min.) vertical vapor-impermeable rigid foam thermal break insulation with taped joints at slab edges, and horizontally under slabs as required to overlap the top edges of vertical insulation at the inside faces of foundation walls. Where heated slabs are provided, install R-10 (min.) vertical vapor-impermeable rigid foam thermal break insulation with taped joints at slab edges, and R-15 (min.) insulation horizontally under the full area of slabs.

G. Strength: Concrete shall be, at a minimum, 3500 psi 28-day compressive strength, with reinforcing materials as required. Exterior concrete shall be air-entrained, and walks and porch/patio slabs shall be, at a minimum, 4000 psi 28-day compressive strength, with reinforcing materials as required. Where structural conditions or exposure to the weather warrant, provide concrete with higher compressive strength(s) as required. Slump

limits shall meet ACI Standards. The concrete shall be used at a degree of plasticity which would produce the required slump(s). Do not increase the water ratio in concrete for easier movement.

- H. Backfill:** The use of recycled concrete rubble for backfill and drainage at the base of foundations is encouraged.
- I. Concrete with Fly Ash or Slag and Recycled Concrete Used as Aggregate:** The use of fly ash and slag as inexpensive substitutes for 15% - 40% of the Portland cement used in concrete for footing, foundation walls, and slabs is encouraged. Demolished concrete may be used as an aggregate in poured concrete structures.
- J. Air Conditioner Condensing Unit Pads:** The outdoor pads for air conditioner or heat pump condensing units shall have a minimum of 50% recycled material content (such as plastic or rubber tires), as verified by the manufacturer.
- K. Concrete Finishing Materials:**
1. Provide a two-coat Portland cement parge coating, type L, M, or P, in compliance with ANSI A422 and ASTM C150, continuous from the sill to 12" (min.) below finished grade.
 2. Waterproofing shall be applied to all foundation walls enclosing a basement or crawlspace. At a minimum, provide asphalt-bituminous coating from the outside edge of the top of footings to finished grade, per manufacturer's printed instructions. Where below-grade habitable spaces are planned, and/or severe underground water conditions warrant, provide more sophisticated systems incorporating rubber membranes, rigid insulation, protection board, bentonite, etc.
 3. All exposed concrete floors within residential buildings shall be sealed. If salts are not present in the ground, epoxy and acrylic polymer coatings, or chemical sealers may be used.
- L. Concrete Placement Crack Control and Expansion Joints:** Comply with applicable provisions of the current editions of ACI 301 specifications and documents for hot weather placement and ACI 306 for cold weather placement. Exterior contraction joints shall be tooled joints. Interior joints shall be made within 24 hours of concrete placement. Expansion joints in interior slabs shall be full depth and located beneath walls.
- M. Cementitious Underlayment:** Cementitious underlayment, where required, including poured gypsum and lightweight concrete, shall be installed in accordance with manufacturer recommendations.

04000 UNIT MASONRY

Set masonry units, plumb and true to line in specified bond patterns, with joints pointed to uniform cross section, and well bonded to adjacent construction. Set units, both bottom and end, in full bed of mortar with joints uniform in thickness and head joints in alternative courses plumb over the ones below. Keep air spaces clean of mortar droppings and other materials during construction. Strike joints facing air spaces flush. Install embedded flashing and weep holes in masonry at shelf angles, lintels, ledges and other obstructions to the downward flow of water in the wall or where indicated on the drawings. Provide weep holes as specified – every effort must be made to keep weep holes clear during subsequent installations. Provide lintels, flashing, weep holes, anchors and other accessories where required in compliance with the highest standards of masonry practice and professional workmanship. Where colored mortar is desired, specify natural and synthetic iron oxide and chromium oxide pigments proven satisfactory for masonry mortars. Do not use calcium chloride or masonry cement.

A. General Installation Guidelines: Comply with the provisions of the current editions of Brick Industry Association (BIA) recommended procedures, as applicable:

1. Disconnect “reservoir” materials that collect and store moisture, such as stone, brick, and stucco, to prevent migrate to other components of exterior wall assemblies. Disconnect masonry veneer “reservoirs” by back-venting or by using a condensing surface.
 - a. To effectively disconnect a masonry veneer from a wall system by back-venting, a cavity must be provided between the masonry and drainage plane, with air inlets at the bottom of the masonry veneer and air outlets at the top. BIA recommends a 2" air space between brick/block and stud back-up framing systems, to prevent encroachment into the wall cavity. Keep wall cavities clean, prevent mortar from “bridging” across the cavity and rendering flashing and weeps ineffective.
 - b. To effectively disconnect masonry veneer from a wall system by using a condensing surface, the drainage plane must also be a vapor barrier, or a vapor impermeable layer (i.e., rigid insulation) must be installed between the masonry veneer and drainage plane. When a condensing surface is used, a ventilated air space is not necessary, and the presence of mortar droppings is not a concern. Provide a drainage space ¼" or greater and drainage openings at the bottom of the masonry veneer.
2. To prevent mortar droppings from blocking drainage weeps, pour a 2 - 3" layer of pea gravel (larger than weep openings) over flashing, or plastic 1 – 2" plastic mesh net mortar collection devices, per BIA recommendations.
3. Through-wall flashing should extend a minimum of 8" up the concrete block or stud back-up, per BIA recommendations. Flashing should extend to the outside face of the wall and form a drip edge.
4. Provide weather-resistive barriers, air barriers and/or vapor retarders.
5. Ensure that weeps let air in, as well as let water out as quickly as possible. Open-vent systems are preferred over rope wicks and small diameter plastic tubes, to allow walls to dry out faster. Space open head joints at 24" o.c., and provide vents or mesh for insect control.
6. Provide adequate caps or copings at the tops of walls and parapets. Caps should slope downward 15° (min.) from the horizontal – caps away from the face of the wall above and copings in one or both directions – and should provide overhangs such that the inner lip of the drip is at least 1" from the face of the wall.
7. Clear coatings that “breathe” (such as silanes and siloxanes), and coatings that form a film (such as acrylic and stearates) are not recommended.
8. Install stucco over two layers of building paper, or over an appropriate capillary break such as foam sheathing.

B. Cold/Hot Weather Procedures: Comply with applicable provisions of the current editions of the Portland Cement Association reference standard: “Table 501: Recommendations for Cold Weather Masonry Construction” and ACI 530.1/ASCE 6/TMS 602 for cold weather installations, and protect unit masonry work when temperature, humidity and wind conditions produce excessive evaporation of water from mortar and grout during hot weather installations.

C. Masonry Materials: Comply with applicable provisions of the current editions of the ASTM Standards for all specified masonry materials, including concrete masonry units, brick, lintels, mortar, grout, joint reinforcement, steel bar reinforcing, anchors and ties, embedded flashing and all required miscellaneous

masonry accessories, including compressible fillers, control joint gaskets, bond-breaker strips, round plastic weep tubing, cavity drainage material, cavity-wall insulation and masonry cleaners, etc.

- D. Sustainable Masonry Practices:** The use of on-site, indigenous Connecticut and New England earth materials, such as common clay, dimensional stone (granite, quartzite and sandstone), crushed stone, construction sand and gravel, and lime, and locally/regionally-produced brick and concrete masonry units, is encouraged.

05000 METALS

- A. Specifications:** Comply with current applicable American Institute of Steel Construction (AISC) steel design and structural standards and provisions.
- B. Materials:** Comply with applicable provisions of the current editions of the ASTM Standards for all specified metal materials, including W-shapes and WT-shapes, channels and angles, plates and bars, cold-formed hollow structural steel sections, steel pipe, welding electrodes, bolts, nuts, and washers, shear connectors, anchor bolts, un-headed anchor rods, threaded rods and welded wire fabric, etc.

The use of metal studs is generally discouraged. Where utilized, metal stud framing above grade must be provided with continuous rigid foam insulation with taped or sealed joints. If basement or below-grade spaces are designed and constructed to be occupied, metal studs should not be used, unless separated from floor slabs with sill gaskets and from perimeter foundation walls with continuous, vapor-permeable rigid insulation with taped or sealed joints, and should not be filled with cavity insulation.

06000 WOOD AND PLASTICS

06100 Rough Carpentry

Provide rough carpentry work as required by job conditions, including but not limited to the following: wall, ceiling framing, roof framing and sheathing; fasteners, attachments and accessories; blocking, bracing, shimming, furring, firestops, sleepers and nailers; and additional framing required to introduce the work of other contractors and trades. All materials, methods and details shall comply with current National Design Specifications, Wood Frame Construction Manual, and the Special Design Provisions for Wind and Seismic Supplement by the American Wood Council (AWC). Erect all work true to line, dimension, level, squared, plumb and securely fastened. All work shall conform to the highest standards of quality workmanship.

A. Framing Requirements:

1. Where flush framing is indicated, method of fastening shall be by means of Code-approved, manufacturer recommended galvanized/stainless steel joist/beam hangers attached with required fasteners, and as specified by the structural engineer.
2. Do not impair integrity of structural members by improper drilling or cutting. All work shall be adequately braced until all portions of the building affecting its stability are in place and securely fastened. All drilling and notching of joists shall be in accordance with applicable codes/pre-engineered framing manufacturer requirements.
3. Wall framing studs – interior and exterior – shall be installed on 12", 16", 19.2" or 24" modules, as required by structural conditions. Spacing of framing shall conform to specifications on construction

documents, except for variations needed to accommodate window and door openings. Coordinate window and door openings with the specified framing module. Provide double studs at all window and door openings; install additional studs only as specifically indicated on the structural engineering drawings. Provide blocking at windows and doors for adequate nailing of siding and trim materials.

4. Where provided, double walls should be two, independently-framed walls, with all framing off-set (except at window and door openings), to minimize thermal bridging and allow for continuous insulation.
5. Below-grade Floors:
 - a. In new construction, finished wood or carpeting may be installed over ¾" plywood subfloor on 1 x 4 furring at 16" o.c. Install furring over ¾" un-faced extruded polystyrene rigid insulation. Expanded polystyrene may be used if the spacing of the furring is reduced to 12" o.c., or if tongue and groove plywood with biscuit-joined narrow edges is supported directly by the foam. Provide a semi-permeable coating or chemical sealer on top of the floor slab. Do not use this assembly with visibly wet slabs or where salty efflorescence is visible.
 - b. In new construction and renovations finished wood may be installed over ¾" tongue and groove plywood, with biscuit-joined narrow edges. Install plywood over, but not mechanically fastened to, un-faced extruded polystyrene rigid insulation. Provide a dimpled plastic sheet membrane between the rigid insulation and the slab, with all joints taped and the membrane sealed to the perimeter foundation to isolate the airspace from the interior. Groundwater leakage can be handled with this approach by draining the airspace to a sump or floor drain.
6. Below-grade Walls: If basement or below-grade spaces are designed and constructed to be occupied, wood studs should be separated from floor slabs with sill gaskets and from perimeter foundation walls with vapor-permeable rigid insulation with taped or sealed joints. Below-grade wall framing should be pressure-treated.

B. Engineered Wood Products: The use of engineered wood for headers, joists, and sheathing is encouraged. Large size lumber can be replaced with engineered lumber, such as microlams, paralams, and glulams. All materials, methods and details shall comply with Engineered Wood Construction Guidelines by the American Plywood Association (APA). Where structural loads allow, single-piece 1¾" structural engineered wood headers provide room in the wall cavity for insulation (provide full-depth horizontal blocking at window head). Solid wood framing lumber shall be Western Wood Products Association (WWPA) grade-stamped and stress-graded. Framing lumber shall be graded "S-dry," max MC=19% and free of warping, checking or other defects. Load-bearing stud framing shall be #2 grade or better. Finger-jointed studs (graded equivalent to full dimensional studs - 1997 UBC Standard, Chapters 23 and 35) may be used. Spanning members shall be graded $F_b=1400$; $E=1.4$. Framing lumber abutting concrete or masonry shall be WWPA grade stamped pressure-treated unless otherwise required. All framing lumber at exposed exterior locations or which abuts concrete or foundations, such as sill plates, shall be pressure-treated. Solid white spruce framing lumber shall not be used.

1. Whenever possible, use reclaimed lumber for nonstructural applications, in place of new material.
2. Where wood "stick" framing is provided, utilize resource-efficient Advanced Framing Techniques (AFT) to minimize material usage wherever possible, while meeting model code requirements:
 - a. Evaluate the use of 24" modular dimensions, rather than standard 16" modules at exterior wall framing.
 - b. Utilize 2 x 6 exterior wall studs rather than standard 2 x 4 studs.
 - c. Evaluate the use of 19.2" or 24" o.c. modular dimensions, rather than the standard 16" o.c. at floor and roof framing. To compensate for the increased panel span, provide floor and roof sheathing that is ⅛" (min.) thicker than may otherwise be required.

- d. Use floor and roof trusses, rather than stick framing.
 - e. Use “in-line” or “stack” framing to transfer loads directly to the foundation and minimize headers
 - f. Use 2-stud “California” corner framing with furring or drywall clips or equivalent alternative framing technique, rather than 3-stud corners.
 - g. Use horizontal ladder framing, full-length furring, drywall clips or equivalent alternative framing technique at wall “T” intersections, rather than 3-stud corners.
 - h. Up-set exterior wall headers into floor framing above to allow for full insulation immediately above windows and doors.
 - i. Eliminate interior wall headers in non-bearing walls, and engineer headers in bearing walls to adequately support loads with the smallest members possible.
3. The use of recycled content materials for decking, and outdoor amenities such as picnic tables, mail kiosks, gazebos, and playgrounds is encouraged. Recycled plastic lumber contains only recycled plastic resins, while composite lumber is made by combining recycled wood fiber and recycled plastic resins that are then formed into deck boards. Both products may be used in place of old-growth redwood, cedar and pressure-treated pine. Follow manufacturer recommendations closely regarding the amount of expansion that will occur when using recycled-content plastic lumber.
 4. The use of sustainably-harvested Forest Stewardship Council (FSC) Certified Wood for new framing materials is encouraged.
 5. Wood products containing urea formaldehyde (UF) resin binders shall be avoided. Consider products manufactured with adhesives which decrease or eliminate formaldehyde content and emissions, such as phenol formaldehyde (PF), phenol urea formaldehyde, melamine urea formaldehyde, methyl diisocyanate (MDI) , hybrid UF/MDI and PF/MDI, and natural tannin and soy-protein resins.
 6. The use of treated wood that does not contain chromium or arsenic for decking and sill plates, and outdoor amenities such as picnic tables, mail kiosks, gazebos, and playgrounds is encouraged. All materials, methods and details shall comply with American Wood-Preservers’ Association (AWPA) standards.
 7. Where possible, use solvent-free products in place of standard adhesives for all interior applications such as installation of flooring, countertops, wall coverings, paneling, and tub/shower enclosures. All construction adhesives shall have a maximum Volatile Organic Compound (VOC) content of 250 g/L, or as otherwise noted below:
 - a. Multipurpose construction adhesives, subfloor adhesives, drywall and panel adhesives, vinyl composition tile (VCT) and asphalt tile adhesives, cove base adhesives, carpet pad adhesives and indoor carpet adhesives: maximum VOC content of 70 g/L;
 - b. Rubber floor adhesives: maximum VOC content of 60 g/L;
 - c. Ceramic tile adhesives: maximum VOC content of 65 g/L;
 - d. Structural glazing adhesives: maximum VOC content of 100 g/L;
 - e. Wood flooring adhesives: maximum VOC content of 100 g/L;
 - f. Outdoor carpet adhesives: maximum VOC content of 150 g/L; and,
 - g. Single-ply roof membrane adhesives: maximum VOC content of 250 g/L.
- C. Energy Heel Trusses/Raised Top Plates:** To ensure installation of the full depth of required attic insulation above exterior wall top plates, without being compressed by insulation baffles, provide energy heel trusses with raised top chords, or raised top plates for joist/rafter assemblies.

06200 Finish Carpentry

All millwork and exterior finishes shall be carefully cut, erected, and secured with finishing nails for tight-fitting joints. All materials, methods and details shall comply with American Woodwork Institute (AWI), American Hardboard Association (AHA), Hardwood Plywood and Veneer Association (HPVA), National Particleboard Association (NPA), National Electrical Manufacturers Association (NEMA), and Builders Hardware Manufacturers Association (BHMA) standards. Exposed nails shall be set for putty. All work shall be installed plumb, level, square, true to line and plane, and in conformance with the highest standards of quality professional workmanship.

- A. Interior Trim:** All interior finish woods shall be kiln dried to maximum moisture content of 12% and free from knots, defects, and warping. Where painted finishes are desired, the use of non-solid sawn wood (such as finger-jointed) or non-wood material (such as cellular PVC) for interior trim is encouraged. Interior wood trim can be paint-grade, finger-jointed poplar or #1 pine. Polystyrene molded door casing and baseboard shall not be used. All rooms with floor coverings shall have base trim.
- B. Exterior Trim:** Low-maintenance trim materials such as vinyl, cellular PVC, or pre-finished cement boards are preferred. All exterior wood trim shall be solid wood free from knots, defects and warpage or finger-jointed wood. Un-clad wood trim, wood columns or other high-maintenance materials shall not be permitted. Aluminum flat stock material, exceeding 6" in width, shall not be used for trim bands, unless a break in the aluminum stock is provided. This required break must be substantial enough to mitigate the effect of oil canning. A formed siding piece may be used in lieu of stock with a break.
- C. Laminates:** Shelf, cabinet and countertop substrate material for plastic laminate shall be exterior-type, hardwood-faced plywood, or other material approved by the manufacturer of the plastic laminate. If particleboard is used, all 6 sides must be coated with a sealant having a maximum VOC content of 250 g/L. Consider particleboard panels that are manufactured with 100% recycled wood fiber or post-consumer waste, and a urea formaldehyde-free adhesive system. Whenever possible, eliminate new particleboard inside houses by using formaldehyde-free medium density fiberboard for shelving, cabinets and substrates for countertops and exterior panels. Sharp edges shall be avoided. Cut-out edges shall be sealed prior to the installation of sinks. Protect walls with back and side splashes - 4" (min.) at bathroom vanity tops and 6" (min.) at kitchen countertops. Counter tops shall not have sharp exposed edges; provide chamfered or rolled edges. Corners protruding in excess of 1-1/2" shall be rounded or chamfered (45°). Consider providing alternative counter top materials, such as bamboo, lyptus wood and composites with recycled content, in lieu of plastic laminate or thermo-set plastic solid surface counter top materials.
- D. Railings and Stairs:** Handrails shall be easy to grasp and able to withstand 300 pound lateral and vertical loads, without damage or permanent set. Handrails shall meet the "graspability" requirements of, and be located in accordance with, all applicable codes. In buildings designed for elderly residents, handrails shall be provided on both sides of all corridors, and shall return to the walls at all interruptions such as doors and cased openings, and fire hose or fire extinguisher cabinets.

Guard rails not less than 36" in height shall be provided at all decks, porches, balconies or raised floor surfaces, including those provided with insect screen enclosures, more than 18" above the floor or grade below. Open sides of stairs with a total rise of more than 18" above the floor or grade below shall have guards not less than 34" in height. Guard rail openings shall comply with all applicable code limits.

Consider providing stair parts such as stringers and treads made from engineered wood, rather than solid hardwoods.

07000 THERMAL & MOISTURE PROTECTION**07010 Energy-Efficient Building Envelope**

Comprehensive measures to reduce energy consumption due to air leakage, avoid moisture condensation problems and uncomfortable drafts, and provide high indoor air quality through reduced indoor air pollution shall be employed in the design and construction of all rehabilitated and new residential facilities. Applicants for funding shall submit a Thermal Efficiency and Energy Conservation Plan which reflects all of the applicable types of construction to be included in proposed developments/re-developments, as indicated below:

- A. Minor, Moderate and Substantial Rehabilitations:** All proposed energy performance-related fabrications, equipment, fixtures, controls and appliances must meet or exceed the prescriptive requirements of ENERGY STAR for Homes Version 3.1 or ENERGY STAR Multifamily High-Rise (MFHR) Version 1.2 Programs, or as otherwise indicated in these Standards or other programmatic funding requirements. ENERGY STAR qualifications for individual fabrications, equipment, fixtures, controls and appliances can be found in the document “ENERGY STAR MFHR Prescriptive Path, Version 1.2” on the ENERGY STAR website. Development teams shall prepare and submit a Thermal Efficiency and Energy Conservation Plan with the Design Development Submission, which takes into consideration pre-development testing and energy audits of existing buildings and data produced by pre-development energy modeling prepared by a Professional Engineer and/or Building Performance Institute (BPI), Residential Energy Services Network Home Energy Ratings Systems (RESNET HERS) or ENERGY STAR-certified assessor/rater. The Energy conservation plan shall include current and post-construction projected residential and common area energy usage data, a summary of proposed energy performance-related improvements, and post-construction building performance summary data. The proposed energy performance-related improvements shall provide for a projected reduction in annual energy use of 15% (min.).
- B. Gut Rehabilitations and New Construction:** Proposed gut rehabilitation and new construction projects shall be designed to meet or exceed ENERGY STAR for Homes Version 3.1 and/or ENERGY STAR MFHR Version 1.2 Program requirements, as applicable: in order to determine which program a project is eligible for, the ENERGY STAR Multifamily New Construction Decision Tree, Version 1.2 on the ENERGY STAR website. Development teams shall prepare and submit a Thermal Efficiency and Energy Conservation Plan which indicates which ENERGY STAR Program(s) will be used to certify the completed project, whether ENERGY STAR compliance will be achieved through the Performance or Prescriptive Path, and provides a summary of proposed energy performance-related measures.
1. The Prescriptive Path provides a single set of measures that can be used to construct an ENERGY STAR Qualified Home or MFHR building which is 15% more energy efficient than the energy code. Modeling is not required; however, no tradeoffs are allowed.
 2. Projects using the Performance Path through the ENERGY STAR for Homes Version 3.1 Program must include a HERS index that meets or exceeds the energy performance projected for the modeled ENERGY STAR Reference Design, as determined through pre-development energy modeling by a professional engineer, and/or RESNET HERS, BPI or ENERGY STAR certified assessor/rater. Projects using the Performance Path through the MFHR Version 1.2 Program must include the modeled percentage ($\geq 15\%$) by which annual energy costs savings will be reduced, as compared to ASHRAE 90.1-2007 Standards requirements, as determined through pre-development energy modeling by a professional engineer, and/or RESNET HERS, BPI or ENERGY STAR certified assessor/rater.

- C. Air Infiltration:** Provide air barriers and other air sealing measures as required for creating a complete exterior building envelope. Install air infiltration barriers to control air leakage into and out of building envelopes. Air barrier products may include mechanically attached membranes “housewraps”, self-adhered membranes, fluid-applied membranes, closed-cell spray polyurethane foam, open cell spray polyurethane foam, or board-stock. Some air barriers may be water vapor permeable, while others may also function as vapor barriers. Provide all air barrier accessories required to connect and maintain air tightness between air barrier materials, assemblies and components, and to fasten them to the structure of the building; i.e., sealants, tapes, backer rods, transition membranes, nails/washers, ties, clips, staples, strapping and primers. Inspect materials and accessories as they are installed, to verify that the air barrier has no punctures and is completely sealed.
1. All dwelling units in multifamily buildings shall be compartmentalized, in order to reduce the transfer of moist air, smoke, odors, pests and noise from adjacent dwelling units and common spaces.
 - a. Provide air barriers and other air sealing measures at common walls between dwelling units, and between dwelling units and common spaces;
 - b. Seal all plumbing chases, exhaust ventilation and heating system components, electrical outlets and controls, window and exterior door rough openings, and intersections between interior, party and demising partitions with exterior walls, etc.; and,
 - c. Air Infiltration rates shall be less than or equal to 4 Air Changes per Hour (ACH₅₀), as determined by a certified rater using a RESNET HERS-approved protocol.
 2. If a housewrap is the air barrier material chosen, follow manufacturer’s recommendations for installation.
 3. Exterior sheathing shall be a nail-able wood product, with a minimum nominal thickness of ½". Structural, APA grade-stamped CDX fir plywood is preferred. Panels shall be stress-rated for job conditions; ½" (min.) at walls, and ⅝" (min.) at roofs.
 - a. If OSB panels are specified, provide high-performance, water-resistant panels bonded with phenolic resin.
 - b. Consider using all-in-one structural sheathing and water-resistive barrier engineered wood roof and wall sheathing panels with integrated protective barriers and manufacturer’s seam tape.
 4. Floor sheathing shall be ⅝" (min.) thick, tongue and groove, APA grade-stamped structural panels. Veneer-faced or sanded-face plywood panels are preferred.
 - a. If OSB panels are specified, provide high-performance, water/mold/fungus/termite-resistant tongue and groove panels bonded with phenolic resin. Screw underlayment @ 8" o.c. (min.). All joints shall occur over structural framing members.
 5. Install vapor retarders with a vapor permeability of 1 perm or less (as tested by ASTM E-96 Test Method A – desiccant or dry cup method) in above-grade exterior wall assemblies. In new construction and significant renovations, paper-faced cavity insulation may be used, or provide un-faced cavity insulation, dry-blown/loose-fill/spray cellulose or low-density spray foam insulation in conjunction with a permeable (latex) interior paint finish.
 6. Flashing/insect barriers at wall bases shall be detailed and specified for all conditions where the outside grade is less than 8" below the interior floor elevation. The flashing material used shall be compatible with the surface it is attached to.
 7. Use termite-resistant building materials, or provide termite control through physical barriers between subterranean termites and wood-framed structures. Physical barriers include termite shields, aggregate, stainless steel mesh, and plastic impregnated with a termiticide. Isolate particularly vulnerable elements of a house, such as beneath concrete slabs on grade, along the interior and exterior of perimeter

foundation walls, and around plumbing and wiring penetrations. Wherever finished grade will be less than 8" below the bottom of the sill plate, apply borate to wood framing materials from the bottom of the sill to 3' high (min.).

- D. Air Sealing Measures:** Dwellings must provide the air sealing measures indicated below, as may be applicable to the proposed design and building material assemblies. Note that many of the required air sealing measures involving the use of caulking, to seal construction joints in fiberglass batt-insulated walls and ceilings, may be obviated through the use of spray-on and/or pour-fill foam insulation.
1. If basement or below-grade spaces are designed and constructed to be occupied, basement walls should be perimeter-insulated with vapor-impermeable rigid insulation panels with taped or sealed joints to prevent interior air from contacting cold masonry walls. No interior vapor barriers should be installed in basements. Provide sealant at joints between wood wall and first floor rim framing members, perimeter rigid insulation panels and interior finish panels.
 2. Framed spaces that connect conditioned areas to unconditioned attics, basements or crawl spaces shall be sealed with sheet material and sealant. These areas include chases for plumbing, duct work, chimneys and flues. For chases with high temperature heat sources, noncombustible sheet materials, such as sheet metal and high temperature caulk, shall be used. Where the code prohibits sealing this gap (such as with fireplace flues) manufacturer-supplied sheet metal shall be used that fits the flue pipe as closely as allowed. Breaks in framing and interior finish materials that connect unconditioned and conditioned areas, such as for dropped soffits and changing ceiling heights, shall be sealed with blocking or sheet material and sealant.
 3. All holes in the floor assembly for plumbing, wiring, ductwork, and other purposes connecting conditioned and unconditioned (and exterior) areas shall be sealed. Penetrations for flues and other heat-producing items shall be sealed with noncombustible sheet materials and high temperature sealant.
 4. Air-impermeable insulation blocking shall be installed between joist cavities underneath kneewalls to seal the floor joist cavities. Align the outside face of the blocking with the inside face of the kneewall framing, to allow cavity insulation to extend under the kneewall. Seal seams at any location where attic air may enter the band area between conditioned floors.
 5. Bottom plates shall be sealed to floor or foundation with a foam gasket beneath the bottom plate and/or a suitable sealant. Apply sealant between the interior of wall plates and gypsum board wall panels and between the exterior of wall plates and exterior wall sheathing.
 6. The shim space between the framing for window or door (including attic access) rough openings and the installed units shall be sealed with non-expanding spray foam sealant, closed cell foam backer rod, spray applied insulation, or other suitable sealant. Cellulose, fiberglass or rock wool batt insulation is not acceptable as a sealant but can be used as a backing for a sealant (such as caulk). Thresholds for exterior doors shall be sealed to the subfloor.
 7. All gaps in exterior sheathing, such as seams between adjacent sheets, shall be sealed with a proper sealant. All penetrations, such as holes drilled for condensation lines and utility boxes, shall be sealed with an expanding j or equivalent. Tape all joints in foam sheathing. Extend sheathing below bottom plate and seal.
 8. All penetrations through the rim joists, such as holes drilled for piping, conduit and wiring, shall be sealed.

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9. All penetrations through insulated floor systems (such as basements, crawlspaces, and garages) over unconditioned areas must be need sealed including duct, electrical and plumbing penetrations.
 10. All penetrations through insulated ceilings, including HVAC boots, bathroom fans, light fixtures, security, and audio speakers shall be sealed with a proper sealant.
 11. Recessed can or high hat lights in ceilings with unconditioned areas above, must meet the energy code specification (2000 IECC section 502.1.3 section 1 or 3) for air tightness, and must be Insulation Contact rated.
 12. Floors with conditioned area over unconditioned open areas, shall have the floor joist cavity sealed with air-impermeable insulation blocking and sealant above the top plate of the bearing wall and insulated to R-30, minimum.
 13. Doors in kneewalls and attic scuttle holes that connect conditioned space to unconditioned attic areas shall be weather-stripped and latched to provide an airtight seal against the door trim and wall drywall.
 14. All seams in band joists between conditioned floors shall be sealed.
 15. Plumbing penetrations shall be blocked with air-impermeable insulation and sealed at edges with proper sealant. Rockwool, or similar products, shall not be used. A secondary air barrier shall be installed behind tub and shower units on insulated walls before installing bath and shower assemblies. The air barrier material must be sealed with a proper sealant and the exterior wall must be insulated to the requirements of the energy code.
 16. All penetrations of drywall in insulated walls, including wall switches, electrical outlets and kneewall door rough openings shall be sealed with a proper sealant.
 17. Drywall shall be sealed at top plate on ceilings separating attic from conditioned space. Gaskets, caulk or foam can be used to air seal drywall at any stage of the installation.
 18. To reduce the potential for air infiltration in fire-rated party walls, walls separating unit envelopes to be constructed using rated construction systems that do not require the use of airspace or “gap” between two independent walls are encouraged. One such system is the U370 system, which also may provide superior sound abatement qualities.
- E. Sealants and Caulking:** Furnish and install sealants according to Section **07030**, and as otherwise required, to provide a complete and finished installation of building systems, components, fixtures, fittings and accessories, and to protect building systems, components, fixtures, fittings and accessories from water and/or air penetration. Caulk all exterior joints between dissimilar materials, around the exterior frames of all windows and doors, and all control joints. Organic-type caulking is not acceptable. Take extra care to provide a smooth, consistent, and clean application of sealant in all areas where the sealant bead is exposed. Consult the sealant manufacturer prior to installation to verify the proper type and chemical composition of sealant for each type of application.
1. The contractor shall furnish and install backer rods in all expansion joints or any joint where movement is to be expected prior to installation of sealant to ensure the correct hour glass profile of the sealant, and to provide a suitable stop for the sealant in deep joints.

2. All interior sealants shall have a maximum VOC content of 50 g/L, and exterior sealants shall have a maximum VOC content of 100 g/L. Provide a 5-year manufacturer’s standard material warranty, including replacement of sealant materials which fail to adhere, cure or provide a water-tight seal.

F. Exterior Envelope Air Infiltration Testing: Before insulation and interior finishes have been installed, carefully examine joints and penetrations in the exterior building envelope assembly, including duct, conduit, and pipe penetrations. The ENERGY STAR Thermal Bypass Inspection Checklist may be useful as a guide for visual inspections of framing areas where air barriers are commonly missed, and inspection of insulation to ensure proper alignment with air barriers, thus serving as an extra check that the air and thermal barriers are continuous and complete. Building codes, as well as regional ENERGY STAR program requirements, may supersede the items specified in the Thermal Bypass Inspection Checklist. The air-tightness of the dwelling unit may also be required to be tested by a professional energy auditor using a calibrated blower door test, to ensure air sealing measures have been effective, in order to verify ENERGY STAR compliance or to qualify for Connecticut Energy Efficiency Fund (CEEF) energy incentives.

1. Dwelling units shall meet current ASHRAE 62.2 minimum ventilation requirements by natural or mechanical means.
2. Only sealed combustion, direct-vented, power-vented or induced-draft combustion appliances should be installed inside conditioned spaces for space conditioning or for domestic hot water. The combustion safety of combustion appliances shall be verified according to current ASTM, ANSI and NFPA standards for assessing depressurization-induced back-drafting and spillage from vented combustion appliances. Gas ovens, gas stoves or gas cooktops should only be installed where exhaust range hoods vent directly to the exterior.

07200 Insulation

A thermally-protected building envelope shall be provided with insulation material having the minimum thermal-resistant values listed, not including windows and doors. Provide roof/attic floor details that allow for the full depth of attic ceiling insulation to extend over the exterior wall plate. Where roof framing is insulated, full-width baffles shall be placed between framing members in all framing bays to allow for cold air movement across the bottom of the roof sheathing and to prevent insulation from migrating in to the vented soffit area.

A. Thermal Resistance Requirements – Wood Framing: Install insulation in and/or over entire wood-framed areas of new work exposed to outside ambient conditions as follows:

1. Exterior Walls/Attic Kneewalls: R-19 + R-6 ci (continuous insulation) or R-20 (minimum) [R-15 + R-5 ci or 13 + R-7.5 ci is acceptable in renovations where framing depth must match existing 2 x 4 framing];
2. Rim Joists/Floors over Unheated Spaces/Cantilevered Floors: R-30+ R-7.5 ci (minimum) or R-38 (use the maximum thickness allowed by floor framing);
3. Uninhabited Attic Floors: R-49 (min.);
4. Cathedral Ceilings/Roofs: R-30+ R-6 ci (min.) or R-38 (use the maximum thickness allowed by roof framing); and,
5. Existing Flat/Low-sloped Roofs to be Replaced: R-13 + R-7.5 ci (minimum) [Flat/Low-sloped Roofs in New Construction: see item 4. above].

- B. Thermal Resistance Requirements – Metal Framing:** Install insulation in and/or over entire areas of new light-gauge metal-framed work exposed to outside ambient conditions as follows:
1. Exterior Walls/Band Joists/Attic Kneewalls: R-19 + R-10 ci , R-21 + R-9 or R-25 + R-7.5 ci (min.) [R-15 + R-12 ci is acceptable in renovations where framing depth must match existing 2 x 4 framing];
 2. Rim Joists/Floors over Unheated Spaces/Cantilevered Floors: R-19 + R-12 ci, R-21 + R-10 ci, R-25 + R-9 ci, R-30 + R-7.5 ci or R-38 + R-6 ci (min. – use the maximum thickness allowed by framing depth);
 3. Uninhabited Attic Floors: R-53 (minimum);
 4. Cathedral Ceilings/Roofs: R-30 + R-7.5 ci or R-38 + R-6 ci (min. – use the maximum thickness allowed by framing depth); and,
 5. Existing Flat/Low-sloped Roofs to be Replaced: R-13 + R-10 ci (minimum) [Flat/Low-sloped Roofs in New Construction: see item 4. above].
- C. Thermal Resistance Requirements – Masonry:** Install insulation in and/or over entire areas of new light-gauge metal-framed work exposed to outside ambient install insulation in and/or over entire areas of new masonry walls exposed to outside ambient conditions as follows:
1. Exterior mass walls: R-13 (minimum and R-17 when more than half of the insulation is on the interior of the mass wall); and,
 2. Basement and crawl space walls: R-10 (minimum and R-13 when more than half of the insulation is on the interior of the basement wall).
- D. Installation Requirements:** Installation of all insulation shall be performed with the utmost care, with the highest standard of professional workmanship, in strict compliance with manufacturer’s specifications and insulation instructions, and RESNET HERS “Grade I” standards. Third-party verification by a RESNET HERS accredited RESNET HERS Rater as “Grade I” insulation may be required for ENERGY STAR compliance or to qualify for CEEF energy incentives.
- E. Continuous Insulation:** Where continuous insulation is required over framed areas with fully-insulated cavities, provide rigid foam insulation panels, such as expanded polystyrene, extruded polystyrene, or polyisocyanurate, as required. Follow manufacturer’s recommended means and methods of installation, including proper adhesives, fasteners and joint-sealing tape.
- F. Insulated Sheathing Panels:** Where exterior finishes are to be installed over continuous insulation, consider composite insulating sheathing panels consisting of 4' x 8' closed cell polyisocyanurate foam bonded to fiber-reinforced facers on one side, and ½" or ⅝" CDX plywood or OSB sheathing on the other, or panels consisting of 4' x 8' closed cell polyisocyanurate foam bonded to fiber-reinforced facers on one side, a middle layer of 1", 1½" or 2" solid wood ventilation spacers, and a top layer of ½" or ⅝" CDX plywood or OSB sheathing. Follow panel manufacturer’s recommended means and methods of installation, including proper adhesives, fasteners and joint-sealing tape.
- G. Plumbing:** Avoid installing pipes that carry water – hot and cold supply pipes, steam lines, hydronic heat pipes and air conditioner condensate lines - in exterior walls. If plumbing in the exterior wall cannot be avoided, a separate plumbing chase wall shall be provided inside the insulated exterior wall.

- H. Interior Walls with Plumbing Intersecting Exterior Walls:** Where unit separation walls or other interior walls with plumbing intersect exterior walls, insulation shall be placed in the first framing bay of the framed interior wall to minimize the chance for frozen pipes in other framing bays.
- I. Insulated Headers:** Provide R-5 (min.) insulated headers. Consider pre-fabricated insulated headers, with engineered lumber framing and rigid-foam cores.
- J. Energy Heel Trusses/Raised Top Plates:** Extend full depth of the required attic insulation over exterior wall top plates at energy heel trusses with raised top chords, and raised top plates at joist/rafter assemblies.
- K. Attic Ventilation:** Eave soffit and continuous ridge ventilation and/or through-wall gable-end vents shall be provided in sizes required to vent attic spaces. Install equal capacities of clear ventilation in the soffits/eaves and the gable ends/ridges. Provide 2 ft² of net free area of venting for every 150 ft² of attic floor (min.). Keep insulation from blocking the soffit vents.
- L. Attic Access Doors:** Adhere R-10 (min.) rigid insulation onto the back of attic access doors and scuttle covers.
- M. Foundation Walls:** Foundation walls shall be insulated to a minimum of R-10. Provide vapor-impermeable rigid foam insulation with taped joints.
- N. Bond-break at Contiguous Slab Locations:** Concrete slabs in unconditioned areas that are in contact, or may come into contact, with slabs in conditioned areas due to settlement, shall be separated with an insulating material covering the entire surface of potential slab contact.
- O. Fireplace Chase:** Wood-framed exterior fireplace chases that connect to a conditioned space shall be insulated to R-19 (min.). Insulation must be continuous in exterior walls and ceiling above. Insulation shall be located no closer than 1 inch to the flue pipe, or according to local code.
- P. Insulated Corners:** Extend required exterior wall insulation into the outside corner of two insulated walls framed with two-stud “California” corner framing with furring or drywall clips, or equivalent alternative framing technique.
- Q. Insulated T-Walls:** Provide continuous insulation at the intersections of an interior and insulated exterior walls framed with horizontal ladder framing, full-length furring, drywall clips or equivalent alternative framing technique.
- R. Alternative Insulation Products:** Consider the use of alternative insulation products, such as recycled content, formaldehyde-free fiberglass, dry-blown, loose-fill or spray cellulose, spray-on/pour-fill cellular plastic insulation and/or a hybrid Insulation and air-sealing system (fast-setting, low-expanding two-part foam framing envelope sealant and fiberglass batt insulation infill).

07310 Roofing

Where four-sided recesses are provided for screening mechanical equipment, the depth of such recesses should not exceed the installed height of the tallest specified piece of equipment intended to be screened.

- A. Material Standards:** Provide materials complying with governing regulations, and which can be installed to comply with the factory mutual requirements for Class 1 of Noncombustible, including zoned resistance, and the underwriters laboratories Fire Classified and Class 1-90 wind uplift resistance. Comply with published recommendations of shingle manufacturer details and recommendations of NRCA Roofing Manual for installation of underlayment and shingles, using number of nails and coursing of shingles in accordance with manufacturer’s standards.
- B. Underlayment:** Roofing felt: 15 lb., asphalt-saturated non-perforated organic roofing felt, complying with ASTM D226, 36" wide, approximate weight 18 lbs. per square. Provide an adhesive ice and water protection membrane where roof slopes are less than 4:12 pitch, and at all valleys, roof penetrations, eaves, intersections of walls and roofs, hips, and wherever else required by job conditions. Apply sufficient layers of ice and water protection membrane at the eaves to cover the sheathing from drip edge to 24" inside any heated spaces below. Follow all the manufacturer's specifications for installation. Separate dissimilar metals with an ice and water protection membrane.
- C. Flashing:** Provide copper or pre-finished aluminum drip edge flashing at roof eaves and rakes, roof to chimney/wall/skylight connections, other horizontal roof material transitions, fastened with compatible metal fasteners.
- D. Asphalt Cement:** Provide fibrated asphalt cement complying with ASTM D1822, designed for trowel application where required.
- E. Shingles:** Provide asphalt fiberglass shingles on sloped roofs. Install mineral surfaced, self-sealing, fiberglass asphalt shingles with a 30-year warranty. Provide manufacturer's standard factory-precut ridge shingles units to match shingles or job-fabricated units cut from actual shingles used. Asphalt shingles shall meet ASTM D3462 standard verified by UL, and have a minimum warranty-period of 30 years. The minimum warranty-period for labor shall be 10 years, No-Dollar-Limit (NDL).
- F. Shingle Fasteners:** Provide aluminum or hot-dip galvanized 11 or 12 gauge sharp pointed conventional roofing nails with barbed shanks, minimum 3/8" diameter head, and of sufficient length to penetrate minimum 3/4" into solid decking or to penetrate through plywood sheathing. Provide minimum 6 nails per shingle.
- G. “Cool” Roofing:** All roof coverings shall meet ENERGY STAR criteria for cool roof products:
 1. Low slope applications (2:12 or less - as defined in ASTM Standard E 1918-97): initial solar reflectance ≥ 0.65 and 3-year aged minimum solar reflectance ≥ 0.50 . Products that are typically installed on low-slope surfaces include single-ply membranes, built-up-roofs, modified bitumen, spray polyurethane foam, roof coatings, and standing-seam profiled metal. Some products that are typically installed on low-slope roofs may also be installed on steep-slope roofs (e.g., single-ply membranes and roof coatings).
 2. Steep slope applications (greater than 2:12 pitch): initial solar reflectance ≥ 0.25 , and 3-year aged minimum solar reflectance ≥ 0.15 . Products that are typically installed on steep-slope surfaces include composite shingles, clay, concrete, or fiber-cement tile, slate, shakes, architectural profiled metal and individual metal roof components.
 3. To avoid condensation under light-colored, reflective membrane roofing, insulate fastener heads from the building exterior and eliminate air flow through the system. Mechanically-fasten the first layer of insulation over a vapor barrier into the decking, adhere the second layer of insulation to the first layer of insulation, and then adhere the roof membrane to the top layer of insulation.

4. Consider providing light-colored metal roofing for long-term reduced maintenance and increased useful life. For re-roofing projects, metal roofing may be able to be applied over the original roof, saving removal and disposal costs.

H. Membrane Roofing: Single-ply membrane roof covering shall have a minimum warranty period of 15 years, covering both labor, material and NDL. Minimum slope to drains shall be ¼" to 1'-0".

Consider providing reinforced Thermoplastic Polyolefin Membrane (TPO) single-ply membrane roof covering in lieu of EPDM or reinforced PVC. White TPO membranes typically display reflectivity ratings in the high 80% range when new (ENERGY STAR specifications require 65% min.), and in the low 80% range after three-year rooftop exposure with cleaning (ENERGY STAR specifications require 50% min.).

I. Gutters and Downspouts: Where on-site rainwater collection/retention is not provided, rain from the roof shall be collected in a roof gutter system and directed via downspouts such that water is discharged at least 5' away from the foundation. The minimum thickness for aluminum gutters shall be 0.032", and 0.027" for aluminum flashing material.

Where gutters are not desirable, roof overhangs shall be no less than 24", and a ground gutter system, not less than 12" wider than the overhang shall be provided. Ground gutters shall have 4" to 6" (minimum) of decorative stones over 16" (minimum) of processed stone, with (2) filter fabric-protected 4" perforated PVC pipes draining to rainwater collection/retention cisterns, drywells or approved outfalls.

07460 Siding

Low-maintenance siding materials, such as vinyl, recycled-content hardboard, and pre-finished fiber-cement boards and panels are preferred. Solid-stained wood, applied over rainscreen panels or other pressure-equalizing, venting materials/assemblies may be used; pre-primed pine or cedar boards/battens, or cedar shakes/shingles shall be free from knots, defects and warpage. Where wood siding is provided, prime all cut ends, and back-prime before installation, to protect against dampness.

A. Vinyl Siding: When provided, vinyl siding shall be solid color virgin vinyl, with all required accessories and trim pieces, and may include decorative siding products. Standing and running trim may be solid PVC trim boards or siding manufacturer-provided vinyl components. Where horizontal vinyl siding is continuous across two or more stories of wood construction, an expansion joint shall be provided at the floor line to absorb the vertical shrinkage of the wood framing. Vinyl siding shall be at least 0.044" thick; horizontal siding shall have no vertical splice joints unless the width of the wall exceeds the standard 12' length. All splice joints in horizontal siding shall be offset a minimum of 2' from siding joints directly below. Warranty period shall be 20 years, NDL.

B. Exterior Insulation & Finish System (EIFS): When provided, EIFS shall not be permitted unless rainscreen panels or other pressure-equalizing, vented back-draining system is specified. EIFS shall not be permitted on any walls at ground-floor level. Where walls are easily reachable by residents from private exterior stairs, balconies, decks, etc., provide heavy-duty reinforcement mesh. EIFS warranty period shall be 10 years, NDL.

C. Texture 1-11: Texture 1-11 is not acceptable as the siding/sheathing material for any new construction or gut rehabilitation projects.

- D. Fasteners and Anchorage:** Provide nails, screws, and other anchoring devices of type, size, material, and finish suitable for intended use and as required to provide secure attachment. Conceal fasteners where possible. Hot dip galvanized fasteners for work exposed to exterior and high humidities to comply with ASTM A153. Staples shall not be used.
- E. Recycled-content Siding:** Recycled-content hardboard siding includes varying amounts of recycled content materials, and may be used wherever wood siding would be desirable.
- F. Fiber-cement Siding:** Fiber-cement siding and panels, composed of cement, sand, and cellulose fibers, may be used wherever wood siding or a stucco finish would be desirable.
- G. Flashing:** Provide 20 oz. copper or 0.027" th. pre-finished aluminum drip edge flashing at window and door head casings and other horizontal siding transitions, column/trim/ledge caps, and at all exposed locations where required, fastened with compatible metal fasteners nails. Aluminum flashing shall not be permitted where flashing is in direct contact with masonry or concrete materials. Provide moldable flashing tape over 20 oz. copper or 0.027" thick pre-finished aluminum head flashing/drip edges/nailing flanges at all windows and doors. Provide soldered copper sill pan flashing, a pre-fabricated recycled polypropylene pan system, or moldable flashing tape at all sills. Provide moldable flashing tape at all jambs.

08000 WINDOWS, SKYLIGHTS & DOORS

08001 Windows and Skylights

Double-hung and single-hung windows are preferred. Awning and casement windows are acceptable, but their use should be limited due to hardware functioning concerns related to heavy and/or long-term use. The use of awning and casement windows in elderly developments is discouraged; however, where such windows are determined to be the best option available, provide accessible hardware, installed in accordance with current ICC/ANSI A117.1 requirements. Sliding windows are not acceptable. Basement windows shall be operable awning units with insulating glass and vinyl insect screens. Size all window units as required to meet code requirements for natural light, ventilation and egress.

- A. Window Materials:** Clad wood windows are preferable, but vinyl, fiberglass and aluminum may also be acceptable. Where aluminum is provided, hollow sections of frames and sash shall be thermally-broken. Provide argon gas-filled, low-E-coated, insulating glass. Latching devices and fiberglass screens in aluminum frames shall be provided for all operable windows. Screen frame corners shall be mitered and reinforced with concealed aluminum "L" reinforcing; vinyl corner splines are not acceptable. Where full screens are specified, provide intermediate screen mullions. Where half screens are specified, and where window air conditioners are to be utilized, provide sliding, locking screens. Manufacturer's warranty for window assemblies shall be 10 years (min.). All windows shall conform to all code requirements, including those for safety glazing and emergency egress.
- B. Energy and Performance Requirements:** All window, door and skylight areas and U-factors must comply with all energy code and ENERGY STAR requirements, unless otherwise noted. Windows, skylights, and glass doors shall be manufactured in accordance with National Wood Window and Door Association (NWWDA), American Architectural Manufacturers Association (AAMA), Window and Door Manufacturers Association (WDMA) and Canadian Standards Association (CSA) standards, rated by the National Fenestration Rating Council (NFRC), and labeled accordingly. All windows shall have been tested according to AAMA/WDMA/CSA 101/I.S.2/A440-08 standards, within the past four years, and shall have met or exceeded the following performance standards: minimum performance grade LC-PG40; minimum design pressure 40 psf; minimum structural test pressure 60.5 psf; minimum water penetration test pressure 6 psf;

positive test pressure 75 Pa (1.6 psf); and maximum allowable leakage 0.30 cfm/sf.

1. All windows shall have a maximum Window and Thermal Transmittance Coefficient (U) value of 0.30 (R-3.3) and a maximum Solar Heat Gain Coefficient (SHGC) value of 0.40. In air-conditioned units, with southeast-, south- and southwest-facing windows that are unshaded in the summer, the maximum SHGC shall be 0.30.
 - a. The required U value for windows in homes with a window area to above-ground conditioned floor area (WFA) ratio greater than 15% shall be adjusted according the following formula:
Adjusted U value = $[0.15/WFA] \times 0.30$
2. All skylights shall have a maximum U value of 0.55 (R-2.2) and a maximum SHGC value of 0.40.
 - a. The required U value for skylights in homes with a window area to a WFA ratio greater than 15% shall be adjusted according the following formula:
Adjusted U value = $[0.15/WFA] \times 0.55$

- C. Design Pressure Rating (DPR):** All windows shall comply with Design Pressure Ratings (DPR) as required by code. Analyze the building site for exposure category, based on the quantity and spacing of wind obstructions. Determine the required DPRs based on the basic wind speed for the local municipality/code, the height and width of the building, the sizes and locations of windows on the building and the height and exposure adjustment coefficient. Provide manufacturer’s standard, or manufacturer-modified, structurally upgraded window sash, frames, mullions and fasteners to meet the required DPR(s).
- D. Security and Operation:** Windows within eight feet of grade, or otherwise accessible without the use of a ladder, shall be forced entry resistant meeting AAMA/WDMA/CSA 101/I.S.2/A440-08 standards.
- E. Materials/Finishes:** All wood windows shall be clad with solid-color vinyl, or factory-finished aluminum with a high performance baked enamel paint finish, except as may be required in historic preservation projects. All-fiberglass and fiberglass and wood windows shall be factory-finished with high performance paint finishes. Aluminum windows shall have a high performance baked enamel paint factory finish; anodized aluminum finishes are not acceptable.
- F. Vinyl (PVC) Windows:** When selected, vinyl (PVC) windows shall be manufactured by a single manufacturer having a minimum of ten (10) years of experience producing PVC windows. Window units shall have a minimum frame material thickness of 0.070", a minimum sash thickness of 0.065", factory-balanced block and tackle sash balances in compliance with AAMA-902 and cam-type sash locks.
- G. Fiberglass Windows:** Consider fiberglass windows for dimensional stability and thermal performance which may outperform wood and vinyl. When selected, fiberglass windows shall be provided by a single manufacturer having a minimum of ten (10) years of experience producing fiberglass windows.
- H. Extra-high-performance Glazing:** Consider optimizing window performance by providing extra-high-performance glass. Triple glazing with suspended film coatings, and double interior interspaces with argon/krypton gas, can provide superior insulating values (U values $\leq .20$ and R-values ≥ 5), UV blockage, sound control, condensation resistance, and radiant comfort. Glazing options can be directionally “tuned” for natural lighting and solar energy conditions on northern, eastern, southern and western building orientations, to provide passive solar heating benefits in the winter, and moderate mid-day and afternoon overheating in the summer.
- I. Installation:** Comply with manufacturer’s instructions and recommendations for installation of door, window, and skylight units, hardware, accessories, and other components of work. Set units plumb, level, and true to line without warp or rack of frames or sash. Provide proper support and anchor securely in place.

Provide joint fillers and sealants as required. Check for proper operation, adjust for proper closure and lubricate hardware.

08100 Doors

All unit entrance doors, and all interior passage doors in elderly housing, shall be 36" wide. All interior passage doors in family developments shall be 32" wide (min.), or as otherwise required for accessibility.

- A. Insulated Steel, Fiberglass and Composite Doors:** Provide foam core insulated steel, fiberglass, or wood veneered steel composite exterior unit entry doors, with thermally-broken, adjustable, barrier-free thresholds. Sides and tops of doors shall be provided with foam-filled, compression-type weather-stripping, and bottoms of doors shall be provided with triple-contact (min.), extruded vinyl compression tube and blade sweeps. When selected, provide metal exterior unit entry doors with 25 gauge (min.) galvanized steel facings and thermally-broken, interlocking steel edges. Hinge stiles, lock stiles and top rails shall be solid, finger-jointed or laminated wood. Bottom rail reinforcement shall be rot-resistant, wood/fiberglass composite. Door jambs shall be reinforced with 2 x 4 horizontal bracing at strike and latch heights. Wood jambs at exterior and unit entry doors shall be rabbeted and finger-jointed.
1. Unit Entry Door (U) and SGHC values:
 - a. All opaque doors shall have a maximum U value of 0.21
 - i. The required U value for opaque doors in homes with a WFA ratio greater than 15% shall be adjusted according the following formula: Adjusted U value = $[0.15/WFA] \times 0.21$;
 - b. All doors $\leq \frac{1}{2}$ Lite shall have a maximum U value of 0.27 and an SHGC-value of 0.30
 - i. The required U value for opaque doors in homes with a WFA ratio greater than 15% shall be adjusted according the following formulas: Adjusted U value = $[0.15/WFA] \times 0.27$
Adjusted SHGC-value = $[0.15/WFA] \times 0.30$; and,
 - c. All doors $> \frac{1}{2}$ Lite shall have a maximum U value of 0.32 and an SHGC-value of 0.30
 - i. The required U value for opaque doors in homes with a WFA ratio greater than 15% shall be adjusted according the following formulas: Adjusted U value = $[0.15/WFA] \times 0.21$
Adjusted SHGC-value = $[0.15/WFA] \times 0.30$.
- B. Wood and Molded Wood Fiber Doors:** All interior passage doors shall be solid-core flush wood or molded wood fiber. Provide doors with wood stiles, MDF top and bottom rails, and low-VOC particleboard cores. Hinged closet doors are preferable to sliding doors. Bi-fold doors are not acceptable, unless they meet the 1994 HUD guideline (or most current) spec for "heavy-duty bi-folding closet doors". Pocket doors and door frames and casings made of polystyrene, are not acceptable.
- C. Aluminum and Glass Entrances, Curtain Walls and Storefronts:** For projects requiring aluminum and glass entrance doors and storefront windows, provide single acting, offset pivot or butt hung aluminum and glass doors in thermally-broken framing with low-emissivity, double- or triple-pane insulated glazing. Provide assemblies with ENERGY STAR maximum thermal resistance and solar heat gain coefficient values: U-0.35/SHGC-0.40 metal-framed curtain wall/storefront; U-0.70/SHGC-0.40 metal-framed entrance doors; U-0.45/SHGC-0 at all other metal framing. Baked enamel paint finishes for aluminum and glass doors are preferred to anodized finishes, and sliding doors are discouraged due long-term operation and maintenance issues. Aluminum and glass doors shall be tested for air infiltration in accordance with ASTM E283, and for thermal performance in accordance with ASTM C236 and AAMA 1503, and forced entry resistant in accordance with AAMA/NWWDA/CSA 101/I.S.2-/A440-08 requirements.
- D. Patio Doors:** In-swing french doors are preferred. In areas where the crime of breaking and entering is prevalent, swing doors in lieu of sliding doors shall be used as access to ground level patios. Sliding glass doors with panels more than 3'-0" wide (nominal) shall not be used. In housing for elderly residents, provide

swinging French doors to patios, in lieu of sliding glass doors. Patio doors on the ground level in family units shall be equipped with locks at a height that prevents small children from being able to unlock and open the door. Particular attention during design shall address FHAA requirements for thresholds and for 32" clear opening width for egress.

- E. Screen and Storm Doors:** When selected, provide pre-hung, heavy-duty, pre-finished aluminum screen and storm doors with foam-insulated frames, heavy-duty extruded aluminum corner gussets, hinges and closers, tempered glass and weather-stripping. Sliding screen doors with roll-formed frames are not acceptable.

08710 Hardware

Provide all required finish hardware, including, but not be limited to all butts, hinges, locksets, mortise locks, passage sets, privacy sets, push-pulls, door stops, catches, coordinators, flush-bolts, shutter hardware, hooks, house numbers and peep-hole viewers. All hardware shall be Grade 2 (minimum) per ANSI/BHMA Standards, which should be reflected in each individual BHMA product number. All door hardware, including sliding glass door roller assemblies, door hinges, handle sets, door locks/multipoint locking hardware, etc. shall meet current AAMA Performance Requirement standards. All hardware shall be installed with the screws, bolts, and fasteners provided by the manufacturer and packaged with the hardware.

- A. Entrance Doors:** All entrance doors shall have Mortise-type locks. A hotel-type electronic card-key security system is preferred for apartment buildings. Peepholes with fish-eye viewers are required for front doors of apartment units and townhouses if the doors have no sidelights. Barrier-free units shall have a second peephole at 42" above the finish floor. Doorbells or door-knockers shall be provided at the main entrance door to all dwelling units.
- B. Locksets:** All unit entries shall have door locks with simultaneous retraction of the dead bolt and dead latch from the inside and a single key operation from the exterior. The dead bolt shall have a 1" throw. The dead latch shall have a 1/2" throw. Unit entry hardware shall not have parts made of plastic.
 1. Bathrooms and master bedrooms shall have door locks that are non-locking against egress, with panic release operation;
 2. Stair tower doors, first through sixth floors, to the corridor shall have self-locking dead latches and trigger bolt protection prohibiting entry from the stair tower to the corridor. In buildings over three stories, these doors shall also have electric strike releases that will unlock upon signal from the fire alarm; and,
 3. Rated exterior doors from common spaces, stairs, maintenance areas etc. shall have adjustable self-closing devices, self-locking dead latches and trigger bolt protection.
- C. Lever Handles:** Lever handles shall be provided at all doors in buildings designed for elderly residents, and in all barrier-free units.
- D. Hinge Pins:** Out-swinging exterior doors shall have non-removable hinge pins or shall have security type hinges that prevent unauthorized door removal.
- E. Electric Locksets:** Exterior doors intended for common entry, in buildings designed for multiple dwelling units for elderly residents, high-rise developments in large metropolitan areas, and all buildings designed for multiple dwelling units in areas where security from trespass is anticipated as a substantial problem, shall have code-compliant electric security with multi-point entry door locks, multi-point exit door locks and exit

devices. Such doors shall be electronically-controlled by telephone-based intercom/remote entry and key fobs, key cards, etc.

- F. Alarms:** Exterior doors intended only for emergency exit from buildings designed for multiple dwelling units for elderly residents, high-rise developments in large metropolitan areas, and all buildings designed for multiple dwelling units in areas where security from trespass is anticipated as a substantial problem, shall have door-ajar alarms wired to a central control panel. Such doors shall be provided with panic hardware and signage which clearly indicates “Emergency Exit Only – Door Alarm Will Sound”. Door-ajar signals shall require manual re-setting.

09000 FINISHES

09250 Gypsum Board and Acoustic Ceiling Panels

- A. Gypsum Board:** Manufacturer’s recommendations shall be followed in specifying ceiling drywall adequate for supporting the weight of specified attic insulation. Only gypsum board panels manufactured in the United States, and labeled “made in the U.S.A.” with the manufacturers name and manufacturing site location, shall be provided.

1. Provide the following materials as required by code, the Standards, project design and job conditions:
 - a. Gypsum Wall Board: ½" (min.) gypsum-core wall panels surfaced with paper on front, back, and long edges in compliance with ASTM C 36 and C 1396;
 - b. Gypsum Ceiling Board: ½" (min.) gypsum-core ceiling panels with additives to enhance the sag-resistance of the core; surfaced with paper on front, back, and long edges; in compliance with ASTM C 1395 and C 1396;
 - c. Fire-rated Gypsum Board: ⅝" (min.) gypsum core wall panels with additives to enhance fire resistance of the core and surfaced with paper on front, back, and long edges; in compliance with ASTM C 36 and C 1396, Type “X”;
 - d. Mold-resistant Gypsum Board [bathroom walls and ceilings, kitchen walls and wherever wall tile is indicated (except within tub and shower enclosures)]: ½" (min.) gypsum core wall panels with additives to enhance water resistance of core; surfaced with moisture/mold/mildew-resistant paper on front, back, and long edges; in compliance with ASTM C 630 and ASTM C 1396, and having a mold and mildew resistance ASTM 3273 panel test score of 10;
 - e. Fire-rated Mold-resistant Gypsum Board: ⅝" (min.) gypsum core wall panel with additives to enhance fire resistance of the core; surfaced with moisture/ mold/mildew resistant paper on front, back, and long edges; and complying with ASTM C 630 and ASTM C 1396, Type “X”, , and having a mold and mildew resistance ASTM 3273 panel test score of 10;
 - f. Cement Backer Board [tub and shower wall enclosures]: ½" (min.) cementitious, water durable panels, surfaced with fiberglass reinforcing mesh on front and back, with long edges wrapped; and complying with ANSI A118.9 and ASTM C 1325; and,
 - g. Gypsum Sheathing Board: ½" (min.) gypsum core wall panels with additives to enhance the water-resistance of the core; surfaced with water-repellant paper on front, back, and long edges; and complying with ASTM C 79 and C 1396.

Consider providing soundproof fire-rated and non-fire-rated ½" and ⅝" thick drywall panels, with STC ratings ranging from 49 to 74, in lieu of standard sound attenuation techniques such as resilient channels and clips.

- B. Gypsum Board Accessories:** Provide gypsum board accessories in compliance with ASTM C 1047. Use corrosion-resistant steel furring channels to attach drywall to inside faces of concrete or C.M.U. walls, except in below grade spaces. Use corner beads at all outside corners and edges. Use J-trim as required by

details/job conditions. Use drywall screws to fasten panels to studs as recommended by the drywall manufacturer. Use manufacturer's recommended reinforced tape and joint reinforcement at all seams, corners and screw heads. In order to eliminate or reduce shrinkage and expansion cracking, manufactured drywall expansion joints shall be placed in long corridor walls above each jamb of all door openings, and elsewhere as required by details/job conditions.

- C. Acoustic Ceiling Panels:** Consider using acoustic ceiling panels with recycled content, low or zero formaldehyde emissions, anti-microbial treatments and high light reflectance values for resource conservation and indoor air and light quality.

09650 Floor Finishes

Floor finishes must be provided over all substrates of plywood, "gypcrete" or lightweight concrete.

- A. Resilient Flooring:** 1/8" thick (min.) resilient flooring or vinyl tile and wall base trim is acceptable for use in kitchens, bathrooms, laundry areas and storage rooms (except at slabs-on-grade with no vapor barrier). Polystyrene wall base trim is not acceptable.
1. Tongue and groove, high-pressure laminate flooring with melamine resin/water repellent-treated core material is acceptable. Laminate floor products are rated using AC ratings after manufacture to determine the products durability. Choose AC-rated laminate flooring products according to their intended installation location:
 - a. Bedrooms and Closets: AC₂
 - b. Unit Hallways and Living Areas: AC₃
 - c. Community Spaces: AC₄
 - d. Common Lobbies and Corridors: AC₅
 2. Consider providing resilient flooring tile made from limestone and ethylene acrylic polymers as a PVC-free alternative to VCT.
- B. Rapidly-Renewable Flooring Materials:** Consider using bamboo and cork flooring as alternatives to hardwood flooring and carpeting. Provide products made without the use of UF binders, such as bamboo flooring and panel products made with polyisocyanurate or phenol formaldehyde binders.
- C. Ceramic Tile:** Ceramic tile is acceptable as a wall and floor finish in kitchens, bathrooms, laundry areas, storage rooms and mechanical rooms. Conform to standards and methods in Tile Council of America, Inc. (TCA) Handbook for Ceramic Tile Installation, current edition, and ANSI Standard Specifications for Installation and manufacturer's instructions and recommendations for installation. Use setting materials according to the recommendations of the tile manufacturer. Stone saddles at bathroom doors shall be beveled. Transitions between floor materials shall occur at centerline of doors. Provide sealant at joints where and as recommended by TCA and approved by architect. Tile in wet areas shall be laid on 1/2" waterproof cement backer board at walls, and over 3/4" subfloor at floors. Consider using recycled content ceramic tile in lieu of standard tile.
- D. Carpeting:** Carpeting in dwelling units is acceptable in living and dining areas, bedrooms and bedroom closets; however, hard-surface flooring with the option for area rugs is preferable to wall-to-wall carpeting. Do not install carpets in basements, entryways, laundry rooms, bathrooms or kitchens. Floor areas designated for carpeting shall be covered with material having a minimum 10 year performance warranty including, but not limited to, abrasive wear static protection, tuft bind and delamination.

1. For all carpeting in moderate traffic areas (inside units) and heavy traffic areas (common corridors, community rooms and public spaces) consider:
 - a. Construction: Tufted level & textured level loop
 - b. Fiber: 100% Nylon
 - c. Dye Method: 70% or greater solution dyed
 - d. Face Weight: 24 oz. or greater
 - e. Standards: HUD UM44d and Green Label Plus Certification Program
 - f. Carpet Emission Limits:
 - i. VOC: 0.50 mg/m² • hr
 - ii. 4-Phenylcyclohexane: 0.05 mg/m² • hr
 - iii. Formaldehyde: 0.05 mg/m² • hr
 - iv. Styrene: 0.40 mg/m² • hr
 - v. Standard: Green Label Plus Certification Program

For all cushioning, consider:

- i. Material: synthetic fiber
 - ii. Standard: Green Label Plus Certification Program
 - iii. Emission Limits:
 - i. TVOC's: 1.00 mg/m² • hr
 - ii. BHT: 0.30 mg/m² • hr
 - iii. Formaldehyde: 0.05 mg/m² • hr
 - iv. 4-PCH: 0.05 mg/m² • hr
 - v. Standard: Green Label Plus Certification Program

2. Moderate Traffic Areas consider:
 - a. Secondary backing: Action backing or unitary backing with 20 lb. tuft or equal;
 - b. Gauge: 1/8 (min.); and,
 - c. Cushion (recommended, but not required) Thickness/Weight: .25" th./6-8 lbs.

3. Heavy Traffic Areas consider:
 - a. Secondary backing: unitary backing with 20 lb. tuft or equal;
 - b. Gauge: 1/10 (min.);
 - c. Cushion (recommended, but not required) Thickness/Weight: .33" th./ 6-8 lbs. ;
 - d. Recycled-content carpet, padding, and underlayment made from recycled plastic bottles, wool or cotton; and,
 - e. Floor coverings with PVC-free backing systems, which may be retrieved by their manufacturers at the end of their life cycles free of charge, and nylon fibers in the carpeting may be recycled into new carpet fiber.

09900 Paints and Coatings

- A. Non-toxic Paint Strippers:** In lieu of paint strippers with methylene chloride as the active ingredient, consider using water-soluble, non-caustic and non-toxic paint strippers with the organic solvent N-Methylpyrrolidone.

- B. Low-VOC and Formaldehyde-free Paint and Water-based Wood Finishes:** Specify low-VOC, formaldehyde-free paints. Where wood finishes are required, consider using low-VOC, water-based wood finishes with a maximum VOC content of 250 g/L.

- C. Low-VOC Paint and Architectural Coating Standards:** “Low- VOC” (Clean Air) paints, which meet the regulatory limits in the South Coast Air Quality Management District (AQMD) Rule 1113, are manufactured

and sold by numerous companies; however many manufacturers have reformulated to levels well below these limits. Those that meet a VOC standard of <10 g/L are referred to as super-compliant by the AQMD, which maintains a list of manufacturers of super-compliant products on their website.

1. Paints and other architectural coatings shall comply with the following VOC Standards:
 - a. Driveway sealer, flat coatings, floor coatings, non-flat coatings, sacrificial anti-graffiti coatings, and roof coatings: maximum VOC content of 50 g/L;
 - b. Non-sacrificial anti-graffiti coatings, primers, sealers and under-coaters, roof coatings (aluminum,) rust preventive coatings, specialty primers, stains, traffic coatings, waterproof sealers and waterproofing (concrete)/masonry sealers: maximum VOC content of 100 g/L;
 - c. Low-solids coatings: maximum VOC content of 120 g/L;
 - d. Concrete surface retarder, form release compound and stains (Interior): maximum VOC content of 250 g/L;
 - e. Clear wood finishes: maximum VOC content of 275 g/L;
 - f. Mastic coatings: maximum VOC content of 300 g/L;
 - g. Bond breakers, reactive penetrating sealers, roof primers (bituminous) and wood preservatives: maximum VOC content of 350 g/L;
 - h. Pre-treatment wash primers: maximum VOC content of 420 g/L;
 - i. Metallic pigmented coatings: maximum VOC content of 500 g/L;
 - j. Shellac (pigmented): maximum VOC content of 550 g/L; and,
 - k. Shellac (clear): maximum VOC content of 730 g/L.

D. Natural Paints and Finishes: Consider using paints and finishes made from natural raw ingredients such as water, plant oils and resins, plant dyes and essential oils; natural minerals such as clay, chalk and talcum; milk casein, natural latex, bees' wax, earth and mineral dyes.

E. Paint: Paint shall be the highest quality grade, and shall be delivered to the site in original containers labeled by the manufacturer, with seals unbroken.

1. Painting Schedule:
 - a. Exterior Siding: 2 coats solid-body stain over pre-primed siding;
 - b. Exterior Trim: 1 coat primer, 2 coats semi-gloss paint;
 - c. Interior Partitions & Walls: 1 coat primer, 2 coats satin or eggshell latex paint;
 - d. Interior Ceilings: 1 coat primer, 2 coats flat latex paint; and,
 - e. Interior Trim/painted woodwork: 1 coat primer, 2 coats semi-gloss latex paint.

F. Interior Painting Requirements:

1. All paint over interior drywall shall meet or exceed the limit of 400 strokes on the scrub ability testing standards established in the most recent version of ASTM D-2486.
2. Kitchens and baths shall be painted with a washable semi-gloss paint. Satin sheen or egg shell finish paint may be used if a satin or egg shell finish is used throughout the residential unit. Using one paint type (satin or egg shell) throughout is preferable.
3. Dwelling units shall have painted drywall ceilings. Painted concrete ceilings are acceptable where the concrete is part of the structural system, but only where sprayed-on popcorn texturing has been applied.

G. Exterior Painting Requirements:

1. If the exterior is stained wood, the finish shall be a solid-body stain, not the transparent or semitransparent type.
2. Vents penetrating roofs, with the exception of stainless steel vents, shall be painted with appropriate paint to match the roof shingles.

H. PVC-free Peel and Stick Wall Covering: Where wall coverings are desired, consider using PVC-free self-adhered textile wall covering containing 100% recycled polyester wall coverings in lieu of standard vinyl wall coverings.

10000 SPECIALTIES

A. Interior Signs: Provide interior signs consistent with current IBC and ICC/ANSI A117 requirements.

B. Mailboxes: In buildings designed for elderly residents, mailboxes shall be mounted with the bottom of the lowest box no less than 28", and the top of the highest box no more than 58" above the floor, or to meet applicable ADA requirements. Boxes shall have keyed locks, and shall be numbered sequentially. If necessary, boxes for barrier-free units shall be located separately to maintain the sequential numbering. Boxes shall have labeling sized for easy reading.

C. Bath Accessories: Provide and install all required bathroom accessories, including paper holders, towel bars, grab bars, soap and toothbrush holders, and robe hooks. Confirm and coordinate all blocking with accessory locations prior to installation of insulation and drywall. Install all accessories plumb, level, true to line and dimension, securely anchored and fastened to solid blocking.

1. Provide grab bars in all "Type A" accessible dwelling units as required by code. Provide solid wood blocking for grab bars in all "Type B" adaptable dwelling units as required by code.
 - a. In buildings designed for elderly residents, grab bars shall be provided at all bathtubs. One 24" long, 1" minimum diameter grab bar shall be placed at 45°, centered on the side opposite the accessible side, and with the lowest point of the bar 12" above the tub rim. The highest end of the diagonal bar shall be at the control end of the bathtub. An alternative to this diagonal grab bar may be proposed. One 24" long, 1" minimum diameter grab bar shall be placed vertically at the control end of the bathtub at the outside edge, with the top of the bar 4'-6" above the floor.
 - b. In buildings designed for elderly residents, grab bars shall be provided at all showers. One 24" long, 1" minimum diameter grab bar shall be placed at 45°, centered on the side opposite the accessible side, and with the lowest point of the bar 29" above the shower floor. The highest end of the diagonal bar shall be at the control end of the shower. An identical bar shall be placed vertically at the control end of the shower at the outside edge, with the top of the bar 4'-6" above the floor.
 - c. Tub/shower enclosures with integral grab bars substantially complying with the aforementioned grab bar requirements may not be used without approval.
2. Medicine cabinets with beveled-edge mirror doors shall be provided at all bathrooms.

11000 EQUIPMENT

A. Residential Appliances: All dwelling unit kitchen appliances, including range/oven, refrigerator, and dishwasher, shall be by a single manufacturer. Clothes washers and dryers shall be by a single manufacturer. All appliances including range and ovens, refrigerators, water heaters, washers, dryers, dishwashers,

ventilation fans, furnaces and air conditioners shall be listed by Underwriter’s Laboratories. Refrigerators, water heaters, washers, dishwashers, ventilation fans, furnaces and air conditioners must be ENERGY STAR-qualified. Choosing the most energy-efficient ENERGY STAR-qualified appliances may qualify for CEEF incentives.

1. Refrigerators: All refrigerators shall be ENERGY STAR-qualified, frost-free refrigerator/freezers with separate compartment doors. Minimum acceptable sizes acceptable are 15 cubic feet for studio and one-bedroom units, 17 cubic feet for two-bedroom units, 19 cubic feet for three-bedroom units and 21 cubic feet for four-bedroom units. Refrigerators shall be placed so that the door will be able to swing at least 135° to allow removal of all drawers. Where refrigerators other than side-by-side type are used, this requirement may be met by selecting a refrigerator with a door design which allows removal of all drawers with a 90° door swing. In elderly units, the refrigerator/freezers shall be side-by-side. In barrier-free units, the refrigerators shall have a two-door refrigerator compartment with a bottom freezer drawer compartment, unless otherwise specifically designed by the manufacturer for handicap-accessibility.
2. Range/Ovens: All ranges and ovens shall be four (4) burner electric appliances with a minimum width of 30 inches. Gas range/ovens may be used where they have automatic ignition and automatic pilot shutoff. Ranges in units designed as barrier-free or for elderly residents shall have front controls with indicator lights, and shall be self-cleaning, unless a roll-under access space is located adjacent to the appliance. Some jurisdictions may require separate cook-tops and wall oven; confirm all local requirements.
3. Microwave Ovens: Where microwave ovens are provided as an amenity, they shall provide a minimum cooking area of 1.0 ft³. An electrical outlet shall be provided directly behind the microwave location. In housing for elderly residents, an electrical outlet shall be conveniently placed for a counter top microwave oven.
4. Garbage Disposal Units: Garbage disposal units shall be provided at all unit kitchens and common area kitchen sinks.
5. Kitchen Ventilation: All kitchens shall be provided with an ENERGY STAR-qualified means of exhaust ventilation to the outside. Provide recessed ceiling fans for kitchen ventilation, or ceiling grills ducted to in-line or roof-top exhaust fans for kitchen ventilation. Re-circulating range hoods with integral task lighting shall be provided to match the width of the range below. Kitchen exhaust fans shall be sized to provide a rate of > 5 ACH continuous ventilation, or an intermittent rate of > 100 cfm. Sound ratings for kitchen ventilation fans shall be < 1 sone at minimum flow rate, and < 3 sones at maximum flow rate.
6. Bath Ventilation: All full and half baths, and common area toilet rooms, shall be provided with an ENERGY STAR-qualified means of exhaust ventilation to the outside. Ceiling grills ducted to in-line, roof-top or side-wall exhaust fans for bathroom ventilation are preferred. Dwelling unit bathroom exhaust fans shall be sized to provide a rate of > 20 cfm continuous ventilation, or an intermittent rate of > 50 cfm. Sound ratings for bath ventilation fans shall be < 1 sone at minimum flow rate, and < 3 sones at maximum flow rate. Bath exhaust fans shall be switched separately from bathroom lighting, and shall be timer-controlled to run for a minimum of twenty minutes of use, or humidity sensor-controlled. Recessed bath fan/light/night light fixtures, with both humidity sensor and manual odor control modes of operation, may also be available.
7. Whole House Fan: Consider using ENERGY STAR-qualified, ducted, in-line whole house fans in units with more than one floor level and attic space above. Vents must be mounted in a hallway ceiling on the top floor of a house, with an insulated, airtight seal to prevent cold air infiltration and warm air exfiltration in winter. Fans should be sized to produce between 4-5 air changes per hour (min.), and should have at least two-speed controls: high speed for quick temperature change, and low speed for

continuous ventilation. Sound ratings for whole house fans shall be < 1 sone at minimum flow rate, and < 3 sones at maximum flow rate.

8. Washers and Dryers: A recessed washer and dryer hook-up assembly shall be provided in each dwelling unit of family housing. Convert washers to rinse with cold water only. If washers and dryers are provided within dwelling units, side-by-side, or full-size stacking washers and dryers shall be provided for units up to two bedrooms. For units with more than two bedrooms, extra-large capacity side-by-side units must be provided. Front-loading, side-by-side or under-cabinet combination units must be provided in barrier-free units.
 - a. Where in-unit washers and dryers are not installed, common laundry facilities shall be provided in a minimum ratio of one washer for each 10 units, and one dryer for each 15 units, rounding up to the next whole number for any fractions. Provide a separate overflow pan connected to a floor drain at all washers.
 - b. Where provided, use ENERGY STAR-qualified washing machines. Consider providing high-performance machines with a Modified Energy Factor ≥ 2.0 and Water Factor ≤ 5.5 .
9. Dryer Ventilation: All dryers shall vent to the outside. Where in-unit appliances are provided and dryers are not located on an exterior wall (or within the dryer manufacturer’s recommended maximum distance to a screened, louvered vent), and in common laundries, provide in-line, roof-top or side-wall dryer booster fans with pressure-sensitive controls. In such cases, rigid metal ductwork shall be used for venting; with the exception that flexible metal ductwork may be used as a final connection to the appliance. Ductwork shall not be left exposed. Where dryer connections are left for occupant installation of the washer/dryer, vents shall be temporarily capped on the interior and exterior to prevent air infiltration.

B. Kitchen and Bath Cabinets: Kitchen and bath cabinetry constructed of plywood boxes with hardwood stile and rail face frames is preferred. Kitchen and bath cabinetry for family developments shall be certified by the Kitchen Cabinet Manufacturers Association (KCMA) as meeting HUD Severe Use standards. Hardwood doors with flush, recessed or raised panels shall be hinged to allow full 180-degree operation. Hardwood drawers shall have ball-bearing type hardware. Finished shelves for base and wall cabinets shall be ¾” thick, minimum. All materials, methods and details shall comply with AWI, AHA, HPVA, NPA, NEMA, and BHMA standards. With the exception of sink bases, all cabinets shall have back panels. In barrier-free units, and units designed for elderly residents, kitchen and bath cabinets shall have easily-grasped door and drawer pulls.

1. If particle board is used for any cabinet components, all exposed cut edges must be coated with a water-based polyurethane sealant or a specialty low-formaldehyde sealant. Particleboard sealant shall have a maximum VOC content of 250 g/L. Whenever possible, eliminate new particleboard inside dwelling units by using formaldehyde-free medium density fiberboard (MDF) for cabinet components and shelving.
2. Verify access and clearance required for the installation of each cabinet. Install materials and systems in accordance with manufacturer's instructions and approved submittals, in proper relation with adjacent construction and with uniform appearance. Anchor securely in place; coordinate with countertop installation and other sections. Adjust and lubricate hardware. Restore damaged finishes and test for proper operation.
3. All dwelling unit bathrooms shall have 42" wide vanities (min.), with a 30" removable sink base and 12" fixed drawer base. In bathrooms designed to be barrier-free, provide a lavatory set in a counter top, in order to provide “roll-under” access. In such cases, storage shelving at appropriate heights shall be provided elsewhere in the bathroom.

12000 FURNISHINGS

- A. Shades and Blinds:** Shades or blinds shall be furnished for all windows. Spring-loaded, roll-up shades are not acceptable. For elderly developments, and in units designed for barrier-free occupancy, or anywhere fire suppression of the units is not provided, shades or blinds shall not be made of PVC. Safety cord stops shall be installed on all window treatment cords to prevent injury.
- B. Furniture and Accessories:** In housing for elderly residents, exterior seating and common area seating shall have backs and arms, or some other means of support for rising. In common Laundry Rooms, provide a hanging rack and a laundry folding table 30" to 34" in height.

13000 SPECIAL CONSTRUCTION

- A. Alternative Construction Systems:** Consider using alternative construction systems, such as panelized framing, structural insulated panels and modular box construction.
- B. Passive House Design:** Consider using Passive House design and construction strategies to provide extraordinarily low-energy buildings that optimize both first cost, and operational costs. Developed in Germany in the late-1980s by Prof. Bo Adamson and Dr. Wolfgang Feist, the Passive House design concept is based on systematically reducing the factors that normally cause a building to need a heating or cooling system. In the United States, Passive House design and certification programs are provided by the Passive House Institute (PHI) and the Passive House Institute United States (PHIUS). The performance-based, verifiable energy conservation criteria and goals built-into the modeling, analysis and certification of buildings through the Passive House Planning Package as developed by PHI, or WUFI Passive as developed by PHIUS, can result in highly-durable construction, an 80-90% reduction in heating demand, a 60-70% reduction in overall energy requirements, and metrics that define the optimum economics between energy conservation measures, and energy production measures.
 - 1. The principle characteristics of buildings designed to Passive House standards include:
 - a. Highly- and continuously-insulated thermal building envelopes, with minimized thermal bridging in roofs, walls, foundations and ground floors;
 - b. Air-tight construction, from continuous exterior air/moisture barriers and interior moisture barriers;
 - c. Optimized winter daylighting and solar heat gain, and summer shading, based on building orientation, high-performance windows and doors, and building-integrated shading devices;
 - d. Indoor air quality, from balanced heat and moisture recovery ventilation; and
 - e. Minimized heating/cooling needs, with simple, compact, high-performance mechanical systems that result in reduced installation and operating costs. Due to the tight, insulated building envelope, the heat generated from the use of electronic equipment, lighting and appliances reduces mechanical system operating time.

14000 CONVEYING SYSTEMS

A. Elevators: A minimum of one elevator shall be provided in all multi-story apartment buildings; in buildings with more than four stories, two shall be provided. Where elevators are provided, one shall be a service elevator of a sufficient size (approx. 5' x 7'), and be so located as to facilitate tenant move-ins/outs and emergencies (able to accommodate evacuees in prone position on EMS stretchers/folding gurneys). Provide hooks and removable pads in service elevators. In buildings with one elevator, provide an “attic stock” of long lead-time maintenance parts. Non-hydraulic elevators are preferred, but for servicing existing elevators, or in situations in which a hydraulic elevator is the only option, consider using a biodegradable fluid.

15000 MECHANICAL

15050 Plumbing

- A. Plumbing Design:** Furnish a complete hot and cold domestic water distribution system. Furnish and install all service, distribution, drainage and vent piping within the building(s), including vent flashing at roof connections. Provide all fixtures, fittings, devices, and accessories as required. Supply, vent and drain piping shall be sized as indicated or required to meet all codes and standards of authorities having jurisdiction, and to comply with highest accepted practices of the trade.
1. Lay out the plumbing system in careful coordination with the drawings and existing conditions, determining proper elevations for all components of the system and using only the minimum number of bends to produce a satisfactorily functioning system. Lay out all pipes to fall within partitions, walls or roof cavities, and not to require furring other than as shown on the drawings.
 2. Do not cut into or reduce the size of any load-carrying member without the prior approval of the Architect or structural engineer.
 3. Provide pipe and pipe fittings – such as Hub and Spigot Cast Iron and Hubless Sewer Pipe, PVC Sewer Pipe, Underground (Type K) and Aboveground Copper, Cross-linked Polyethylene plastic flexible tubing and Chlorinated Polyvinyl Chloride Water Pipe and Tracpipe Black Iron Underground Gas Pipe – in compliance with applicable ASTM Standards.
 4. All drainage and vent piping shall be ASTM D2836-72 solvent welded PVC or ASTM D2751 solvent welded ABS plastic. Cellular foam core PVC shall not be used.
 5. Provide hose bibbs with freeze-proof cast brass valves.
 6. Provide proper labeling of equipment and piping in conformance with the latest industry standards.
 7. In finished spaces, and within sink and vanity base cabinets, furnish a chromium-plated sectional escutcheon on each pipe or hanger rod penetrating the wall, floor or ceiling. Plates shall fit snugly.
 8. Upon completion of rough-in, fully test supply system at full pressure. Verify and ensure that system is free from leaks. Obtain all approvals and certificates of inspection from all authorities having jurisdiction upon the work.

- B. Pipe Insulation:** Insulate all plumbing piping. Insulation shall be continuous over pipes, valves and fittings, etc. Insulate all soil, waste and storm drainage stacks for their entire length, unless cast iron is specified. Provide the following minimum R-Values: $\frac{3}{8}$ " diameter to $\frac{1}{2}$ " diameter - R-5; $\frac{5}{8}$ " diameter to $\frac{3}{4}$ " diameter - R-7; $\frac{7}{8}$ " diameter to 2" diameter - R-9; 2 $\frac{1}{2}$ " diameter to 4" diameter - R-8.
1. Heating Piping: Insulation shall be securely applied to all steam heating and hot water heating supply and return piping exposed or concealed, except short run-outs above the floor to terminal units, except dead end loops.
 2. Domestic Water Supply Piping: All water piping in unconditioned spaces, such as basements, crawl spaces, attics and exterior walls shall be covered with universal insulating jacket.
 3. Barrier-free Design: Insulate exposed piping below kitchen sinks and bathroom lavatories in units designed as barrier-free to insure residents in wheelchairs do not touch exposed metal piping. Provide factory-made decorative insulating covers specifically designed for this purpose.
- C. Plumbing Fixtures and Trim:** All exposed pipe fittings, trim, faucets, traps and exposed connections shall be chrome-plated brass. Faucets shall be heavy brass, compression type, with replaceable seats and discs or cartridges. Provide a stop or shut-off valve in the water connection(s) to each water heater, water closet, group of fixtures and main riser.
1. Kitchen sinks shall be single bowl and shall be stainless steel, 20 gauge or thicker. Pull-out spray hoses shall not be provided. A garbage disposal shall be provided.
 2. Lavatories shall not be made of fiberglass. Wall hung lavatories shall not be used in dwelling units. In common areas where wall hung lavatories are used, wall chairs to support the lavatories shall be provided.
 3. In buildings designed for elderly residents, except in barrier-free designed units, bathtub rim heights above finish floor shall not be higher than 16". The bottoms of all bathtub basins shall have a non-slip finish. In housing for elderly residents, it is preferred to have water closets located adjacent to a wall 48" (min.) in length (perpendicular to the plumbing wall) to facilitate the future addition of a grab bar. All kitchen and bathroom water controls shall be single lever controls complying with barrier-free design requirements. Controls at bathtubs and showers shall be offset toward the entry side of the fixture for ease of access. In housing for elderly residents and for barrier-free designed units, all showerheads, whether in bathtubs or showers, shall be height adjustable on a slide bar device. In non-barrier-free units for elderly residents a flexible, detachable head, with brackets allowing several mounting heights, is an acceptable alternative.
 4. Provide plumbing fixtures, fittings and controls which comply with the EPA WaterSense® Program, which labels products that are about 20% more water-efficient than average comparable products. WaterSense®-labeled products include bathroom sink faucets and accessories, showerheads, toilets and flushing urinals and valves.
 5. Consider providing a graywater lavatory water recycling system for toilet water, in lieu of fresh water.
- D. Fire Protection Sprinkler Systems:** All required fire protection systems shall be wet-pipe sprinkler systems.
- Fire Sprinkler Heads: All fire sprinkler heads in finished residential spaces shall be white in color and have a minimal cowling. Heads recessed into ceilings and walls are preferable.

15470 Water Heaters

- A. Residential Water Heaters:** All dwelling units designed for family occupancy shall have individual water heaters. All water heaters shall be gas-fired. Water heaters used as the heat source shall be installed per manufacturer's recommendations with particular attention paid to the outlet locations. Water heater tanks shall have an insulating jacket equal to or greater than R-5. Jacket(s) must be installed according to manufacturer's recommendations.
1. Where permitted, shutoff valves for inlet and outlet lines shall be provided for ease of replacement. Heat traps are required on all water heaters.
 2. Water heater drains from pressure-temperature relief valves shall not be discharged onto the floor. A separate protective pan, connected to a floor drain shall be installed under all water heaters.
 3. ENERGY STAR-qualified tank type domestic hot water equipment shall meet or exceed the following Energy Efficiency (EF) requirements:
 - a. Gas Units (preferred): 30 gallons - 0.63 EF; 40 gallons - 0.61 EF; 50 gallons - 0.59 EF; 60 gallons - 0.57 EF; 70 gallons - 0.55 EF; 80 gallons - 0.53 EF;
 - b. Oil Units: 30 gallons - 0.55 EF; 40 gallons - 0.53 EF; 50 gallons - 0.51 EF; 60 gallons - 0.49 EF; 70 gallons - 0.47 EF; 80 gallons - 0.45 EF; and,
 - c. Electric Units (if no other fuel energy source can be provided) 30 gallons - 0.94 EF; 40 gallons - 0.93 EF; 50 gallons - 0.92 EF; 60 gallons - 0.91 EF; 70 gallons - 0.90 EF; 80 gallons - 0.89 EF.
- B. Tankless Water Heaters:** Consider using ENERGY STAR-qualified tankless natural gas or propane domestic hot water heaters (DHW) to conserve heating time and energy use. Install "right-sized" tankless water heaters with variable-set thermostats as close to the point of use as possible. Specifying the most energy-efficient ENERGY STAR-qualified equipment may qualify for CEEF incentives:
1. Natural Gas Tankless DHWs: Energy factor ≥ 0.82 with electronic ignition;
 2. Natural Gas Condensing Storage Tanks: Thermal efficiency $\geq 90\%$; and,
 3. Heat Pump Hot Water Heaters: COP ≥ 2.0 .
- C. Commercial Water Heaters:** Where required, commercial water heaters shall be gas-fired. All common water heaters shall be of the continuous recirculation design.

15600 Heating, Ventilation, and Air Conditioning (HVAC)

- A. HVAC Design:** Heating equipment and fuel sources shall be selected based on efficiency ratings and life-cycle costs.
1. It is preferable that all dwelling units shall have individual HVAC units. All heating systems shall be designed so that each living unit has at least one programmable thermostat to control space temperature. Dwelling unit thermostats shall be placed on an interior wall, at 48" above the finish floor, away from the direct flow of forced air and drafts. In apartment buildings, smaller, sectional boilers for all apartments may be provided, which shall be located in a centralized boiler room. Thermostats in common areas shall have automatic setback controls.

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2. Interior design temperatures for calculations shall be for 70° F (max.) for heating and 75° (min.) for cooling when the outside temperature is the appropriate outdoor design temperature for each development location, as specified in accordance with the ASHRAE 99% scale. Warranty period for equipment shall be 5 years minimum.
3. Fresh air by mechanical means shall be provided in all public corridors and other community spaces in apartment buildings.
4. Common spaces in developments designed for elderly residents shall be air-conditioned. Corridor make-up air shall maintain corridor temperature at 75° F in the summer, and 72° F in the winter. Common laundries, craft rooms and trash and trash compactor rooms shall all be designed to have negative pressure.
5. All roof-top equipment shall be installed on 12" high (min.) curbs. Heavy-duty radiator covers, 18 gauge or better, shall be used when a hydronic heating system is specified. Where unit entries are located at grade for units that have living areas above grade, i.e.: individual entry stacked units, a supply air duct run shall be provided at the grade level entry foyer.
6. Where applicable, the use of zoned hydronic radiant heating is encouraged.
7. Utilize the Air-conditioning Contractors of America (ACCA) System Design Process for the proper design and installation of “right-sized” residential HVAC systems, including Manual J (load calculation), Manual T (air distribution), Manual S (equipment selection), and Manual D (duct size calculation).
 - a. Incorporate whole building delivered ventilation per ASHRAE Standard 62.2 2007, Section 4.4. Intake of ventilation air directly from the outdoors is preferred. Air inlets shall be located $\geq 10'$ from stacks, exhaust vents/hoods, or vehicular exhaust, $\geq 3'$ from dryer exhaust, and such that they will remain unobstructed by snow, plantings or other materials. Screen air inlets with mesh with openings $\leq \frac{1}{2}"$.
 - b. Residences should be constructed to have a low building envelope air leakage rate and a controlled mechanical ventilation system. The ventilation system should slightly pressurize the dwelling unit when the air handler unit blower is operating, restricting air exchange to exfiltration. Ducts should be located in conditioned spaces. Appliance and occupant heat gain should be factored into the design process. For the outdoor design temperature, use the cooling dry bulb temperature listed in the ASHRAE 2001 Handbook of Fundamentals. The building design load shall be calculated for the worst case elevation at the solar orientation that produces the highest heat gain. For equipment selection, indoor and outdoor coils should be matched. The equipment should be selected to meet the design sensible load at the actual outdoor and indoor design conditions (not ARI standard conditions). Avoid over-sizing cooling equipment to try to compensate for high occupancy, large thermostat setbacks, unusual loads, poor initial design, or inadequate distribution. Perform room-by-room load calculations according ACCA Manual J guidelines: calculate the required cubic feet per minute (CFM) based on loads and select equipment based on loads and required CFM. Size the cooling system to appropriately meet the design load calculated according to ACCA Manual J, to provide good air distribution for improved indoor air quality and thermal comfort. The total capacity of the cooling system should be no greater than 110% of the ACCA Manual J total load. Size the equipment based on 100% of the total cooling load (not the sensible cooling load) at the actual outdoor design condition (not the ARI rated condition) and for the realistically-expected evaporator air flow.
 - c. The capacity of cooling and heating systems should be specified based on the building orientation that creates the highest total load. At a minimum, the four N, E, S, W orientations should be considered. It may be advisable to also consider the four off-angle orientations of NE, SE, SW, NW as well, especially if there is significant off-angle, un-shaded glass.

- B. Furnaces, Boilers and Heat Pumps:** Provide ENERGY STAR-qualified, AHRI-rated heating equipment.
1. **Furnaces:** Choosing the most energy-efficient ENERGY STAR-qualified equipment may qualify for CEEF incentives. Specify gas-fired zoned forced air furnaces with a minimum 95% annual fuel utilization efficiency rating (AFUE \geq 95) and \leq 2% average annual auxiliary electrical energy consumption. Furnaces shall have variable-speed blowers and programmable thermostats. Each zone shall have a separate temperature control and wired damper controls. Air handlers located within conditioned space (vented combustion closets are not considered conditioned space) is preferred. Furnace filters shall not be made of fiberglass. All furnaces shall bear all applicable UL-listed and AGA-certified labels. Where natural gas is not readily available, ENERGY STAR-qualified oil-fired furnaces (AFUE \geq 85) may be provided.
 2. **Modular Boilers:** Gas fired boilers shall be used where heating systems are not provided for each dwelling unit. Where provided, boiler systems shall have two or more gas-fired boilers and shall be furnished with a control panel designed to reset the supply water temperature based on the outdoor temperature. The control panel shall step fire the boilers in sequential order. Boiler drains from pressure-temperature relief valves shall not be discharged onto the floor. A separate protective pan, connected to a floor drain shall be installed under all boilers. Provide ENERGY STAR-qualified gas-fired boilers (AFUE \geq 85); for hot water systems, provide ENERGY STAR-qualified, AHRI-rated boilers (AFUE \geq 90) with temperature re-set/purge controls.
 3. **Heat Pumps:** Where air-source heat pumps are specified, provide ENERGY STAR-qualified units (SEER \geq 14.5/EER \geq 12/ HSPF \geq 9.25) with or without electric back-up, or ENERGY STAR-qualified units (SEER \geq 14.5/EER \geq 12/ HSPF \geq 8.2) with ENERGY STAR-qualified dual-fuel back-up. Where ground-source heat pumps are specified, provide ENERGY STAR-qualified, AHRI/ISO-rated units (closed loop water-to-air \geq 3.5 COP/16.1 EER; closed loop water-to-water \geq 3.0 COP/15.1 EER; open loop water-to-air \geq 3.8 COP/18.2 EER; open loop water-to-water \geq 3.4 COP/19.1 EER; and direct geo-exchange \geq 3.6 COP/16 EER).
- C. Air Conditioning:** Provide ENERGY STAR-qualified, AHRI-rated air conditioning equipment. Zoned, central air-conditioning systems with programmable indoor thermostats, with each zone having separate temperature and wired damper controls are preferred. Otherwise, room air-conditioners in through-wall sleeves shall be provided in living rooms and bedrooms. Choosing the most energy-efficient ENERGY STAR-qualified equipment may qualify for CEEF incentives; specify central air conditioning units with a seasonal energy efficiency rating (SEER) \geq 14.5 or energy efficiency ratio (EER) \geq 12. Air conditioners shall have variable-speed blowers and a cooling sensible heat fraction (SHF) of 0.75 or less. All cooling equipment shall be charged with refrigerants not containing CFCs or HCFCs, such as HFC-410A (< 100 tons), HFC-134a (>100 tons), and HFC-407C (DX chillers). Where room air conditioners are provided, pre-manufactured, demountable insulated molded plastic air conditioner covers, shall be provided on interior walls for use during cold weather months to prevent air infiltration. ENERGY STAR-qualified room air conditioners shall bear an energy efficiency rating (EER) \geq 12.
- D. CEE/AHRI Verified Directory:** The Consortium for Energy Efficiency (CEE) and the AHRI have developed an online database which identifies high efficiency equipment that has been tested to ARI 210/240 and verified by AHRI. The CEE/AHRI Verified Directory identifies a list of equipment (less than 65 MBtuh) that the manufacturers represent as meeting energy performance tiers established by the CEE as part of the Residential Air-Conditioner and Heat Pump Initiative and the High-Efficiency Commercial Air-Conditioning Initiative. The CEE/AHRI Verified Directory lists equipment that meets the performance levels specified in

the ENERGY STAR Central Air-Conditioner and Air-source Heat Pump Specification; however, only equipment listed by an ENERGY STAR partner are officially recognized as ENERGY STAR-qualified. The list of ENERGY STAR partners and the CEE/AHRI verified directory are available on the ENERGY STAR website (www.energystar.gov).

- E. Ductwork and Flues:** Comply with Sheet Metal & Air Conditioning Contractors' National Association (SMACNA) HVAC Duct Construction Standards. Fiberglass ductwork or fiberglass insulation within ductwork shall not be used. Rigid glass fiber insulation with a factory applied vapor barrier on the side facing the air stream is acceptable if all requirements of UL 181 for a Class 1 Air Duct System are satisfied. All ductwork terminating at the exterior shall be equipped with a back draft damper. Vertical flue vent pipe shall be double-wall vent type in order to prevent condensation due to the high-efficiency furnaces, boiler and water heaters. Vent pipes shall not extend more than 6" above a chimney or chimney enclosure. Horizontal direct venting is acceptable for equipment specifically designed for that purpose.
1. Ductwork design shall comply with the ACCA Manual D guidelines. Duct work made of rigid sheet metal materials is preferred. Different size rooms may require different size ducts. Avoid excessive duct lengths, loops, hard turns and compression in flexible ducts. Support flexible ducts at intervals recommended by the manufacturer, but not $\leq 5'$, and with a maximum sag of $\frac{1}{2}''/\text{ft}$ of spacing between supports. Where possible, an extended supply plenum with enough room to make mostly homerun run-outs is the preferred duct layout method, so final air balancing is not dependent on the limitations and difficulties of cascading supply branches. Airflow for each duct run shall be measured and balanced to comply with Manual D specifications to within 15 cfm of design air flow.
 2. All air handlers shall be installed with a ducted return plenum sealed to the unit and any associated ducts with mastic or mastic tape.
 3. All duct systems shall feature at least one long supply trunk with multiple take-offs. "Octopus" systems, with all duct runs originating at the supply plenum, are not acceptable.
 4. Each bedroom shall have a dedicated return duct, or, for apartments with no return ducts located in bedrooms, all supply air shall have a direct path back to a return grill even when doors are closed. In order to keep supply air from pressurizing closed rooms by more than 3 Pa, provide transfer grills, jump ducts or interior bedroom doors with additional clearance between the bottom of door when closed, and the finished floor surface, to allow supply air to flow back to the central system return.
 5. All ductwork for heating or cooling shall be run through conditioned space inside the insulated envelope. No exposed duct runs shall be installed within habitable spaces. Duct runs within chases shall be incorporated into the design as required. Seal all joints and seams in air handler and ductwork with mastic or mastic tape. Use removable tape for filter door. Seal collars to plenum with mastic or mastic tape. All duct trunk lines located outside conditioned space, such as crawl spaces and attics, shall be insulated. Supply ducts in unconditioned attics shall have insulation $\geq R-8$; all other ducts in unconditioned space shall have insulation $\geq R-6$.
 6. All ductwork must be sealed and insulated according to the IECC. Unless all ductwork and air-handling equipment are located in conditioned space, confirm duct leakage to the outdoors as $\leq 4 \text{ CFM}_{25}/100 \text{ ft}^2$ of conditioned floor area, and total duct leakage as $\leq 8 \text{ CFM}_{25}/100 \text{ ft}^2$ of conditioned floor area, through RESNET HERS-approved testing protocol in conjunction with required blower door testing (section 07010). All unions between components of HVAC system including joints between ductwork and the air handler shall be sealed with mastic or mastic tape. Flex-to-flex duct connections must have a metal collar connecting them and be sealed with mastic. All transverse seams in supply and return ducts, including supply and return plenums and leakage sites in the air handler, shall be sealed with duct mastic and

fibrous reinforcing mesh according to SMACNA specifications. Duct tape is not an acceptable sealant for ducts, but may be used for sealing leakage sites at the air handler's removable access panels and at filter access panels.

7. Clean or vacuum all ducts prior to occupancy, before carpet is laid and finishes are applied.
8. Test and balance all mechanical systems in conformance with Associated Air Balance Council (AABC) or National Environmental Balancing Bureau (NEBB) Standards.
9. Size the air handler to accommodate the reduced air pressure caused by the filter. Provide \geq MERV 8 high-efficiency particulate air (HEPA) filters in the return air stream at the air handler, located so that return and ventilation air pass through prior to conditioning.
10. Designing heat recovery ventilation units (HRVs) into HVAC systems, to recover heat from exhausted indoor air and transfer it to the incoming fresh air stream, is encouraged. Use of HRVs is particularly appropriate in units with blower door test results of less than 0.35 ACH.

16000 ELECTRICAL

A. Electrical Design: Furnish and install all wire, cable, conductors, connectors, conduit, junction boxes, electrical services and other rough-in equipment, fixtures, outlets, lamps, and trim requires to render a complete and fully operating, inspected and approved electrical power distribution and lighting system as required. All work shall be in accordance with Underwriters' Laboratories, National Electrical Manufacturers Associates, Illuminating Engineer Society, National Fire Protection Association and the Connecticut Electrical Code.

1. Provide and install sufficient electrical service to all equipment, appliances, and devices indicated in the drawings and specifications, including, but not limited to: residential appliances, HVAC equipment, light fixtures, receptacles, alarm system, telephone system, cable system, doorbells, etc. Ground the entire system, providing ground-fault interrupters and interrupting capacity of circuit breakers as required by the code.
2. Electrical service shall be designed so that all dwelling units can be metered separately; a separately-metered electrical load center with a capacity of 100 amps (min.) for each dwelling unit is preferred. A maximum of six service-main disconnects in the same location or room will be allowed. Rated fire assemblies separating main disconnects shall not be penetrated with circuiting. Energy load data for heating and electrical energy loads comprised of summary loads of each type of dwelling shall be provided. Branch circuit load calculations for general lighting and receptacles in dwelling areas shall be a maximum of 80% of branch circuit capacity.
3. Copper wiring shall be used throughout except that aluminum wiring may be used for wiring #6 or larger. Wire size shall be based on 75° Celsius. Solid aluminum conductors, stranded aluminum conductors smaller than #8 Awg, stranded aluminum #8 Awg without antioxidant paste at lugs, and aluminum conductors as a ground for antenna systems are not permitted.
4. Controls for garbage disposal unit and range hood switches are required to be within reach for access by elderly and handicapped persons, on a side wall or at the front of the cabinet. An electrical outlet shall be conveniently placed for a counter-top microwave oven, unless a built-in microwave is being provided.

5. Exterior doors in buildings designed for multiple dwelling units for elderly residents, or any apartment buildings in areas where security from trespass may be problematic, shall have door-ajar alarms wired to a central control panel, requiring manual reset.
6. Main entrance doors to buildings designed for access to multiple dwelling units shall have electric door release hardware. Such controls shall be located near the entry space and shall not be integrated with the intercommunication system for remote operation.
7. Stair tower doors to corridors (on first through sixth floors) shall have self-locking dead latches and trigger bolt protection prohibiting entry from the stair tower to the corridor. In buildings over three stories, provide electric strike releases that unlock when signaled by the fire alarm.
8. The use of ENERGY STAR-qualified ceiling fans and/or ceiling fans equipped with lighting fixtures in living rooms and bedrooms, to reduce the need for air conditioning and heating is encouraged. If provided, ceiling fans must be adequately supported between framing members.
9. The use of alternative energy sources to supplement the operation of common area features, amenities, and fixtures is encouraged.
 - a. Lower future energy costs may justify the initial installation cost of a PV system for signage, parking area lighting or common area and hallway lighting, etc. If not immediately viable financially, siting, designing, engineering and wiring the development to make the development “PV-ready” is encouraged; and,
 - b. Passive and active (pumped) solar hot water systems for washing and bathing, or to supplement home heating in conjunction with auxiliary energy sources, are encouraged.

B. Emergency Generator: An emergency generator shall be provided in any building with 4 or more dwelling units and 3 or more stories, to provide support for life safety systems for safe egress. Additionally, any building that is required to have a fire pump for the fire protection system shall be provided with an emergency generator, unless a diesel fire pump is provided. At a minimum, systems shall be sized to include egress lighting, emergency elevator (with cab size capable of handling a stretcher horizontally), emergency call systems, and recirculation pumps on boilers. The emergency generator shall be provided with a fuel supply – natural gas (preferred) or diesel – that will allow operation for a minimum of 24 hours. No underground storage tanks shall be used.

C. Lighting: Lighting fixtures shall be selected to provide a minimum of glare.

1. Average (min.) illumination levels at task surfaces, in foot-candles (fc), shall be: 50fc at Office desk surfaces; 30fc at kitchen counter top, sink and range surfaces and bathrooms vanity tops; 15fc at bathroom bathtubs and corridors, lobby, stairs and common area bathrooms; 10fc at store rooms, mechanical rooms and electrical rooms. Egress emergency lighting shall be maintained at a 1fc inside the building, and to any point 20 feet outside the building exits.
2. Provide ENERGY STAR-qualified CFL, LED or pin-based lighting in 80% of fixtures in common areas.
3. Provide a night light, or an outlet for a night light, near the bedroom/bathroom area in all units designed for the elderly.
4. Provide Insulation-Compatible (IC) lighting fixtures with fluorescent or LED lamps wherever recessed fixtures are installed in insulated framing.
5. Automated lighting controls, such as sensors and timers, to turn lights off in unused areas or during times when lighting is not needed, are strongly encouraged. Large multipurpose rooms and corridors shall be

wired so that half of the fixtures may be shut off, and a uniformly reduced lighting level is achieved with the balance of the lighting.

6. Bare bulb porcelain fixtures shall not be used.
 - a. Common area lighting shall be ENERGY STAR-qualified fluorescent/CFL, LED or pin-based lighting;
 - b. Dwelling unit and common area kitchen lights shall be fluorescent/CFL or LED. Each kitchen shall have a task light above the sink, a CFL/LED-compatible light above the range (integrated into the range hood) and a centrally located general kitchen light; and,
 - c. Exit lights shall be ENERGY STAR-qualified LED or light-emitting capacitor (LEC) fixtures.

D. Alarm and Detection Systems:

1. Carbon Monoxide and Smoke Detectors: Provide carbon monoxide detectors as indicated below, and as otherwise required by code:
 - a. A minimum of one carbon monoxide alarm shall be installed on each habitable level of all residential facilities, and on each habitable level of a dwelling unit or sleeping unit, that are equipped with fossil-fuel burning heat and hot water equipment or appliances, in use groups R-1, R-2, R-3, R-4, I-1 and I-4, whether regulated by the IBC or the IRC. In addition, approved carbon monoxide alarms must be installed within 10 feet of each room used for sleeping purposes;
 - b. For new construction, carbon monoxide alarms must receive their primary power from the building wiring, with either battery or emergency electrical system backup. Exceptions to this provision may be made for projects involving only minor revisions to buildings where hard-wiring would require removal of interior wall or ceiling finishes;
 - c. All carbon monoxide alarms within large multi-unit facilities must be interconnected so that all alarms will sound on the activation of one alarm;
 - d. Multiple alarms within dwelling units must be interconnected, so that the activation of one alarm will activate all of the alarms. Unit smoke detectors shall not be wired in a "buddy" or "zoned" configuration with other dwelling units, nor shall they initiate the general building alarm.
 - e. All dwelling unit smoke detectors shall be photoelectric-type;
 - f. In buildings for elderly residents, the unit smoke detectors shall be part of a "fully addressable" system (see below), and shall be wired to activate an audible alarm in the unit and at the primary annunciator panel. The system shall also activate a remote signal in the manager's unit if a secondary panel is provided. Unit smoke detectors shall not be wired in a "buddy" or "zoned" configuration with other dwelling units, nor shall they initiate the general building alarm. The system must require a manual reset at the annunciator panel. The system shall also have the capability to send the same identifying information to a remote location off-site to a monitoring agent, pager, etc.; and,
 - g. The operation of the alarm system shall be discussed during the design stage with the local emergency medical service provider determine their system operation requirements, in compliance with service provider regulations, such that the capabilities of the system shall not be diminished.
2. Visible alarms shall be provided when new fire alarm systems are installed, and when existing systems are upgraded or replaced.
3. Fully addressable emergency call systems shall be installed in all buildings designed for elderly residents.
 - a. Pull cord stations shall be provided in bathrooms and bedrooms (with bathroom fixture and accessory locations and bedroom furnish ability dictating station placement), with a colored light (no bell or alarm) over the unit entry door;

- b. An annunciator panel shall be located in the manager's office or reception area, on which a light displays and a sound is emitted to indicate the dwelling unit in which the emergency call was pulled, or a remote annunciator panel located in the manager's unit; and,
 - c. To be fully addressable, the display at the office annunciator panel(s) shall differentiate between smoke detector alarm and emergency call signals, be able to identify the dwelling unit from which the call originated, have the capability to send the same identifying information to a remote location off-site to a monitoring agent, pager, etc. and must require a manual reset at the annunciator panel(s).
4. Intrusion alarms shall be installed within residential units with grade level entrances or where otherwise vulnerable to intrusion, in buildings designed for multiple dwelling units for elderly residents, or any apartment buildings in areas where security from trespass is anticipated as a substantial problem.

E. Telecommunications Systems:

- 1. Provide concealed-wired telephone systems, with outlets located in the kitchen, living room, and master bedroom, in locations suitable for convenient use based on likely furniture placements.
- 2. All dwelling units shall be provided with a Local Area Network (LAN) connection in the living or dining room, capable of providing a high-speed internet connection.
- 3. All buildings that are designed to include a multiple number of dwelling units accessible through a common entry shall have a two-way intercom between the main entry and the individual units; however, door releases at common entries shall be at the door and not remotely operated. Intercom communications shall not result in additional costs to the resident.
- 4. Concealed-wired television cable systems shall be provided in all developments. Install one jack in master bedrooms and two in living rooms (min.), based on likely furniture placements.
- 5. Doorbells or door-knockers shall be provided at all unit entrance doors.

F. Electric Heating: Electric baseboard heat is not allowed. Use of small electric space heaters is also not allowed, unless justifiable by a life-cycle cost analysis.

ATTACHMENT D – NHTF Rating and Ranking Criteria

NHTF Rating and Ranking Criteria

Applicant Name: _____
 Project Name: _____
 Project Location: _____

Project #: _____
 Date of Review: _____
 Reviewer: _____

Section and/or Exhibit	Title	Point Calculation	Explanation of Points Calculation	Max Possible Points	Actual Points	Additional Scoring Info	Comments
Affordability, Marketability, and Fair Housing							
4.3.4, 5.1, and Mrkt Asmnt	Marketability	Provide points based on demonstrated demand for the project. All documentation submitted must be current (completed with the previous 12 months).	Below market rents and/or marketability demonstrated	10		To receive points the application must demonstrate that there is a market demand with quantifiable information. The applicant should demonstrate that marketability exists for all units, including affordable, market, and commercial units. NOTE: DOH may eliminate applications for threshold purposes where there are significant marketability concerns.	
			Demonstration of marketability but financial feasibility concerns	2			
			Marketability Concerns	-5			
DOH Website	Availability of Affordable Housing	Provide points if the project is located in a municipality where there is less than 10% affordable housing as identified in the Affordable Housing Appeals List. Points will be only be awarded for the creation of new units with 2 or more bedrooms. Points will not be awarded for the rehabilitation of existing units.	Award 2 points for every 4 units of non-age restricted housing created up to a maximum of 16 points.	16			
4.3.a Proj. Narr.	Reduction of Affordable Units	Does the proposed development result in a reduction in the overall number, type, or style of existing affordable housing units.	Reduce the scoring by 15 points if there is an overall reduction in the number or size (square footage and bedroom count) of existing affordable housing units	-15			
4.1.a	Length of Affordability	Points will be awarded based on the proposed affordability in excess of programmatic minimums.	Greater than 35 year affordability period	7		Award points based on affordability period.	
			25-35 year affordability period	5			
5.1	Percentage of Extremely Low Income	Does the project target extremely low income households? **SEE NOTE BELOW	more than 20% and up to 30%	8		Add all units restricted for extremely low income households and divide by total units in the project. Extremely low income means households earning up to and including 30% AMI.	
			more than 15% and up to 20%	6			
			5% up to 15%	4			
	Percentage of Very Low Income	Does the project target very low income households? **SEE NOTE BELOW	more than 25% and up to 50%	5		Add all units restricted for very low income households and divide by total units in the project. Very low income means households earning 31 - 50% AMI.	
			more than 15% and less than 25%	4			
			5% up to 15%	3			
9.1 Fair Hsg Impacts Form	Fair Housing Goals	Does the proposed development address achieving Fair Housing Goals by meeting the following standards?	Project provides a type of tenure that is under-represented in the census tract (ownership, rental, cooperative, etc.)	6		Award points per each category if applicant has submitted information which clearly documents that the proposal addresses the stated objective. The application must clearly demonstrate that these fair housing goals are supported based on specific and detailed information regarding the census tract, neighborhood, and/or municipality in which the project would be located.	
			Provides that at least 20% of a project's units are large family units (3+ bedrooms)	9			
			Project serves an income range that is under-represented in the census tract	6			
	Areas of Opportunity	Provide between 6 and 2 points will be awarded based on project location as defined by the DOH website Opportunity Mapping.	Very High - High	6		DOH maintains the discretion to modify the points in this category based on specific project details if the scoring does not properly reflect location opportunity.	
			Moderate	4			
			Low - Very Low	2			
4.3.8	Percentage of Supportive Housing Units	Points will be awarded based on the <u>percentage</u> of supportive housing units located within the proposed development that are made available to homeless or at risk individuals or families. **SEE NOTE BELOW	More than 10% up to 30%	8		The owner/developer must have a written agreement in place with a supportive housing service provider identifying the specific number of supportive housing units to be served. The units must be affordable to families earning less than 25% AMI.	
			greater than 5% up to 10%	5			

****Note to Low Income and Supportive Housing Point Categories:** Applicants may only receive points for a maximum of two of the following categories: Percentage of Extremely Low Income, Percentage of Very Low Income, and Percentage of Supportive Housing Units. DOH will provide points for the two highest categories if an application is eligible under all three categories. Note that the same units cannot be used to qualify for both Percentage of Extremely Low and Supportive Housing Units.

Project Need: Total Possible Points= 81 0

Applicant Capacity

3.1	Relevant Housing Experience	Does the application demonstrate that the development team has the requisite experience to complete the development in a timely manner and within budget?	Experience with affordable housing projects and all closed/completed on time and within budget.	9		Award points based on the development team members' prior record of completing affordable housing development projects and whether such projects were completed on time and within budget.	
			Experience with residential projects completed on time.	6			
			Lack of experience with residential projects <u>or</u> experienced but with closing/completion problems.	0			
			Record indicates development team member(s) had closing or completion problems in past.	-5			

Applicant Capacity: Total Points Possible= 9 0

NHTF Rating and Ranking Criteria

Project Feasibility and Readiness to Proceed						
4.8.c and 4.8.d	Status of Construction Documents	Points will be awarded based on the completeness of construction documents, including architectural drawings and contract specifications.	Over 90% construction documents (including bid documents) completed	14		ARCHITECTURAL STAFF TO PROVIDE SCORE
4.6 and 4.8.a	Zoning	Has the applicant received full zoning approval for the specific project being applied for? "Full zoning approval" means zoning "as of right", or documented approval of all conditions identified in ConApp Section 4.6. Conditional approval is a threshold.	Full approval of zoning Approval with Conditions	4 2		DOH DEVELOPMENT STAFF TO PROVIDE SCORE
6.5	Commitments for Financing	How firm are the funding sources (excluding CHFA financing, state and federal tax credit proceeds, and DOH funds)? Points will only be awarded for this category if these funding sources account for at least 50% of Total Development Costs.	Firm commitments equal or above 50% Firm commitments between 25%-49% Firm commitments between 10%-24% Detailed soft commitment letters with rate and key terms identified	10 8 6 4		Review the funding sources to determine the % with a firm commitment and/or detailed soft commitment. If the applicant is proposing to use both construction and permanent financing, the points should be based on the totality of such funding. NOTE: Soft commitments are threshold for all funding sources.
6.5	Leveraging	What is the percentage of DOH's investment vs. TDC? Other state funds, including but not limited to Urban Act, Brownfields, and CRDA, are not considered leverage for the purposes of this scoring category.	0 -20% greater than 20% but ≤ 30% greater than 30% but ≤ 50% greater than 50%	14 10 6 0		Divide DOH investment by TDC (less other state funds) and input score based on percentage. Use Exhibit 6.5 - Sources of Funds: Permanent Sources.
4.2 and 6.5	DOH Cost Per Unit	Points will be awarded based on the cost per DOH assisted unit. Applications will be scored on whether the project is rehabilitation or new construction. Conversion of properties from non-housing to housing is considered new construction. If projects include both rehabilitation and new construction, the costs need to be calculated for each and an average score provided. Points will be calculated on the housing portion of costs only. The ConApp requires that all commercial related costs be identified and broken out in the Development Budget.	Rehabilitation projects Up to and including \$50,000/DOH Unit Above \$50,000 and up to and including \$75,000/DOH Unit Above \$75,000 and up to and including \$100,000/DOH Unit Above \$150,000 per unit New Construction Up to and including \$75,000/DOH Unit Above \$75,000 and up to and including \$125,000/DOH Unit Above \$125,000 and up to and including \$175,000/DOH Unit Above \$250,000 per unit	12 8 4 -4 12 8 4 -4		Divide DOH investment by the number of DOH units. Use the "Number of DOH Restricted Units" which the applicant specified in the ConApp. The gut rehabilitation of existing unoccupied units as well as the conversion of non-residential space into residential space shall be considered new construction for the purposes of this category. NOTE: DOH may make adjustments based on unavoidable and reasonable high costs associated with a specific development.
4.2 and 6.5	Total Cost Per Unit	Points will be awarded based on the total cost per unit. Applications will be scored on whether the project is rehabilitation or new construction. Conversion of properties from non-housing to housing is considered new construction. If projects include both rehabilitation and new construction, costs will be calculated for each and an average score provided. Points will be calculated on the housing portion of costs only. The ConApp requires that all commercial related costs be identified and broken out in the Development Budget.	Rehabilitation projects \$50,000 up to and including \$100,000 Above \$100,000 and up to and including \$150,000 Above \$150,000 and up to and including \$175,000 Above \$250,000 per unit New Construction \$75,000 up to and including \$150,000 Above \$150,000 and up to and including \$200,000 Above \$200,000 and up to and including \$250,000 Above \$350,000 per unit	3 6 3 -4 3 6 3 -4		Divide "Total Development Budget" by total number of units in the project. The gut rehabilitation of existing unoccupied units as well as the conversion of non-residential space into residential space shall be considered new construction for the purposes of this category. NOTE: DOH may make adjustments based on unavoidable and reasonable high costs associated with a specific development.
4.8.e.	Construction Reasonableness	Do the proposed construction hard costs meet the DOH standard established for per unit and square foot costs? Points will be deducted based on the % that projected costs exceed the established DOH standard.	projected costs exceed the standard by 50% projected costs exceed the standard by 40% but < 50% projected costs exceed the standard by 30% but < 40% projected costs exceed the standard by 20% but < 30% projected costs exceed the standard by 10% but < 20% projected costs exceed the standard by less than 10%	-12 -10 -8 -6 -4 0		ARCHITECTURAL STAFF TO PROVIDE SCORE The "DOH Standard" means the "CHFA Standards for Design and Construction." Exceptions for extraordinary site and/or project costs that are justified by application materials may be considered by DOH, at DOH's discretion.
Project Feasibility and Readiness to Proceed Total Points=				60	0	

Responsible Growth and Livability Initiatives						
4.3.2 and 4.7.a.	Transit Oriented Development - Connectivity to Public and Mass Transit Sources	Is the proposed development within walking distance of public and mass transit sources? All measurements should be actual walking distances rather than map distances.	within 1/2 mile of multi-modal options for transit (2 or more modes, i.e., rail transit station, regular all-day bus transit stops to major employment centers, all-day ferry station, etc.) OR Within 1/4 mile of regular all-day bus transit stops to major employment centers within 1/2 mile of one major transit mode - rail transit, regular all-day bus transit service to major employment centers, or similar service. within 1/2 mile of one minor transit mode - peak-time bus or rail service.	10 6 4		DOH DEVELOPMENT STAFF TO PROVIDE SCORE Award points based on the proximity of the proposed development to public and mass transit. Proposed transit projects that are underway may also be considered.
4.3.a Prodi. Narr.	Tenant Services	Proximity to a concentration of resident related services including but not limited to recreational areas, green spaces, government facilities, commercial services, medical facilities, and grocery stores.	Award 4 points if criteria satisfied	4		Provide 4 points if the app. demonstrate that the project site is within a safe walking distance (not more than 1/4 mile) of community services and amenities. Partial points may be awarded for proximity to fewer amenities.
4.3.a Proj. Narr.	Environmental Justice	Are there properties or activities in the vicinity of the project that are reasonably likely to significantly and adversely impact the health and/or safety of residents (e.g. waste disposal facility, sewage treatment facility, other significant sources of harmful emissions or noise pollution, and properties with high concentrations of hazardous substances)?	Reduce the scoring by 12 points if significant environmental concerns raised.	-12		An application for a project in which more than 50% of the units are proposed to be affordable will be reduced by up to -5 points if the project location is negatively impacted by its proximity to facilities and land uses that raise significant noise, sound, smell, or other environmental concerns, if such negative impacts are not effectively mitigated.

NHTF Rating and Ranking Criteria

4.3.1		Points will be provided if the proposed development includes mixed-use development. To receive points, the development must include dedicated space for non-residential uses such as office, retail, commercial, educational etc.	Yes No	3 0		Projects that propose mixed-uses rather than a single land use will be awarded points. Points will only be awarded if the non-residential space will be occupied by a party other than the developer or any related entity.
4.3.1	Community/ Neighborhood Impact	Is the project a mixed-income development, meaning a portion of the units are non-income restricted and the projected unit rents are targeted to bands substantially higher than the affordable units? Three (3) points will be awarded if a development has at least 20% non-income restricted but rents are similar to the restricted affordable rents.	At least 10% and up to and including 30% non-income restricted Above 30% and up to and including 70% non-income restricted Above 70% and up to and including 90% non-income restricted At least 20% non-rent restricted with rent levels similar to affordable levels	5 9 5 3		Award points based on the percentage of non-income restricted units. (0 or 5 points should be awarded if the percentage of non-restricted units fall within the identified threshold AND such units are projected to have substantially higher rents than the restricted units. Award 3 points if the development will have at least 20% non-restricted units that are at rent levels similar to the affordable units.
4.6		Does the project include an approved zone change or an overlay district designation that will enable mixed-use development in the present and in the future in the project site and /or in the surrounding area, such as a housing incentive zone?	Yes No	2 0		DOH encourages adoption of mixed-use zones in municipal planning and zoning guidelines either through conversion of single uses or other tools such as overlay zones.
4.3.9		Does the application contain a letter of support from the municipality's Chief Elected Official or other state or local officials?	Yes No	2 0		
4.3.1 and 4.7.a	Reuse/ Rehabilitation Characteristics and Infrastructure Capacity	Can the project or project site be served by existing public utility services? OR the proposed development is located in a high opportunity municipality.	Yes No	0 -4		The question is attempting to gauge if capital investment for water/sewer will be required to accomplish the project.
		Does the project involve a tract of undeveloped land, raw land or a "Greenfield?" (Note: Development of infill sites - smaller undeveloped parcels within larger developed areas, are highly encouraged.)	Yes No	-4 0		DOH DEVELOPMENT STAFF TO PROVIDE SCORE
		Does the project include the reuse and rehabilitation of suitable formerly developed vacant or abandoned properties? OR Does the project reuse or rehabilitate any designated historic property (appearing on the National Register of Historic Places, State Register or a designated Local Historic property)	6 points if both 3 points if vacant/abandoned property 3 points if historic designated property	6 3 3		DOH DEVELOPMENT STAFF TO PROVIDE SCORE
		Is the main project site a designated Brownfield?	Yes No	2 0		
4.7.e and 4.7.a	Sustainable Development	The State encourages the incorporation of sustainable development standards into all project designs. These standards include green building standards, alternate energy sources, water conservation, and land conservation, and energy conservation.	The project design includes LEED, ASTM, Green Globes or other comparable best management practices/standards for green building design.	3		ARCHITECTURAL STAFF TO PROVIDE SCORE Award 3 points for each category if the application and construction documents clearly demonstrate that these standards are met.
			The project design includes alternative energy sources such as wind, solar, hydro, etc., with sufficient savings in operating costs to justify the initial investment.	3		ARCHITECTURAL STAFF TO PROVIDE SCORE
			The project promotes land conservation through the use of higher densities, compact building designs, smaller lot sizes, smaller setbacks, etc.	3		ARCHITECTURAL STAFF TO PROVIDE SCORE Award points for this category only for new construction.
4.3.7	Leveraging Investment	Is the project located in a neighborhood where other state or municipal housing, economic, community development, or other funding is planned or underway in the neighborhood OR part of a municipally approved revitalization effort that includes the appropriation of local financial resources.	Yes No	3 0		Evidence/explanation must be provided. Neighborhood is defined as the development census tract or contiguous census tract and MUST demonstrate linkage to the proposed development.
N/A	Unique Characteristics	Does the proposed development include unique and positive community development component(s) and impact(s) not otherwise reflected in other rating and ranking categories? Points can be provided on a sliding scale from 1-7 if such characteristics are present.	Yes No	5 0		Explanation:

Responsible growth and Livability Initiatives Total Points = 55 0

Scoring Summary			
Affordability, Marketability, and Fair Housing	81	0	0.0%
Applicant Capacity	9	0	0.0%
Project Feasibility and Readiness to Proceed	60	0	0.0%
Responsible Growth and Livability Initiatives	55	0	0.0%
Application Score	205	0	0.0%

DOH will use the following tiebreakers in the order listed if two proposals have equal scores:

- 1 Resident Participation Agreements - to be used only if two Housing Authority developed or sponsored applications are tied. Not to be used as a tiebreaker between HA and Non-Housing Authority proposals. For development applications which fall under the applicability of the resident participation requirements of Connecticut Public Act 11-72, applications which have a signed agreement for resident participation in place will be given priority over proposals which do not have a signed agreement for such developments.
- 2 Highest Project Feasibility and Readiness to Proceed Score
- 3 Highest Project Affordability, Marketability, and Fair Housing Score
- 4 Highest Project Responsible Growth and Livability Initiatives Score
- 5 Highest Project Applicant Capacity Score

The results of the evaluation and Rating and Ranking of applications and all final determinations regarding the selection of projects for funding under the CHAMP initiative will be determined at the sole discretion of the Commissioner of DOH.

ATTACHMENT E – Construction Guidelines – Construction Costs - CHFA



CONNECTICUT
HOUSING FINANCE
AUTHORITY

The Key To Affordable Housing

Connecticut Housing Finance Authority

Construction Guidelines:
Construction Costs

2016

These Guidelines are effective July 1, 2016

I. Construction Cost Evaluation

Cost effectiveness is strongly encouraged, as the objective is to maximize the overall cost effectiveness of developments, including but not limited to, construction costs for applications submitted. The “Construction Guidelines: Construction Costs” document outlines the CHFA construction cost review process.

CHFA recognizes all construction projects as unique and understands there may be verifiable, significant Square Foot (SF) cost differences between the guideline costs and a general contractor’s cost submission.

Conditions which may significantly increase or decrease SF costs may be: extreme site conditions, extreme environmental conditions, material and labor market conditions, site location and conditions specific to difficult inner city site profiles, interior and exterior finishes, and/or geothermal and photovoltaic applications. Recognition of the cost implications of these and other conditions may result in an upward adjustment to the guideline SF cost.

CHFA derives a final cost per SF for each project by performing site visits, evaluating architectural drawings from the design development stage to 100% drawings, environmental and geotechnical reports, and the method of construction (wood stick-frame, panelized, modular, masonry, steel, etc.) that is specified. CHFA’s historical construction cost database is also accessed and used to determine construction cost effectiveness. When a construction project’s final SF cost is determined, the SF cost, and all relevant material, is reviewed and discussed with the CHFA underwriter and technical services staff.

CHFA invites all applicants to contact the CHFA Technical Services Department to discuss conditions which may significantly increase or decrease SF costs.

II. Prevailing Wages/Davis-Bacon Wages

Prevailing Wages and/or Davis Bacon Wage Rates may be required. It is the responsibility of the applicant to determine if such requirements apply to their project. Please contact the necessary authorities to determine the applicability of prevailing wages and/or Davis Bacon wage rates. When Prevailing Wage Rates are required by the Connecticut Department of Labor, and/or Davis Bacon Wage Rates are required by the U.S. Department of Labor, documentation and itemization of all current required wage rates shall be provided to CHFA with the funding application, whether or not cost changes are proposed based upon additional detail and/or revisions to the construction documents.

III. Project Building Types and Guideline Costs

Note that references to “single” and “multiple” buildings pertain to the number of buildings on the site, not buildings of different sizes, configuration, number of stories, etc. The guideline cost for dissimilar buildings will be analyzed on the type, size and scope of the construction work specified.

1. Minor Rehabilitation
 - a. Single building, multiple story minor rehabilitation: \$35 per SF
 - b. Multiple buildings, multiple story minor rehabilitation: \$29 per SF

2. Moderate Rehabilitation
 - a. Existing single building, multiple story moderate rehabilitation: \$75 per SF
 - b. Existing multiple buildings, multiple story moderate rehabilitation: \$70 per SF

CHFA Construction Guidelines: Construction Costs
July 2016

3. Substantial Rehabilitation
 - a. Existing single building, multiple story substantial rehabilitation: \$109 per SF
 - b. Existing multiple buildings, multiple story substantial rehabilitation: \$104 per SF

4. Gut Rehabilitation
 - a. Existing single building, multiple story gut rehabilitation: \$133 per SF
 - b. Existing multiple buildings, multiple story gut rehabilitation: \$127 per SF
 - c. Existing single/multiple 19th/early 20th century mill buildings, gut rehabilitation: \$159 per SF

5. New Construction
 - a. Single building, multiple story (wood frame, vinyl siding): \$150 per SF
 - b. Multiple buildings, multiple story (wood frame, vinyl siding): \$144 per SF
 - c. Single/multiple buildings, multiple story (steel frame): \$198 per SF

Example: A new construction project with multiple buildings, multiple story wood framing and vinyl siding has a guideline SF cost of \$144. With the inclusion of extreme site and environmental conditions, and an upgrade from vinyl siding to brick veneer, upward adjustments may result in a new, increased SF cost. In this type of example, the applicant should contact CHFA prior to submitting an application.

IV. Definitions

1. Square Foot (SF): Gross Square Footage is calculated using a building's first level footprint square footage, and adding the square footage of other levels (except basements and attics) to determine total square footage, including steel-framed first floor structures, parking garages, etc. Portions of basements, attics, and cantilevered sections used for living space shall be included (attic living areas are measured from knee wall to knee wall and gable end to gable end, where applicable). SF cost is determined by dividing the total construction cost by the project's SF. For application construction cost review, the source document of the total project SF is the square footage table found on the architect's drawings per Consolidated Application requirements.

2. Total Construction Cost: Total Construction Cost is defined as all construction costs, inclusive of CSI Masterformat 1995 Construction Divisions 2 through 16, contractor's general requirements, overhead & profit, building permits and fees, and bond premium. Total Construction Cost does not include contingency reserve.

3. Building Rehabilitation Definitions: (based on the International Existing Building Code)
 - a. Minor Rehabilitation: Construction renovations to existing buildings, consisting of items such as: kitchen cabinet replacement; bathroom vanity replacement; new wall, ceiling and floor finishes in kitchens and bathrooms; A/C unit and sleeve replacement, etc.
 - b. Moderate Rehabilitation: Construction renovations to existing buildings, consisting of items such as: kitchen cabinet replacement; bathroom vanity replacement; new wall, ceiling and floor finishes in kitchens, bathrooms and various other rooms in each apartment; exterior door replacement; exterior window replacement; roof replacement; exterior siding repair or replacement; new hot water heaters; hot water boilers; A/C unit and sleeve replacement; electrical service upgrade, etc.
 - c. Substantial Rehabilitation: Construction renovations to existing buildings, consisting of all items listed for moderate rehabilitation above, and the inclusion of up to 50% of the items listed for gut rehabilitation below.

CHFA Construction Guidelines: Construction Costs

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- d. **Gut Rehabilitation:** Construction alterations and renovations to existing buildings, consisting of complete removal, replacement or reconfiguration of: interior partitions and walls; ceiling and floor finishes; replacement of all interior doors and frames; replacement of building mechanical and electrical systems; modifications to existing structure and exterior wall systems, including window and exterior door replacements and new building insulation; replacement of existing roof system(s); replacement of all interior kitchen cabinets and bathroom vanities; painting of all rooms in each apartment and common areas, etc.
4. **Commercial space:**
- a. CHFA will not pay for the subdivision or fit-out of any commercial tenant space.
 - b. CHFA will only accept the cost for the portion of the building structure, exterior doors and windows, exterior walls, etc., that pertain to the building envelope where the commercial space is included.
 - c. CHFA will accept the cost for Mechanical and Electrical provisions to be put in place, such as heating/cooling equipment on the roof with the ductwork running down through the building, but capped off once it reaches the tenant space. Ductwork within the space is the responsibility of the tenant. Cost for providing electrical sub-panels for the tenant to connect to would also be accepted.

Building materials, components, fabrications, assemblies and equipment for all proposed development projects (rehabilitations and new construction) should comply with the applicable sections of the current “Multifamily Design, Construction and Sustainability Standards-CHFA” (the Standards). The “Construction Guidelines: Project Planning & Technical Services Review” and the Standards define the design process and the specific recommendations for multifamily housing financed through CHFA. All applications should strive to meet the Standards, and must comply with CHFA Procedures and the requirements of the CHFA/DOH Consolidated Application.

Attachment F: Uniform Physical Condition Standards for Multifamily Housing Rehabilitation - July 2016

NOTE: Deficiencies highlighted in orange are life-threatening and must be addressed immediately, if the housing is occupied

Requirements for Site		
Inspectible Item	Observable Deficiency	Type and Degree of Deficiency that must be addressed
Fencing and Gates	Damaged/Falling/Leaning	<i>Fence or gate is missing or damaged to the point it does not function as it should</i>
	Holes	<i>Hole in fence or gate is larger than 6 inches by 6 inches</i>
	Missing Sections	<i>An exterior fence, security fence or gate is missing a section which could threaten safety or security</i>
Grounds	Erosion/Rutting Areas	<i>Runoff has extensively displaced soils which has caused visible damage or potential failure to adjoining structures or threatens the safety of pedestrians or makes the grounds unusable</i>
	Overgrown/Penetrating Vegetation	<i>Vegetation has visibly damaged a component, area or system of the property or has made them unusable or unpassable</i>
	Ponding/Site Drainage	<i>There is an accumulation of more than 5 inches deep and/or a large section of the grounds-more than 20%-is unusable for its intended purpose due to poor drainage or ponding</i>
Health & Safety	Air Quality - Sewer Odor Detected	<i>Sewer odors that could pose a health risk if inhaled for prolonged period.</i>
	Air Quality - Propane/Natural Gas/Methane Gas Detected	<i>Strong propane, natural gas or methane odors that could pose a risk of explosion/ fire and/or pose a health risk if inhaled</i>
	Electrical Hazards - Exposed Wires/Open Panels	<i>Any exposed bare wires or openings in electrical panels (capped wires do not pose a risk)</i>
	Electrical Hazards - Water Leaks on/near Electrical Equipment	<i>Any water leaking, puddling or ponding on or immediately near any electrical apparatus that could pose a risk of fire, electrocution or explosion</i>
	Flammable Materials - Improperly Stored	<i>Flammable materials are improperly stored, causing the potential risk of fire or explosion</i>
	Garbage and Debris - Outdoors	<i>Too much garbage has gathered-more than the planned storage capacity, or garbage has gathered in an area not sanctioned for staging or storing garbage or debris</i>
	Hazards - Other	<i>Any general defects or hazards that pose risk of bodily injury</i>
	Hazards - Sharp Edges	<i>Any physical defect that could cause cutting or breaking of human skin or other bodily harm</i>
	Hazards - Tripping	<i>Any physical defect in walkways or other travelled area that poses a tripping risk</i>
	Infestation - Insects	<i>Evidence of infestation of insects-including roaches and ants-throughout a unit or room, food preparation or storage area or other area of building substantial enough to present a health and safety risk</i>
	Infestation - Rats/Mice/Vermin	<i>Evidence of rats or mice--sightings, rat or mouse holes, or droppings substantial enough to present a health and safety risk</i>
	Mailboxes/Project Signs	Mailbox Missing/Damaged
Signs Damaged		<i>The project sign is not legible or readable because of deterioration or damage</i>
Parking Lots/Driveways/Roads	Cracks	<i>Cracks that are large enough to affect traffic ability over more than 5% of the property's parking lots/driveways/roads or pose a safety hazard</i>
	Ponding	<i>3 inches or more of water has accumulated making 5% or more of a parking lot/driveway unusable or unsafe</i>
	Potholes/Loose Material	<i>Potholes or loose material that have made a parking lot/driveway unusable/unpassable for vehicles and/or pedestrians or could cause tripping or falling</i>
	Settlement/Heaving	<i>Settlement/heaving has made a parking lot/driveway unusable/unpassable or creates unsafe conditions for pedestrians and vehicles</i>
Play Areas and Equipment	Damaged/Broken Equipment	<i>More than 20% of the equipment is broken or does not operate as it should or any item that poses a safety risk</i>
	Deteriorated Play Area Surface	<i>More than 20% of the play surface area shows deterioration or the play surface area could cause tripping or falling and thus poses a safety risk</i>
Refuse Disposal	Broken/Damaged Enclosure-Inadequate Outside Storage Space	<i>A single wall or gate of the enclosure has collapsed or is leaning and in danger of falling or trash cannot be stored in the designated area because it is too small to store refuse until disposal</i>

Retaining Walls	Damaged/Falling/Leaning	<i>A retaining wall is damaged and does not function as it should or is a safety risk</i>
Storm Drainage	Damaged/Obstructed	<i>The system is partially or fully blocked by a large quantity of debris, causing backup into adjacent areas or runoffs into areas where runoff is not intended</i>
Walkways/Steps	Broken/Missing Hand Railing	<i>The hand rail is missing, damaged, loose or otherwise unusable</i>
	Cracks/Settlement/Heaving	<i>Cracks, hinging/tilting or missing sections that affect traffic ability over more than 5% of the property's walkways/steps or any defect that creates a tripping or falling hazard</i>
	Spalling/Exposed rebar	<i>More than 5% of walkways have large areas of spalling--larger than 4 inches by 4 inches--that affects traffic ability</i>
Requirements for Building Exterior		
Inspectable Item	Observable Deficiency	
Doors	Damaged Frames/Threshold/Lintels/Trim	<i>Any door that is not functioning or cannot be locked because of damage to the frame, threshold, lintel or trim</i>
	Damaged Hardware/Locks	<i>Any door that does not function as it should or cannot be locked because of damage to the door's hardware</i>
	Damaged Surface (Holes/Paint/Rusting/Glass)	<i>Any door that has a hole or holes greater than 1 inch in diameter, significant peeling/cracking/no paint or rust that affects the integrity of the door surface, or broken/missing glass</i>
	Damaged/Missing Screen/Storm/Security Door	<i>Any screen door or storm door that is damaged or is missing screens or glass--shown by an empty frame or frames or any security door that is not functioning or is missing</i>
	Deteriorated/Missing Caulking/Seals	<i>The seals/caulking is missing on any entry door, or they are so damaged that they do not function as they should</i>
	Missing Door	<i>Any exterior door that is missing</i>
Fire Escapes	Blocked Egress/Ladders	<i>Stored items or other barriers restrict or block people from exiting</i>
	Visibly Missing Components	<i>Any of the functional components that affect the function of the fire escape--one section of a ladder or railing, for example--are missing</i>
Foundations	Cracks/Gaps	<i>Large cracks in foundation more than 3/8 inches wide by 3/8 inches deep by 6 inches long that present a possible sign of a serious structural problem, or opportunity for water penetration or sections of wall or floor that are broken apart</i>
	Spalling/Exposed Rebar	<i>Significant spalled areas affecting more than 10% of any foundation wall or any exposed reinforcing material--rebar or other</i>
Health and Safety	Electrical Hazards - Exposed Wires/Open Panels	<i>Any exposed bare wires or openings in electrical panels (capped wires do not pose a risk)</i>
	Electrical Hazards - Water Leaks on/near Electrical Equipment	<i>Any water leaking, puddling or ponding on or immediately near any electrical apparatus that could pose a risk of fire, electrocution or explosion</i>
	Emergency Fire Exits - Emergency/Fire Exits Blocked/Unusable	<i>The exit cannot be used or exit is limited because a door or window is nailed shut, a lock is broken, panic hardware is chained, debris, storage, or other conditions block exit</i>
	Emergency Fire Exits - Missing Exit Signs	<i>Exit signs that clearly identify all emergency exits are missing or there is no illumination in the area of the sign</i>
	Flammable/Combustible Materials - Improperly Stored	<i>Flammable materials are improperly stored, causing the potential risk of fire or explosion</i>
	Garbage and Debris - Outdoors	<i>Too much garbage has gathered--more than the planned storage capacity or garbage has gathered in an area not sanctioned for staging or storing garbage or debris</i>
	Hazards - Other	<i>Any general defects or hazards that pose risk of bodily injury</i>
	Hazards - Sharp Edges	<i>Any physical defect that could cause cutting or breaking of human skin or other bodily harm</i>
	Hazards - Tripping	<i>Any physical defect in walkways or other travelled area that poses a tripping risk</i>
	Infestation - Insects	<i>Evidence of infestation of insects--including roaches and ants--throughout a unit or room, food preparation or storage area or other area of building substantial enough to present a health and safety risk</i>
	Infestation - Rats/Mice/Vermin	<i>Evidence of rats or mice--sightings, rat or mouse holes, or droppings substantial enough to present a health and safety risk</i>

Lighting	Broken Fixtures/Bulbs	10% or more of the lighting fixtures and bulbs surveyed are broken or missing
Roofs	Damaged Soffits/Fascia	Soffits or fascia that should be there are missing or so damaged that water penetration is visibly possible
	Damaged Vents	Vents are missing or so visibly damaged that further roof damage is possible
	Damaged/Clogged Drains	The drain is damaged or partially clogged with debris or the drain no longer function.
	Damaged/Torn Membrane/Missing Ballast	Ballast has shifted and no longer functions as it should or there is damage to the roof membrane that may result in water penetration
	Missing/Damaged Components from Downspout/Gutter	Drainage system components are missing or damaged causing visible damage to the roof, structure, exterior wall surface, or interior
	Missing/Damaged Shingles	Roofing shingles are missing or damaged enough to create a risk of water penetration
	Ponding	Evidence of standing water on roof, causing potential or visible damage to roof surface or underlying materials
Walls	Cracks/Gaps	Any large crack or gap that is more than 3/8 inches wide or deep and 6 inches long that presents a possible sign of serious structural problem or opportunity for water penetration
	Damaged Chimneys	Part or all of the chimney has visibly separated from the adjacent wall or there are cracked or missing pieces large enough to present a sign of chimney failure or there is a risk of falling pieces that could create a safety hazard
	Missing/Damaged Caulking/Mortar	Any exterior wall caulking or mortar deterioration that presents a risk of water penetration or risk of structural damage
	Missing Pieces/Holes/Spalling	Any exterior wall deterioration or holes of any size that present a risk of water penetration or risk of structural damage
	Stained/Peeling/Needs Paint	More than 20% of the exterior paint is peeling or paint is missing and siding surface is exposed thereby exposing siding to water penetration and deterioration
Windows	Broken/Missing/Cracked Panes	Any missing panes of glass or cracked panes of glass where the crack is either greater than 4" and/or substantial enough to impact the structural integrity of the window pane
	Damaged Sills/Frames/Lintels/Trim	Sills, frames, lintels, or trim are missing or damaged, exposing the inside of the surrounding walls and compromising its weather tightness
	Damaged/Missing Screens	Missing screens or screens with holes greater than 1 inch by 1 inch or tears greater than 2 inches in length
	Missing/Deteriorated Caulking/Seals/Glazing Compound	There are missing or deteriorated caulk or seals--with evidence of leaks or damage to the window or surrounding structure
	Peeling/Needs Paint	More than 20% of the exterior window paint is peeling or paint is missing and window frame surface is exposed thereby exposing window frame to water penetration and deterioration
	Security Bars Prevent Egress	The ability to exit through egress window is limited by security bars that do not function properly and, therefore, pose safety risks
Requirements for Building Systems		
Inspectable Item	Observable Deficiency	
Domestic Water	Leaking Central Water Supply	Leaking water from water supply line is observed
	Missing Pressure Relief Valve	There is no pressure relief valve or pressure relief valve does not drain down to the floor
	Rust/Corrosion on Heater Chimney	The water heater chimney shows evidence of flaking, discoloration, pitting, or crevices that may create holes that could allow toxic gases to leak from the chimney
	Water Supply Inoperable	There is no running water in any area of the building where there should be
Electrical System	Blocked Access/Improper Storage	One or more fixed items or items of sufficient size and weight impede access to the building system's electrical panel during an emergency
	Burnt Breakers	Carbon residue, melted breakers or arcing scars are evident
	Evidence of Leaks/Corrosion	Any corrosion that affects the condition of the components that carry current or any stains or rust on the interior of electrical enclosures, or any evidence of water leaks in the enclosure or hardware
	Frayed Wiring	Any nicks, abrasion, or fraying of the insulation that exposes any conducting wire

	Missing Breakers/Fuses	<i>Any open and/or exposed breaker port</i>
	Missing Outlet Covers	<i>A cover is missing, which results in exposed visible electrical connections</i>
Elevators	Not Operable	<i>The elevator does not function at all or the elevator doors open when the cab is not there</i>
Emergency Power	Auxiliary Lighting Inoperable (if applicable)	<i>Auxiliary lighting does not function</i>
Fire Protection	Missing Sprinkler Head	<i>Any sprinkler head is missing, visibly disabled, painted over, blocked, or capped</i>
	Missing/Damaged/Expired Extinguishers	<i>There is missing, damaged or expired fire extinguisher in any area of the building where a fire extinguisher is required</i>
Health & Safety	Air Quality - Mold and/or Mildew Observed	<i>Evidence of mold or mildew is observed that is substantial enough to pose a health risk</i>
	Air Quality - Propane/Natural Gas/Methane Gas Detected	<i>Strong propane, natural gas or methane odors that could pose a risk of explosion/ fire and/or pose a health risk if inhaled</i>
	Air Quality - Sewer Odor Detected	<i>Sewer odors that could pose a health risk if inhaled for prolonged period.</i>
	Electrical Hazards - Exposed Wires/Open Panels	<i>Any exposed bare wires or openings in electrical panels (capped wires do not pose a risk</i>
	Electrical Hazards - Water Leaks on/near Electrical Equipment	<i>Any water leaking, puddling or ponding on or immediately near any electrical apparatus that could pose a risk of fire, electrocution or explosion</i>
	Elevator - Tripping	<i>An elevator is misaligned with the floor by more than 3/4 of an inch. The elevator does not level as it should, which causes a tripping hazard</i>
	Emergency Fire Exits - Emergency/Fire Exits Blocked/Unusable	<i>The exit cannot be used or exit is limited because a door or window is nailed shut, a lock is broken, panic hardware is chained, debris, storage, or other conditions block exit</i>
	Emergency Fire Exits - Missing Exit Signs	<i>Exit signs that clearly identify all emergency exits are missing or there is no illumination in the area of the sign</i>
	Flammable Materials - Improperly Stored	<i>Flammable materials are improperly stored, causing the potential risk of fire or explosion</i>
	Garbage and Debris - Indoors	<i>Too much garbage has gathered-more than the planned storage capacity or garbage has gathered in an area not sanctioned for staging or storing garbage or debris</i>
	Hazards - Other	<i>Any general defects or hazards that pose risk of bodily injury</i>
	Hazards - Sharp Edges	<i>Any physical defect that could cause cutting or breaking of human skin or other bodily harm</i>
	Hazards - Tripping Hazards	<i>Any physical defect in walkways or other travelled area that poses a tripping risk</i>
	Infestation - Insects	<i>Evidence of infestation of insects-including roaches and ants-throughout a unit or room, food preparation or storage area or other area of building substantial enough to present a health and safety risk</i>
	Infestation - Rats/Mice/Vermin	<i>Evidence of rats or mice--sightings, rat or mouse holes, or droppings substantial enough to present a health and safety risk</i>
HVAC	Boiler/Pump Leaks	<i>Evidence of water or steam leaking in piping or pump packing</i>
	Fuel Supply Leaks	<i>Evidence of any amount of fuel leaking from the supply tank or piping</i>
	General Rust/Corrosion	<i>Significant formations of metal oxides, significant flaking, discoloration, or the development of a noticeable pit or crevice</i>
	Misaligned Chimney/Ventilation System	<i>A misalignment of an exhaust system on a combustion fuel-fired unit (oil, natural gas, propane, wood pellets etc.) that causes improper or dangerous venting of gases</i>
Roof Exhaust System	Roof Exhaust Fan(s) Inoperable	<i>The roof exhaust fan unit does not function.</i>
Sanitary System	Broken/Leaking/Clogged Pipes or Drains	<i>Evidence of active leaks in or around the system components or evidence of standing water, puddles or ponding--a sign of leaks or clogged drains</i>
	Missing Drain/Cleanout/Manhole Covers	<i>A protective cover is missing</i>
Requirements for Common Areas		
Inspectable Item	Observable Deficiency	
Basement/Garage/Carport	Baluster/Side Railings - Damaged	<i>Any damaged or missing balusters or side rails that limit the safe use of an area</i>
Closet/Utility/Mechanical	Cabinets - Missing/Damaged	<i>10% or more of cabinet, doors, or shelves are missing or the laminate is separating</i>
Community Room	Call for Aid - Inoperable	<i>The system does not function as it should</i>
Halls/Corridors/Stairs	Ceiling - Holes/Missing Tiles/Panels/Cracks	<i>Any holes in ceiling, missing tiles or large cracks wider than 1/4 of an inch and greater than 11 inches long</i>

Kitchen	Ceiling - Peeling/Needs Paint	More than 10% of ceiling has peeling paint or is missing paint
Laundry Room	Ceiling - Water Stains/Water Damage/Mold/Mildew	Evidence of a leak, mold or mildew--such as a darkened area--over a ceiling area greater than 1 foot square
Lobby	Countertops - Missing/Damaged	10% or more of the countertop working surface is missing, deteriorated, or damaged below the laminate ---not a sanitary surface to prepare food
Office	Dishwasher/Garbage Disposal - Inoperable	The dishwasher or garbage disposal does not operate as it should
Other Community Spaces	Doors - Damaged Frames/Threshold/Lintels/Trim	Any door that is not functioning or cannot be locked because of damage to the frame, threshold, lintel or trim
Patio/Porch/Balcony	Doors - Damaged Hardware/Locks	Any door that does not function as it should or cannot be locked because of damage to the door's hardware
Restrooms	Doors - Damaged Surface (Holes/Paint/Rust/Glass)	Any door that has a hole or holes greater than 1 inch in diameter, significant peeling/cracking/no paint or rust that affects the integrity of the door surface, or broken/missing glass
Storage	Doors - Damaged/Missing Screen/Storm/Security Door	Any screen door or storm door that is damaged or is missing screens or glass--shown by an empty frame or frames or any security door that is not functioning or is missing
	Doors - Deteriorated/Missing Seals (Entry Only)	The seals/caulking is missing on any entry door, or they are so damaged that they do not function as they should
	Doors - Missing Door	Any door that is missing that is required for the functional use of the space
	Dryer Vent -Missing/Damaged/Inoperable	The dryer vent is missing or it is not functioning because it is blocked. Dryer exhaust is not effectively vented to the outside
	Electrical - Blocked Access to Electrical Panel	One or more fixed items or items of sufficient size and weight impede access to the building system's electrical panel during an emergency
	Electrical - Burnt Breakers	Carbon residue, melted breakers or arcing scars are evident
	Electrical - Evidence of Leaks/Corrosion	Any corrosion that affects the condition of the components that carry current or any stains or rust on the interior of electrical enclosures or any evidence of water leaks in the enclosure or hardware
	Electrical - Frayed Wiring	Any nicks, abrasion, or fraying of the insulation that exposes any conducting wires
	Electrical - Missing Breakers	Any open and/or exposed breaker port
	Electrical - Missing Covers	A cover is missing, which results in exposed visible electrical connections
	Floors - Bulging/Buckling	Any flooring that is bulging, buckling or sagging or a problem with alignment between flooring type
	Floors - Floor Covering Damaged	More than 10% of floor covering has stains, surface burns, shallow cuts, small holes, tears, loose areas or exposed seams.
	Floors - Missing Floor/Tiles	More than 5% of the flooring or tile flooring is missing
	Floors - Peeling/Needs Paint	Any painted flooring that has peeling or missing paint on more than 10% of the surface
	Floors - Rot/Deteriorated Subfloor	Any rotted or deteriorated subflooring greater than 6 inches by 6 inches
	Floors - Water Stains/Water Damage/Mold/Mildew	Evidence of a leak, mold or mildew--such as a darkened area--covering a flooring area greater than 1 foot square
	GFI - Inoperable	The GFI does not function
	Graffiti	Any graffiti on any exposed surface greater than 6 inches by 6 inches
	HVAC - Convection/Radiant Heat System Covers Missing/Damaged	Cover is missing or substantially damaged, allowing contact with heating/surface elements or associated fans
	HVAC - General Rust/Corrosion	Significant formations of metal oxides, flaking, or discoloration--or a pit or crevice
	HVAC - Inoperable	HVAC does not function. It does not provide the heating and cooling it should. The system does not respond when the controls are engaged
	HVAC - Misaligned Chimney/Ventilation System	Any misalignment that may cause improper or dangerous venting of gases
	HVAC - Noisy/Vibrating/Leaking	HVAC system shows signs of abnormal vibrations, other noise, or leaks when engaged
	Lavatory Sink - Damaged/Missing	Sink has extensive discoloration or cracks in over 50% of the basin or the sink or associated hardware have failed or are missing and the sink can't be used
	Lighting - Missing/Damaged/Inoperable Fixture	More than 10% of the permanent lighting fixtures are missing or damaged so they do not function
	Mailbox - Missing/Damaged	The U.S Postal Service mailbox cannot be locked or is missing
	Outlets/Switches/Cover Plates - Missing/Broken	Outlet or switch is missing or a cover plate is missing or broken, resulting in exposed wiring

	Pedestrian/Wheelchair Ramp	<i>A walkway or ramp is damaged and cannot be used by people on foot, in wheelchair, or using walker.</i>
	Plumbing - Clogged Drains	<i>Drain is substantially or completely clogged or has suffered extensive deterioration</i>
	Plumbing - Leaking Faucet/Pipes	<i>A steady leak that is adversely affecting the surrounding area</i>
	Range Hood /Exhaust Fans - Excessive Grease/Inoperable	<i>A substantial accumulation of dirt or grease that threatens the free passage of air</i>
	Range/Stove - Missing/Damaged/Inoperable	<i>One or more burners are not functioning or doors or drawers are impeded or on gas ranges pilot is out and/or flames are not distributed equally or oven not functioning</i>
	Refrigerator - Damaged/Inoperable	<i>The refrigerator has an extensive accumulation of ice or the seals around the doors are deteriorated or is damaged in any way which substantially impacts its performance</i>
	Restroom Cabinet - Damaged/Missing	<i>Damaged or missing shelves, vanity top, drawers, or doors that are not functioning as they should for storage or their intended purpose</i>
	Shower/Tub - Damaged/Missing	<i>Any cracks in tub or shower through which water can pass or extensive discoloration over more than 20% of tub or shower surface or tub or shower is missing</i>
	Sink - Missing/Damaged	<i>Any cracks in sink through which water can pass or extensive discoloration over more than 10% of the sink surface or sink is missing</i>
	Smoke Detector - Missing/Inoperable	<i>Smoke detector is missing or does not function as it should</i>
	Stairs - Broken/Damaged/Missing Steps	<i>A step is missing or broken</i>
	Stairs - Broken/Missing Hand Railing	<i>The hand rail is missing, damaged, loose or otherwise unusable</i>
	Ventilation/Exhaust System - Inoperable	<i>Exhaust fan is not functioning or window designed for ventilation does not open</i>
	Walls - Bulging/Buckling	<i>Bulging, buckling or sagging walls or a lack of horizontal alignment</i>
	Walls - Damaged	<i>Any hole in wall greater than 2 inches by 2 inches</i>
	Walls - Damaged/Deteriorated Trim	<i>10% or more of the wall trim is damaged</i>
	Walls - Peeling/Needs Paint	<i>10% or more of interior wall paint is peeling or missing</i>
	Walls - Water Stains/Water Damage/Mold/Mildew	<i>Evidence of a leak, mold or mildew--such as a common area--covering a wall area greater than 1 foot square</i>
	Water Closet/Toilet - Damaged/Clogged/Missing	<i>Fixture elements--seat, flush handle, cover etc.--are missing or damaged or the toilet seat is cracked or has a broken hinge or toilet cannot be flushed</i>
	Windows - Cracked/Broken/Missing Panes	<i>Any missing panes of glass or cracked panes of glass where the crack is either greater than 4" and/or substantial enough to impact the structural integrity of the window pane</i>
	Windows - Damaged Window Sill	<i>The sill is damaged enough to expose the inside of the surrounding walls and compromise its weather tightness</i>
	Windows - Inoperable/Not Lockable	<i>Any window that is not functioning or cannot be secured because lock is broken</i>
	Windows - Missing/Deteriorated Caulking/Seals/Glazing Compound	<i>There are missing or deteriorated caulk or seals--with evidence of leaks or damage to the window or surrounding structure</i>
	Windows - Peeling/Needs Paint	<i>More than 10% of interior window paint is peeling or missing</i>
	Windows - Security Bars Prevent Egress	<i>The ability to exit through the window is limited by security bars that do not function properly and, therefore, pose safety risks</i>
Health & Safety	Air Quality - Mold and/or Mildew Observed	<i>Evidence of mold or mildew is observed that is substantial enough to pose a health risk</i>
	Air Quality - Propane/Natural Gas/Methane Gas Detected	<i>Strong propane, natural gas or methane odors that could pose a risk of explosion/ fire and/or pose a health risk if inhaled</i>
	Air Quality - Sewer Odor Detected	<i>Sewer odors that could pose a health risk if inhaled for prolonged period.</i>
	Electrical Hazards - Exposed Wires/Open Panels	<i>Any exposed bare wires or openings in electrical panels (capped wires do not pose a risk)</i>
	Electrical Hazards - Water Leaks on/near Electrical Equipment	<i>Any water leaking, puddling or ponding on or immediately near any electrical apparatus that could pose a risk of fire, electrocution or explosion</i>
	Emergency Fire Exits - Emergency/Fire Exits Blocked/Unusable	<i>The exit cannot be used or exit is limited because a door or window is nailed shut, a lock is broken, panic hardware is chained, debris, storage, or other conditions block exit</i>
	Emergency Fire Exits - Missing Exit Signs	<i>Exit signs that clearly identify all emergency exits are missing or there is no illumination in the area of the sign</i>
	Flammable/Combustible Materials - Improperly Stored	<i>Flammable or combustible materials are improperly stored, causing the potential risk of fire or explosion</i>

	Garbage and Debris - Indoors	<i>Too much garbage has gathered-more than the planned storage capacity or garbage has gathered in an area not sanctioned for staging or storing garbage or debris</i>
	Garbage and Debris - Outdoors	<i>Too much garbage has gathered-more than the planned storage capacity or garbage has gathered in an area not sanctioned for staging or storing garbage or debris</i>
	Hazards - Other	<i>Any general defects or hazards that pose risk of bodily injury</i>
	Hazards - Sharp Edges	<i>Any physical defect that could cause cutting or breaking of human skin or other bodily harm</i>
	Hazards - Tripping	<i>Any physical defect in walkways or other travelled area that poses a tripping risk</i>
	Infestation - Insects	<i>Evidence of infestation of insects-including roaches and ants-throughout a unit or room, food preparation or storage area or other area of building substantial enough to present a health and safety risk</i>
	Infestation - Rats/Mice/Vermin	<i>Evidence of rats or mice--sightings, rat or mouse holes, or droppings substantial enough to present a health and safety risk</i>
Pools and Related Structures	Fencing - Damaged/Not Intact	<i>Any damage that could compromise the integrity of the fence</i>
Trash Collection Areas	Chutes - Damaged/Missing Components	<i>Garbage has backed up into chutes, because the collection structure is missing or broken or compactors or components--chute, chute door, and other components--have failed</i>
Requirements for Unit		
Inspectable Item	Observable Deficiency	
Bathroom	Bathroom Cabinets - Damaged/Missing	<i>Damaged or missing shelves, vanity tops, drawers, or doors that are not functioning as they should for storage or their intended purpose</i>
	Lavatory Sink - Damaged/Missing	<i>Any cracks in sink through which water can pass or extensive discoloration over more than 10% of the sink surface or sink is missing</i>
	Plumbing - Clogged Drains, Faucets	<i>Drain or faucet is substantially or completely clogged or has suffered extensive deterioration</i>
	Plumbing - Leaking Faucet/Pipes	<i>A steady leak that is adversely affecting the surrounding area</i>
	Shower/Tub - Damaged/Missing	<i>Any cracks in tub or shower through which water can pass or extensive discoloration over more than 20% of tub or shower surface or tub or shower is missing</i>
	Ventilation/Exhaust System – Absent/Inoperable	<i>exhaust fan is not functioning or window designed for ventilation does not operate</i>
	Water Closet/Toilet - Damaged/Clogged/Missing	<i>Fixture elements--seat, flush handle, cover etc.--are missing or damaged or the toilet seat is cracked or has a broken hinge or toilet cannot be flushed</i>
Call-for-Aid (if applicable)	Inoperable	<i>The system does not function as it should</i>
Ceiling	Bulging/Buckling/Leaking	<i>Bulging, buckling or sagging ceiling or problem with alignment</i>
	Holes/Missing Tiles/Panels/Cracks	<i>Any holes in ceiling, missing tiles or large cracks wider than 1/4 of an inch and greater than 6 inches long</i>
	Peeling/Needs Paint	<i>More than 10% of ceiling has peeling paint or is missing paint</i>
	Water Stains/Water Damage/Mold/Mildew	<i>Evidence of a leak, mold or mildew--such as a darkened area--over a ceiling area greater than 1 foot square</i>
Doors	Damaged Frames/Threshold/Lintels/Trim	<i>Any door that is not functioning or cannot be locked because of damage to the frame, threshold, lintel or trim</i>
	Damaged Hardware/Locks	<i>Any door that does not function as it should or cannot be locked because of damage to the door's hardware</i>
	Damaged/Missing Screen/Storm/Security Door	<i>Any screen door or storm door that is damaged or is missing screens or glass--shown by an empty frame or frames or any security door that is not functioning or is missing</i>
	Damaged Surface - Holes/Paint/Rusting/Glass/Rotting	<i>Any door that has a hole or holes greater than 1 inch in diameter, significant peeling/cracking/no paint or rust that affects the integrity of the door surface, or broken/missing glass</i>
	Deteriorated/Missing Seals (Entry Only)	<i>The seals/caulking is missing on any entry door, or they are so damaged that they do not function as they should</i>
	Missing Door	<i>Any door that is required for security (entry) or privacy (Bathroom) that is missing or any other unit door that is missing and is required for proper unit functionality</i>
Electrical System	Blocked Access to Electrical Panel	<i>One or more fixed items or items of sufficient size and weight impede access to the building system's electrical panel during an emergency</i>
	Burnt Breakers	<i>Carbon residue, melted breakers or arcing scars are evident</i>

	Evidence of Leaks/Corrosion	<i>Any corrosion that affects the condition of the components that carry current or any stains or rust on the interior of electrical enclosures or any evidence of water leaks in the enclosure or hardware</i>
	Frayed Wiring	<i>Any nicks, abrasion, or fraying of the insulation that exposes any conducting wires</i>
	GFI - Inoperable	<i>The GFI does not function</i>
	Missing Breakers/Fuses	<i>Any open and/or exposed breaker port</i>
	Missing Covers	<i>A cover is missing, which results in exposed visible electrical connections</i>
Floors	Bulging/Buckling	<i>Any flooring that is bulging, buckling or sagging or a problem with alignment between flooring type</i>
	Floor Covering Damage	<i>More than 10% of floor covering has stains, surface burns, shallow cuts, small holes, tears, loose areas or exposed seams.</i>
	Missing Flooring Tiles	<i>Any flooring or tile flooring that is missing</i>
	Peeling/Needs Paint	<i>Any painted flooring that has peeling or missing paint on more than 10% of the surface</i>
	Rot/Deteriorated Subfloor	<i>Any rotted or deteriorated subflooring greater than 6 inches by 6 inches</i>
	Water Stains/Water Damage/Mold/Mildew	<i>Evidence of a leak, mold or mildew--such as a darkened area--covering a flooring area greater than 1 foot square</i>
Health & Safety	Air Quality - Mold and/or Mildew Observed	<i>Evidence of mold or mildew is observed that is substantial enough to pose a health risk</i>
	Air Quality - Sewer Odor Detected	<i>Sewer odors that could pose a health risk if inhaled for prolonged period.</i>
	Air Quality - Propane/Natural Gas/Methane Gas Detected	<i>Strong propane, natural gas or methane odors that could pose a risk of explosion/ fire and/or pose a health risk if inhaled</i>
	Electrical Hazards - Exposed Wires/Open Panels	<i>Any exposed bare wires or openings in electrical panels (capped wires do not pose a risk)</i>
	Electrical Hazards - Water Leaks on/near Electrical Equipment	<i>Any water leaking, puddling or ponding on or immediately near any electrical apparatus that could pose a risk of fire, electrocution or explosion</i>
	Emergency Fire Exits - Emergency/Fire Exits Blocked/Unusable	<i>The exit cannot be used or exit is limited because a door or window is nailed shut, a lock is broken, panic hardware is chained, debris, storage, or other conditions block exit</i>
	Emergency Fire Exits - Missing Exit Signs	<i>Exit signs that clearly identify all emergency exits are missing or there is no illumination in the area of the sign</i>
	Flammable Materials - Improperly Stored	<i>Flammable materials are improperly stored, causing the potential risk of fire or explosion</i>
	Garbage and Debris - Indoors	<i>Too much garbage has gathered-more than the planned storage capacity or garbage has gathered in an area not sanctioned for staging or storing garbage or debris</i>
	Garbage and Debris - Outdoors	<i>Too much garbage has gathered-more than the planned storage capacity or garbage has gathered in an area not sanctioned for staging or storing garbage or debris</i>
	Hazards - Other	<i>Any general defects or hazards that pose risk of bodily injury</i>
	Hazards - Sharp Edges	<i>Any physical defect that could cause cutting or breaking of human skin or other bodily harm</i>
	Hazards - Tripping	<i>Any physical defect in walkways or other travelled area that poses a tripping risk</i>
	Infestation - Insects	<i>Evidence of infestation of insects-including roaches and ants-throughout a unit or room, food preparation or storage area or other area of building substantial enough to present a health and safety risk</i>
	Infestation - Rats/Mice/Vermin	<i>Evidence of rats or mice--sightings, rat or mouse holes, or droppings substantial enough to present a health and safety risk</i>
Hot Water Heater	Misaligned Chimney/Ventilation System	<i>Any misalignment that may cause improper or dangerous venting of gases</i>
	Inoperable Unit/Components	<i>Hot water from hot water taps is no warmer than room temperature indicating hot water heater is not functioning properly</i>
	Leaking Valves/Tanks/Pipes	<i>There is evidence of active water leaks from hot water heater or related components</i>
	Pressure Relief Valve Missing	<i>There is no pressure relief valve or pressure relief valve does not drain down to the floor</i>
	Rust/Corrosion	<i>Significant formations of metal oxides, flaking, or discoloration--or a pit or crevice</i>
HVAC System	Convection/Radiant Heat System Covers Missing/Damaged	<i>Cover is missing or substantially damaged, allowing contact with heating/surface elements or associated fans</i>
	Inoperable	<i>HVAC does not function. It does not provide the heating and cooling it should. The system does not respond when the controls are engaged</i>
	Misaligned Chimney/Ventilation System	<i>Any misalignment that may cause improper or dangerous venting of gases</i>

	Noisy/Vibrating/Leaking	<i>The HVAC system shows signs of abnormal vibrations, other noise, or leaks when engaged</i>
	Rust/Corrosion	<i>Deterioration from rust or corrosion on the HVAC system in the dwelling unit</i>
Kitchen	Cabinets - Missing/Damaged	<i>10% or more of cabinet, doors, or shelves are missing or the laminate is separating</i>
	Countertops - Missing/Damaged	<i>10% or more of the countertop working surface is missing, deteriorated, or damaged below the laminate -- not a sanitary surface to prepare food</i>
	Dishwasher/Garbage Disposal - Inoperable	<i>The dishwasher or garbage disposal does not operate as it should</i>
	Plumbing - Clogged Drains	<i>Drain is substantially or completely clogged or has suffered extensive deterioration</i>
	Plumbing - Leaking Faucet/Pipes	<i>A steady leak that is adversely affecting the surrounding area</i>
	Range Hood/Exhaust Fans - Excessive Grease/Inoperable	<i>A substantial accumulation of dirt or grease that threatens the free passage of air</i>
	Range/Stove - Missing/Damaged/Inoperable	<i>One or more burners are not functioning or doors or drawers are impeded or on gas ranges pilot is out and/or flames are not distributed equally or oven not functioning</i>
	Refrigerator-Missing/Damaged/Inoperable	<i>The refrigerator has an extensive accumulation of ice or the seals around the doors are deteriorated or is damaged in any way which substantially impacts its performance</i>
	Sink - Damaged/Missing	<i>Any cracks in sink through which water can pass or extensive discoloration over more than 10% of the sink surface or sink is missing</i>
Laundry Area (Room)	Dryer Vent - Missing/Damaged/Inoperable	<i>The dryer vent is missing or it is not functioning because it is blocked. Dryer exhaust is not effectively vented to the outside</i>
Lighting	Missing/Inoperable Fixture	<i>A permanent light fixture is missing or not functioning, and no other switched light source is functioning in the room</i>
Outlets/Switches	Missing	<i>An outlet or switch is missing</i>
	Missing/Broken Cover Plates	<i>An outlet or switch has a broken cover plate over a junction box or the cover plate is missing</i>
Patio/Porch/Balcony	Baluster/Side Railings Damaged	<i>Any damaged or missing balusters or side rails that limit the safe use of an area</i>
Smoke Detector	Missing/Inoperable	<i>Smoke detector is missing or does not function as it should</i>
Stairs	Broken/Damaged/Missing Steps	<i>A step is missing or broken</i>
	Broken/Missing Hand Railing	<i>The hand rail is missing, damaged, loose or otherwise unusable</i>
Walls	Bulging/Buckling	<i>Bulging, buckling or sagging walls or a lack of horizontal alignment</i>
	Damaged	<i>Any hole in wall greater than 2 inches by 2 inches</i>
	Damaged/Deteriorated Trim	<i>10% or more of the wall trim is damaged</i>
	Peeling/Needs Paint	<i>10% or more of interior wall paint is peeling or missing</i>
	Water Stains/Water Damage/Mold/Mildew	<i>Evidence of a leak, mold or mildew covering a wall area greater than 1 foot square</i>
Windows	Cracked/Broken/Missing Panes	<i>Any missing panes of glass or cracked panes of glass where the crack is either greater than 4" and/or substantial enough to impact the structural integrity of the window pane</i>
	Damaged Window Sill	<i>The sill is damaged enough to expose the inside of the surrounding walls and compromise its weather tightness</i>
	Missing/Deteriorated Caulking/Seals/Glazing Compound	<i>There are missing or deteriorated caulk or seals--with evidence of leaks or damage to the window or surrounding structure</i>
	Inoperable/Not Lockable	<i>Any window that is not functioning or cannot be secured because lock is broken</i>
	Peeling/Needs Paint	<i>More than 10% of interior window paint is peeling or missing</i>
	Security Bars Prevent Egress	<i>The ability to exit through the window is limited by security bars that do not function properly and, therefore, pose safety risks</i>

DEPARTMENT OF ADMINISTRATIVE SERVICES

2016 Connecticut State Building Code

**DIVISION OF
CONSTRUCTION SERVICES**
Office of the State Building Inspector

165 Capitol Avenue
Hartford, CT 06106

MELODY A. CURREY
Commissioner

JOSEPH V. CASSIDY, P.E.
State Building Inspector



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INTRODUCTION

Adopted and Referenced Publications

Pursuant to Connecticut General Statute §29-252, as amended by Public Act 16-215, the following national model codes, as amended herein, are adopted and shall be known as the 2016 Connecticut State Building Code:

2012 International Building Code
2009 ICC/ANSI A117.1 Accessible and Usable Buildings and Facilities
2012 International Existing Building Code
2012 International Plumbing Code
2012 International Mechanical Code
2012 International Energy Conservation Code
2014 NFPA 70, National Electrical Code, of the National Fire Protection Association Inc.
2012 International Residential Code of the International Code Council, Inc.

Copies of the International Codes may be obtained from the International Code Council, Inc., 4051 West Flossmoor Road., Country Club Hills, IL 60478-5795 (website: www.iccsafe.org).

Copies of the 2014 NFPA 70, National Electrical Code, may be obtained from the National Fire Protection Association Inc., 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02169-7471 (website: www.nfpa.org).

Copies of the 2016 Connecticut State Building Code document may be downloaded from the website: www.ct.gov/dcs.

The requirements of the 2016 State Building Code shall apply to all work for which a permit application was made on or after the date of adoption.

As used in this document, these annotations have the following meaning:

Add: A section or subsection preceded by (Add) indicates the addition of this section or subsection to the adopted referenced standard.

Amd: A section or subsection preceded by (Amd) indicates the substitution of this section or subsection in the adopted referenced standard.

Del: A section or subsection preceded by (Del) indicates the deletion of this section or subsection from the adopted referenced standard.

AMENDMENTS TO THE 2012 INTERNATIONAL BUILDING CODE

CHAPTER 1 – SCOPE AND APPLICATION

(Amd) **101.1 Title.** The 2012 International Building Code as amended in this section shall be known as the 2012 International Building Code portion of the 2016 Connecticut State Building Code.

(Add) **101.1.1 Statutes.** In accordance with the provisions of sections 29-252a and 29-253 of the Connecticut General Statutes, respectively, this code shall be the building code for all towns, cities and boroughs and all state agencies.

(Amd) **101.2 Scope.** The provisions of this code shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures.

Exceptions:

1. Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories above grade plane in height with a separate means of egress and their accessory structures shall comply with the International Residential Code portion of the 2016 Connecticut State Building Code.
2. Existing buildings undergoing repair, movement, alterations or additions and change of occupancy may comply with the International Existing Building Code portion of the 2016 Connecticut State Building Code. The choice to comply with this code or the International Existing Building Code portion of the 2016 Connecticut State Building Code shall be made by the permit applicant at the time of application for the building permit and shall be indicated on the construction documents in writing.

(Amd) **101.2.1 Appendices.** The provisions of Appendices C, H, I and N shall be incorporated into the requirements of this code.

(Amd) **101.4.1 Gas.** The International Fuel Gas Code is not adopted by the State of Connecticut. Any references to the International Fuel Gas Code within the body of this code shall be considered references to requirements of NFPA 2, Hydrogen Technologies Code, NFPA 54, National Fuel Gas Code and NFPA 58, Liquefied Petroleum Gas Code, as incorporated in the Connecticut State Fire Safety and the Connecticut Fire Prevention Codes. These requirements apply to liquid petroleum storage systems, gas piping systems extending from the point of delivery to the inlet connections of appliances, the installation and operation of residential and commercial gas appliances and related accessories as covered by this code.

(Amd) **101.4.3 Plumbing.** The provisions of the International Plumbing Code shall apply to the installation, alterations, repairs and replacement of plumbing systems (including equipment, appliances, fixtures, fittings and appurtenances) where such systems are connected to a water or sewage system and to all aspects of a medical gas system. The International Private Sewage Disposal Code is not adopted by the State of Connecticut. Private sewage disposal systems shall be designed and installed in accordance with the Public Health Code adopted under authority of

section 19a-36 of the Connecticut General Statutes. References to the International Private Sewage Disposal Code within the body of the model document shall be considered to be references to the Public Health Code.

(Amd) **101.4.4 Property maintenance.** The International Property Maintenance Code is not adopted by the State of Connecticut. Property maintenance shall be in accordance with the requirements of this code and the applicable provisions of the Connecticut State Fire Safety and State Fire Prevention Codes. All references to the International Property Maintenance Code found within the body of the model document shall be considered null and void.

(Add) **101.4.5.1 Connecticut State Fire Safety Code.** References to the International Fire Code within the body of the model document shall be considered to be references to the Connecticut State Fire Safety Code.

(Add) **101.4.7 Electrical.** The provisions of NFPA 70, National Electrical Code, shall apply to the installation of electrical systems, including alterations, repairs, replacement, equipment, appliances, fixtures, fittings and appurtenances thereto.

(Add) **101.4.8 Oil-burning equipment, piping and storage.** In addition to the requirements of this code, the installation of oil burners, equipment, and appliances used in conjunction therewith, including tanks, piping, pumps, control devices and accessories shall comply with NFPA 31 as incorporated in the Connecticut Fire Safety and Fire Prevention Codes.

(Amd) **102.6 Existing structures.** The legal use and occupancy of any building or structure existing on the date of adoption of this code shall be permitted to continue without change, except as specifically covered in this code or the Connecticut State Fire Safety Code.

(Del) **SECTION 103 – DEPARTMENT OF BUILDING SAFETY.** Delete Section 103 in its entirety and replace with the following:

(Add) **SECTION 103 – ENFORCEMENT AGENCY**

(Add) **103.1 Creation of enforcement agency.** Each town, city and borough shall create an agency whose function is to enforce the provisions of this code. The official in charge thereof shall be known as the building official.

(Add) **103.2 Appointment.** The chief executive officer of any town, city or borough shall appoint an officer to administer this code, and this officer shall be known as the building official in accordance with section 29-260 of the Connecticut General Statutes and referred to herein as the building official, local building official or code official.

(Add) **103.3 Employees.** In accordance with the prescribed procedures and regulations of the town, city or borough, and with the concurrence of the appointing authority, the building official shall have the authority to appoint an assistant building official, related technical officers, inspectors, plan examiners and other employees. Such employees shall have the powers as regulated by the town, city or borough, and by the State of Connecticut.

(Add) **103.4 Restriction of employees.** An official or employee connected with the agency created to enforce the provisions of this code pursuant to Section 103.1, except one whose only connection with it is that of a member of the board of appeals established under the provisions of Section 113, shall not be engaged in or directly or indirectly connected with the furnishing of labor,

materials or appliances for the construction, addition, alteration, repair or maintenance of a building located in the town, city or borough in which such official or employee is employed, or the preparation of construction documents therefore, unless that person is the owner of the building. Such officer or employee shall not engage in any work that conflicts with official duties or with the interests of the agency.

(Amd) **104.1 General.** The building official is hereby authorized and directed to enforce the provisions of this code. The building official shall have the authority to adopt policies and procedures to clarify the application of its provisions. Such policies and procedures shall comply with the intent and purpose of this code. Such policies and procedures shall not have the effect of waiving requirements specifically provided for in this code, nor shall they have the effect of establishing requirements in excess of those set forth in this code.

(Add) **104.1.1 Rule making authority.** Pursuant to the provisions of subsection (a) of section 29-252 of the Connecticut General Statutes, the State Building Inspector and the Codes and Standards Committee shall, jointly, with the approval of the Commissioner of Administrative Services, adopt and administer a State Building Code for the purpose of regulating the design, construction and use of buildings or structures to be erected and the alteration of buildings or structures already erected and make such amendments thereto as they, from time to time, deem necessary or desirable.

(Amd) **104.6 Right of entry.** In accordance with the provisions of subsection (d) of section 29-261 of the Connecticut General Statutes, the building official or his assistant shall have the right of entry to such buildings or structures, except single-family residences, for the proper performance of his duties between the hours of nine a.m. and five p.m., except that in the case of an emergency, he shall have the right of entry at any time, if such entry is necessary in the interest of public safety. On receipt of information from the local fire marshal or from any other authentic source that any building in his jurisdiction, due to lack of exit facilities, fire, deterioration, catastrophe or other cause, is in such condition as to be a hazard to any person or persons, the building official or his assistant shall immediately make inspection in accordance with the provisions of section 29-393 of the Connecticut General Statutes.

(Del) **104.10 Modifications.** Delete section and subsection and replace with the following:

(Add) **104.10 Modifications.** Modifications, variations, or exemptions from and approval of equivalent or alternative compliance with the requirements of this code shall be in accordance with the provisions of Sections 104.10.1 to 104.10.6, inclusive.

(Add) **104.10.1 State Building Code.** The State Building Inspector may grant modifications, variations or exemptions from, or approve equivalent or alternative compliance with, the State Building Code where strict compliance with the State Building Code would entail practical difficulty or unnecessary hardship, or is otherwise adjudged unwarranted, provided the intent of the law shall be observed and public welfare and safety be assured. Any person aggrieved by any decision of the State Building Inspector may appeal to the Codes and Standards Committee within 30 days after mailing of the decision in accordance with subsection (b) of section 29-254 of the Connecticut General Statutes.

(Add) **104.10.1.1 Action on application.** The application for modification, variation, exemption from or approval of equivalent or alternative compliance with the requirements of the State Building Code shall be made on a form supplied by the State Building Inspector available from the local building official or the Office of the State Building Inspector, which shall be forwarded by the applicant to the local building official. Any such application received by a local building official

shall be forwarded to the State Building Inspector within 15 business days of receipt by such local building official. The application shall include the local building official's comments on the merits of the application, and shall be signed by the local building official, acting building official or provisional building official.

(Add) **104.10.1.2 Records.** The application for modification, variation, exemption or approval of equivalent or alternative compliance and the decision of the State Building Inspector shall be in writing and shall be officially recorded with the application for a building permit in the permanent records of the building department.

(Add) **104.10.2 Accessibility exemption.** Any variation of or exemption from any provisions relating to accessibility to, use of and egress from, buildings and structures as required herein shall be permitted only when approved by the State Building Inspector and the Executive Director of the Office of Protection and Advocacy for Persons with Disabilities, acting jointly, pursuant to subsection (b) of section 29-269 of the Connecticut General Statutes. Any person aggrieved by the joint decision of the State Building Inspector and the Executive Director of the Office of Protection and Advocacy for Persons with Disabilities may appeal to the Codes and Standards Committee within 30 days after such decision has been rendered in accordance with subsection (b) of section 29-269 of the Connecticut General Statutes.

(Add) **104.10.3 Historic structures exemption.** In accordance with section 29-259 of the Connecticut General Statutes, exemptions may be granted to the provisions of this code for historic structures as defined by section 10-410 of the Connecticut General Statutes, which have been classified as such in the State Register of Historic Places as long as the provisions of subsection (b) of section 29-259 of the Connecticut General Statutes are adhered to and provided that such exemptions shall not affect the safe design, use or construction of such property.

(Add) **104.10.4 Urban homesteading property exemption.** In accordance with section 29-259 of the Connecticut General Statutes, exemptions may be granted to the provisions of this code for property acquired by an urban homesteading agency, pursuant to section 8-169r of the Connecticut General Statutes, and transferred to a qualified applicant pursuant to section 8-169s of the Connecticut General Statutes; provided such exemptions shall not affect the safe design, use or construction of such property. Exemptions shall be granted in accordance with Section 104.10.1 of this code.

(Add) **104.10.5 Elevators and escalators.** In accordance with section 29-192 of the Connecticut General Statutes, the State Building Inspector may approve variations, exemptions or equivalent or alternate compliance with regulations governing elevators and escalators where strict compliance with such provisions would cause practical difficulty or unnecessary hardship. Any person aggrieved by the decision of the State Building Inspector may appeal to the Commissioner of Administrative Services or such commissioner's designee not later than 30 days after notice of such decision has been rendered.

(Add) **104.10.6 Lift and limited use/limited application elevator approval.** Lifts and limited use, limited access elevators shall not be part of a required accessible path unless approved in accordance with the provisions of Section 1109.8 of this code.

(Amd) **105.1 Required.** Any owner or authorized agent who intends to construct, enlarge, alter, repair, move, demolish or change the occupancy of a building or structure, or to move a lot line that will affect any existing building or structure, or to erect, install, enlarge, alter, repair, remove, convert or replace any electrical, gas, mechanical or plumbing system, the installation of which is

regulated by this code, or to cause any such work to be done, shall first make application to the building official and obtain the required permit.

(Add) **105.1.3 Connecticut State Fire Safety Code abatement.** Where conflicts exist between the requirements of this code and the requirements of Connecticut State Fire Safety Code abatement orders issued in writing by the local fire marshal with respect to existing buildings, the requirements of that portion of the Connecticut State Fire Safety Code that regulates existing buildings shall take precedence.

Exceptions:

1. New fire protection systems shall meet the requirements of Chapter 9 of this code.
2. Electrical work shall meet the requirements of the NFPA 70, National Electrical Code.
3. Structural, plumbing and mechanical work shall conform to the requirements of this code.

(Amd) **105.2 Work exempt from permit.** Exemption from the permit requirements of this code shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code or any other laws, statutes, regulations or ordinances of the jurisdiction. Permits shall not be required for the following work:

Building:

1. One-story detached accessory structures used as tool and storage sheds, playhouses and similar uses, provided the floor area is not greater than 200 square feet (18.58 m²).
2. Fences, other than swimming pool barriers, not higher than 7 feet (2134 mm).
3. Oil derricks.
4. Retaining walls that are not higher than 3 feet (914 mm) measured from finished grade at the bottom of the wall to finished grade at the top of the wall, unless supporting a surcharge or impounding Class I, II or III-A liquids.
5. Water tanks supported directly upon grade if the capacity does not exceed 5,000 gallons (18925 L) and the ratio of height to diameter or width does not exceed 2 to 1.
6. Sidewalks, driveways and on-grade concrete or masonry patios not more than 30 inches (762 mm) above adjacent grade and not over any basement or story below and which are not part of an accessible route.
7. Painting, papering, tiling, carpeting, cabinets, countertops and similar finish work not involving structural changes or alterations.
8. Temporary motion picture, television and theater stage sets and scenery.
9. Prefabricated swimming pools accessory to a Use Group R-3 occupancy, as applicable in Section 101.2, which are equal to or less than 24 inches (610 mm) deep, do not exceed 5,000 gallon (18925 L) capacity and are installed entirely above ground.
10. Shade cloth structures constructed for nursery or agricultural purposes and not including service systems.
11. Swings and other playground equipment.
12. Window awnings in Group R-3 and U occupancies, supported by an exterior wall that do not project more than 54 inches (1372 mm) from the exterior wall and do not require additional support.

13. Movable cases, counters and partitions not higher than 5 feet 9 inches (1753 mm) and not containing any electrical, plumbing or mechanical equipment.
14. Portable grandstands or bleachers providing seating for fewer than 100 persons when located outside of a building.

Electrical:

1. Minor repairs and maintenance work, including replacement of lamps and fuses or the connection of approved portable electrical equipment to approved permanently installed receptacles.
2. Electrical equipment used solely for radio and television transmissions, but a permit is required for equipment and wiring for power supply and for the installation of towers and antennas.
3. Temporary testing systems required for the testing or servicing of electrical equipment or apparatus.

Gas:

1. Portable heating or cooking appliances with a self-contained fuel supply.
2. Replacement of any minor part that does not alter approval of equipment or make such equipment unsafe.
3. Portable fuel cell appliances that are not connected to a fixed piping system and are not interconnected to a power grid.

Mechanical:

1. Portable heating appliances with a self-contained fuel supply.
2. Portable ventilation appliances.
3. Portable cooling units.
4. Steam, hot or chilled water piping within any heating or cooling equipment regulated by this code.
5. Replacement of any minor part that does not alter approval of equipment or make such equipment unsafe.
6. Portable evaporative coolers.
7. Self-contained refrigeration systems containing 10 pounds (5 kg) or less of refrigerant or that are actuated by motors of 1 horsepower (746 W) or less.
8. Portable fuel cell appliances that are not connected to a fixed piping system and are not interconnected to a power grid.

Plumbing:

1. The stopping of leaks in drains, water, soil, waste or vent pipe; provided, however, that if any concealed trap, drainpipe, water, soil, waste or vent pipe becomes defective and it becomes necessary to remove and replace the same with new material, such work shall be considered new work and a permit shall be obtained and inspection made as provided in this code.
2. The clearing of stoppages or the repairing of leaks in pipes, valves or fixtures, and the removal and reinstallation of water closets, provided such repairs do not involve or require the replacement or rearrangement of valves, pipes or fixtures.

(Add) **105.2.4 State agency exemptions.** A state agency shall not be required to obtain a building permit from the local building official. A state agency shall obtain a building permit for construction or alteration of state buildings or structures from the State Building Inspector in accordance with the provisions of section 29-252a of the Connecticut General Statutes.

Exception: State agencies shall obtain demolition permits from the local building official in accordance with the provisions of sections 29-401 to 29-415, inclusive, of the Connecticut General Statutes.

(Add) **105.2.5 Federal agency exemptions.** A federal agency performing construction on federally owned land or on leased land totally under the control of the federal government shall not be required to obtain a building permit or a demolition permit from the local building official.

(Amd) **105.3.1 Action on application.** The building official shall examine or cause to be examined applications for permits and amendments thereto within 30 days after filing and either issue or deny a permit within such 30-day period. If the application or construction documents do not conform to the requirements of this code and pertinent laws, the building official shall reject such application in writing, stating the reasons therefore. If the building official is satisfied that the proposed work conforms to the requirements of this code and applicable laws, statutes, regulations and ordinances, the building official shall issue a permit therefore as soon as practicable. In order to meet the 30-day requirement set forth herein, construction documents shall be submitted by the applicant to both the building official and the local fire marshal, concurrently.

(Add) **105.3.1.1 Zoning approval.** Pursuant to subsection (f) of section 8-3 of the Connecticut General Statutes, no building permit shall be issued, in whole or in part, for a building, use or structure subject to the zoning regulations of a municipality without certification in writing by the official charged with the enforcement of such regulations that such building, use or structure is in conformity with such regulations or is a valid nonconforming use under such regulations.

(Add) **105.3.1.2 Fire marshal approval.** No building permit for a building, structure or use subject to the requirements of the Connecticut State Fire Safety Code shall be issued in whole or in part without certification in writing from the local fire marshal that the construction documents for such building, structure or use are in substantial compliance with the requirements of the Connecticut State Fire Safety Code.

(Add) **105.3.3 By whom application is made.** Pursuant to section 29-263 of the Connecticut General Statutes, application for a permit shall be made by the owner in fee or by an authorized agent. If the authorized agent is a licensed contractor, the provisions of section 20-338b of the Connecticut General Statutes shall be followed. The full names and addresses of the owner, agent and the responsible officers, if the owner or agent is a corporate body, shall be stated in the application. No permit shall be issued to a contractor who is required to be registered pursuant to chapter 400 of the Connecticut General Statutes, for work to be performed by such contractor, unless the name, business address and Department of Consumer Protection registration number of such contractor is clearly marked on the application for permit, and the contractor has presented such contractor's certificate of registration as a home improvement contractor.

(Amd) **105.5 Expiration of permit.** Every permit issued shall become invalid unless the work authorized by such permit is commenced within 180 days after its issuance, or if the work authorized by such permit is suspended or abandoned for a period of 180 days after the time the work is commenced. The building official is authorized to grant, in writing, one or more extensions

of time, for periods of not more than 180 days each. The extensions shall be requested in writing and justifiable cause shall be demonstrated.

Exception: The building official may specify an expiration date of not less than 30 days, nor more than 180 days, for commencement of work under permits issued to abate unsafe conditions pursuant to Section 115 of this code. Work performed under such permits shall be completed as expeditiously as possible.

(Amd) **107.2.2 Fire sprinkler system shop drawings.** Shop drawings for fire sprinkler system(s) shall be submitted to indicate conformance to this code and the construction documents and shall be approved prior to the start of system installation. Shop drawings shall contain all information as required by the referenced installation standards in Chapter 9. Such documents shall be accompanied by evidence of licensure by the state pursuant to section 29-263a of the Connecticut General Statutes.

(Add) **107.2.5.2 Private sewage disposal system.** The site plan shall indicate the location of a private sewage disposal system where a public sewer is not available. Private sewage disposal systems shall be designed and installed in accordance with the requirements of the Public Health Code adopted under authority of section 19a-36 of the Connecticut General Statutes. All technical and soil data required by the Public Health Code shall be submitted with the site plan. Approval of such systems shall be by the local authority having jurisdiction. When such approval is required by the local authority having jurisdiction, written proof of such approval shall be submitted to the building official prior to issuance of a building permit.

(Amd) **107.3.4.1 Deferred submittals.** For the purposes of this section, deferred submittals are defined as those portions of the design that are not submitted at the time of application and that are to be submitted to the building official within a specified period.

Any deferred submittal shall have the prior approval of the building official. The registered design professional in responsible charge shall list the deferred submittals on the construction documents for review by the building official.

Documents for deferred submittal items shall be submitted to the registered design professional in responsible charge who shall review them and forward them to the building official with a notation indicating that the deferred submittal documents have been reviewed and found to be in general conformance to the design of the building. The deferred submittal items shall not be installed until the deferred submittal documents have been approved by the building official.

Documents for deferred submittals that relate to the primary structural support systems of buildings or structures that exceed the threshold limit set forth in section 107.7 of this code shall also be submitted to the independent structural engineering consultant by the registered design professional in responsible charge. Such deferred submittal items shall not be installed until the deferred submittal documents have been reviewed and found to be in general conformance to the design of the building by the independent structural engineering consultant and approved by the building official.

(Amd) **107.5 Retention of construction documents.** The building official shall retain one set of approved construction documents for a period as set forth in the records/disposition schedule adopted pursuant to chapter 188 of the Connecticut General Statutes.

Exception: In accordance with the provisions of subsection (e) of section 29-261 of the Connecticut General Statutes, upon receipt of a written request signed by the owner of plans and specifications on file for a single-family dwelling or out-building, the

building official shall immediately return the original plans and specifications to the owner after a certificate of occupancy is issued with respect to the plans and specifications.

(Add) **107.6 Additional requirements.** Pursuant to section 29-276c of the Connecticut General Statutes, the plans and specifications for any proposed structure or addition classified as (1) assembly, educational, institutional, high hazard, transient residential, which includes hotels, motels, rooming or boarding houses, dormitories or similar buildings, other than residential buildings designed to be occupied by one or more families, without limitation as to size or number of stories; (2) business, factory and industrial, mercantile, moderate and low hazard storage, having three stories or more or exceeding 30,000 square feet total gross area; and (3) nontransient residential dwellings having more than 16 units or 24,000 square feet total gross area per building, shall be sealed by a licensed architect or professional engineer as defined by the statutory requirements of the professional registration laws of the State of Connecticut, and acting within the scope of their practice. Such architect or engineer shall be responsible for the review of shop drawings and the observation of construction. In the event such architect or engineer is unable to fulfill their review responsibilities, an additional architect or engineer shall be retained and the local building official shall be informed, in writing, of such retainer. If fabricated structural load-bearing members or assemblies are used in such construction, the licensed professional engineer responsible for the design of such members or assemblies shall be responsible for the implementation of their design by reviewing the fabrication process to ensure conformance with their design specifications and parameters. The additional requirements set forth in this subsection shall not apply to alterations, repairs, relocation or change of occupancy to any existing building.

(Add) **107.7 Threshold limits.** For the purposes of this section, the term “threshold limit” shall apply to any proposed structure or addition thereto: (1) having four stories; (2) 60 feet in height; (3) with a clear span of 150 feet in width; (4) containing 150,000 square feet of total gross floor area; or (5) with an occupancy of 1,000 persons.

The following use groups shall have the following additional threshold limits:

<u>Use Group</u>	<u>Threshold Limit</u>
I Institutional	150 beds or persons
R-1 Residential - hotels or motels	Single structure with 200 rooms
R-2 Residential - multi-family	Single structure with 100 dwelling units
S Storage	250,000 square feet or parking structures with 1,000 cars

Threshold limits shall not apply to alterations, repairs or change of occupancy to any existing building.

(Add) **107.7.1 Requirements for proposed structures or additions that exceed the threshold limits.** Pursuant to section 29-276b of the Connecticut General Statutes, if a proposed structure or addition to an existing structure will exceed the threshold limit set forth in Section 107.7 of this code, the building official of the municipality in which the structure or addition will be located shall require that an independent structural engineering consultant review the structural plans and design specifications of the structure or addition to be constructed to determine compliance with

the requirements of this code to the extent necessary to assure the stability and integrity of the primary structural support systems of such structure or addition. Any modifications of approved structural plans or design specifications shall require shop drawings to the extent necessary to determine compliance with the requirements of this code and shall be reviewed by such consultant. Any fees relative to such review requirements shall be paid by the owner of the proposed building project.

If a structure or addition exceeds the threshold limit, the architect of record, professional engineer of record responsible for the design of the structure or addition and the general contractor shall sign a statement of professional opinion affirming that the completed construction is in substantial compliance with the approved plans and design specifications. If fabricated structural load-bearing members or assemblies are used in the construction, the professional engineer responsible for the design of such members or assemblies shall sign a statement of professional opinion affirming that the completed fabrication is in substantial compliance with the approved design specifications.

The building official of the municipality in which the structure or addition will be located shall satisfy himself that each architect, professional engineer, including each professional engineer responsible for the design of fabricated structural load-bearing members or assemblies, general contractor and major subcontractor involved in the project holds a license to engage in the work or occupation for which the appropriate building permit has been issued.

(Add) **107.8 Lift slab construction.** Pursuant to subsection (b) of section 29-276a of the Connecticut General Statutes, any building designed to be constructed utilizing the lift-slab method of construction shall be classified as exceeding the “threshold limit” and shall be subject to the provisions of Sections 107.7.1 and 107.8.1 of this code.

(Add) **107.8.1 Lift slab operations.** All buildings and structures utilizing the lift slab method of construction shall comply with the provisions of 29 CFR 1926 and section 31-372-107-1926 of the Regulations of Connecticut State Agencies.

(Amd) **108.1 General.** The building official may issue a permit for temporary structures and temporary uses. Such permits shall be limited as to time of service, but shall not be permitted for more than 180 days. The building official may grant a single 180-day extension for demonstrated cause.

Exception: Tents, canopies and other membrane structures erected for a period of fewer than 180 days shall comply with Section 3103 of this code.

(Amd) **108.3 Temporary power.** The building official may give permission to temporarily supply and use power in part of an electrical installation before such installation has been fully completed and the final certificate of approval has been issued. The part covered by the temporary certificate shall comply with the requirements specified for temporary lighting, heat or power in this code and in NFPA 70, National Electrical Code.

(Amd) **109.2 Schedule of permit fees.** Each municipality shall establish a schedule of fees for each construction document review, building permit, certificate of approval and certificate of occupancy. A schedule of adopted fees shall be posted in the building department for public view.

(Del) **109.4 Work commencing before permit issuance.** Delete without substitution.

(Add) **110.1.1 Posting of required inspections.** A schedule of required inspections shall be compiled by the building official. The schedule shall be posted in the building department for public view.

(Add) **110.3.8.1 Electrical inspections.** Required electrical inspections shall include installations of temporary services prior to activation; installation of underground piping and conductors after trenches are excavated and bedded and before backfill is put in place; rough inspections of installed wiring and components after the roof, framing, fireblocking and bracing are complete and prior to concealment; and final inspection after all work required by the permit is complete.

(Add) **110.6.1 Notification of inspection results.** Notification as to passage or failure, in whole or in part, of any required inspection shall be made in writing by the building official or his duly authorized representative and shall be left at the job site or delivered to the permit holder. It shall be the duty of the permit holder to ascertain the results of required inspections.

(Amd) **111.1 Use and occupancy.** Pursuant to subsection (a) of section 29-265 of the Connecticut General Statutes, no building or structure erected or altered in any municipality after October 1, 1970, shall be occupied or used, in whole or in part, until a certificate of occupancy has been issued by the building official, certifying that such building or structure or work performed pursuant to the building permit substantially complies with the provisions of the State Building Code. Nothing in the code shall require the removal, alteration or abandonment of, or prevent the continuance of the use and occupancy of, any single-family dwelling but within six years of the date of occupancy of such dwelling after substantial completion of construction of, alteration to or addition to such dwelling, or of a building lawfully existing on October 1, 1945, except as may be necessary for the safety of life or property. The use of a building or premises shall not be deemed to have changed because of a temporary vacancy or change of ownership or tenancy.

Exceptions:

1. Work for which a certificate of approval is issued in accordance with Section 111.6.
2. Certificates of occupancy are not required for work exempt from permit requirements under Section 105.2.

(Add) **111.1.1 State agency.** State agencies shall not be required to obtain certificates of occupancy from local building officials. State agencies shall obtain certificates of occupancy from the State Building Inspector in accordance with the provisions of section 29-252a of the Connecticut General Statutes.

(Add) **111.1.2 Zoning approval.** Pursuant to subsection (f) of section 8-3 of the Connecticut General Statutes, no certificate of occupancy shall be issued for a building, use or structure subject to the zoning regulations of a municipality without certification in writing by the official charged with the enforcement of such regulations that such building, use or structure is in conformity with such regulations or is a valid nonconforming use under such regulations.

(Add) **111.1.3 Fire marshal approval.** No certificate of occupancy or certificate of approval for a building, structure or use subject to the requirements of the Connecticut State Fire Safety Code shall be issued without certification in writing from the local fire marshal that the building, structure or use is in substantial compliance with the requirements of the Connecticut State Fire Safety Code.

(Add) **111.1.4 Statement of professional opinion.** Pursuant to section 29-276c of the Connecticut General Statutes, no certificate of occupancy shall be issued for a proposed structure or addition to buildings classified as (1) assembly, educational, institutional, high hazard, transient

residential, which includes hotels, motels, rooming or boarding houses, dormitories or similar buildings, other than residential buildings designed to be occupied by one or more families, without limitation as to size or number of stories; (2) business, factory and industrial, mercantile, moderate and low hazard storage, having three stories or more or exceeding 30,000 square feet total gross area; and (3) nontransient residential dwellings having more than 16 units or 24,000 square feet total gross area per building, until the building official has been provided with a statement signed by the architect or professional engineer and the general contractor stating that the completed structure or addition is in substantial compliance with the approved plans on file.

(Amd) **111.3 Temporary occupancy.** The building official may issue a temporary certificate of occupancy before the completion of the entire work covered by the permit, provided such portion or portions shall be occupied safely prior to full completion of the building or structure without endangering life or public welfare. Any occupancy permitted to continue during completion of the work shall be discontinued within 30 days after completion of the work unless a certificate of occupancy is issued by the building official.

(Add) **111.5 Partial occupancy.** The building official may issue a partial certificate of occupancy for a portion of the building or structure when, in the building official's opinion, the portion of the building to be occupied is in substantial compliance with the requirements of this code and no unsafe conditions exist in the portion of the building not covered by the partial certificate of occupancy.

(Add) **111.6 Certificate of approval.** The building official shall issue a certificate of approval indicating substantial compliance with the requirements of this code for all completed work that requires a building permit but does not require a certificate of occupancy. Such work shall include, but not be limited to: fences greater than 7 feet in height; retaining walls greater than 3 feet in height; decks; garages; swimming pools; basements and attics converted to habitable space; electrical, plumbing, and mechanical repairs or alterations.

(Add) **111.7 Prefabricated assemblies.** A certificate of approval by an approved agency shall be furnished with every prefabricated assembly, including modular housing, except where all elements of the assembly are readily accessible for inspection at the site. Placement of prefabricated assemblies and the connections to public utilities and private water and septic systems at the building site, as well as any site-built or installed components or equipment, shall be inspected by the building official to determine compliance with this code. A final inspection shall be provided in accordance with Section 110.3.10.

(Del) **SECTION 113 - BOARD OF APPEALS.** Delete this section in its entirety and replace with the following:

(Add) **SECTION 113 – MEANS OF APPEAL.**

(Add) **113.1 Appeal from decision of building official.** Pursuant to subsection (a) of section 29-266 of the Connecticut General Statutes, when the building official rejects or refuses to approve the mode or manner of construction proposed to be followed or the materials to be used in the erection or alteration of a building or structure, or when it is claimed that the provisions of the code do not apply or that an equally good or more desirable form of construction can be employed in a specific case, or when it is claimed that the true intent and meaning of the code has been misconstrued or wrongly interpreted or when the building official issues a written order under subsection (c) of section 29-261 of the Connecticut General Statutes, the owner of such building or structure, whether already erected or to be erected, or his authorized agent may

appeal in writing from the decision of the building official to the municipal board of appeals. A person, other than such owner, who claims to be aggrieved by any decision of the building official may, by himself or his authorized agent, appeal in writing from the decision of the building official to the municipal board of appeals as provided by subsection (a) of section 29-266 of the Connecticut General Statutes.

(Add) **113.1.1 Absence of municipal board of appeals.** In the absence of a municipal board of appeals, the provisions of subsection (c) of section 29-266 of the Connecticut General Statutes shall be followed.

(Add) **113.1.2 State Building Inspector review.** In accordance with the provisions of subsection (d) of section 29-252 of the Connecticut General Statutes, the State Building Inspector or such inspector's designee shall review a decision by a local building official or municipal board of appeals appointed pursuant to section 29-266 of the Connecticut General Statutes, when he has reason to believe that such official or board has misconstrued or misinterpreted any provision of the State Building Code.

(Add) **113.2 Appointment of municipal board of appeals.** A municipal board of appeals consisting of five members shall be appointed in accordance with the provisions of subsection (a) of section 29-266 of the Connecticut General Statutes.

(Add) **113.2.1 Qualifications.** One member of the municipal board of appeals shall be appointed from the general public. The other four members shall have at least five years of experience each in building design, building construction or supervision of building construction.

(Add) **113.2.2 Chair.** The board shall annually select one of its members to serve as chair.

(Add) **113.3 Notice of meeting.** Each appeal under this subsection shall be heard in the municipality for which the building official serves within five days, exclusive of Saturdays, Sundays and legal holidays, after the date of receipt of the appeal.

(Add) **113.4 Determination of aggrievement.** Upon receipt of an appeal from a person other than the owner or his agent, the board of appeals shall first determine whether such person has a right to appeal.

(Add) **113.5 Appointment of a panel.** Upon receipt of an appeal from an owner or his agent, or approval of an appeal by a person other than the owner or his agent, the chairman of the municipal board of appeals shall appoint a panel of not less than three members of such board to hear such appeal.

(Add) **113.6 Rendering of decisions.** The panel shall, upon majority vote of its members, affirm, modify or reverse the decision of the building official in a written decision upon the appeal and file such decision with the building official from whom such appeal has been taken not later than five days, exclusive of Saturdays, Sundays and legal holidays, following the day of the hearing thereon. A copy of the decision shall be mailed, prior to such filing, to the party taking the appeal.

(Add) **113.7 Appeal to the Codes and Standards Committee.** Any person aggrieved by the decision of a municipal board of appeals may appeal to the Codes and Standards Committee within 14 days after the filing of the decision with the building official in accordance with the provisions of section 29-266 of the Connecticut General Statutes.

(Add) **113.8 Court review.** Any person aggrieved by any ruling of the Codes and Standards Committee may appeal to the Superior Court for the judicial district where such building or structure has been or is being erected.

(Add) **114.2.1 Written notice.** The notice of violation shall be in writing and shall be given to the owner of the property involved, or to the owner's agent or to the person doing the work.

(Amd) **114.3 Prosecution of violation.** If the notice of violation is not complied with promptly, the building official may request the legal counsel of the jurisdiction to institute the appropriate proceeding at law, as well as the appropriate proceeding in equity to restrain, correct or abate such violation, 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.

(Amd) **114.4 Violation penalties.** Any person who violates any provision of this code shall be fined not less than two hundred nor more than one thousand dollars or imprisoned not more than six months or both, pursuant to section 29-254a of the Connecticut General Statutes.

(Amd) **115.3 Unlawful continuance.** Any person who shall continue any work in or about the structure 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 conditions, shall be liable for penalties in accordance with Section 114.4.

(Add) **116.6 Unsafe equipment.** Equipment deemed unsafe by the building official or his authorized representative shall not be operated after the date stated in the notice unless the required repairs or changes have been made and the equipment has been approved, or unless an extension of time has been secured from the building official or his authorized representative in writing.

(Add) **116.6.1 Authority to seal equipment.** In the case of emergency, the building official or his authorized representative may seal out of service immediately any unsafe device or equipment regulated by this code.

(Add) **116.6.2 Unlawful to remove seal.** Any device or equipment sealed out of service by the building official or his authorized representative shall be plainly identified as out of service by such official and shall indicate the reason for such sealing. The identification shall not be tampered with, defaced or removed except by the building official or his authorized representative.

(Add) **116.7 Hazardous Conditions.** Pursuant to the provisions of section 29-393 of the Connecticut General Statutes, on receipt of information from the local fire marshal or from any other authentic source that any building in his jurisdiction, due to lack of exit facilities, fire, deterioration, catastrophe or other cause, is in such condition as to be a hazard to any person or persons, the building official shall immediately make an inspection by himself or by his assistant, and may make orders for additional exit facilities or the repair or alteration of the building if the same is susceptible to repair or both or for the removal of such building or any portion thereof if any such order is necessary in the interests of public safety. Any building official shall have the right of entry into all buildings for the performance of his duties between the hours of nine o'clock a.m. and five o'clock p.m., in the interests of public safety.

(Add) **116.7.1 Penalty.** Pursuant to the provisions of section 29-394 of the Connecticut General Statutes, any person who, by himself or his agent, fails to comply with the written order of a

building inspector for the provision of additional exit facilities in a building, the repair or alteration of a building or the removal of a building or any portion thereof, shall be fined not less than two hundred nor more than one thousand dollars or imprisoned not more than six months, or both.

(Add) **SECTION 117 – EMERGENCY MEASURES**

(Add) **117.1 Imminent danger.** When, in the opinion of the building official, there is imminent danger of failure or collapse of a building or structure or any part thereof which endangers human life, or when any building or structure or part thereof has fallen and human life is endangered by the occupation of the building or structure, the building official is hereby authorized and empowered to order and require the occupants to vacate the same forthwith. The building official shall post, or cause to be posted at each entrance to such building or structure a notice reading as follows: "This structure is unsafe and its occupancy has been prohibited by the building official." It shall be unlawful for any person to enter such premises except upon permission granted by the building official for the purposes of making the required repairs or of demolishing the premises. The posted identification shall not be defaced or removed except by the building official or his authorized representative.

(Add) **117.2 Temporary safeguards.** When, in the opinion of the building official, there is imminent danger to human life due to an unsafe condition, the building official shall cause the necessary work to be done to render such building or structure temporarily safe, whether or not the legal procedure described in Section 116 has been instituted.

(Add) **117.3 Temporary closings.** When necessary for public safety, the building official shall temporarily close buildings and structures and close, or order the authority having jurisdiction to close, sidewalks, streets, public ways and places adjacent to unsafe structures, and prohibit the same from being used.

(Add) **117.4 Emergency work.** When imminent danger or an unsafe condition requiring immediate action exists and the owner of the building or structure cannot be located, or refuses or is unable to expeditiously render the premises safe, the building official shall order the employment of the necessary labor and materials to perform the required work as expeditiously as possible. Such work shall include that required, in the building official's sole opinion, to make the premises temporarily safe, up to and including demolition.

(Add) **117.5 Costs of emergency work.** Costs incurred in the performance of emergency repairs or demolition under the order of the building official shall be paid from the treasury of the town, city or borough in which the building or structure is located on approval of the building official. The legal counsel of the town, city or borough shall institute appropriate action against the owner of the premises where the unsafe building or structure is or was located.

(Add) **SECTION 118 – VACANT BUILDINGS**

(Add) **118.1 General.** Temporarily unoccupied buildings, structures, premises or portions thereof, including tenant spaces, shall be safeguarded and maintained in accordance with this section.

(Add) **118.1.1 Abandoned premises.** Buildings, structures and premises for which an owner cannot be identified or located by dispatch of a certificate of mailing to the last known or registered address, which persistently or repeatedly become unprotected or unsecured; which have been occupied by unauthorized persons or for illegal purposes; or which present a danger of structural

collapse or fire spread to adjacent properties shall be considered abandoned, declared unsafe and abated or demolished in accordance with this code.

(Add) **118.2 Safeguarding vacant premises.** Temporarily unoccupied buildings, structures, premises or portions thereof shall be secured and protected in accordance with this section.

(Add) **118.2.1 Security.** Exterior openings and interior openings accessible to other tenants or unauthorized persons shall be boarded, locked, blocked or otherwise protected to prevent entry by unauthorized individuals.

(Add) **118.2.2 Fire protection.** Fire alarm, sprinkler and standpipe systems shall be maintained in an operable condition at all times.

Exceptions:

1. When the premises have been cleared of all combustible materials and debris and, in the opinion of the code official, the type of construction, fire separation distance and security of the premises do not create a fire hazard.
2. Where buildings will not be heated and fire protection systems will be exposed to freezing temperatures, fire alarm and sprinkler systems may be placed out of service and standpipes may be maintained as dry systems (without an automatic water supply) provided the building has no contents or storage, and windows, doors and other openings are secured to prohibit entry by unauthorized persons.

(Add) **118.2.3 Fire separation.** Fire-resistance-rated partitions, fire barriers and fire walls separating vacant tenant spaces from the remainder of the building shall be maintained.

(Add) **118.3 Removal of combustibles.** Persons owning, or in charge or control of, a vacant building or portion thereof, shall remove all accumulations of combustible materials and flammable or combustible waste or rubbish from such space. The premises shall be maintained clear of waste or hazardous materials.

Exceptions:

1. Buildings or portions of buildings undergoing additions, alterations, repairs or change of occupancy under a valid permit in accordance with this code.
2. Seasonally occupied buildings.

(Add) **118.4 Removal of hazardous materials.** Persons owning, or in charge or control of, a vacant building or portion thereof, shall remove all accumulations of hazardous materials as defined by this code.

CHAPTER 2 – DEFINITIONS

(Amd) **201.3 Terms defined in other codes.** Where terms are not defined in this code and are defined in other codes adopted as portions of the State Building Code, such terms shall have the meanings ascribed to them as in those codes.

(Add) **202.1 Definitions.** Add or amend the following definitions:

(Amd) **APPROVED AGENCY.** An established and recognized agency regularly engaged in conducting tests or furnishing inspection services, when such agency has been approved. Officials certified in accordance with the provisions of section 29-298 of the Connecticut General Statutes, and employed by the jurisdiction in which the building or structure is being constructed, shall be considered an approved agency for the portions of this code also regulated by the 2016 Connecticut State Fire Safety Code.

(Amd) **EXISTING STRUCTURE (For Chapter 34).** A building or structure, or portion thereof, erected in whole or in part, for which a legal building permit and a certificate of occupancy or certificate of approval has been issued. Buildings or structures or portions thereof erected prior to October 1, 1970, shall be deemed existing structures regardless of the existence of a legal permit or a certificate of occupancy or certificate of approval.

(Amd) **FABRICATED ITEM.** Structural, load-bearing or lateral load-resisting assemblies consisting of materials assembled prior to installation in a building or structure, or subject to operations such as heat treatment, thermal cutting, cold working or reforming after manufacture and prior to installation in a building or structure. Materials produced in accordance with standard specifications referenced by this code, such as rolled structural steel shapes, open web steel joists, steel-reinforcing bars, masonry units, laminated veneer lumber and plywood sheets, shall not be considered "fabricated items."

(Amd) **FOSTER CARE FACILITIES.** Facilities that provide care to more than three children, 3 years of age or younger.

(Amd) **HURRICANE-PRONE REGIONS.** Areas within municipalities as tabulated in Appendix N.

(Add) **PLANS AND SPECIFICATIONS.** See construction documents.

(Amd) **PLATFORM.** A raised area within a building used for worship, the presentation of music, plays or other entertainment; the head table for special guests; the raised area for lecturers and speakers; boxing and wrestling rings; theatre-in-the round stages; and similar purposes wherein there are no overhead hanging curtains, drops, scenery or stage effects other than lighting and sound. A temporary platform is one installed for not more than 30 days.

Exception: Curtains suspended from overhead but which open and close in a horizontal manner shall be permitted at platforms.

(Amd) **REGISTERED DESIGN PROFESSIONAL.** An architect, engineer or interior designer, registered or licensed to practice professional architecture, engineering or interior design, as defined by the statutory requirements of the professional registration laws of the State of Connecticut, and acting within the scope of his or her practice.

(Amd) **SPECIAL AMUSEMENT BUILDING.** A special amusement building is any temporary or permanent building or portion thereof that is occupied for amusement, entertainment or education purposes and that contains a device or system that conveys passengers or provides a walkway along, around or over a course in any direction so arranged that the means of egress path is not readily apparent due to visual or audio distractions or is intentionally confounded or is not readily available because of the nature of the attraction or mode of conveyance through the building or structure.

Exception: Children's play structures that do not exceed 10 feet in height and do not have an aggregate horizontal projection in excess of 300 square feet.

(Add) **STORY.** For the purposes of accessibility for persons with disabilities, see Section 1102.1.1.

(Amd) **TECHNICALLY INFEASIBLE.** An alteration of a building or a facility that has little likelihood of being accomplished because the existing structural conditions require the removal or alteration of a load-bearing member that is an essential part of the structural frame, or because other physical or site constraints prohibit modification or addition of elements, spaces or features that are in full and strict compliance with the minimum requirements for new construction and that are necessary to provide accessibility. The determination of technical infeasibility is made jointly by the State Building Inspector and the Executive Director of the Office of Protection and Advocacy for Persons with Disabilities in accordance with the provisions of subsection (b) of section 29-269 of the Connecticut General Statutes.

(Amd) **TYPE B UNIT.** A dwelling unit or sleeping unit designed and constructed for accessibility in accordance with this code and the provisions for Type B units in ICC/ANSI A117.1, as amended.

(Amd) **WIND-BORNE DEBRIS REGION.** Areas within municipalities or portions thereof as tabulated in Appendix N.

CHAPTER 3 – USE AND OCCUPANCY CLASSIFICATION

(Amd) **305.2 Group E, Day care facilities.** This group includes buildings or structures or portions thereof occupied by more than six children 3 years of age or older who receive educational, supervision or personal care services for fewer than 24 hours per day.

(Amd) **305.2.2 Six or fewer children.** A facility having six or fewer children receiving such day care shall be classified as part of the primary occupancy.

(Amd) **305.2.3 Six or fewer children in a dwelling unit.** As defined in subsection (a)(3) of section 19a-77 of the Connecticut General Statutes, a family child care home that accommodates six or fewer children of any age shall be classified as Group R-3 or shall comply with the International Residential Code in accordance with Section 101.2. During the regular school year, a maximum of three additional children who are in school full-time, shall be permitted, except that if the provider has more than three children who are in school full-time, all of the provider's children shall be permitted.

(Add) **307.5.1 Consumer fireworks, Class 1.4G.** Sparklers and fountain display items permitted to be sold in Connecticut shall be exempt from the requirements of an H-3 occupancy under the following circumstances:

1. The total amount on display and in storage in any single control area complies with the maximum allowable quantities as listed in Table 307.1(1) of this code, or;
2. The new or existing retail store or retail sales facility complies with the provisions of NFPA 1124 for new stores and facilities as herein amended.

(Add) **307.5.2** The provisions of NFPA 1124 are amended for use in Connecticut as follows:

(Amd) **307.5.3 Storage Rooms.** Storage rooms containing consumer fireworks, regardless of size, in a new or existing permanent store shall be protected with an automatic sprinkler system installed in accordance with NFPA 13, Standard for the Installation of Sprinkler Systems, or separated from the retail sales area by a fire barrier having a fire resistance rating of not less than 1 hour. The quantity of fireworks permitted in storage shall not exceed 3,600 cubic feet, including packaging. Such storage shall be segregated into areas of 1,200 cubic feet or less, separated by a minimum of 4 feet of clear space.

(Amd) **308.3.1 Three or fewer persons receiving care.** A facility such as above with three or fewer persons receiving such care shall be classified as Group R-3 or shall comply with the International Residential Code.

(Amd) **308.3.2 Four to sixteen persons receiving care.** A facility such as above, housing not fewer than 4 and not more than 16 persons receiving such care, shall be classified as R-4.

(Amd) **308.4 Group I-2.** This occupancy shall include buildings and structures used for medical care on a 24-hour basis for more than three persons who are incapable of self-preservation. This group shall include, but not be limited to, the following:

- Foster care facilities
- Detoxification facilities
- Hospitals
- Nursing homes
- Psychiatric hospitals

(Amd) **308.4.1 Three or fewer persons receiving care.** A facility such as the above with three or fewer persons receiving such care shall be classified as Group R-3 or shall comply with the International Residential Code.

(Add) **308.4.2 Alternative compliance for small I-2 homes.** See Section 407.13 for alternative compliance provisions for Group I-2 homes serving four to six persons who are incapable of self-preservation.

(Amd) **308.5 Group I-3.** This occupancy shall include buildings and structures inhabited by more than three persons who are under restraint or security. An I-3 facility is occupied by persons who are generally incapable of self-preservation due to security measures not under the occupant's control. This group shall include, but not be limited to, the following:

- Correctional centers
- Detention centers
- Jails
- Prerelease centers
- Prisons
- Reformatories

Group I-3 buildings shall be classified as one of the occupancy conditions indicated in Sections 308.5.1 to 308.5.5, inclusive (see Section 408.1).

(Amd) **308.6 Institutional Group I-4, day care facilities.** This group shall include buildings and structures occupied by more than six persons of any age who receive custodial care for fewer than 24 hours per day by persons other than parents or guardians, relatives by blood, marriage

or adoption, and in a place other than the home of the person cared for. This group shall include, but not be limited to, the following:

- Adult day care
- Child day care

(Amd) **308.6.1 Classification as Group E.** A child day care facility that provides care for more than 6 but no more than 100 children 3 years or less of age, where the rooms in which the children are cared for are located on the level of exit discharge serving such rooms and each of these child care rooms has an exit door directly to the exterior, shall be classified as Group E.

(Amd) **308.6.3 Six or fewer persons receiving care.** A facility having six or fewer persons receiving custodial care shall be classified as part of the primary occupancy.

(Amd) **308.6.4 Six or fewer persons receiving care in a dwelling unit of any age.** As defined in section 19a-77 of the Connecticut General Statutes, a family child care home that accommodates six or fewer children of any age shall be classified as Group R-3 or shall comply with the International Residential Code. During the regular school year, a maximum of three additional children who are in school full-time, including the provider's own children, shall be permitted, except that if the provider has more than three children who are in school full-time, all of the provider's children shall be permitted.

(Add) **310.2.1 Definitions.** Add the following definitions:

(Add) **BED AND BREAKFAST ESTABLISHMENT.** A building that does not qualify as a one- or two-family dwelling unit in accordance with Section 101.2 and that contains only: The owner's dwelling unit and guest rooms without permanent provisions for cooking, with a total building occupant load of not more than 16 persons (see Section 310.3.1).

(Add) **GUEST ROOM.** A space in a Group R-1 structure providing sleeping accommodations in one room, or in a series of closely associated rooms.

(Add) **HOTEL.** Any building containing six or more guest rooms, intended or designed to be used, or which are used, rented or hired out to be occupied or which are occupied for sleeping purposes by guests.

(Amd) **310.3 R-1.** Residential occupancies containing sleeping units where the occupants are primarily transient in nature including:

- Bed and breakfast establishments
- Boarding houses with more than six occupants
- Congregate living facilities with more than six occupants
- Hotels
- Motels

(Add) **310.3.1 Group R-1 bed and breakfast establishments.** A building that the owner occupies or that is adjacent to a building that the owner occupies as his/her primary place of residence, has a total building occupant load of not more than 16 persons including the owner-occupants, and has no provisions for cooking or warming food in the guest rooms. A Group R-1 bed and breakfast establishment shall not be permitted within a mixed-use building.

(Add) **310.3.1.1 Kitchens in Group R-1 bed and breakfast establishments.** Kitchens in Group R-1 bed and breakfast establishments shall be separated by ½-hour rated fire separation assemblies.

Exceptions:

1. Fire separation assemblies shall not be required when the kitchen is protected by a limited-area sprinkler system.
2. Fire separation assemblies shall not be required when the kitchen is equipped with a listed residential range top extinguisher unit or an approved commercial kitchen hood with a listed, approved automatic fire suppression system.
3. The structural members supporting the rated assemblies shall not be required to be fire-resistance rated.

(Amd) **310.4 Residential Group R-2** Residential occupancies containing sleeping units or more than two dwelling units where the occupants are primarily permanent in nature, including:

Apartment houses
Boarding houses with more than six occupants
Congregate living facilities with more than six occupants
Convents
Dormitories
Fraternities and sororities
Hotels
Live/work units
Monasteries
Motels
Vacation timeshare properties

(Amd) **310.5 Residential Group R-3.** Residential occupancies where the occupants are primarily permanent in nature and not classified as Group R-1, R-2, R-4 or I, including:

Buildings that do not contain more than two dwelling units

Boarding houses with six or fewer occupants where personal care services are not provided

Care facilities in accordance with section 308.3.1, 308.4.1, or 308.6.4

Congregate living facilities with six or fewer occupants where personal care services are not provided

(Del) **310.5.1 Care facilities within a dwelling unit.** Delete without substitution.

(Amd) **310.6 Residential Group R-4.** This occupancy shall include buildings, structures or portions thereof for more than 3 but not more than 16 occupants, excluding staff, who reside on a 24-hour basis in a supervised residential environment and receive custodial care. The persons receiving care are capable of self-preservation. This group shall include, but not be limited to, the following:

Alcohol and drug centers
Assisted living facilities
Congregate care facilities

Convalescent facilities
Group homes
Halfway houses
Residential board and care custodial care facilities
Social rehabilitation facilities

Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3, except as otherwise provided for in this code.

CHAPTER 4 – SPECIAL DETAILED REQUIREMENTS BASED ON USE AND OCCUPANCY

(Add) **404.1.2 Exception.** The provisions of Section 404 shall not apply to vertical openings in Group R-1 bed and breakfast establishments.

(Amd) **404.3 Automatic sprinkler protection.** An approved automatic sprinkler system shall be installed throughout the entire building.

Exception: That area of the building adjacent to or above the atrium need not be sprinklered provided that portion of the building is separated from the atrium portion by not less than 2-hour fire barriers constructed in accordance with section 707 or horizontal assemblies constructed in accordance with Section 711, or both.

(Amd) **406.3.4 Separation.** Separations shall comply with the following:

1. The private garage shall be separated from the dwelling unit and its attic area by means of Type X gypsum board, not less than 5/8-inch (15.9 mm) in thickness, applied to the garage side. Garages beneath habitable rooms shall be separated from all habitable rooms above by not less than a 5/8-inch (15.9 mm) Type X gypsum board or equivalent and 5/8-inch (15.9 mm) Type X gypsum board applied to structures supporting the separation from habitable rooms above the garage. Door openings between a private garage and the dwelling unit shall be equipped with either solid wood doors or solid or honeycomb core steel doors not less than 1 $\frac{3}{8}$ inches (34.9 mm) in thickness, or doors in compliance with Section 716.5.3 with a fire protection rating of not less than 20 minutes. Openings from a private garage directly into a room used for sleeping purposes shall not be permitted. Doors shall be self-closing and self-latching.
2. Ducts in a private garage and ducts penetrating the walls or ceilings separating the dwelling unit, including its attic area, from the garage shall be constructed of sheet steel of not less than 0.019 inches (0.48 mm) in thickness and shall have no openings into the garage.
3. A separation is not required between a Group R-3 and U carport, provided the carport is entirely open on two or more sides and there are no enclosed areas above.

(Add) **407.11 Laboratories.** In addition to other requirements of this code, laboratories employing quantities of flammable, combustible or hazardous materials that exceed exempt amounts shall be protected in accordance with NFPA 99.

(Add) **407.12 Medical gas systems.** Medical gas systems shall comply with Chapter 12 of the International Plumbing Code and Section 5306 of the International Fire Code.

(Add) **407.13 Small I-2 homes.** Group I-2 homes that serve four to six persons who are incapable of self-preservation that comply with the alternative provisions of Section 407.13 shall be

considered to be code complaint for the systems itemized. Other applicable provisions of the code shall also apply.

(Add) **407.13.1 Height, area and construction type.** Height and area shall comply with Chapter 5 and the requirements of Chapter 6 except as provided in Section 407.13.1.1.

(Add) **407.13.1.1 Type VB construction.** Type VB construction is permitted for a one story building not more than 4500 square feet in area where the unoccupied attic space is protected by automatic sprinklers or provided with heat detection in the attic connected to the building fire alarm system.

(Add) **407.13.2 Size of doors.** The minimum width of all door openings shall provide a clear width of 34 inches (914 mm). Clear openings of doorways with swinging doors shall be measured between the face of the door and the stop, with the door open 90 degrees (1.57 rad).

(Add) **407.13.2.1 Door latches.** Every door latch to closets, storage areas, and other similar spaces or such areas shall be such that the clients can open the door from inside the space or area.

(Add) **407.13.2.2 Client sleeping room and bathroom doors.** Client sleeping room and bathroom door locks shall be designed to allow the opening of the locked door from the outside by an opening device readily accessible by staff in an emergency.

(Add) **407.13.3 Exterior ramps.** Exterior ramps in accordance with Section 1026 shall be permitted for small I-2 homes.

(Add) **407.13.4 Means of escape.** In addition to the means of egress requirements of Chapter 10, all client sleeping rooms shall have a means of escape in accordance with Section 1029.

(Add) **407.13.5 Sleeping room walls.** All client sleeping room walls separating the sleeping rooms from the hallways and other habitable or occupiable spaces of the building shall be constructed as smoke partitions in accordance with Section 710.

(Add) **407.13.6 Separation of sleeping area.** One door directly to the exterior at the level of exit discharge from the hallway or client sleeping room where the sleeping area and its hallway are separated from other habitable spaces such as living areas and kitchens by a smoke partition in accordance with Section 710 and the doorway to the sleeping area hallway from such spaces has a minimum 20-minute fire protection rating and is self-closing or automatic-closing.

(Add) **407.13.7 Automatic fire sprinkler system.** Buildings shall be equipped with a NFPA 13R sprinkler system or a NFPA 13D sprinkler system with a 30-minute water supply. All storage, habitable and occupiable rooms as well as kitchens and closets shall be sprinklered. Sprinkler valves shall be electrically supervised and connected to the building fire alarm system.

Exception: Attached unheated garages used only for storage provided it is separated from the remainder of the structure by 1-hour fire resistive construction with any openings protected by 45-minute opening protectives. The garage shall also be provided with heat detection connected to the building fire alarm system.

(Add) **407.13.8 Fire alarm and detection systems.** Fire alarm and detection systems shall be installed in accordance with Section 907.2.6.

(Add) **407.13.8.1 Detection.** Smoke detection shall be provided in all sleeping rooms and

common spaces except kitchens and bathrooms. Heat detection shall be provided as specified in Section 407.13.

(Add) **407.13.8.2 Carbon monoxide detectors.** Carbon monoxide detectors shall be provided in accordance with Section 915.

(Add) **407.13.9 Attic space access.** An opening not less than 36 inches by 36 inches (914 mm by 914 mm) shall be provided to any attic area having a clear height of over 30 inches (762 mm). Clear headroom of not less than 30 inches (762 mm) shall be provided at the attic space at or above the opening.

Exception: In conversions of a single family home, a rough framed opening of 30 inches by 22 inches (762 mm by 559 mm) shall be permitted from a hallway or other readily accessible location.

(Add) **407.13.10 Standby power.** Standby power shall be provided for small 1-2 home in accordance with Section 2702.1.

(Del) **410.3.6 Scenery.** Delete section.

(Add) **422.8 Laboratories.** In addition to other requirements of this code, laboratories employing quantities of flammable, combustible or hazardous materials that exceed exempt amounts shall be protected in accordance with NFPA 99.

(Add) **422.9 Medical gas systems.** Medical gas systems shall comply with Chapter 12 of the International Plumbing Code and Section 5306 of the International Fire Code.

(Amd) **424.5 Area limits.** Children's play structures greater than 300 square feet (28 m²) in area shall comply with Section 411.

(Add) **SECTION 425 – GROUP E**

(Add) **425.1 Proximity to the level of exit discharge.** Proximity to the level of exit discharge shall be provided in accordance with Sections 425.1.1 and 425.1.2. For the purpose of this section, normally occupied shall include such spaces as libraries, cafeterias, gymnasiums and multipurpose rooms. This does not include administrative offices, healthcare rooms nor special one-on-one rooms.

(Add) **425.1.1 Preschool, kindergarten and first grade.** Rooms normally occupied by preschool, kindergarten or first-grade students shall be located on a level of exit discharge.

Exception: Rooms located on levels other than a level of exit discharge shall be permitted to be normally occupied by preschool, kindergarten or first-grade students where such rooms are provided with an independent stairway or ramp directly from the room dedicated for use by the preschool, kindergarten or first-grade students.

(Add) **425.1.2 Second grade.** Rooms normally occupied by second-grade students shall be located not more than one story above a level of exit discharge.

Exception: Rooms located on levels other than one story above a level of exit discharge shall be permitted to be normally occupied by second-grade students where such rooms are provided with an independent stairway or ramp from the room dedicated for use by the second-grade students.

(Add) **425.2 Subdivision of building spaces.** Group E occupancies shall be subdivided into compartments by smoke barriers complying with Section 709 where one or both of the following conditions exist:

1. The maximum area of a compartment, including the aggregate area of all floors having a common atmosphere, exceeds 30,000 square feet (2787 m²).
2. The length or width of the occupancy exceeds 300 feet (91 m).

Exceptions:

1. Where all spaces normally subject to student occupancy have not less than one door opening directly to the outside or to an exterior or exit access balcony or corridor in accordance with Section 1019.7.5.3.
2. Buildings protected throughout by an approved, supervised automatic fire sprinkler in accordance with Section 903.3.1.1.

The area of any smoke compartment required by this section shall not exceed 30,000 square feet (2787 m²) with no dimension exceeding 300 feet (91 m).

(Add) **425.3 Carbon monoxide detectors.** In accordance with section 29-292 of the Connecticut General Statutes, carbon monoxide detection shall be provided as required by Section 915.

CHAPTER 5 - GENERAL BUILDING HEIGHTS AND AREAS

(Add) **504.4 Group R-1 bed and breakfast establishments.** The height limitation for existing buildings of Type VB construction undergoing a change of occupancy from detached one- and two-family dwellings to Group R-1 bed and breakfast establishments shall be increased one story and 5 feet from the values in Table 503 where 1-hour fire-resistance rated assemblies are constructed between the second and third floors. The structural members supporting the rated assemblies shall not be required to be fire-resistance rated.

Exception: Where compliance with Section 504.2 is achieved.

(Add) **509.4.1.1 Storage rooms.** Storage rooms larger than 100 square feet shall be provided with a 1-hour fire-resistance-rated separation or an automatic sprinkler system in accordance with Section 509.4.

CHAPTER 7 – FIRE AND SMOKE PROTECTION FEATURES

(Add) **704.6.1 Connections.** Where non-fire-resistance-rated members attach to fire-resistance-rated members, the non-rated member shall be protected in the same manner as the rated member for a distance of not less than 12 inches (305 mm) from the point of connection.

(Amd) **708.1 General.** The following wall assemblies shall comply with this section.

1. Walls separating dwelling units in the same building as required by Section 420.2.
2. Walls separating sleeping units in the same building as required by Section 420.2.

Exception to Item 2: Group R-1 bed and breakfast establishments.

3. Walls separating tenant spaces in covered and open mall buildings as required by Section 402.4.2.1.

4. Corridor walls as required by Section 1018.1.
5. Elevator lobby separation as required by Section 713.14.1.

(Amd) **712.1.12 Unenclosed stairs and ramps.** Vertical floor openings created by unenclosed stairs or ramps in accordance with Section 1009.2 shall be permitted.

(Add) **720.1.1 Foamed-in place insulation.** Foamed-in-place insulation shall be furnished and installed pursuant to section 29-277 of the Connecticut General Statutes. Urea-formaldehyde foamed-in-place insulation shall not be installed in any building or structure on or after June 1, 1981.

CHAPTER 9 – FIRE PROTECTION SYSTEMS

(Amd) **903.1.1 Alternative protection.** In any occupancy where the character of fuel for fire is such that extinguishment or control of fire is accomplished by a type of alternative automatic extinguishing system complying with Section 904, such system shall be permitted in lieu of an automatic sprinkler system, and shall be installed in accordance with the applicable standard and approved by the code official.

(Amd) **903.2.1.2 Group A-2.** An automatic sprinkler system shall be provided for Group A-2 occupancies where one of the following conditions exists:

1. The fire area exceeds 5,000 square feet (464.5 m²).

Exception: Existing restaurants in existing non-sprinklered buildings that were designated Use Group A-3 under a previous edition of the State Building Code that undergo addition, alteration or change of occupancy that results in an increase in the restaurant's fire area providing the proposed fire area does not exceed 12,000 square feet.

2. The fire area has an occupant load of 300 or more or where the occupant load exceeds 100 or more in the following assembly occupancies:

- a. Dance halls
- b. Discotheques
- c. Nightclubs
- d. Assembly occupancies with festival seating

3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.

(Add) **903.2.3.1. Statutory requirements.** An automatic sprinkler system shall be installed in Group E occupancies pursuant to Section 29-315 of the Connecticut General Statutes.

(Amd) **903.2.6 Group I.** An automatic sprinkler system shall be provided throughout buildings with a Group I fire area.

Exceptions:

1. An automatic sprinkler system installed in accordance with section 903.3.1.2 shall be permitted in Group I-1 facilities.

2. An automatic sprinkler system is not required where day care facilities are at the level of exit discharge and where every room in which care is provided has at least one exterior door.

3. In buildings where Group I-4 day care is provided on levels other than the level of exit discharge, an automatic sprinkler system in accordance with section 903.3.1.1 shall be installed on the entire floor where care is provided and all floors between the level of care and the level of exit discharge, all floors below the level of exit discharge, other than areas classified as an open parking garage.

(Amd) **903.2.7 Group M.** An automatic sprinkler system shall be provided throughout buildings containing a Group M occupancy where one of the following conditions exists:

1. A Group M fire area exceeds 12,000 square feet (1115 m²).
2. A Group M fire area is located more than three stories above grade plane.
3. The combined area of all Group M fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m²).
4. A Group M occupancy used for the display and sale of upholstered furniture or mattresses exceeds 5,000 square feet (464 m²).
5. Throughout stories below the level of exit discharge where such stories have an area exceeding 2,500 square feet (232 m²) and are used for the sale, storage or handling of combustible goods or merchandise.

(Amd) **903.2.8 Group R.** An automatic sprinkler system installed in accordance with Section 903.3 shall be provided throughout all newly constructed buildings with a Group R fire area or in existing buildings that have a Group R fire area newly introduced by change of occupancy, occupancy group designation or by an addition.

Exceptions:

1. Group R-1 bed and breakfast establishments.
2. Existing buildings four stories or less in height undergoing a change of occupancy from a one- or two-family building or Group R-3 to Group R-2 containing not more than four dwelling units that does not involve an increase in height or area and where each dwelling unit has either:
 - 2.1 An exit door directly to the exterior at a level of exit discharge,
 - 2.2 Direct access to an exterior stair serving a maximum of two dwelling units on the same story, or
 - 2.3 Direct access to an interior stair serving only that dwelling unit and separated from all other portions of the building with 1-hour fire-resistance-rated fire barriers.
3. Existing buildings converted prior to June 15, 1994, from a one- or two-family building or Group R-3 to Group R-2 containing not more than four dwelling units.
4. Horizontal additions containing a newly introduced Group R occupancy that are added to existing buildings shall be required to have an automatic sprinkler system installed in the addition only if the addition is completely separated from the existing building by fire barriers with a minimum one-hour fire-resistance rating.

5. In a building with a maximum of two dwelling units where:

5.1 Each dwelling unit has a direct independent exit to grade.

5.2 The exit(s) and dwelling units are separated from any non-residential occupancy by a minimum 1-hour fire-resistive-rated separation.

5.3 The non-residential occupancy is protected by an automatic fire detection and alarm system with notification in the dwelling unit(s).

(Amd) **903.2.8.1 Group R-3 or R-4 congregate residences.** An automatic sprinkler system installed in accordance with Section 903.3.1.3 shall be permitted in Group R-3 or Group R-4 congregate living facilities with six or fewer residents.

(Amd) **903.2.8.2 Care facilities.** An automatic sprinkler system in accordance with Section 903.3.1.3 shall be permitted in a Group R-4 care facility with 16 or fewer residents when all of the following conditions are met:

1. The facility is not in a building containing mixed occupancies,
2. The building in which the facility is located is limited to two stories above grade plane and 40 feet in height,
3. The automatic sprinkler system is provided with a minimum 30-minute water supply,
4. All habitable, enclosed usable areas and closets shall be sprinklered,
5. Facilities with more than eight residents shall be treated as two-family dwellings with regard to water supply, and
6. The sprinkler system is provided with valve supervision by one of the following methods:
 - 6.1. A single listed control valve that shuts off both domestic and sprinkler system water supply and a separate valve that shuts off the domestic system only.
 - 6.2. Electrical supervision connected to the facility's fire alarm system.
 - 6.3. Valve closure that causes the sounding of an audible alarm audible throughout the premises.

(Add) **903.2.11.7 Additional statutory requirements.** Pursuant to section 29-315 of the Connecticut General Statutes, automatic fire extinguishing systems shall be installed in any building or structure to be built more than four stories tall and used for human occupancy and in other occupancies as required by the State Fire Marshal in the interest of safety because of special occupancy hazards.

(Amd) **903.3.1.1.1 Exempt locations.** Automatic sprinklers shall not be required in the following rooms or areas where such rooms or areas are protected with an approved automatic fire detection system in accordance with Section 907.2 that will respond to visible particles of combustion. Sprinklers shall not be omitted from any room merely because it is damp, of fire-resistance construction or contains electrical equipment.

1. Generator and transformer rooms separated from the remainder of the building by walls and floor/ceiling assemblies having a fire-resistance-rating of not less than 2 hours.
2. Fire service access elevator machine rooms and machinery spaces.

3. Machine rooms and machinery spaces associated with occupant evacuation elevators designed in accordance with Section 3008 of the State Building Code.

(Add) **903.3.1.1.2 Vertical openings.** Closely spaced sprinklers and draft stops are not required around floor openings permitted to be unenclosed by this code unless the closely spaced sprinklers and draft stops are being utilized in lieu of an enclosure as specified by Section 712.1.3.1.

(Amd) **903.3.1.2 NFPA 13R sprinkler systems.** Automatic sprinkler systems in Group R up to and including four stories not exceeding 60 feet (18,288 mm) above grade plane shall be permitted to be installed throughout in accordance with NFPA 13R.

The number of stories of Group R occupancies constructed in accordance with Sections 510.2 and 510.4 shall be measured from the horizontal assembly creating separate buildings.

(Add) **903.3.1.2.2 Mixed occupancies.** Buildings containing occupancies other than Group R shall not be permitted to utilize an NFPA 13R sprinkler system.

Exception: Buildings that comply with Section 510.2 that contain only Group R occupancies above the horizontal assembly may use an NFPA 13R sprinkler system above the horizontal assembly provided such occupancy complies with Section 903.3.1.2.

(Amd) **903.3.5.1.1 Limited area sprinkler systems.** Limited area sprinkler systems serving six sprinklers on any single connection are permitted be connected to the domestic service where a wet automatic standpipe is not available. Limited area sprinkler systems connected to domestic water supplies shall comply with each of the following requirements:

1. Valves shall not be installed between the domestic water riser control valve and the sprinklers.

Exception to Item 1: An approved indicating control valve supervised electrically or locked or secured in the open position shall be permitted.

2. The domestic service shall be capable of supplying the simultaneous domestic demand and the sprinkler demand required to be hydraulically calculated by NFPA 13, NFPA 13D or NFPA 13R.

(Add) **903.3.5.1.3 Water authority approval.** Unless served by a private well of sufficient capacity or other approved source, domestic service shall be permitted to provide the water supply for the automatic sprinkler system only upon written approval of the water authority supplying such domestic service.

(Amd) **903.3.5.2 Secondary water supply.** A secondary on-site water supply having a capacity not less than the hydraulically calculated sprinkler demand, including the hose stream requirement, shall be provided for high-rise buildings in Seismic Design Category D, E or F as determined by this code. An additional fire pump shall not be required for the secondary water supply unless needed to provide the minimum design intake pressure at the suction side of the fire pump supplying the automatic sprinkler system. The secondary water supply shall have a duration of not less than 30 minutes as determined by the occupancy hazard classification in accordance with NFPA 13.

Exception: Existing buildings.

(Del) **903.5 Testing and maintenance.** Delete subsection without substitution.

(Add) **905.2.1 Piping design.** The riser piping, supply piping and the water service piping shall be sized to maintain a residual pressure of at least 100 pounds per square inch (psi) at the topmost outlet of each riser while flowing the minimum quantities of water specified based upon a pressure of 150 psi available at the fire department connection.

Exception: In buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or Section 903.3.1.2 and where the highest floor level is not more than 75 feet above the lowest level of fire department vehicle access, Class I standpipes shall have an automatic or manual-wet supply.

(Del) **905.3.4.1 Hose and cabinet.** Delete without substitution.

(Del) **SECTION 906 - PORTABLE FIRE EXTINGUISHERS.** Delete this section in its entirety and replace with the following:

(Add) **SECTION 906 - PORTABLE FIRE EXTINGUISHERS.**

(Add) **906.1 Where required.** Portable fire extinguishers shall be provided in occupancies and locations as required by the Connecticut State Fire Prevention Code.

(Add) **Maintenance.** Portable fire extinguishers shall be maintained in accordance with the Connecticut State Fire Prevention Code.

(Amd) **907.1.1 Construction documents.** Construction documents for fire alarm systems shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that it will conform to the provisions of this code and the State Fire Safety Code as determined by the code official.

(Del) **907.2.7.1 Occupant notification.** Delete without substitution.

(Amd) **907.2.8.2 Automatic smoke detection system.** An automatic smoke detection system that activates the occupant notification system in accordance with Section 907.5 shall be installed throughout all interior corridors serving sleeping units.

Exceptions:

1. An automatic fire detection system is not required in buildings that do not have interior corridors serving sleeping units and where each sleeping unit has a means of egress door opening directly to an exit access that leads directly to an exit.
2. An automatic fire detection system is not required in Group R-1 bed and breakfast establishments (see Section 907.2.10.1.1.1).

(Amd) **907.2.9.1 Manual fire alarm system.** A manual fire alarm system that activates the occupant notification system in accordance with section 907.5 shall be installed in Group R-2 occupancies where:

1. Any dwelling unit or sleeping unit is located three or more stories above the lowest level of exit discharge;
2. Any dwelling unit or sleeping unit is located more than one story below the highest level of exit discharge of exits serving the dwelling unit or sleeping unit; or
3. The building contains more than 11 dwelling units or sleeping units.

Exceptions:

1. A fire alarm system is not required in buildings not more than two stories in height where all dwelling units or sleeping units and contiguous attic and crawl spaces are separated from each other and public or common areas by at least 1-hour fire partitions and each dwelling unit or sleeping unit has an exit directly to a public way, egress exit, court or yard.
2. Manual fire alarm boxes are not required where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and the occupant notification appliances will automatically activate throughout the notification zones upon a sprinkler water flow.
3. A fire alarm system is not required in buildings that do not have interior corridors serving dwelling units or sleeping units and are protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, provided that dwelling units or sleeping units either have a means of egress door opening directly to an exterior exit access that leads directly to the exits or are served by open-ended corridors designed in accordance with Section 1026.6, Exception 4.

(Add) **907.2.11.1.1 Group R-1 bed and breakfast establishments.** An approved household fire warning system in accordance with the requirements of NFPA 72, consisting of a control unit with smoke detectors, a manual fire alarm box on each floor and occupant notification shall be installed in all Group R-1 bed and breakfast establishments. A heat detector shall be installed in the kitchen.

(Add) **907.2.11.2.1 Group R-4.** In Group R-4 occupancies, single- or multiple-station smoke alarms shall be installed in living rooms, dens, day rooms and similar spaces in addition to the locations required by Section 907.2.11.2.

(Add) **907.2.11.2.2 Group I-4 and Group E day care facilities.** Single- or multiple-station smoke detectors shall be installed and maintained in all day care facilities in the following locations:

1. On each story in front of doors to the stairways;
2. In the corridors of all floors occupied by the day care facilities; and
3. In lounges, recreation areas and sleeping rooms in the day care facilities.

Exception: Day care facilities housed in one room.

(Amd) **907.2.11.4 Power source.** Pursuant to Section 29-292 of the Connecticut General Statutes, in new construction, required smoke alarms shall receive their primary power from the building wiring and shall be equipped with a battery backup. Smoke alarms with integral strobes not equipped with battery backup shall be connected to an emergency electrical system. Smoke alarms shall emit a signal when the batteries are low. Wiring shall be permanent and without a disconnecting switch other than as required for overcurrent protection.

(Amd) **907.6.5.1 Automatic telephone-dialing devices.** Automatic telephone-dialing devices used to transmit an emergency alarm shall comply with the requirements of subsection (c) of section 28-25b of the Connecticut General Statutes.

(Del) **907.6.5.2 Termination of monitoring service.** Delete without substitution.

(Del) **907.8 Inspection, testing and maintenance.** Delete without substitution.

(Del) **908.7 Carbon monoxide alarms.** Delete this section in its entirety and replace with Section 915.

(Add) **913.6 Electric fire pumps.** Buildings provided with standby electrical power for the purpose of continuing operations or occupancy shall provide standby power in accordance with Article 701 of NFPA 70, National Electrical Code, for any electric fire pump installed to provide an adequate water supply or minimum operating pressure to a required automatic sprinkler system. Such system shall be in accordance with section 2702.2.21.

(Del) **SECTION 915 - EMERGENCY RESPONDER RADIO COVERAGE.** Delete this section in its entirety and replace with the following:

(Add) **SECTION 915 - CARBON MONOXIDE DETECTION**

(Add) **915.1 General.** Carbon monoxide detectors shall be installed in new buildings and occupancies in accordance with Section 915.1 to 915.6, inclusive. When alterations or additions requiring a permit occur in existing buildings, carbon monoxide detection shall be provided in accordance with Section 915.7.

(Add) **915.1.1 Where required.** Carbon monoxide detection shall be provided in Group I-1, I-2, I-4 and R occupancies and in Group E occupancies in the locations specified in Section 915.2 where any of the conditions in 915.1.2 to 915.1.6, inclusive, exist.

(Add) **915.1.2 Fuel-burning appliances and fuel-burning fireplaces.** Carbon monoxide detection shall be provided in dwelling units and sleeping units that contain a fuel-burning appliance or fuel-burning fireplace.

(Add) **915.1.3 Forced-air furnaces.** Carbon monoxide detection shall be provided in dwelling units and sleeping units served by a fuel-burning, forced-air furnace.

Exception: Carbon monoxide detection shall not be required in dwelling units and sleeping units where carbon monoxide detection is provided in the first room or area served by each main duct leaving the furnace, and the carbon monoxide alarm signals are automatically transmitted to an approved location.

(Add) **915.1.4 Fuel-burning appliances outside of dwelling units and sleeping units.** Carbon monoxide detection shall be provided in dwelling units and sleeping units located in buildings that contain fuel-burning appliances or fuel-burning fireplaces.

Exceptions:

1. In dwelling units and sleeping units where there are no communicating openings between the fuel-burning appliance or fuel-burning fireplace and the dwelling unit or sleeping unit.
2. In dwelling units and sleeping units where carbon monoxide detection is provided in one of the following locations:

- 2.1. In an approved location between the fuel-burning appliance or fuel-burning fireplace and the dwelling unit or sleeping unit.
- 2.2. On the ceiling of the room containing the fuel-burning appliance or fuel-burning fireplace.

(Add) **915.1.5 Private garages.** Carbon monoxide detection shall be provided in dwelling units and sleeping units in buildings with attached private garages.

Exceptions:

1. Where there are no communicating openings between the private garage and the dwelling unit or sleeping unit.
2. In dwelling units and sleeping units located more than one story above or below a private garage.
3. Where the private garage connects to the building through an open-ended corridor.
4. Where carbon monoxide detection is provided in an approved location between openings to a private garage and dwelling units or sleeping units.

(Add) **915.2 Locations.** Where required by Section 915.1.1, carbon monoxide detection shall be installed in locations specified in Sections 915.2.1 to 915.2.3, inclusive.

(Add) **915.2.1 Dwelling units.** Carbon monoxide detection shall be installed in dwelling units outside of each separate sleeping area in the immediate vicinity of the bedrooms. Where a fuel-burning appliance is located within a bedroom or its attached bathroom, carbon monoxide detection shall be installed within the bedroom.

(Add) **915.2.2 Sleeping units.** Carbon monoxide detection shall be installed in sleeping units.

Exception: Carbon monoxide detection shall be allowed to be installed outside of each separate sleeping area in the immediate vicinity of the sleeping unit where the sleeping unit or its attached bathroom does not contain a fuel-burning appliance and is not served by a forced air furnace.

(Add) **915.2.3 Group E occupancies.** Carbon monoxide detection system shall be provided in the locations specified in Section 915.2.3.1 and 915.2.3.2.

Exception: Group E rooms with cooking appliances, laboratories and maintenance spaces.

(Add) **915.2.3.1. Locations.** Carbon monoxide detectors shall be located as follows:

1. On the ceilings of rooms containing permanently installed fuel-burning heating equipment.
2. Centrally located within the first room or area served by the first air supply register by each main duct leaving a fuel-burning, forced-air furnace.

(Add) **915.2.3.2 Signage.** A sign shall be provided at all entrances to such rooms indicating that carbon monoxide detectors are located within the space.

(Add) **915.3 Detection equipment.** Carbon monoxide detection required by Sections 915.1 to 915.2.3, inclusive, shall be provided by carbon monoxide alarms complying with Section 915.4 or carbon monoxide detection systems complying with Section 915.5.

(Add) **915.4 Carbon monoxide alarms.** Carbon monoxide alarms shall comply with Sections 915.4.1 to 915.4.3, inclusive.

(Add) **915.4.1 Power source.** Carbon monoxide alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source and, when primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than required for overcurrent protection.

Exception: When installed in buildings without commercial power, battery-powered carbon monoxide alarms shall be an acceptable alternative.

(Add) **915.4.2 Listings.** Carbon monoxide alarms shall be listed in accordance with UL 2034.

(Add) **915.4.3 Combination alarms.** Combination carbon monoxide/smoke alarms shall be an acceptable alternative to carbon monoxide alarms. Combination carbon monoxide/smoke alarms shall be listed in accordance with UL 2034 and UL 217.

(Add) **915.4.4 Interconnection of alarms.** Carbon monoxide alarms shall be interconnected in accordance with Section 9.6.4 of NFPA 720.

(Add) **915.5 Carbon monoxide detection systems.** Carbon monoxide detection systems shall be an acceptable alternative to carbon monoxide alarms and shall comply with Sections 915.5.1 to 915.5.3, inclusive.

(Add) **915.5.1 General.** Carbon monoxide detection systems shall comply with NFPA 720. Carbon monoxide detection systems shall be listed in accordance with UL 2072.

(Add) **915.5.2 Locations.** Carbon monoxide detectors shall be installed in the locations specified in Section 915.2. These locations supersede the locations specified in NFPA 720.

(Add) **915.5.3 Combination detectors.** Combination carbon monoxide/smoke detectors installed in carbon monoxide detection systems shall be an acceptable alternative to carbon monoxide detectors, provided they are listed in accordance with UL 2075 and UL 268.

(Add) **915.5.4 Group E alarm notification.** Carbon monoxide detectors shall be connected to the building fire alarm signaling system as a separate zone or zones. Such alarms shall activate a supervisory signal at the main control unit and any remote annunciators. Such alarms shall not activate the building evacuation alarm.

(Add) **915.6 Maintenance.** Carbon monoxide alarms and carbon monoxide detection systems shall be maintained in accordance with NFPA 720. Carbon monoxide alarms and carbon monoxide detectors that become inoperable, begin producing end-of-life signals or have reached the manufacturer's replacement date shall be replaced.

(Add) **915.7 Alterations and additions.** When alterations or additions requiring a permit occur to buildings with Group R-3 and R-4 occupancies and to Group R-1 bed and breakfast establishments, or when one or more sleeping rooms are added or created in such occupancies, the entire occupancy shall be provided with carbon monoxide detectors located as required for

new construction. The carbon monoxide detectors shall have a power source in accordance with Section 915.4.1.

When alterations or additions requiring a permit occur to buildings with Group I-1, I-2, I-4, R-1 other than bed and breakfast, R-2, and E, or when one or more sleeping rooms are added or created in such occupancies, only the work area shall be provided with carbon monoxide detectors located as required for new construction. The carbon monoxide detectors shall have a power source in accordance with Section 915.4.1. For the purpose of this section, work area is defined as: That portion or portions of a building consisting of all reconfigured spaces as indicated on the construction documents. Work area excludes other portions of the building where incidental work entailed by the intended work must be performed and portions of the building where work not initially intended by the owner is specifically required by this code.

Exceptions:

1. The carbon monoxide detectors may be battery operated or plug-in and are not required to be interconnected when other remodeling considerations do not require the removal of the appropriate wall or ceiling coverings to facilitate concealed interconnected wiring.
2. Alterations to the exterior surfaces of existing buildings including, but not limited to, re-roofing, re-siding, window replacement and the construction of decks without roofs, are exempt from the requirements of this section.
3. Carbon monoxide detectors shall not be required in buildings not containing a fuel-burning appliance, fireplace or attached garage.

CHAPTER 10 – MEANS OF EGRESS

(Add) **1003.8 Security device.** Any security device or system that emits any medium that could obscure a means of egress in any building, structure or premises shall be prohibited.

(Amd) **1004.1.2 Areas without fixed seating.** The number of occupants shall be computed at the rate of one occupant per unit of area as prescribed in Table 1004.1.2. For areas without fixed seating, the occupant load shall not be less than the number determined by dividing the floor area under consideration by the occupant load factor assigned to the function of the space as set forth in Table 1004.1.2. Where an intended function is not listed in Table 1004.1.2, the building official shall establish a function based on a listed function that most nearly resembles the intended function.

(Amd) **1005.3.1 Stairways.** The capacity, in inches (mm), of the means of egress stairways shall be calculated by multiplying the occupant load served by such stairway by a means of egress capacity factor of 0.3 inch (7.6 mm) per occupant. Where stairways serve more than one story, only the occupant load of each story considered individually shall be used in calculating the required capacity of the stairways serving that story.

(Amd) **1005.3.2 Other egress components.** The capacity, in inches (mm), of the means of egress components other than stairways shall be calculated by multiplying the occupant load served by such component by a means of egress capacity factor of 0.2 inch (5.1 mm) per occupant.

(Amd) **1006.1 Illumination required.** The means of egress, including the exit discharge, shall be illuminated at all times the building space served by the means of egress is occupied.

Exceptions:

1. Occupancies in Group U.
2. Aisle accessways in Group A.
3. Within dwelling units and sleeping units in Groups R-1, R-2 and R-3.
4. Within sleeping units of Group I occupancies.
5. In Group R-1 bed and breakfast establishments shall not be required when illumination of the means of egress is initiated upon initiation of a fire alarm.

(Add) **1006.2.1 Arrangement of illumination.** Required illumination shall be arranged so that the failure of any single lamp does not result in an illumination level of less than 0.2 foot-candle (2.15 lux) at the floor level.

(Amd) **1006.3 Emergency power for illumination.** The power supply for means of egress illumination shall normally be provided by the premise's electrical supply. In the event of power supply failure, an emergency electrical system shall automatically illuminate the following areas:

1. Aisles and unenclosed egress stairways in rooms and spaces that require two or more means of egress.
2. Corridors, interior exit stairways and ramps and exit passageways in buildings required to have two or more exits.
3. Exterior egress components at other than their levels of exit discharge until exit discharge is accomplished for buildings required to have two or more exits.
4. Interior exit discharge elements, as permitted in Section 1027.1, in buildings required to have two or more exits.
5. Exterior landings as required by section 1008.1.6 for exit discharge doorways in buildings required to have two or more exits.
6. Means of egress lighting in Group R-1 bed and breakfast establishments.

The emergency power system shall provide power for a duration of not less than 90 minutes and shall consist of storage batteries, unit equipment or an on-site generator. The installation of the emergency power system shall be in accordance with Section 2702.

(Add) **1006.3.2 Activation.** The emergency means of egress illumination system shall be arranged to provide the required illumination automatically in the event of any interruption of normal lighting due to any of the following:

1. Failure of a public utility or other outside electrical power supply.
2. Opening of a circuit breaker or fuse.
3. Manual acts including accidental opening of a switch controlling normal lighting facilities.

(Add) **1008.1.1.2 Bed and breakfast establishments.** Doors within and accessing Group R-1 bed and breakfast establishments shall have a minimum clear width of 28 inches (711 mm). Doors within and accessing bathrooms shall have a minimum clear width of 24 inches (610 mm).

(Amd) **1008.1.2 Door swing.** Egress doors shall be of the pivoted or side-hinged swinging type.

Exceptions:

1. Private garages, office areas, factory and storage areas with an occupant load of 10 or less.
2. Group I-3 occupancies used as a place of detention.
3. Critical or intensive care patient rooms within suites of health care facilities.
4. Doors within or serving a single dwelling unit in Groups R-2 and R-3.
5. In other than Group H occupancies, revolving doors complying with Section 1008.1.4.1.
6. In other than Group H occupancies, horizontal sliding doors complying with Section 1008.1.4.3.
7. Power-operated doors in accordance with Section 1008.1.4.2.
8. Doors serving a bathroom within an individual sleeping unit in Group R-1.
9. In other than Group H occupancies, manually operated horizontal sliding doors from spaces with an occupant load of 10 or less.

Doors shall swing in the direction of egress travel where serving a room or area containing an occupant load of 50 or more persons, where serving an exit enclosure unless the door serves an individual living unit that opens directly into an exit enclosure or a Group H occupancy.

(Amd) **1008.1.9.5.1 Closet and bathroom doors.** In Group R-4 occupancies, Group I-2 child care facilities, and Group I-4 day care facilities, closet doors that latch in the closed position shall be openable from inside the closet and bathroom doors that latch in the closed position shall be capable of being unlocked from the ingress side.

(Add) **1008.1.9.6.1 Group I-1 occupancies.** The provisions of Section 1008.1.9.6 for special locking arrangements may be utilized in Group I-1 occupancies.

(Amd) **1009.2.2 Enclosure.** All interior exit stairways and floor openings between stories created by exit access stairways shall be enclosed in accordance with the provisions of Section 1022.

Exceptions:

1. In buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1 with other than Group H or I occupancies, an exit access stairway serving an occupant load of less than 10 not more than one story above the level of exit discharge.
2. Exit access stairways serving and contained within a single residential dwelling unit or sleeping unit in Group R-1, R-2 or R-3 occupancies.
3. Exit access stairways connecting the first and second floors of bed and breakfast establishments. Stairways connecting the second and third floors in such occupancies shall be enclosed with fire separation assemblies having a fire-resistance rating of not less than 1 hour. Stairways connecting the basement and the first floor occupancies shall be enclosed with fire partitions having a fire-resistance rating of not less than ½ hour with 20-minute fire-resistance rated door assemblies. Fire-resistance assemblies at stairways

in Group R-1 bed and breakfast establishments shall not be required to be supported by fire-resistance rated construction.

4. Exit access stairways and ramps in open parking garages that serve only the parking garage.
5. Stairways serving outdoor facilities where all portions of the means of egress are essentially open to the outside.
6. Exit access stairways serving stages, platforms and technical production areas in accordance with Sections 410.6.2 and 410.6.3.
7. Stairways between the balcony, gallery or press box and the main assembly floor in occupancies such as theaters, places of religious worship, auditoriums and sport facilities.
8. In Group I-3 occupancies, exit access stairways constructed in accordance with Section 408.5.
9. Exit access stairways serving mezzanines complying with the provisions of Section 505.

(Del) **1009.3 Exit access stairways.** Delete section and subsections without substitution.

(Amd) **1009.7.2 Riser height and depth.** Stair riser heights shall be 7 inches (178 mm) maximum and 4 inches (102 mm) minimum. The riser height shall be measured vertically between the nosings of adjacent treads. Rectangular tread depth shall be 11 inches (279 mm) minimum measured horizontally between the vertical planes of the foremost projection of adjacent treads and at right angle to the tread's nosing. Winder treads shall have a minimum tread depth of 11 inches (279 mm) between the vertical planes of the foremost projection of adjacent treads at the intersections with the walkline and a minimum tread depth of 10 inches (254 mm) within the clear width of the stair.

Exceptions:

1. Alternating tread devices in accordance with Section 1009.13.
2. Ship ladders in accordance with Section 1009.14.
3. Spiral stairways in accordance with Section 1009.12.
4. Aisle stairs in assembly seating areas where the stair pitch or slope is set, for sightline reasons, by the slope of the adjacent seating area in accordance with Section 1028.11.2.
5. In Group R-1 bed and breakfast establishments; in Group R-3 occupancies; within dwelling units in Group R-2 occupancies; and in Group U occupancies that are accessory to Group R-3 occupancy, or accessory to individual dwelling units in Group R-2 occupancies; the maximum riser height shall be 8 ¼ inches (209.5 mm) and the minimum tread depth shall be 9 inches (229 mm); the minimum winder tread depth at the walkline shall be 10 inches (254 mm); and the minimum winder tread depth shall be 6 inches (152 mm). A nosing not less than ¾ inch (19.1 mm) but not more than 1 ¼ inches (32 mm) shall be provided on stairways with solid risers where the tread depth is less than 11 inches (279 mm).
6. The riser height and tread depth of existing stairways in buildings undergoing addition, alteration, repair, relocation or change of occupancy that involve the existing stairways shall be permitted to remain, provided the greatest riser height within any flight of stairs

shall not exceed the smallest by 3/8 inch and the greatest tread depth within any flight of stairs shall not exceed the smallest by 3/8 inch.

Any stairway replacing an existing stairway within a space where the pitch or slope cannot be reduced because of existing construction shall not be required to comply with the maximum riser height and minimum tread depth requirements.

7. In Group I-3 facilities, stairways providing access to guard towers, observation stations and control rooms, not more than 250 square feet (23 m²) in area, shall be permitted to have a maximum riser height of 8 inches (203 mm) and a minimum tread depth of 9 inches (229 mm).

(Amd) **1009.7.3 Winders.** Winder treads are not permitted in means of egress stairways except within a dwelling unit and within existing detached one- and two-family dwellings undergoing a change of occupancy to Group R-1 bed and breakfast establishments.

Exceptions:

1. Curved stairways in accordance with Section 1009.11.
2. Spiral stairways in accordance with Section 1009.12.

(Amd) **1009.9.2 Outdoor conditions.** Outdoor stairways and outdoor approaches to stairways shall be designed so that water will not accumulate on walking surfaces. In other than occupancies in Group R-3 and occupancies in Group U that are accessory to an occupancy in Group R-3, treads, platforms and landings that are part of exterior stairways in climates subject to snow and ice shall be protected to prevent the accumulation of same.

(Amd) **1009.15 Handrails.** Stairways shall have handrails on each side and shall comply with Section 1012. Where glass is used to provide the handrail, the handrail shall also comply with Section 2407.

Exceptions:

1. Handrails for aisle stairs provided in accordance with Section 1028.13.
2. Stairways within dwelling units, Group R-1 bed and breakfast establishments and spiral stairways are permitted to have a handrail on one side only.
3. Decks, patios and walkways that have a single change in elevation where the landing depth on each side of the change in elevation is greater than what is required for a landing do not require handrails.
4. In Group R-3 occupancies, a change in elevation consisting of a single riser at an entrance or egress door does not require handrails.
5. Changes in room floor elevations of three or fewer risers within dwelling units and sleeping units in Group R-1 bed and breakfast establishments and Groups R-2 and R-3 occupancies do not require handrails.

(Add) **1011.1.1 Accessible exits.** Where exit signs are required by Section 1011.1 of this code, accessible exit doors at the level of exit discharge that lead directly to accessible paths of exit discharge shall additionally be marked by the International Symbol of Accessibility. Such symbol shall be not less than 6 inches (152 mm) high and shall be incorporated into the required exit sign or shall be located directly adjacent to it. Such symbol shall meet the requirements of Section 1011.

(Amd) **1011.2 Floor-level exit signs.** Where exit signs are required from a room or space in Group R-1 occupancies, Group I-2 occupancies, and Group R-2 occupancies by Section 1011.1, additional low-level exit signs shall be provided at doors within exit access corridors serving guest rooms in Group R-1 occupancies, patient and client sleeping areas of Group I-2 occupancies and sleeping areas and dwelling units in Group R-2 occupancies and shall comply with Section 1011.5.

The bottom of the sign shall be not less than 10 inches (254 mm) nor more than 12 inches (305 mm) above the floor level. The sign shall be flush mounted to the door or wall on the same plane as the door. Where mounted on the wall, the edge of the sign shall be within 4 inches (102 mm) of the door frame on the latch side.

Exception: Group R-1 bed and breakfast establishments.

(Amd) **1012.9 Intermediate handrails.** Stairways shall have intermediate handrails located in such a manner that all portions of the stairway width exceeding 75 inches (1905 mm) required for egress capacity are within 30 inches (762 mm) of a handrail. On monumental stairs, handrails shall be located along the most direct path of egress travel.

(Amd) **1013.3 Height.** Required guards shall not be less than 42 inches (1067 mm) high, measured vertically as follows:

1. From the adjacent walking surfaces;
2. On stairs, from the line connecting the leading edges of the tread nosings; and
3. On ramps, from the ramp surface at the guard.

Exceptions:

1. For occupancies in Group R-3 not more than three stories above grade in height, and within individual dwelling units in occupancies in Group R-2 not more than three stories above grade in height with separate means of egress, required guards shall not be less than 36 inches (914 mm) in height measured vertically above the adjacent walking surfaces or adjacent fixed seating.
2. For occupancies in Group R-3, within individual dwelling units in occupancies in Group R-2, guards on the open sides of stairs shall have a height not less than 34 inches (864 mm) measured vertically from the leading edges of the treads.
3. For occupancies in Group R-1 bed and breakfast establishments, Group R-3, and within individual dwelling units in occupancies in Group R-2, where the top of the guard also serves as a handrail on the open sides of stairs, the top of the guard shall not be less than 34 inches (864 mm) and not more than 38 inches (965 mm) measured vertically from a line connecting the leading edges of the treads.
4. For occupancies in Group R-1 bed and breakfast establishments, level guards shall be not less than 36 inches (914 mm) high, measured vertically above the adjacent walking surface.
5. The guard height in assembly seating areas shall comply with Section 1028.14.
6. Along alternating tread devices and ship ladders, guards whose top rail also serves as a handrail, shall have height not less than 30 inches (762 mm) and not more than 34 inches (864 mm), measured vertically from the leading edge of the device tread nosing.

(Amd) **1013.4 Opening limitations.** Required guards shall not have openings which allow passage of a sphere 4 inches (102 mm) in diameter from the walking surface to the required guard height.

Exceptions:

1. From a height of 36 inches (914 mm) to 42 inches (1067 mm), guards shall not have openings which allow passage of a sphere 4 $\frac{3}{8}$ inches (111 mm) in diameter.
2. The triangular openings at the open side of a stair, formed by the riser, tread and bottom rail shall not allow passage of a sphere 6 inches (152 mm) in diameter.
3. At elevated walking surfaces for access to and use of electrical, mechanical or plumbing systems or equipment, guards shall not have openings which allow passage of a sphere 21 inches (533 mm) in diameter.
4. In areas that are not open to the public within occupancies in Group I-3, F, H or S, and for alternating tread devices and ship ladders, guards shall not have openings which allow passage of a sphere 21 inches (533 mm) in diameter.
5. In assembly seating areas, guards at the end of aisles where they terminate at a fascia of boxes, balconies and galleries shall not have openings which allow passage of a sphere 4 inches in diameter (102 mm) up to a height of 26 inches (660 mm). From a height of 26 inches (660 mm) to 42 inches (1067 mm) above the adjacent walking surfaces, guards shall not have openings which allow passage of a sphere 8 inches (203 mm) in diameter.
6. Within individual dwelling units and sleeping units in Group R-2 and R-3 occupancies, guards on the open sides of stairs shall not have openings which allow passage of a sphere 4 $\frac{3}{8}$ inches (111 mm) in diameter.
7. In Group R-1 bed and breakfast establishments, guards shall have balusters or ornamental patterns such that a 6-inch-diameter (152 mm) sphere cannot pass through any opening.

(Add) **1013.9 Retaining walls.** Retaining walls with a difference in finished grade from the top of the wall to the bottom of the wall that is greater than 4 feet (1219 mm) shall be provided with guards complying with Sections 1013.3, 1013.4 and 1607.8 when there is a walking surface, parking lot or driveway on the high side located closer than 2 feet (610 mm) to the retaining wall. For the purpose of this section, grass, planting beds or landscaped areas shall not be considered a walking surface.

(Amd) **1015.6 Day care means of egress.** Day care facilities, rooms or spaces where care is provided for more than 10 children who are 3 years of age or younger shall have access to not less than two exits or exit access doorways.

(Add) **1018.1.1 Group R-1 bed and breakfast establishments.** A fire-resistance rating is not required for corridors in Group R-1 bed and breakfast establishments. Doors leading from guest rooms into corridors or hallways in Group R-1 bed and breakfast establishments shall be equipped with self-closing devices.

(Add) **1020.3 Group M occupancies.** In mercantile occupancies other than bulk merchandising retail buildings, if the only means of customer entrance is through one exterior wall of a building, one-half of the required egress width from the street floor shall be located in such wall. For the purpose of this section, bulk merchandising retail building is defined as a building exceeding

12,000 square feet (1115 m²) in area in which the sales area includes the storage of combustible materials on pallets, in solid piles, or in racks in excess of 12 feet (3660 mm) in storage height.

(Amd) **1021.2 Exits from stories.** Two exits from any story or occupied roof shall be provided where one of the following conditions exists:

1. The occupant load or number of dwelling units exceeds one of the values in Table 1021.2(1) or 1021.2(2).
2. The exit access travel distance exceeds that specified in Table 1021.2(1) or 1021.2(2) as determined in accordance with the provisions of Section 1016.1.
3. Helistop landing areas located on buildings or structures shall be provided with two exits, or exit access stairways or ramps providing access to exits.

Exceptions:

1. Rooms, areas and spaces complying with Section 1015.1 with exits that discharge directly to the exterior at the level of exit discharge, are permitted to have one exit.
2. Group R-3 occupancy buildings shall be permitted to have one exit.
3. Parking garages where vehicles are mechanically parked shall be permitted to have one exit.
4. Air traffic control towers shall be provided with the minimum number of exits specified in Section 412.3.
5. Individual dwelling units in compliance with Section 1021.2.3.
6. Group R-3 and R-4 congregate residences shall be permitted to have one exit.
7. Exits serving specific spaces or areas need not be accessed by the remainder of the story when all of the following are met:
 - 7.1. The number of exits from the entire story complies with Section 1021.2.4;
 - 7.2. The access to exits from each individual space in the story complies with Section 1015.1; and
 - 7.3 All spaces within each portion of a story shall have access to the minimum number of approved independent exits based on the occupant load of that portion of the story, but not less than two exits.
8. Buildings of Group R-1 bed and breakfast establishments.

(Amd) **1022.5 Penetrations.** Penetrations into and openings through interior exit stairways and ramps are prohibited except for required exit doors, equipment and ductwork necessary for independent ventilation or pressurization, sprinkler piping, standpipes, electrical raceway for fire department communication and security systems and electrical raceway serving the interior exit stairway and ramp and terminating at a steel box not exceeding 16 square inches (0.010 m²). Such penetrations shall be protected in accordance with Section 714. There shall be no penetrations or communicating openings, whether protected or not, between adjacent interior exit stairways and ramps.

Exception: Membrane penetrations shall be permitted on the outside of the interior exit stairway and ramp. Such penetrations shall be protected in accordance with Section 714.3.2.

(Amd) **1023.6 Penetrations.** Penetrations into openings through an exit passageway are prohibited except for required exit doors, equipment and ductwork necessary for independent ventilation or pressurization, sprinkler piping, standpipes, electrical raceway for fire department communication and security systems and electrical raceway serving the exit passageway and terminating at a steel box not exceeding 16 square inches (0.010 m²). Such penetrations shall be protected in accordance with Section 714. There shall be no penetrations or communicating openings, whether protected or not, between adjacent exit passageways.

(Add) **1024.6 Statutory requirements for exit access corridors.** Pursuant to section 29-256d of the Connecticut General Statutes, in addition to means of egress illumination required by Section 1006, approved luminous egress path marking systems or devices shall be required in exit access corridors serving an occupant load greater than 30 in the following newly constructed occupancies:

1. Group A occupancies with a total occupant load greater than 300.
2. Group B medical occupancies.
3. Group E occupancies.
4. Group I-1 occupancies.
5. Group I-2 occupancies.
6. Group R-1 hotels and motels.
7. Group R-2 dormitories.

Exceptions:

1. Group E occupancies where each classroom has at least one door directly to the exterior and rooms for assembly purposes have at least one-half of the required means of egress doors opening directly to the exterior. Exterior doors specified in this exception are required to be at ground level.
2. In corridors or hallways located within Group R-1 and R-2 sleeping units or dwelling units.
3. Such systems shall not be required in existing buildings of any occupancy including those undergoing repair, addition, alteration or change of occupancy. In the case of an addition to an existing building, this exception also applies to the new construction.

(Add) **1024.6.1 Size and location.** Luminous egress path marking systems or devices shall be sized and located in exit access corridors as prescribed by Section 1024.2.4. In exit access corridors exceeding 120 inches (3048 mm), the marking shall be provided on both sides of the corridor.

(Add) **1024.6.2 Device or system requirements.** Luminous egress path marking systems or devices shall be listed and labeled and installed in accordance with the manufacturer's installation requirements. Self-luminous and photoluminescent egress path markings shall comply with Sections 1024.4 and 1024.5. Such systems shall not incorporate arrows, chevrons, signs or

alternating lighting patterns designed or intended to lead an occupant to any one specific exit in preference over another exit.

Exception: Systems incorporating arrows, chevrons, signs or alternating lighting patterns designed or intended to lead an occupant in any one specific direction shall be permitted in common paths of travel and dead end corridors.

(Add) **1024.6.3 Illumination.** Luminous egress path marking systems or devices shall be continuously illuminated or shall illuminate within 10 seconds in the event of power failure. Illumination shall be maintained for a period of not less than 90 minutes following loss of power to the corridor within which the system or device is located.

(Add) **1027.3.1 Remoteness.** Where two or more doors leading to exit discharge are required, a minimum of two such doors shall be placed a distance apart equal to not less than one-third of the length of the maximum overall diagonal dimension of the building served, measured in a straight line between doors. Additional doors leading to exit discharge shall be arranged a reasonable distance apart so that if one becomes blocked, the others will be available.

(Amd) **1028.2 Assembly main exit.** Pursuant to Section 29-381a of the Connecticut General Statutes, in a building, room or space used for assembly purposes and is provided with a single main entrance/exit, the main exit shall be of sufficient width to accommodate not less than two-thirds of the occupant load, but such width shall not be less than the total required width of all means of egress leading to the exit. This applies to Group A occupancies that are newly constructed, have an increase in the number of occupants by addition or alteration or are created by change of occupancy. Where the building is classified as a Group A occupancy, the main exit shall front on at least one street or an unoccupied space of not less than 10 feet (3048 mm) in width that adjoins a street or public way. In a building, room or space used for assembly purposes where there is no well-defined main entrance/exit or where multiple main entrance/exits are provided, exits shall be permitted to be distributed around the perimeter of the building provided that the total width of egress is not less than 100 percent of the required width.

(Amd) **1028.12 Seat stability.** In a building, room or space used for assembly purposes, the seats shall be securely fastened to the floor.

Exceptions:

1. In a building, room or space used for assembly purposes or portions thereof without ramped or tiered floors for seating and with 200 or fewer seats.
2. In a building, room or space used for assembly purposes or portions thereof with seating at tables and without ramped or tiered floors for seating.
3. In a building, room or space used for assembly purposes or portions thereof without ramped or tiered floors for seating and with greater than 200 seats, the seats shall be fastened together in groups of not less than three or the seats shall be fastened to the floor.
4. In a building, room or space used for assembly purposes or portions thereof where flexibility of the seating arrangement is an integral part of the design and function of the space and seating is on tiered levels, a maximum of 200 seats shall not be required to be fastened to the floor. Plans showing the seating, tiers and aisles shall be submitted for approval.

5. Groups of seats within a building, room or space used for assembly purposes separated from other seating by railings, guards, partial height walls or similar barriers with level floors and having no more than 14 seats per group shall not be required to be fastened to the floor.
6. Seats intended for musicians or other performers and separated by railings, guards, partial height walls or similar barriers shall not be required to be fastened to the floor.

(Add) **1029.1.1 Group E occupancies.** In Group E occupancies, emergency escape and rescue openings shall be provided in every room or space greater than 250 square feet used for classroom or educational purposes or normally subject to student occupancy.

Exceptions:

1. Buildings protected throughout by an approved automatic sprinkler system in accordance with section 903.3.1.1.
2. Rooms or spaces that have a door leading directly to the outside of the building.

(Add) **1029.1.2 Group I-4 occupancies.** In Group I-4 occupancies, emergency escape and rescue openings shall be provided in every room or space greater than 250 square feet normally subject to client occupancy.

Exceptions:

1. Buildings protected throughout by an approved automatic sprinkler system in accordance with Section 903.3.1.1.
2. Rooms or spaces that have a door leading directly to the outside of the building.

(Amd) **1029.2.1 Minimum dimensions.** The minimum net clear opening height dimension shall be 24 inches (610 mm). The minimum net clear opening width dimension shall be 20 inches (508 mm). The net clear opening dimensions shall be the result of normal operation of the opening.

Exception: In existing buildings undergoing a change of occupancy to Group R-1 bed and breakfast establishments, the net clear opening dimensions may be obtained by removal of the sash without the use of a key or tool provided that the instructions for the removal of the sash are clearly posted on the inside of the guest room door.

(Amd) **1029.3 Maximum height from floor.** Emergency escape and rescue openings shall have the bottom of the clear opening not greater than 44 inches (1118 mm) measured from the floor.

Exception: In an existing building undergoing a change of use, the 44-inch (1118 mm) maximum height may be measured vertically above a fixed, permanent platform, step or steps whose minimum width shall equal or exceed the operable width of the opening and shall be centered on such opening. Any stairs or steps shall comply with Section 1009.7.

CHAPTER 11 – ACCESSIBILITY

(Add) **1102.1.1 Definitions.** Add the following definitions:

(Add) **COMPLEX.** For application of accessibility requirements, this term means any group of buildings located on a single parcel of land or on contiguous parcels of land or any building or group of buildings that are subdivided into separate occupancies and planned, financed, constructed or promoted by common management for the purpose of sale or lease of the entire complex or any subdivision thereof, except any single-family detached dwelling.

(Add) **STORY.** For application of accessibility requirements, this term means that part of a building comprised between a floor and the floor or roof next above.

(Add) **STREET FLOOR.** For application of accessibility requirements, this term means the floor nearest the level of exit discharge.

(Amd) **1103.2.11 Group R-1 bed and breakfast establishments.** Group R-1 bed and breakfast establishments are not required to be accessible.

(Add) **1103.2.16 Statutory requirements.** The following additional exceptions to requirements for accessibility are in accordance with section 29-274 of the Connecticut General Statutes:

1. Accessibility shall not be required in renovations, additions or alterations to stories in existing buildings above the street floor being converted to Group B provided each story above the street floor contains less than 3,000 square feet of total gross area per floor and the street floor is renovated or altered to provide accessibility to persons with disabilities. This provision shall not apply to stories above the street floor that include the offices of health care providers, municipal or state agencies or passenger transportation facilities or offices located in airport terminals.
2. Buildings and structures of any occupancy not otherwise exempted from the requirements of this chapter shall be exempt if each story above and below the street floor contains less than 3,000 square feet of total gross area and the street floor is designed, renovated or altered to provide accessibility to persons with disabilities. This provision shall not apply to stories above or below the street floor that include the offices of health care providers, municipal or state agencies or passenger transportation facilities or offices located in airport terminals or mercantile facilities having five or more tenant spaces.

(Add) **1103.2.17 Mezzanines.** Mezzanines having fewer than 3,000 square feet of gross floor area, either singly or in the aggregate for multiple mezzanines on any floor are not required to be accessible and are not required to be located on an accessible route, provided that the goods and services available on any mezzanine shall be available in accessible areas.

(Amd) **1104.1 Site arrival points.** Accessible routes within the site shall be provided from public transportation stops, accessible parking and accessible passenger loading zones and public streets or sidewalks to the accessible building entrance served. Where an accessible route must cross speed bumps or vehicle wheel stops, there shall be a minimum clear passage width not less than 32 inches.

Exception: Other than in buildings or facilities containing or serving Type B units, an accessible route shall not be required between site arrival points and the building or facility entrance if the only means of access between them is a vehicular way not providing for pedestrian access.

(Amd) **1104.4 Multilevel buildings and facilities.** At least one accessible route shall connect each accessible level, including mezzanines, in multi-level buildings and facilities.

Exceptions:

1. An accessible route is not required to stories and mezzanines that comply with Sections 1103.2.16 and 1103.2.17, respectively.

2. Levels that do not contain accessible elements or other spaces required by Section 1107 or 1108 are not required to be served by an accessible route from an accessible level.
3. In air traffic control towers, an accessible route is not required to serve the cab and the floor immediately below the cab.
4. Where a two-story building or facility has one story with an occupant load of five or fewer persons that does not contain public use space, that story shall not be required to be connected by an accessible route to the story above or below.
5. Vertical access to elevated employee work stations within a courtroom is not required at the time of initial construction, provided a ramp, lift or elevator can be installed without requiring reconfiguration or extension of the courtroom or extension of the electrical system.

(Add) **1105.2 Automatic entrances.** Pursuant to section 29-270a of the Connecticut General Statutes, at least one primary entrance to any covered mall building, anchor store or retail business (Group M) with more than 50,000 square feet of floor space shall be equipped with an automatically operating door or doors in sequence, installed in accordance with applicable provisions of this code. Where controls for automatic doors are provided they shall be in an accessible location outside the swing of the door, located within a space that is a minimum of 5 feet in length and 3 feet in width that has a surface gradient of not more than one unit vertical in 50 units horizontal (1:50), within 10 feet of the entrance and set at a maximum height of 30 inches above the walking surface.

Exception: Nothing in this section shall require the installation of an automatically operating door in a primary entrance which is open and unobstructed by any door during the hours the retail business is open to the public.

(Add) **1106.1.1 Automobile accessible parking spaces.** Pursuant to subsection (h) of section 14-253a of the Connecticut General Statutes, parking spaces for passenger motor vehicles designated for persons who are blind and persons with disabilities shall be as near as possible to a building entrance or walkway and shall be 15 feet wide including 5 feet of cross hatch.

(Amd) **1106.2 Groups R-2 and R-3.** At least two percent, but not less than one, of each type of parking space provided for occupancies in Groups R-2 and R-3, which are required to have Accessible, Type A or Type B dwelling or sleeping units, shall be accessible. Where parking is provided within or beneath a building, accessible parking spaces shall also be provided within or beneath the building.

Exception: Private parking garages within or beneath the building that contain no more than two parking spaces, that are reserved for the exclusive use of a specific dwelling unit and are directly accessed from that dwelling unit are not required to be accessible.

(Amd) **1106.5 Van spaces.** For every six or fraction of six accessible parking spaces, at least one shall be a van-accessible parking space. Each public parking garage or terminal shall have a minimum of two van-accessible parking spaces complying with this section.

Exception: In Group R-2 and R-3 occupancies, van-accessible spaces located within private garages shall be permitted to have vehicular routes, entrances, parking spaces and access aisles with a minimum vertical clearance of 7 feet.

(Add) **1106.5.1 Van accessible parking spaces.** Pursuant to subsection (h) of section 14-253a of the Connecticut General Statutes, parking spaces for passenger vans designated for persons who are blind and persons with disabilities shall be as near as possible to a building entrance or walkway and shall be 16 feet wide including 8 feet of cross hatch.

(Add) **1106.5.1.1 Van access clearance.** Pursuant to subsection (i) of section 14-253a of the Connecticut General Statutes, each public parking garage or terminal shall have 8 feet 2 inches vertical clearance at a primary entrance and along the route to at least two parking spaces for passenger vans that conform to Section 1106.5.1 and that have 8 feet 2 inches of vertical clearance.

(Amd) **1107.6.2.1.1 Type A units.** In occupancies in Group R-2 containing more than 20 dwelling units or sleeping units, at least 10 percent of the units shall be a Type A unit in accordance with ICC/ANSI A117.1-2003. All R-2 units on the site, within the building or within the complex, shall be considered to determine the total number of units and the required number of Type A units. Type A units shall be dispersed among the various classes of units.

Exceptions:

1. The number of Type A units is permitted to be reduced in accordance with Section 1107.7.
2. Existing Group R-2 buildings or structures on a site or within a complex shall not contribute to the total number of units on a site.

(Amd) **1107.7.2 Multistory units.** A multistory dwelling or sleeping unit which is not provided with elevator service is not required to be a Type B unit. Where a multistory unit is provided with external elevator service to only one floor, the floor provided with elevator service shall be the primary entrance to the unit and shall comply with the requirements for a Type B unit, providing provisions for living, sleeping, eating, cooking and a complete toilet and bathing facility on that floor. Where a multistory unit is provided with external elevator service to more than one floor of the unit, one floor shall be the primary entrance to the unit and shall comply with the requirements for a Type B unit, providing provisions for living, sleeping, eating, cooking and a complete toilet and bathing facility on that floor.

(Add) **1109.2.2.1 Pull handle.** Where accessible water closet compartments or single occupancy toilet rooms are provided, the compartment or room doors shall have a pull handle mounted 6 inches from the hinge side on the compartment or room side of the door. This handle shall be between 26 inches and 36 inches from the floor and shall meet the requirements of Section 404.2.6 of ICC/ANSI A117.1.

Exceptions:

- 1.) Compartments or rooms with self-closing, self-latching doors.
- 2.) Doors that swing into the compartment or room.

(Del) **1109.2.3 Lavatories.** Delete in its entirety and replace with the following:

(Add) **1109.2.3 Single occupancy toilet.** Required accessible toilet rooms designed for single occupancy in other than Group R shall meet the requirements of ICC/ANSI A117.1. Each such room shall contain both toilet and lavatory, shall have a lever handle privacy lockset and shall have an emergency call system that actuates a visible and audible alarm in a normally occupied area. An alarm pull switch, identified with emergency instruction, shall be provided within 3 feet

of the water closet with a pull cord extending to within 12 inches of the floor. Emergency instructions shall be provided outside the toilet room at the normally occupied location.

(Add) **1109.2.4 Faucets and controls.** The controls to operate a faucet shall be located no more than 25 inches from the front face of a lavatory, kitchen sink, counter or vanity. At least one lavatory per gender per toilet room shall have its faucet and soap dispenser control located within 13 inches or, if automatic, shall be activated within a reach depth of 13 inches from the face of the fixture or vanity front. Water and soap flow shall be provided with a reach depth of 13 inches maximum. Lavatory faucets on accessible fixtures shall comply with the requirements of ICC/ANSI A117.1.

(Add) **1109.8.1 Limited-use/limited-application elevators.** Limited-use/limited-application elevators shall be permitted to be installed in new construction in the same locations specified in Section 1109.8. Limited-use/limited-application elevators shall be installed in accordance with the Connecticut Safety Code for Elevators and Escalators, adopted under authority of section 29-192 of the Connecticut General Statutes and with regulations adopted under authority of section 29-200 of the Connecticut General Statutes.

(Add) **1109.16 Automated teller machines.** Where automated teller machines are provided for pedestrian use at any site, at least one location and one automated teller machine shall be accessible.

(Amd) **1110.1 Signs.** Required accessible elements shall be identified by the International Symbol of Accessibility at the following locations:

1. Accessible parking spaces as required by Section 1106. Pursuant to subsection (h) of section 14-253a of the Connecticut General Statutes, such spaces shall be designated by above-grade signs with white lettering against a blue background and shall bear the words "RESERVED PARKING PERMIT REQUIRED" and "VIOLATORS WILL BE FINED" in addition to the International Symbol of Accessibility. When such a sign is replaced, repaired or erected, it shall indicate the minimum fine for a violation of subsection (l) of section 14-253a of the Connecticut General Statutes. Such indicator may be in the form of a notice affixed to such sign. Newly installed signs shall be 60 inches (1525 mm) minimum above the floor or ground of the parking space, measured to the bottom of the sign.
2. Accessible passenger loading zones.
3. Accessible rooms where multiple single-user toilet or bathing rooms are clustered at a single location.
4. Accessible entrances where not all entrances are accessible.
5. Accessible check-out aisles where not all aisles are accessible. The sign, where provided, shall be above the check-out aisle in the same location as the check-out aisle number or type of check-out identification.
6. Family or assisted-use toilet and bathing rooms and single occupancy toilet rooms.
7. Accessible dressing, fitting and locker rooms where not all such rooms are accessible.
8. Accessible areas of refuge required by Section 1007.9.

9. Exterior areas for assisted rescue in accordance with Section 1007.9.
10. Accessible portable toilet and bathing units.
11. Accessible means of egress stairways.
12. Accessible grade level exits required by Section 1011.1.2.

(Add) **1110.5 Interior signage.** Interior signs, when provided, that designate permanent rooms and spaces shall be raised text characters and Braille, designed and located in accordance with ICC/ANSI A117.1. Mounting location for signage shall be such that any person approaching the signage will not encounter protruding objects, or stand within the swing of any door.

CHAPTER 12 – INTERIOR ENVIRONMENT

(Amd) **1203.2 Attic space.** Enclosed attics and enclosed rafter spaces formed where ceilings are applied directly to the underside of roof framing members shall have cross ventilation for each separate space by ventilation openings protected against the entrance of rain and snow. Blocking and bridging shall be arranged so as not to interfere with the movement of air. An airspace of not less than 1 inch (25 mm) shall be provided between the insulation and the roof sheathing. The net free ventilating area shall not be less than 1/150th of the area of the space ventilated.

Exceptions:

1. The net free cross-ventilation area shall be permitted to be reduced to 1/300 provided that not less than 50 percent and not more than 80 percent of the required ventilating area provided by ventilators located in the upper portion of the space to be ventilated is at least 3 feet (914 mm) above eave or cornice vents with the balance of the required ventilation provided by eave or cornice vents.
2. The net free cross-ventilation area may be reduced to 1/300 where a Class I or II vapor barrier is installed on the warm-in-winter side of the ceiling.
3. Unvented attic and unvented enclosed rafter assemblies shall comply with section R806.5 of the International Residential Code as amended.

CHAPTER 15 – ROOF ASSEMBLIES AND ROOFTOP STRUCTURES

(Amd) **TABLE 1507.2.7.1(1)**
CLASSIFICATION OF ASPHALT ROOF SHINGLES PER ASTM D 7158^a

NOMINAL DESIGN WIND SPEED, V_{asd} FROM APPENDIX N (mph)	CLASSIFICATION REQUIREMENT
85	D, G or H
90	D, G or H
100	G or H
110	G or H
120	G or H
130	H
140	H
150	H

For SI: 1 foot = 304.8 mm; 1 mph = 0.447 m/s.

a. The standard calculations contained in ASTM D 7158 assume exposure category B or C and building height of 60 feet or less. Additional calculations are required for conditions outside of these assumptions.

(Amd) **TABLE 1507.2.7.1(2)**
CLASSIFICATION OF ASPHALT ROOF SHINGLES PER ASTM D 3161

NOMINAL DESIGN WIND SPEED, V_{asd} APPENDIX N (mph)	CLASSIFICATION REQUIREMENT
85	A, D or F
90	A, D or F
100	A, D or F
110	F
120	F
130	F
140	F
150	F

For SI: 1 mph = 0.447 m/s.

(Amd) **1507.11.1 Slope.** Modified bitumen membrane roofs shall have a design slope of a minimum of one-fourth unit vertical in 12 units horizontal (2-per cent slope) for drainage.

Exception: A minimum design slope of one-eighth unit vertical in 12 units horizontal shall be permitted when the following two conditions are met:

1. The roofing material is warranted/guaranteed by both the roofing material manufacturer and the roofing installer for the proposed slope.
2. The registered design professional responsible for the design of the roof structure certifies that the roof structure is designed to support all loads, including any additional loads resultant to the reduced slope.

(Amd) **1507.12.1 Slope.** Thermoset single ply membrane roofs shall have a design slope of a minimum of one-fourth unit vertical in 12 units horizontal (2-per cent slope) for drainage.

Exception: A minimum design slope of one-eighth unit vertical in 12 units horizontal shall be permitted when the following two conditions are met:

1. The roofing material is warranted/guaranteed by both the roofing material manufacturer and the roofing installer for the proposed slope.
2. The registered design professional responsible for the design of the roof structure certifies that the roof structure is designed to support all loads, including any additional loads resultant to the reduced slope.

(Amd) **1507.13.1 Slope.** Thermoplastic single ply membrane roofs shall have a design slope of a minimum of one-fourth unit vertical in 12 units horizontal (2-per cent slope) for drainage.

Exception: A minimum design slope of one-eighth unit vertical in 12 units horizontal shall be permitted when the following two conditions are met:

1. The roofing material is warranted/guaranteed by both the roofing material manufacturer and the roofing installer for the proposed slope.
2. The registered design professional responsible for the design of the roof structure certifies that the roof structure is designed to support all loads, including any additional loads resultant to the reduced slope.

CHAPTER 16 – STRUCTURAL DESIGN

(Amd) **1603.1.3 Roof snow load data.** The ground snow load, P_g , shall be indicated. In areas where the ground snow load, P_g , exceeds 10 pounds per square foot (psf) (0.479 kN/m²), the following additional information shall also be provided, regardless of whether snow loads govern the design of the roof:

1. Flat-roof snow load, P_f .
2. Snow exposure factor, C_e .
3. Snow load importance factor, I .
4. Thermal factor, C_t .
5. Drift surcharge loads, P_d .
6. Width of snow drifts, W .
7. Existing roofs. Confirmation that existing adjacent lower roofs have been evaluated for increased snow loads and/or owners of existing adjacent lower roofs have been advised of the potential for increased snow loads as required by Section 7.12 of ASCE 7.

TABLE 1607.1 MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS, L_o , AND MINIMUM CONCENTRATED LIVE LOADS^a

(Del)	5. Balconies and decks ^h	Same as occupancy served	-----
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Delete row 5 in its entirety and replace with the following:

(Add)	5. Balconies and decks ^h	1.5 times the live load for the area served. Not required to exceed 100 psf.	-----
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(Add) **1607.3.1 Group R-1 bed and breakfast establishments.** Live loads shall comply with the requirements of Table 1607.1 for one- and two-family dwellings.

(Add) **1608.1.1 Flat roof snow loads.** The flat roof snow load, p_f , on a roof with a slope equal to or less than 30 degrees (1 inch per foot = 4.76 degrees) shall be calculated in accordance with Section 7.3 of ASCE-7. The calculated value of p_f shall not be less than 30 pounds per square foot. The calculated value of p_f without the 30 pounds per square foot minimum requirement shall be used to determine partial loading effects, unbalanced snow loads, snow drifting loads, roof projections and parapets, and snow sliding loads in accordance with Sections 7.5, 7.6, 7.7, 7.8 and 7.9 of ASCE-7.

(Add) **1608.1.2 Sloped roof snow loads.** The snow load, p_s , on a roof with a slope greater than 30 degrees (1 inch per foot = 4.76 degrees) shall be calculated in accordance with Section 7.4 of ASCE-7. The value of p_f used in such calculation shall not be less than 30 pounds per square foot. Values for “unobstructed slippery roofs” in Figure 7-2 of ASCE-7 shall not be utilized, unless approved by the building official.

(Amd) **1608.2 Ground snow loads.** Ground snow loads to be utilized in determining the design snow loads for roofs shall be as listed in Appendix N.

(Amd) **1609.3 Basic wind speed.** The ultimate design wind speed, V_{ult} , in mph, for the determination of the wind loads shall be determined by Appendix N.

(Amd) **1612.3 Establishment of flood hazard areas.** Flood hazard areas shall be established locally by methods lawfully adopted by the town, city or borough.

(Amd) **1613.3.1 Mapped acceleration parameters.** The parameters S_s and S_1 shall be determined from the 0.2 and 1-second spectral response accelerations shown in Appendix N.

CHAPTER 17 - SPECIAL INSPECTIONS AND TESTS

(Amd) **1704.2.4 Report requirement.** Special inspectors shall keep records of inspections. The special inspector shall furnish inspections reports to the building official and to the registered design professional in responsible charge. Reports shall indicate that work inspected was or was not completed in conformance to approved construction documents. Discrepancies shall be brought to the immediate attention of the contractor for correction. If they are not corrected, the discrepancies shall be brought to the attention of the building official and to the registered design professional in responsible charge prior to the completion of that phase of the work. A final report of inspections documenting completion of all required special inspections and correction of any discrepancies noted in the inspections shall be submitted prior to the issuance of the Certificate of Occupancy. Interim reports shall be submitted periodically at the frequency agreed upon by the permit applicant and the building official prior to the start of work.

(Amd) **1704.2.5.2 Fabricator approval.** Special inspections required by Section 1705 shall be permitted to be reduced or eliminated when approved by the registered design professional in responsible charge where the work is done on the premises of a fabricator registered and approved to perform such work without special inspection. Approval shall be based upon review of the fabricator's written procedural and quality control manuals and periodic auditing of fabrication practices by an approved special inspection agency. Approved fabricators shall include:

1. A fabricator of structural steel certified by the American Institute of Steel Construction Inc.'s Certification Program for Structural Steel Fabricators, Standard for Steel Building Structures.
2. A manufacturer of metal building systems accredited by the ICC International Accreditation Service (IAS) in accordance with accreditation criteria IAC-AC-472.
3. A manufacturer of K-, LH-, or DLH-Series Joist or Joist Girders who is a member of the Steel Joist Institute and has completed the Institute's examination of complete engineering design details and calculations of joists, bridging and accessories for which standards have been adopted; data obtained from physical tests of joists to verify conclusions from analysis of the applicant company's engineering design, details and calculations; an initial plant inspection and subsequent periodic inspections are required to ensure that the applicant/member company possesses the facilities, equipment and personnel required to properly fabricate Joists.
4. A fabricator of precast concrete certified by the Precast/Prestressed Concrete Institute's Plant Certification Program, commercial category.
5. A fabricator of cold-formed steel trusses certified by the Truss Plate Institute's Quality Assurance Program.
6. A fabricator of wood trusses certified by the Truss Plate Institute's Quality Assurance Program.
7. A fabricator of structural timber components and assemblies certified by the American Institute of Timber Construction's AITC 115 – Standard for Fabricated Structural Glued Laminated Timber Components and Assemblies.

At the completion of fabrication, the approved fabricator shall submit a certificate of compliance to the building official stating that the work was performed in accordance with the approved construction documents.

(Amd) **1704.5.2 Structural observations for wind requirements.** Structural observations shall be provided for those structures sited where V_{asd} as determined in accordance with Appendix N exceeds 110 mph (49 m/sec), where one or more of the following conditions exist:

1. The structure is classified as Risk Category III or IV in accordance with Table 1604.5.
2. The building height of the structure is greater than 75 feet (22 860 mm).
3. When so designated by the registered design professional responsible for the structural design.
4. When such observation is specifically required by the building official.

(Amd) **1705.2.2.2. Cold-formed steel trusses.** Where a cold-formed steel truss clear span is 30 feet (9,144 mm) or greater, the special inspector shall verify that the permanent individual truss member restraint/bracing is installed in accordance with the approved truss submittal package. Where a cold-formed steel truss clear span is 60 feet (18,288 mm) or greater, the special inspector shall verify that the temporary installation restraint/bracing and the permanent individual truss member restraint/bracing are installed in accordance with the approved truss submittal package.

(Amd) **1705.5.2. Metal-plate-connected wood trusses.** Where a truss clear span is 30 feet (9,144 mm) or greater, the special inspector shall verify that the permanent individual truss member restraint/bracing is installed in accordance with the approved truss submittal package. Where a truss clear span is 60 feet (18,288 mm) or greater, the special inspector shall verify that the temporary installation restraint/bracing and the permanent individual truss member restraint/bracing are installed in accordance with the approved truss submittal package.

CHAPTER 18 – SOILS AND FOUNDATIONS

(Amd) **1803.5.7 Excavation near foundations.** Where excavation will reduce support from any foundation, a registered design professional shall prepare an assessment of the structure as determined from examination of the structure, the review of available design documents and, if necessary, excavation of test pits. The registered design professional shall determine the requirements for underpinning and protection and prepare site-specific plans, details, and sequence of work for submission. Such support shall be provided by underpinning, sheeting, and bracing, or by other means acceptable to the building official.

(Amd) **1804.1 Excavation near foundations.** Excavation for any purpose shall not reduce lateral support from any foundation or adjacent foundation without first underpinning or protecting the foundation against detrimental lateral or vertical movement, or both.

(Add) **1804.7 Underpinning.** Where underpinning is chosen to provide the protection or support of adjacent structures, the underpinning system shall be designed and installed in accordance with provisions of this chapter and chapter 33.

(Add) **1804.7.1 Underpinning sequencing.** Underpinning shall be installed in a sequential manner that protects the neighboring structure and the working construction site. The sequence of installation shall be identified in the approved construction documents.

(Amd) **Table 1806.2 PRESUMPTIVE LOAD-BEARING VALUES**

CLASS OF MATERIALS	VERTICAL FOUNDATION PRESSURE (pfs)	LATERAL BEARING PRESSURE (psf/ft below natural grade)	LATERAL SLIDING RESISTANCE	
			Coefficient of friction ^a	Cohesion (psf) ^b
1. Crystalline bedrock	100,000	1,200	0.6	----
2. Sedimentary and foliated rock	20,000	400	0.35	----
3. Cemented sand, gravel, silt, clay (hard pan)	8,000	300	0.35	----
4. Sandy gravel and/or gravel (GW and GP)	6,000	200	0.35	----
5. Sand, silty sand, clayey sand, silty gravel and clayey gravel (SW, SP, SM, SC, GM, and GC)	4,000	150	0.25	----
6. Clay, sandy clay, silty clay, clayey silt, silt and sandy silt (CL, ML, MH, and CH)	1,500	100	----	130

For SI: 1 pound per square foot = 0.0479 kPa, 1 pound per square foot per foot = 0.157 kPa/m

a. Coefficient to be multiplied by the dead load.

b. Cohesion value to be multiplied by the contact area, as limited by Section 1806.3.2

(Add) **1807.2.1.1 Guards.** Retaining walls with a difference in finished grade from the top of the wall to the bottom of the wall that is greater than 4 feet (1219 mm) shall be provided with guards complying with Sections 1013.3, 1013.4 and 1607.8 when there is a walking surface, parking lot or driveway on the high side located closer than 2 feet (610 mm) to the retaining wall. For the purpose of this section, grass, planting beds or landscaped areas shall not be considered a walking surface.

(Add) **1808.3.2 Surcharge.** No fill or other surcharge loads shall be placed adjacent to any building or structure unless such building or structure is capable of withstanding the additional loads caused by the fill or the surcharge. Existing footings or foundations that will be affected by any excavation shall be underpinned or otherwise protected against settlement and shall be protected against detrimental lateral or vertical movement or both.

Exception: Minor grading for landscaping purposes shall be permitted where done with walk-behind equipment, where the grade is not increased more than 1 foot (305 mm) from original design grade or where approved by the building official.

(Amd) **1809.4 Depth of footings.** The minimum depth of footings below the undisturbed ground surface shall be in accordance with Section 1809.5. The minimum width of footings shall be 12 inches (305 mm).

(Amd) **1809.5 Frost protection.** Except where otherwise protected from frost, foundations and other permanent supports of buildings and structures shall be protected from frost by one or more of the following methods:

1. Extending a minimum of 42 inches below finished grade;
2. Constructing in accordance with ASCE 32; or

3. Erecting on solid rock.

Exception: Free-standing buildings or structures meeting all of the following conditions shall not be required to be protected:

1. Assigned to Risk Category I, in accordance with Section 1604.5;
2. Area of 600 square feet (56 m²) or less for light frame construction or 400 square feet (37 m²) or less for other than light-frame construction; and
3. Eave height of 10 feet (3048 mm) or less.

Shallow foundations shall not bear or be installed on frozen soil.

CHAPTER 23 – WOOD

(Add) **2303.1.1.3 Ungraded lumber.** Pursuant to section 29-256b of the Connecticut General Statutes, the use of ungraded lumber shall be allowed in Group U Utility and Miscellaneous structures in accordance with Section 312.

CHAPTER 24 – GLASS AND GLAZING

(Amd) **2407.1.2 Support.** Each handrail or guard shall be supported by a minimum of three glass balusters or shall be otherwise supported to remain in place should one baluster panel fail. Glass balusters shall not be installed without an attached handrail or guard.

CHAPTER 27 – ELECTRICAL

(Add) **2702.2.21 Electric fire pumps.** Buildings provided with standby electrical power for the purpose of continuing operations or occupancy shall provide standby power in accordance with Article 701 of the National Electrical Code for any electric fire pump installed to provide an adequate water supply or minimum operating pressure to a required automatic sprinkler system.

(Amd) **2702.3 Maintenance.** Emergency and standby power systems shall be maintained and tested in accordance with the Connecticut State Fire Prevention Code.

CHAPTER 28 - MECHANICAL SYSTEMS

(Amd) **2801.1 Scope.** Mechanical appliances, equipment and systems shall be constructed, installed and maintained in accordance with this chapter, the International Mechanical Code and applicable statutes and regulations as set forth in Section 101.4 of this code. Masonry chimneys, fireplaces and barbeques shall comply with Chapter 21 and the International Mechanical Code.

(Add) **2801.2 Space heaters.** Space heaters shall comply with the requirements of sections 29-318, 29-318a, 29-318b and 29-318c of the Connecticut General Statutes, and the regulations adopted by the Commissioner of Consumer Protection under authority of section 29-318c of the Connecticut General Statutes.

CHAPTER 29 – PLUMBING FIXTURES

(Amd) **2901.1 Scope.** The provisions of this chapter and the International Plumbing Code shall govern the erection, installation, alteration, repairs, relocation, replacement, addition to, use or maintenance of plumbing equipment and systems. Toilet and bathing rooms shall be constructed

in accordance with Section 1210. Plumbing systems and equipment shall be constructed, installed and maintained in accordance with the International Plumbing Code. Private sewage disposal systems shall be designed and installed in accordance with the Public Health Code adopted under authority of section 19a-36 of the Connecticut General Statutes. Approval of such systems shall be by the local authority having jurisdiction. When such approval is required by the local authority having jurisdiction, written proof of such approval shall be submitted to the building official prior to issuance of a building permit.

(Amd) **2902.1 Minimum number of fixtures.** Plumbing fixtures shall be provided for the type of occupancy and in the minimum number shown in Table 2902.1. Types of occupancies not shown in Table 2902.1 shall be considered individually by the building official. The number of occupants shall be determined by this code. Occupancy classification shall be determined in accordance with Chapter 3.

Exceptions:

1. The following minimum fixtures shall be provided in Group R-1 bed and breakfast establishments: Water closets – one per two guest rooms; lavatories – one per two guest rooms; bathtubs/showers – one per two guest rooms. Plumbing fixtures in Group R-1 bed and breakfast establishments shall be permitted to be accessed from hallways and corridors and to be shared by guests.
2. Child washing and diaper changing facilities shall be permitted in lieu of bathtubs or showers in Group I-4 child care occupancies.

CHAPTER 30 - ELEVATORS AND CONVEYING SYSTEMS

(Add) **3001.1.1 Equipment regulated by statute.** All elevators, dumbwaiters, material lifts, vertical and inclined platform lifts, inclined stairway chairlifts, limited-use/limited-application elevators and escalators, including existing systems, shall comply with regulations adopted by the Commissioner of Administrative Services pursuant to chapter 538 of the Connecticut General Statutes. Where the provisions of this chapter conflict with other statutory or regulatory provisions, such other requirements shall prevail.

CHAPTER 31 - SPECIAL CONSTRUCTION

(Amd) **3102.1 General.** The provisions of this section shall apply to air-supported, air-inflated, membrane-covered-cable and membrane-covered-frame structures, collectively known as membrane structures, erected for a period of 180 days or longer. Those erected for a shorter time shall comply with Section 3103.5. Membrane structures covering water storage facilities, water clarifiers, water treatment plants, sewage treatment plants, greenhouses and similar facilities not used for human occupancy, are required to meet only the requirements of Sections 3102.3.1 and 3102.7. Membrane structures erected on a building, balcony, deck or other structure shall comply with this section.

(Add) **3102.3.1.1 Label.** Tents and membrane structures shall have a permanently affixed label which shall identify the size of the structure and the fabric or material type.

(Add) **3102.3.1.2 Certification.** An affidavit or affirmation shall be submitted to the building official. The affidavit or affirmation shall attest to the following information relative to the flame resistance of the fabric:

1. Names and addresses of the owners of the tent, canopy or membrane structure.

2. Date the fabric was last treated with flame-resistant solution.
3. Trade name or kind of chemical used in the treatment.
4. Name of person or firm treating the material.
5. Name of testing agency and test standard by which the fabric was tested.

(Add) **3102.9 Spot lighting.** Spot or effect lighting shall only be by electricity, and all combustible construction located within 6 feet (1829 mm) of such equipment shall be protected with approved noncombustible insulation not less than 9¼ inches (235 mm) thick.

(Add) **3102.10 Heating and cooking equipment.** Heating and cooking equipment shall be in accordance with Section 3104.15 of the State Fire Safety Code.

(Add) **3102.11 LP-gas.** The storage, handling and use of LP-gas and LP-gas equipment shall be in accordance with Section 3104.16 of the State Fire Safety Code.

(Add) **3102.12 Flammable and combustible liquids.** The use of flammable-fuel-fired equipment shall be in accordance with Section 3104.17 of the State Fire Safety Code.

(Add) **3102.13 Separation of generators.** Generators and other internal combustion power sources shall be separated from tents or membrane structures by a minimum of 20 feet (6096 mm) and shall be isolated from contact with the public by fencing, enclosure or other approved means.

(Amd) **3103.1 General.** The provisions of this section shall apply to structures, including tents and other membrane structures, erected for a period of less than 180 consecutive calendar days out of any 365 consecutive calendar days on a single premises. Tents and other membrane structures erected for a period of less than 180 days shall comply with Section 3103.5. Those erected for a longer period of time shall comply with the applicable sections of this code.

(Add) **3103.5 Tents and other membrane structures.** All temporary tents and membrane structures shall comply with this section.

(Add) **3103.5.1 Permit required.** Tents and membrane structures having an area in excess of 400 square feet (37 m²) shall not be erected, operated or maintained for any purpose without obtaining a permit from the building official.

Exceptions:

1. Tents used exclusively for recreational camping purposes.
2. Tents open on all sides which comply with all of the following:
 - 2.1 Individual tents having a maximum size of 700 square feet (65 m²)
 - 2.2 The aggregate area of multiple tents placed side by side without a fire break clearance of 12 feet (3658 mm), not exceeding 700 square feet (65 m²) total.
 - 2.3 A minimum clearance of 12 feet (3658 mm) to all other structures and tents.
3. Tents 900 square feet and smaller in total area when occupied by fewer than 50 persons, which have no heating appliances, no installed electrical service and are erected for fewer than 72 hours.

(Add) **3103.5.2 Place of assembly.** For the purposes of this section, a place of assembly shall include a circus, carnival, tent show, theater, skating rink, dance hall or other place of assembly in or under which persons gather for any purpose.

(Add) **3103.5.3 Construction documents.** A detailed site and floor plan for tents or membrane structures with an occupant load of 50 or more shall be provided with each application for approval. The tent or membrane structure floor plan shall indicate details of the means of egress facilities, seating capacity, arrangement of the seating and location and type of heating and electrical equipment.

(Add) **3103.5.4 Location and parking.** The location and parking for temporary tents and membrane structures shall be in accordance with this section.

(Add) **3103.5.4.1 Location.** Tents or membrane structures shall not be located within 20 feet (6096 mm) of lot lines, buildings, other tents or membrane structures, parked vehicles or internal combustion engines. For the purpose of determining required distances, support ropes and guy wires shall be considered as part of the temporary membrane structure or tents.

Exceptions:

1. Separation distance between membrane structures and tents not used for cooking is not required when the aggregate floor area does not exceed 15,000 square feet (1394 m²).
2. Membrane structures or tents need not be separated from buildings when all of the following conditions are met:
 - 2.1. The aggregate floor area of the membrane structure or tent shall not exceed 10,000 square feet (929m²).
 - 2.2. The aggregate floor area of the building and membrane structure or tent shall not exceed the allowable floor area including increases as indicated in this code.
 - 2.3. Required means of egress are provided for both the building and membrane structure or tent including travel distances.

(Add) **3103.5.5 Location of structures in excess of 15,000 square feet in area.** Membrane structures having an area of 15,000 square feet (1394 m²) or more shall be located not less than 50 feet (15 240 mm) from any other tent or structure as measured from the sidewall of the tent or membrane structure unless joined together by a corridor.

(Add) **3103.5.6 Connecting corridors.** Tents or membrane structures are allowed to be joined together by means of corridors. Exit doors shall be provided at each end of such corridor. On each side of such corridor and approximately opposite each other, there shall be provided openings not less than 12 feet (3658 mm) wide.

(Add) **3103.5.7 Fire break.** An unobstructed fire break passageway or fire road not less than 12 feet (3658 mm) wide and free from guy ropes or other obstructions shall be maintained on all sides of all tents and membrane structures unless otherwise approved by the building official.

(Add) **3103.5.8 Membrane material.** The membrane material for all tents and membrane structures shall be of: approved noncombustible material as set forth in Section 703.5; flame-

resistant material as determined in accordance with NFPA 701 and the manufacturer's test protocol; or material treated in an approved manner to render the material flame-resistant.

(Add) **3103.5.8.1 Label.** Tents and membrane structures shall have a permanently affixed label which shall identify the size of the structure and the fabric or material type.

(Add) **3103.5.8.2 Certification.** An affidavit or affirmation shall be submitted to the building official and a copy retained on the premises on which the tent or membrane structure is located. The affidavit or affirmation shall attest to the following information relative to the flame resistance of the fabric:

1. Names and addresses of the owners of the tent, canopy or membrane structure.
2. Date the fabric was last treated with flame-resistant solution.
3. Trade name or kind of chemical used in the treatment.
4. Name of person or firm treating the material.
5. Name of testing agency and test standard by which the fabric was tested.

(Add) **3103.5.9 Anchorage required.** Tents or membrane structures and their appurtenances shall be adequately roped, braced and anchored to withstand the elements of weather and prevent against collapsing. Documentation of structural stability shall be furnished to the building official upon request.

(Add) **3103.5.9.1 Tents and membrane structures exceeding one story.** Tents and membrane structures exceeding one story shall be designed and constructed to comply with Chapter 16.

(Add) **3103.5.10 Temporary air-supported and air-inflated membrane structures.** In addition to other applicable requirements of Section 3103.5, temporary air-supported and air-inflated membrane structures shall be in accordance with Sections 3103.10.1 to 3103.10.4, inclusive.

(Add) **3103.5.10.1 Door operation.** In high winds greater than 50 miles per hour (22 m/s) or in snow conditions, the use of doors in air-supported structures shall be controlled to avoid excessive air loss. Doors shall not be left open under any condition.

(Add) **3103.5.10.2 Fabric envelope design and construction.** Air-supported and air-inflated structures shall have the design and construction of the fabric envelope and the method of anchoring in accordance with Architecture Fabric Institute ASI 77.

(Add) **3103.5.10.2.1 Inflation pressure.** Operating pressure in air-supported and air-inflated structures shall be maintained at the design pressure specified by the manufacturer to assure stability and to avoid excessive distortion during high wind or snow loads.

(Add) **3103.5.10.3 Blowers.** An air-supported structure used as a place of assembly shall be furnished with not less than two blowers, each of which has adequate capacity to maintain full inflation pressure with normal leakage. The design of the blower shall be so as to provide integral limiting pressure at the design pressure specified by the manufacturer.

(Add) **3103.5.10.4 Auxiliary power.** Places of assembly for more than 200 occupants shall be furnished with either a fully automatic auxiliary engine-generator set capable of powering one

blower continuously for 4 hours, or a supplementary blower powered by an internal combustion engine that shall be automatic in operation.

(Add) **3103.5.11 Seating arrangements.** Seating in tents and membrane structures shall be in accordance with Chapter 10.

(Add) **3103.5.12 Means of egress.** Means of egress for temporary tents and membrane structures shall be in accordance with Sections 3103.12.1 to 3103.12.8, inclusive.

(Add) **3103.5.12.1 Distribution.** Exits shall be spaced at approximately equal intervals around the perimeter of the tent or membrane structure, and shall be located such that all points are 100 feet (30 480 mm) or less from an exit.

(Add) **3103.5.12.2 Number.** Tents, or membrane structures or a usable portion thereof shall have at least one exit and not less than the number of exits required by Table 3103.12.2. The total width of means of egress in inches (mm) shall not be less than the total occupant load served by a means of egress multiplied by 0.2 inches (5mm) per person.

(Add) **TABLE 3103.12.2
MINIMUM NUMBER OF MEANS OF EGRESS AND MEANS OF
EGRESS WIDTHS FROM TEMPORARY MEMBRANE STRUCTURES AND TENTS**

Occupant load	Minimum Number of Means of Egress	Minimum Width of Each Means of Egress	
		Tents	Membrane Structures
10 to 199	2	72	36
200 to 499	3	72	72
500 to 999	4	96	72
1,000 to 1,999	5	120	96
2,000 to 2,999	6	120	96
Over 3,000 ^a	7	120	96

a. When the occupant load exceeds 3,000, the total width of means of egress (in inches) shall not be less than the total occupant load multiplied by 0.2 inches per person.

(Add) **3103.5.12.3 Exit openings from tents.** Exit openings from tents shall remain open unless covered by a flame-resistant curtain. The curtain shall comply with the following requirements:

1. Curtains shall be free sliding on a metal support. The support shall be a minimum of 80 inches (2032 mm) above the floor level at the exit. The curtains shall be arranged so that, when open, no part of the curtain obstructs the exit.
2. Curtains shall be of a color, or colors, that contrasts with the color of the tent.

(Add) **3103.5.12.4 Doors.** Exit doors shall swing in the direction of exit travel. To avoid hazardous air and pressure loss in air-supported membrane structures, such doors shall be automatic closing against operating pressures. Opening force at the door edge shall not exceed 15 pounds (67 N).

(Add) **3103.5.12.5 Aisle.** The width of aisles without fixed seating shall be in accordance with the following:

1. In areas serving employees only, the minimum width shall be 24 inches (610 mm) or not less than the width required by the number of employees served.

2. In public areas, smooth-surfaced, unobstructed aisles having a minimum width of not less than 44 inches (1118 mm) shall be provided from seating areas, and aisles shall be progressively increased in width to provide, at all points, not less than 1 foot (305 mm) of aisle width for each 50 persons served by such aisle at that point.

(Add) **3103.5.12.6 Exit signs.** Exits shall be clearly marked. Exit signs shall be installed at required exit doorways and where otherwise necessary to indicate clearly the direction of egress when the exit serves an occupant load of 50 or more.

(Add) **3103.5.12.6.1 Exit sign illumination.** Exit signs shall be either listed and labeled in accordance with UL 924 as the internally illuminated type and used in accordance with the listing or shall be externally illuminated by luminaires supplied in the following manner:

1. Two separate circuits, one of which shall be separated from all other circuits, or occupant loads of 300 or less; or
2. Two separate sources of power, one of which shall be an approved emergency system, shall be provided when the occupant load exceeds 300. Emergency systems shall be supplied from storage batteries or from the on-site generator set, and the system shall be installed in accordance with NFPA 70. The emergency system provided shall have a minimum duration of 90 minutes when operated at full design demand.

(Add) **3103.5.12.7 Means of egress illumination.** Means of egress shall be illuminated with light having an intensity of not less than 1 footcandle (11 lux) at floor level while the structure is occupied. Fixtures required for means of egress illumination shall be supplied from a separate circuit or source of power.

(Add) **3103.5.12.8 Maintenance of means of egress.** The required width of exits, aisles and passageways shall be maintained at all times to a public way. Guy wires, guy ropes and other support members shall not cross a means of egress at a height of not less than 8 feet (2438 mm). The surface of the means of egress shall be maintained in an approved manner.

(Add) **3103.5.13 Spot lighting.** Spot or effect lighting shall only be by electricity, and all combustible construction located within 6 feet (1829 mm) of such equipment shall be protected with approved noncombustible insulation not less than 9¼ inches (235 mm) thick.

(Add) **3103.5.14 Heating and cooking equipment.** Heating and cooking equipment shall be in accordance with Section 3104.15 of the State Fire Safety Code.

(Add) **3103.5.15 LP-gas.** The storage, handling and use of LP-gas and LP-gas equipment shall be in accordance with Section 3104.16 of the State Fire Safety Code.

(Add) **3103.5.16 Flammable and combustible liquids.** The use of flammable-fuel-fired equipment shall be in accordance with Section 3104.17 of the State Fire Safety Code.

(Add) **3103.5.17 Separation of generators.** Generators and other internal combustion power sources shall be separated from tents or membrane structures by a minimum of 20 feet (6096 mm) and shall be isolated from contact with the public by fencing, enclosure or other approved means.

(Amd) **3105.3 Design and construction.** Awnings and canopies shall be designed and constructed to withstand wind or other lateral loads, snow loads and live loads as required by

Chapter 16 with due allowance for shape, open construction and similar features that relieve the pressures or loads. Structural members shall be protected to prevent deterioration. Awnings shall have frames of noncombustible material, fire-retardant-treated wood, wood of Type IV size, or 1-hour construction with combustible or noncombustible covers and shall be either fixed, retractable, folding or collapsible.

Exceptions:

1. Fixed awnings shall not be required to be designed to resist nominal (V_{asd}) wind loads in excess of 90 mph.
2. Retractable awnings shall not be required to be designed to resist wind or snow loads.

(Amd) **3107.1 General.** Signs shall be designed, constructed and maintained in accordance with Appendix H of this code.

(Amd) **3109.1 General.** Swimming pools shall comply with the requirements of Section 3109.2 to 3109.9, inclusive, and other applicable sections of this code.

(Add) **3109.1.1 Health Department regulations.** No person shall construct, substantially alter or reconstruct a swimming pool until the construction documents and water discharge provisions have been approved by the Department of Public Health, in accordance with the regulations adopted pursuant to section 19a-36 of the Connecticut General Statutes.

Exception: Swimming pools accessory to owner-occupied, detached one- two- or three-family residences and swimming pools accessory to a single one-family townhouse where the pool is intended to be used exclusively by the owner and invited guests.

(Amd) **3109.3 Public swimming pools.** Public swimming pools shall be completely enclosed by a barrier meeting the requirements of Section 3109.4.

(Amd) **3109.4 Swimming pool barriers.** Residential and public swimming pool barriers shall comply with Sections 3109.4.1 to 3109.4.3, inclusive.

Exception: A residential swimming pool with a power safety cover or a spa with a safety cover complying with ASTM F 1346 need not comply with Section 3109.4.

(Amd) **3109.4.1.1 Openings.** Openings in residential swimming pool barriers as defined by the exception to Section 3109.1.1 shall not allow passage of a 4-inch-diameter (102 mm) sphere. Openings in public swimming pool barriers shall not allow passage of a 2-inch diameter (51 mm) sphere.

(Amd) **3109.4.1.4 Widely spaced horizontal members.** Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is 45 inches (1143 mm) or more, spacing between vertical members in residential pools shall be greater than 4 inches (102 mm) and spacing between vertical members in public pools shall be greater than 2 inches (51 mm). Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1 ¾ inches (44 mm) in width.

(Amd) **3109.4.1.8 Dwelling wall as a barrier.** Where a wall of a dwelling serves as part of the barrier, one of the following shall apply:

1. Doors with direct access to the pool through that wall shall be equipped with an alarm that produces an audible warning when the door and/or its screen, if present, are opened. The alarm shall be listed and labeled in accordance with UL 2017. In dwellings not required to

be accessible units, Type A units or Type B units, the deactivation switch shall be located 54 inches (1372 mm) or more above the threshold of the door. In dwelling units required to be accessible units, Type A units or Type B units, the deactivation switch shall be located not higher than 54 inches (1372 mm) and not less than 48 inches (1219 mm) above the threshold of the door.

2. The pool shall be equipped with a power safety cover which complies with ASTM F1346.
3. All doors with direct access to the pool through that wall shall be equipped with a self-closing and self-latching device with the release mechanism located a minimum of 54 inches above the door threshold. Swinging doors shall open away from the pool area.

(Amd) **3109.4.1.9 Pool structure as a barrier.** Where an above-ground or on-ground pool structure is used as a barrier or where the barrier is mounted on top of the pool structure, and the means of access is a ladder or steps, then the ladder or steps shall be surrounded by a barrier that meets the requirements of Sections 3109.4.1.1 to 3109.4.1.8, inclusive.

Exception: A residential spa or hot tub with a safety cover complying with ASTM F 1346.

(Amd) **3109.4.2 Indoor swimming pools.** Walls surrounding indoor swimming pools shall be required to comply with Section 3109.4.1.8.

(Add) **3109.6 Temporary enclosure.** A temporary enclosure shall be installed prior to the electrical bonding inspection of any in-ground swimming pool unless the permanent barrier specified in Section 3109 is in place prior to the commencement of the installation. The temporary enclosure shall be a minimum of 4 feet in height, shall have no openings that will allow passage of a 4-inch sphere and shall be equipped with a positive latching device on any openings.

(Add) **3109.7 Pool alarm.** Pursuant to section 29-265a of the Connecticut General Statutes no building permit shall be issued for the construction or substantial alteration of a swimming pool at a residence occupied by, or being built for, one or more families unless a pool alarm is installed with the swimming pool. As used in this section, "pool alarm" means a device that emits a sound of at least 50 decibels when a person or an object weighing 15 pounds or more enters the water in a swimming pool.

Exception: Hot tubs and portable spas shall be exempt from this requirement.

(Add) **3109.8 Accessibility.** Public swimming pools, when less than 50 meters in length, shall be provided with ramps or approved fixed or portable lifting equipment for the purpose of providing assisted access to the water for persons with disabilities. Public swimming pools, when 50 meters or more in length, shall be provided with ramps. All public swimming pools, pool decks, toilet facilities, showers, locker and dressing areas shall be accessible and located along accessible routes.

(Add) **3109.8.1 Slopes and handrails.** The slopes of ramps for accessibility, where required, shall not exceed one unit vertical to eight units horizontal (1:8) where located at least 24 inches below the water line and one unit vertical to 12 units horizontal (1:12) above that point. Ramps shall be provided with handrails on both sides in accordance with Section 1010.8.

(Add) **3109.9 Pool structure.** The pool structure shall be engineered and designed to withstand the expected forces to which the pool will be subjected.

CHAPTER 33 – SAFEGUARDS DURING CONSTRUCTION

(Add) **3303.8 Demolition of structures.** The demolition of structures shall be conducted in accordance with the State Demolition Code as found in chapter 541 of the Connecticut General Statutes and with Chapter 33 of this code.

CHAPTER 34 – EXISTING STRUCTURES

(Add) **3401.6 Means of egress.** In addition to the requirements of this code, means of egress in existing buildings undergoing additions, alterations or repairs shall meet the requirements of the provisions of Part IV of the Connecticut State Fire Safety Code for the proposed occupancy.

(Amd) **3403.5 Smoke alarms in existing portions of a building.** Where an addition is made to a building or structure of a Group I-4 and E day care facilities, Group I-1 or R occupancy, or when one or more sleeping rooms are added or created in existing dwelling units, the entire dwelling unit or building shall be provided with smoke detectors located as required for new buildings. Such smoke detectors within existing spaces may be battery operated and are not required to be dual-powered or interconnected unless other remodeling considerations require removal of wall and ceiling coverings which would facilitate concealed interconnected wiring.

(Add) **3403.6 Carbon monoxide alarms in existing portions of a building.** Where an addition is made to a building or structure of Group I-1, I-2, I-4, R, and E occupancy, the existing building shall be provided with carbon monoxide alarms in accordance with Section 915.7.

(Amd) **3404.6 Smoke alarms.** When alterations requiring a permit occur in Group I-4 and E day care facilities, Group I-1 or R occupancies, or when one or more sleeping rooms are added or created in existing dwelling units, the entire dwelling unit or building shall be provided with smoke detectors located as required for new buildings. Such smoke detectors within existing spaces may be battery operated and are not required to be dual-powered or interconnected unless other remodeling considerations require removal of wall and ceiling coverings which would facilitate concealed interconnected wiring.

(Add) **3404.7 Carbon monoxide alarms.** Where an alteration is made to a building or structure of Group I-1, I-2, I-4, R, and E occupancy, the existing building shall be provided with carbon monoxide alarms in accordance with Section 915.7.

(Add) **3408.1.1 Determination of hazard.** For the purposes of Section 3408.1, the determination of hazard category shall be made in accordance with Section 1012.4 of the International Existing Building Code.

(Amd) **3408.3 Stairways.** Existing stairway in an existing structure shall be required to comply with the requirements of Section 1009.7.

(Amd) **3409.1 Historic buildings.** Exemptions may be granted to the provisions of this code for historic structures pursuant to Section 29-259 of the Connecticut General Statutes.

(Amd) **3410.1 Conformance.** Buildings or structures moved into or within the jurisdiction shall comply with the provisions of this code for new structures.

Exception: Buildings or structures moved into or within the jurisdiction shall be permitted to comply with the International Existing Building Code for relocated or moved buildings or structures.

(Amd) **3411.4.2 Complete change of occupancy.** Where an entire building undergoes a change of occupancy, it shall comply with Section 3411.4.1 and shall have all of the following accessible features:

1. At least one accessible building entrance.
2. At least one accessible route from an accessible building entrance to primary function areas.
3. Signage complying with Section 1110.
4. Accessible parking complying with Section 1106, where parking is being provided.
5. At least one accessible passenger loading zone, when passenger loading zones are provided.
6. At least one accessible route connecting accessible parking and accessible passenger loading zones to an accessible entrance.
7. At least one accessible toilet room or toilet and bathing facility complying with Section 1109.2.3.

Where it is technically infeasible as defined in Section 3402.1 to comply with the new construction standards for any of these requirements for a change of group or occupancy, the above items shall conform to the maximum extent technically feasible.

Exception: The accessible features listed in Items 1 through 7 are not required for an accessible route to Type B units.

(Amd) **3411.8.3 Lifts and limited use/limited application elevators in existing buildings.** Vertical or incline platform lifts, inclined stairway chairlifts and limited use/limited application elevators shall not be a part of an accessible route in existing buildings undergoing alteration or repair except that vertical or incline platform lifts and limited use/limited application elevators shall be permitted in existing buildings where permitted in the locations set forth in Section 1109.8. Pursuant to section 29-200 of the Connecticut General Statutes, the following additional exceptions are allowed:

Exceptions:

1. In existing buildings principally used for meeting, gathering or assembling by any civic, religious, fraternal or charitable organization.
2. In residential buildings designed to be occupied by one or two families.
3. In new buildings for which a building permit application has been filed on or after October 1, 2004, in accordance with the State Building Code.
4. In other existing buildings and structures only if the Executive Director of the Office of Protection and Advocacy for Persons with Disabilities and the State Building Inspector jointly approve such installation.

Lifts and limited use/limited application elevators shall be installed in accordance with regulations adopted under authority of section 29-200 of the Connecticut General Statutes. Limited use/limited application elevators shall also be installed in accordance with regulations adopted under authority of section 29-192 of the Connecticut General Statutes.

(Amd) **3411.8.7 Accessible dwelling or sleeping units.** Where Group I-1, I-2, I-3, R-1, R-2 or R-4 dwelling or sleeping units are being altered or added, the requirements of Section 1107 for Accessible units and Chapter 9 for visible alarms apply only to the quantity of spaces being altered or added.

(Amd) **3411.8.8 Type A dwelling or sleeping units.** Where more than 20 Group R-2 dwelling or sleeping units are being altered or added, the requirements of Section 1107 for Type A units and Chapter 9 for visible alarms apply only to the quantity of the spaces being altered or added.

(Amd) **3411.8.9 Type B dwelling or sleeping units.** Where four or more Group I-1, I-2, R-2, R-3, or R-4 dwelling or sleeping units are being added, the requirements of Section 1107 for Type B units and Chapter 9 for visible alarms apply only to the quantity of the spaces being added. Where Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being altered and where the work area is greater than 50 percent of the aggregate area of the building, the requirements of Section 1107 for Type B units and Chapter 9 for visible alarms apply only to the quantity of the spaces being altered.

(Amd) **3411.8.11 Toilet rooms.** Where it is technically infeasible to alter existing toilet and bathing rooms to be accessible, an accessible single occupant toilet or bathing room constructed in accordance with Section 1109.2.3 is permitted. The single occupant toilet or bathing room shall be located on the same floor and in the same area as the existing toilet or bathing rooms.

(Add) **3411.8.11.1 Directional signage.** Where existing toilet or bathing rooms are being altered and are not made accessible, directional signage shall be provided indicating the location of the nearest accessible toilet or bathing facility within the facility.

(Add) **3411.8.15 Assembly seating.** Where it is technically infeasible to disperse accessible seating throughout an altered assembly area, accessible seating areas may be clustered. Each accessible wheelchair space shall have provisions for companion seating and shall be located on an accessible route that also serves as an accessible means of egress.

(Add) **3412.1.1 Means of egress.** In addition to the requirements of this code, means of egress in existing buildings utilizing the compliance alternatives of Section 3412 shall meet the requirements of the provisions of Part IV of the Connecticut State Fire Safety Code for the proposed occupancy.

(Amd) **3412.2 Applicability.** Structures existing prior to the adoption date of the State Building Code, in which there is work involving additions, alterations or changes of occupancy shall be made to conform to the requirements of this section or the provisions of Sections 3403 through 3409. The provisions in Sections 3412.2.1 through 3412.2.5 shall apply to existing occupancies that will continue to be, or are proposed to be, in Groups A, B, E, F, M, R, S and U. These provisions shall not apply to buildings with occupancies in Groups H or I.

CHAPTER 35 – REFERENCED STANDARDS

Delete the following standard under ASME:

(Del) ASME/A17.1 2007/CSA B44-07 Safety Code for Elevators and Escalators – with A17.1a/CSA B44a-08 Addenda.

Add the following standard under ASME:

(Add) ASME A17.1 - 96 Safety Code for Elevators and Escalators with the 1997 and 1998 addenda.

(Amd) National Fire Protection Association
NFPA 1 Batterymarch Park
 Quincy, MA 02169-7471

Standard reference number— year of publication	Title	Referenced in code section number
(Add) 02-11	Hydrogen Technologies Code	101.4.1
(Amd) 31-11	Installation of Oil-burning Equipment	2113.15
(Add) 54-12	National Fuel Gas Code	101.4.1
(Add) 58-11	Liquefied Petroleum Gas Code	415.8.3
(Amd) 70-14	National Electrical Code	108.3, 415.10.1.8, 904.3.1, 907.6.1, 909.12.1, 909.16.3, 1205.4.1, 2701.1, 3401.3, H106.1, H106.2, K101, K111.1
(Amd) 99-12	Health Care Facilities	407.10
(Add) 102-16	Grandstands, Folding and Telescopic Seating, Tents, and Membrane Structures	3103.5
(Amd) 409-11	Air Hangers	412.4.6, Table 412.4.6, 412.4.6.1, 412.6.5
(Amd) 720-12	Carbon Monoxide (CO) Detection and Warning Equipment	908.7
(Amd) 2001-12	Clean Agent Fire Extinguishing Systems	904.10

(Add) **APPENDIX N MUNICIPALITY – SPECIFIC STRUCTURAL DESIGN PARAMETERS**

(APPENDIX N) MUNICIPALITY - SPECIFIC STRUCTURAL DESIGN PARAMETERS												
Municipality	Ground Snow Load	MCE Spectral Accelerations (%g)		Wind Design Parameters								
		S _s	S ₁	Ultimate Design Wind Speeds, V _{ult} (mph)			Nominal Design Wind Speeds, V _{asd} (mph)			Wind-Borne Debris Regions ¹		Hurricane-Prone Regions
				Risk Cat. I	Risk Cat. II	Risk Cat III-IV	Risk Cat. I	Risk Cat. II	Risk Cat. III-IV	Risk Cat. II & III except Occup I-2	Risk Cat III Occup I-2 & Risk Cat. IV	
Andover	30	0.176	0.063	120	130	140	93	101	108			Yes
Ansonia	30	0.195	0.064	115	125	135	89	97	105			Yes
Ashford	35	0.173	0.063	120	130	140	93	101	108			Yes
Avon	35	0.181	0.064	110	120	130	85	93	101			Yes

(APPENDIX N) MUNICIPALITY - SPECIFIC STRUCTURAL DESIGN PARAMETERS

Municipality	Ground Snow Load	MCE Spectral Accelerations (%g)		Wind Design Parameters								
		S _s	S ₁	Ultimate Design Wind Speeds, V _{ult} (mph)			Nominal Design Wind Speeds, V _{asd} (mph)			Wind-Borne Debris Regions ¹		Hurricane-Prone Regions
				Risk Cat. I	Risk Cat. II	Risk Cat III-IV	Risk Cat. I	Risk Cat. II	Risk Cat. III-IV	Risk Cat. II & III except Occup I-2	Risk Cat III Occup I-2 & Risk Cat. IV	
Barkhamsted	40	0.177	0.065	110	120	125	85	93	97			Yes
Beacon Falls	30	0.192	0.064	115	125	135	89	97	105			Yes
Berlin	30	0.183	0.063	115	125	135	89	97	105			Yes
Bethany	30	0.189	0.063	115	125	135	89	97	105			Yes
Bethel	30	0.215	0.066	110	120	125	85	93	97			Yes
Bethlehem	35	0.190	0.065	110	120	125	85	93	97			Yes
Bloomfield	35	0.180	0.064	115	125	130	89	97	101			Yes
Bolton	30	0.177	0.063	115	125	135	89	97	105			Yes
Bozrah	30	0.170	0.061	120	135	145	93	105	112		Type A	Yes
Branford	30	0.180	0.061	120	130	140	93	101	108		Type B	Yes
Bridgeport	30	0.209	0.064	115	125	135	89	97	105		Type B	Yes
Bridgewater	35	0.201	0.066	110	120	125	85	93	97			Yes
Bristol	35	0.185	0.064	110	120	130	85	93	101			Yes
Brookfield	35	0.208	0.066	110	120	125	85	93	97			Yes
Brooklyn	35	0.171	0.062	120	130	140	93	101	108			Yes
Burlington	35	0.182	0.064	110	120	130	85	93	101			Yes
Canaan	40	0.173	0.065	105	115	120	81	89	93			
Canterbury	35	0.171	0.061	120	130	140	93	101	108		Type A	Yes
Canton	35	0.180	0.064	110	120	130	85	93	101			Yes
Chaplin	35	0.173	0.062	120	130	140	93	101	108			Yes
Cheshire	30	0.186	0.063	115	125	135	89	97	105			Yes
Chester	30	0.172	0.060	120	130	140	93	101	108		Type A	Yes
Clinton	30	0.169	0.059	120	135	140	93	105	108	Type B	Type A	Yes
Colchester	30	0.174	0.061	120	130	140	93	101	108			Yes
Colebrook	40	0.174	0.065	105	115	125	81	89	97			
Columbia	30	0.175	0.062	120	130	140	93	101	108			Yes
Cornwall	40	0.180	0.065	105	115	120	81	89	93			
Coventry	30	0.176	0.063	120	130	140	93	101	108			Yes
Cromwell	30	0.181	0.063	115	125	135	89	97	105			Yes
Danbury	30	0.217	0.067	110	120	125	85	93	97			Yes
Darien	30	0.242	0.068	110	120	130	85	93	101			Yes
Deep River	30	0.170	0.060	120	130	140	93	101	108		Type A	Yes
Derby	30	0.195	0.064	115	125	135	89	97	105			Yes
Durham	30	0.179	0.062	115	130	140	89	101	108			Yes
Eastford	40	0.172	0.063	120	130	140	93	101	108			Yes
East Granby	35	0.177	0.065	110	120	130	85	93	101			Yes
East Haddam	30	0.172	0.061	120	130	140	93	101	108			Yes
East Hampton	30	0.177	0.062	120	130	140	93	101	108			Yes
East Hartford	30	0.180	0.064	115	125	135	89	97	105			Yes
East Haven	30	0.182	0.062	120	130	140	93	101	108		Type B	Yes
East Lyme	30	0.164	0.059	125	135	145	97	105	112	Type B	Type A	Yes
Easton	30	0.215	0.066	120	130	140	93	101	108			Yes
East Windsor	35	0.177	0.064	115	125	135	89	97	105			Yes
Ellington	35	0.176	0.064	115	125	135	89	97	105			Yes

(APPENDIX N) MUNICIPALITY - SPECIFIC STRUCTURAL DESIGN PARAMETERS

Municipality	Ground Snow Load	MCE Spectral Accelerations (%g)		Wind Design Parameters								
		S _s	S ₁	Ultimate Design Wind Speeds, V _{ult} (mph)			Nominal Design Wind Speeds, V _{asd} (mph)			Wind-Borne Debris Regions ¹		Hurricane-Prone Regions
				Risk Cat. I	Risk Cat. II	Risk Cat III-IV	Risk Cat. I	Risk Cat. II	Risk Cat. III-IV	Risk Cat. II & III except Occup I-2	Risk Cat III Occup I-2 & Risk Cat. IV	
New Haven	30	0.186	0.062	115	125	135	89	97	105		Type C	Yes
Newington	30	0.182	0.064	115	125	135	89	97	105			
New London	30	0.161	0.058	125	135	145	97	105	112	Type B	Type A	Yes
New Milford	35	0.198	0.066	105	115	125	81	89	97			
Newtown	30	0.208	0.066	110	120	130	85	93	101			Yes
Norfolk	40	0.175	0.065	105	115	125	81	89	97			
North Branford	30	0.179	0.061	120	130	140	93	101	108			Yes
North Canaan	40	0.173	0.065	105	115	120	81	89	93			
North Haven	30	0.184	0.062	115	125	135	89	97	105			Yes
North Stonington	30	0.163	0.059	125	135	145	97	105	112		Type A	Yes
Norwalk	30	0.232	0.067	110	120	130	85	93	101			Yes
Norwich	30	0.168	0.060	125	135	145	97	105	112		Type A	Yes
Old Lyme	30	0.164	0.059	125	135	145	97	105	112	Type B	Type A	Yes
Old Saybrook	30	0.164	0.059	125	135	145	97	105	112	Type B	Type A	Yes
Orange	30	0.192	0.063	115	125	135	89	97	105			Yes
Oxford	30	0.196	0.064	110	125	130	85	97	101			Yes
Plainfield	35	0.170	0.061	125	135	145	97	105	112		Type A	Yes
Plainville	35	0.184	0.064	115	125	135	89	97	105			Yes
Plymouth	35	0.186	0.064	110	120	130	85	93	101			Yes
Pomfret	40	0.172	0.063	120	130	140	93	101	108			Yes
Portland	30	0.180	0.063	115	130	135	89	101	105			Yes
Preston	30	0.167	0.060	125	135	145	97	105	112		Type A	Yes
Prospect	30	0.188	0.064	115	125	135	89	97	105			Yes
Putnam	40	0.172	0.063	120	130	140	93	101	108			Yes
Redding	30	0.220	0.067	110	120	130	85	93	101			Yes
Ridgefield	30	0.230	0.068	110	120	125	85	93	97			Yes
Rocky Hill	30	0.181	0.063	115	125	135	89	97	105			Yes
Roxbury	35	0.197	0.065	110	120	125	85	93	97			Yes
Salem	30	0.170	0.060	120	135	140	93	105	108		Type A	Yes
Salisbury	40	0.173	0.065	105	115	120	81	89	93			
Scotland	30	0.172	0.061	120	130	140	93	101	108			Yes
Seymour	30	0.194	0.064	115	125	135	89	97	105			Yes
Sharon	40	0.179	0.065	105	115	120	81	89	93			
Shelton	30	0.199	0.064	115	125	135	89	97	105			Yes
Sherman	35	0.202	0.066	105	115	120	81	89	93			
Simsbury	35	0.179	0.064	110	120	130	85	93	101			Yes
Somers	35	0.174	0.064	115	125	135	89	97	105			Yes
Southbury	35	0.198	0.065	110	120	130	85	93	101			Yes
Southington	30	0.185	0.064	115	125	135	89	97	105			Yes
South Windsor	30	0.178	0.064	115	125	135	89	97	105			Yes

(APPENDIX N) MUNICIPALITY - SPECIFIC STRUCTURAL DESIGN PARAMETERS													
Municipality	Ground Snow Load	MCE Spectral Accelerations (%g)		Wind Design Parameters									
		S_s	S₁	Ultimate Design Wind Speeds, V_{ult} (mph)			Nominal Design Wind Speeds, V_{asd} (mph)			Wind-Borne Debris Regions¹			Hurricane-Prone Regions
				Risk Cat. I	Risk Cat. II	Risk Cat III-IV	Risk Cat. I	Risk Cat. II	Risk Cat. III-IV	Risk Cat. II & III except Occup I-2	Risk Cat III Occup I-2 & Risk Cat. IV		
Sprague	30	0.171	0.061	120	130	140	93	101	108		Type A	Yes	
Stafford	35	0.173	0.064	115	125	135	89	97	105			Yes	
Stamford	30	0.249	0.069	110	120	130	85	93	101			Yes	
Sterling	35	0.170	0.061	125	135	145	97	105	112		Type A	Yes	
Stonington	30	0.159	0.058	125	140	150	97	108	116	Type B	Type A	Yes	
Stratford	30	0.201	0.064	115	125	135	89	97	105		Type B	Yes	
Suffield	35	0.176	0.065	110	120	130	85	93	101			Yes	
Thomaston	35	0.186	0.064	110	120	130	85	93	101			Yes	
Thompson	40	0.172	0.063	120	130	140	93	101	108			Yes	
Tolland	35	0.175	0.064	115	125	135	89	97	105			Yes	
Torrington	40	0.182	0.065	110	120	125	85	93	97			Yes	
Trumbull	30	0.207	0.065	115	125	135	89	97	105			Yes	
Union	40	0.172	0.064	115	125	135	89	97	105			Yes	
Vernon	30	0.177	0.064	115	125	135	89	97	105			Yes	
Voluntown	30	0.168	0.060	125	135	145	97	105	112		Type A	Yes	
Wallingford	30	0.183	0.063	115	125	135	89	97	105			Yes	
Warren	40	0.186	0.065	105	115	125	81	89	97				
Washington	35	0.192	0.065	105	120	125	81	93	97			Yes	
Waterbury	35	0.189	0.064	110	125	130	85	97	101			Yes	
Waterford	30	0.161	0.058	125	135	145	97	105	112	Type B	Type A	Yes	
Watertown	35	0.189	0.064	110	120	130	85	93	101			Yes	
Westbrook	30	0.167	0.059	120	135	145	93	105	112	Type B	Type A	Yes	
West Hartford	30	0.181	0.064	115	125	135	89	97	105			Yes	
West Haven	30	0.188	0.062	115	125	135	89	97	105		Type B	Yes	
Weston	30	0.224	0.067	110	120	130	85	93	101			Yes	
Westport	30	0.226	0.067	110	120	130	85	93	101		Type B	Yes	
Wethersfield	30	0.181	0.064	115	125	135	89	97	105			Yes	
Willington	35	0.174	0.063	115	125	135	89	97	105			Yes	
Wilton	30	0.231	0.068	110	120	130	85	93	101			Yes	
Winchester	40	0.177	0.065	105	120	125	81	93	97			Yes	
Windham	30	0.173	0.062	120	130	140	93	101	108			Yes	
Windsor	35	0.179	0.064	115	125	135	89	97	105			Yes	
Windsor Locks	35	0.177	0.064	110	125	130	85	97	101			Yes	
Wolcott	35	0.187	0.064	110	125	130	85	97	101			Yes	
Woodbridge	30	0.191	0.063	115	125	135	89	97	105			Yes	
Woodbury	35	0.194	0.065	110	120	130	85	93	101			Yes	
Woodstock	40	0.172	0.063	120	130	140	93	101	108			Yes	

1. Wind-Borne Debris Regions: Type A: Full Municipality.
Type B: Areas south of Interstate 95.

Exception: Areas that are more than one mile from the coastal mean high-water line as certified by a registered design professional may be classified as being outside a wind-borne debris region.

Type C: Areas south of Metro North/Amtrak Railroad to the west of the Quinnipiac River and areas south of Interstate 95 to the east of the Quinnipiac River.

Exception: Areas that are more than one mile from the coastal mean high-water line as certified by a registered design professional may be classified as being outside a wind-borne debris region.

AMENDMENTS TO ICC/ANSI A117.1 - 2009

(Amd) **105.2.5 Safety Code for Elevators and Escalators:** ASME A17.1 - 96 with the 1997 and 1998 addenda (American Society of Mechanical Engineers International, Three Park Avenue, New York, NY 10016-5990).

(Amd) **105.2.6 Safety Standard for Platform Lifts and Stairway Chairlifts:** ASME A18.1-2008 (American Society of Mechanical Engineers International, Three Park Avenue, New York, NY 10016-5990).

(Amd) **Table 404.2.3.2 - Maneuvering Clearances at Manual Swinging Doors**

TYPE OF USE		MINIMUM MANEUVERING CLEARANCES AT MANUAL SWINGING DOORS	
		Perpendicular to Doorway	Parallel to Doorway (beyond latch unless noted)
Approach Direction	Door Side		
From front	Pull	60 inches	24 inches
From front	Push	48 inches	0 inches ³
From hinge side	Pull	60 inches	36 inches
From hinge side	Pull	54 inches	42 inches
From hinge side	Push	42 inches ¹	22 inches ^{3 & 4}
From latch side	Pull	48 inches ²	24 inches
From latch side	Push	42 inches ²	24 inches

¹ Add 6 inches if closer and latch provided.

² Add 6 inches if closer provided.

³ Add 12 inches beyond latch if closer and latch provided.

⁴ Beyond hinge side.

(Amd) **Fig. 404.2.3.2 Maneuvering clearance at manual swinging doors; (a) front approach, pull side.** Amend diagram (a) 18 min. notation to read 24 min.

(Amd) **404.2.3.5 Recessed doors.** Where any obstruction within 24 inches of the latch side of a doorway projects more than 8 inches beyond the face of the door, measured perpendicular to the face of the door, maneuvering clearances for a forward approach shall be provided.

(Amd) **Fig. 404.2.3.5 Maneuvering clearance at recessed doors; (a) pull side.** Amend the 18 min. notation to read 24 min.

(Amd) **502.2 Vehicle space size.** Parking spaces designated for persons with disabilities shall be as near as possible to a building entrance or walkway. Accessible automobile parking spaces shall be 15 feet in width including 5 feet of cross hatch. Accessible van spaces shall be 16 feet in width including 8 feet of cross hatch.

(Del) **Fig. 502.2 Vehicle parking space size.** Delete figure without substitution.

(Del) **Fig. 502.4 Parking space access aisle.** Delete figure without substitution.

(Amd) **502.4.1 Location.** Access aisles (cross hatch) shall adjoin an accessible route. Parking spaces for two cars or two vans may share a common access aisle. A car and van shall not share a common access aisle. Access aisles shall not overlap with the vehicular way. Parking spaces may have access aisles placed on either side of the car or van parking space. Van parking spaces that are angled shall have access aisles located on the passenger side of the parking space.

(Amd) **502.4.2 Width.** Access aisles (cross hatch) serving car parking spaces shall be 60 inches (1525 mm) minimum in width. Access aisles serving van parking spaces shall be 96 inches (2440 mm) minimum in width.

(Amd) **502.6 Vertical clearance.** Vertical clearance for accessible van parking spaces shall be in accordance with Section 1106.5 and 1106.5.1.1 of the 2012 International Building Code portion of the State Building Code.

(Amd) **502.7 Identification.** Accessible parking spaces shall be identified by above grade signs in accordance with Section 1110.1 of the 2012 International Building Code portion of the State Building Code.

(Del) **504 Stairways.** Delete Section 504 in its entirety without substitution.

(Del) **505 Handrails.** Delete section in its entirety and replace with the following:

(Add) **505 Handrails.**

(Add) **505.1 General.** Handrails shall be provided in accordance with Section 1012 of the 2012 International Building Code portion of the State Building Code.

(Amd) **604.5.2 Rear wall grab bars.** The rear wall grab bar shall be 36 inches (915 mm) minimum in length, and extend from the centerline of the water closet 12 inches (305 mm) minimum on the side closest to the wall, and 24 inches (610 mm) minimum on the transfer side.

Exception: The rear grab bar shall be permitted to be 24 inches (610 mm) minimum in length, centered on the water closet, where wall space does not permit a grab bar 36 inches (915 m) minimum in length due to the location of a recessed fixture adjacent to the water closet.

(Del) **606.5 Lavatories with enhanced reach range.** Delete section in its entirety without substitution.

(Amd) **607.5 Controls.** Controls, other than drain stoppers, shall be provided on an end wall, located between the bathtub rim and grab bar, and between the open side of the bathtub and the midpoint of the width of the bathtub. Controls shall comply with Section 309.4.

Exception: Controls in Group I-2 long-term health care that provide supervised, assisted bathing may be located outside of the bathtub compartment.

(Amd) **608.4 Controls and hand showers.** Controls and hand held showers shall comply with Sections 608.4 and 309.4.

Exception: Controls in Group I-2 long-term health care facilities that provide supervised, assisted bathing shall be permitted to be located outside of the shower compartment.

(Amd) **703.6.3.1 International Symbol of Accessibility.** In accordance with Public Act 16-78, references in this code to the International Symbol of Accessibility shall be deemed to mean Connecticut's symbol of access and shall comply with Figure 703.6.3.1.



(Amd) **FIG. 703.6.3.1**

(Amd) **1004.3 Accessible Route.** Accessible routes within Type B dwelling units shall comply with Section 1004.3.

Exception: Exterior spaces less than 60 inches in depth.

(Amd) **1004.3.1 Location.** At least one accessible route shall connect all spaces and elements that are a part of the unit. Where only one accessible route is provided, it shall not pass through bathrooms and toilet rooms, closets or similar spaces.

Exception: An accessible route is not required to unfinished attics and unfinished basements that are part of the unit.

(Add) **1004.3.3 Turning Space.** All rooms served by an accessible route shall provide a turning space complying with Section 304.

Exceptions:

1. Toilet rooms and bathrooms not required to comply with Sections 1004.11.3.1 or 1004.11.3.2.
2. Within closets or pantries that are 48 inches (1220 mm) maximum in depth.
3. A kitchen or kitchenette complying with Section 1004.12.1.1.

AMENDMENTS TO THE 2012 INTERNATIONAL EXISTING BUILDING CODE

CHAPTER 1 – SCOPE AND ADMINISTRATION

(Amd) **101.1 Title.** The 2012 International Existing Building Code and this Section shall be known as the 2012 International Existing Building Code portion of the 2016 State Building Code, hereinafter referred to as “the code” or “this code”.

(Amd) **101.4.2 Buildings previously occupied.** The legal occupancy of any building or structure existing on the date of adoption of this code shall be permitted to continue without change, except as is specifically covered in this code or in the Connecticut State Fire Safety Code.

(Add) **101.4.3 Property maintenance.** The International Property Maintenance Code is not adopted by the State of Connecticut. Property maintenance shall be in accordance with the requirements of this code and the applicable provisions of the Connecticut State Fire Prevention Code. References to the International Property Maintenance Code found within the body of the model document shall be considered null and void.

(Amd) **101.6 Appendices.** The provisions of Appendix A shall be incorporated into the requirements of this code.

(Add) **101.8 Gas.** The International Fuel Gas Code is not adopted by the State of Connecticut. Any references to the International Fuel Gas Code within the body of this code shall be considered references to requirements of NFPA 2, Hydrogen Technologies Code, NFPA 54, National Fuel Gas Code and NFPA 58, Liquefied Petroleum Gas Code, as incorporated in the Connecticut State Fire Safety and the Connecticut Fire Prevention Codes. These requirements apply to liquid petroleum storage systems, gas piping systems extending from the point of delivery to the inlet connections of appliances, the installation and operation of residential and commercial gas appliances and related accessories as covered by this code.

(Add) **101.9 Connecticut State Fire Safety Code.** References to the International Fire Code within the body of the model document shall be considered to be references to the Connecticut State Fire Safety Code.

(Add) **101.10 Means of egress.** In addition to the requirements of this code, means of egress in existing buildings shall meet the requirements of the provisions of Part IV of the Connecticut State Fire Safety Code for the proposed occupancy.

(Del) **SECTION 103 – DEPARTMENT OF BUILDING SAFETY.** Delete in its entirety and replace with the following:

(Add) **SECTION 103 – ENFORCEMENT AGENCY**

(Add) **103.1 General.** The creation of the enforcement agency responsible for administration and enforcement of this code shall be in accordance with the provisions of Section 103 of the International Building Code portion of the State Building Code.

(Del) **SECTION 104 – DUTIES AND POWERS OF CODE OFFICIAL.** Delete in its entirety and replace with the following:

(Add) **SECTION 104 – DUTIES AND POWERS OF BUILDING OFFICIAL**

(Add) **104.1 General.** The duties and powers of the building official shall be in accordance with the provisions of Section 104 of the International Building Code portion of the State Building Code.

(Del) **SECTION 105 – PERMITS.** Delete in its entirety and replace with the following:

(Add) **SECTION 105 - PERMITS**

(Add) **105.1 General.** Requirements for permits shall be in accordance with the provisions of Section 105 of the International Building Code portion of the State Building Code.

(Del) **SECTION 106 – CONSTRUCTION DOCUMENTS.** Delete in its entirety and replace with the following:

(Add) **SECTION 106 – CONSTRUCTION DOCUMENTS**

(Add) **106.1 General.** Requirements for construction document shall be in accordance with the provisions of Section 107 of the International Building Code portion of the State Building Code.

(Amd) **107.3 Temporary power.** The building official may give permission to temporarily supply and use power in part of an electrical installation before such installation has been fully completed and the final certificate of occupancy or certificate of approval has been issued. The part covered by the temporary certificate shall comply with the requirements specified for temporary lighting, heat or power in this code and in NFPA 70 National Electrical Code.

(Del) **SECTION 108 – FEES.** Delete in its entirety and replace with the following:

(Add) **SECTION 108 - FEES**

(Add) **108.1 General.** Fees shall be in accordance with the provisions of Section 109 of the International Building Code portion of the State Building Code.

(Add) **109.1.1 Posting of required inspections.** A schedule of required inspections shall be compiled by the building official. The schedule shall be posted in the building department for public view.

(Add) **109.6.1 Notification of inspection results.** Notification as to passage or failure, in whole or in part, of any required inspection shall be made in writing by the building official or his duly authorized representative and shall be left at the job site or delivered to the permit holder. It shall be the duty of the permit holder to ascertain the results of required inspections.

(Amd) **110.1 Use and occupancy.** Pursuant to subsection (a) of section 29-265 of the Connecticut General Statutes, no building or structure erected or altered in any municipality after October 1, 1970, shall be occupied or used, in whole or in part, until a certificate of occupancy has been issued by the building official, certifying that such building or structure or work performed pursuant to the building permit substantially complies with the provisions of the State Building Code. Nothing in the code shall require the removal, alteration or abandonment of, or

prevent the continuance of the use and occupancy of, any single-family dwelling but within six years of the date of occupancy of such dwelling after substantial completion of construction of, alteration to, or addition to such dwelling, or of a building lawfully existing on October 1, 1945, except as may be necessary for the safety of life or property. The use of a building or premises shall not be deemed to have changed because of a temporary vacancy or change of ownership or tenancy.

Exceptions:

1. Work for which a certificate of approval is issued in accordance with Section 110.1.3.
2. Certificates of occupancy are not required for work exempt from permit requirements under section 105.2 of the International Building Code portion of the Connecticut State Building Code.

(Add) **110.1.1 State agency.** State agencies shall not be required to obtain certificates of occupancy from local building officials. State agencies shall obtain certificates of occupancy from the State Building Inspector in accordance with the provisions of section 29-252a of the Connecticut General Statutes.

(Add) **110.1.2 Statement of professional opinion.** Pursuant to section 29-276c of the Connecticut General Statutes, no certificate of occupancy shall be issued for a proposed structure or addition to buildings classified as (1) assembly, educational, institutional, high hazard, transient residential, which includes hotels, motels, rooming or boarding houses, dormitories or similar buildings, other than residential buildings designed to be occupied by one or more families, without limitation as to size or number of stories; (2) business, factory and industrial, mercantile, moderate and low hazard storage, having three stories or more or exceeding 30,000 square feet total gross area; and (3) nontransient residential dwellings having more than 16 units or 24,000 square feet total gross area per building, until the building official has been provided with a statement signed by the architect or professional engineer and the general contractor stating that the completed structure or addition is in substantial compliance with the approved plans on file.

(Add) **110.1.3 Certificate of approval.** A certificate of approval shall be issued indicating substantial compliance with the requirements of this code for all completed work that requires a building permit but does not require a certificate of occupancy. Such work shall include, but not be limited to: fences greater than 7 feet in height; retaining walls greater than 3 feet in height; decks; garages; swimming pools; basements and attics converted to habitable space; electrical, plumbing, and mechanical repairs or alterations.

(Amd) **110.3 Temporary occupancy.** The building official may issue a temporary certificate of occupancy before the completion of the entire work covered by the permit, provided that such portion or portions shall be occupied safely prior to full completion of the building or structure without endangering life or public welfare. Any occupancy permitted to continue during completion of the work shall be discontinued within 30 days after completion of the work unless a certificate of occupancy is issued by the building official.

(Add) **110.5 Partial occupancy.** The building official may issue a partial certificate of occupancy for a portion of the building or structure when in the building official's opinion, the portion of the building to be occupied is in substantial compliance with the requirements of this code and no unsafe conditions exist in the portions of the building not covered by the partial certificate of occupancy that are accessible from the occupied portion.

(Del) **SECTION 112 – BOARD OF APPEALS.** Delete in its entirety and replace with the following:

(Add) **SECTION 112 – MEANS OF APPEAL**

(Add) **112.1 General.** Means of appeal shall be in accordance with the provisions of Section 113 of the International Building Code portion of the State Building Code.

(Del) **SECTION 113 - VIOLATIONS.** Delete in its entirety and replace with the following:

(Add) **SECTION 113 - VIOLATIONS**

(Add) **113.1 General.** Violations shall be regulated in accordance with the provisions of Section 114 of the International Building Code portion of the State Building Code.

(Del) **SECTION 114 – STOP WORK ORDER.** Delete in its entirety and replace with the following:

(Add) **SECTION 114 – STOP WORK ORDER**

(Add) **114.1 General.** Stop work orders shall be regulated in accordance with the provisions of Section 115 of the International Building Code portion of the State Building Code.

(Del) **SECTION 115 – UNSAFE BUILDINGS AND EQUIPMENT.** Delete in its entirety and replace with the following:

(Add) **SECTION 115 – UNSAFE BUILDINGS AND EQUIPMENT**

(Add) **115.1 General.** Unsafe buildings and equipment shall be regulated in accordance with the provisions of Section 116 of the International Building Code portion of the State Building Code.

(Del) **SECTION 116 – EMERGENCY MEASURES.** Delete in its entirety and replace with the following:

(Add) **SECTION 116 – EMERGENCY MEASURES**

(Add) **116.1 General.** Emergency measures shall be regulated in accordance with the provisions of Section 117 of the International Building Code portion of the State Building Code.

(Del) **SECTION 117 – DEMOLITION.** Delete in its entirety and replace with the following:

(Add) **SECTION 117 - DEMOLITION**

(Add) **117.1 Demolition of Structures.** The demolition of structures shall be regulated in accordance with the provisions of Section 3303 of the International Building Code portion of the State Building Code.

CHAPTER 2 – DEFINITIONS

(Amd) **201.3 Terms defined in other codes.** Where terms are not defined in this code and are defined in other codes adopted as portions of the State Building Code, such terms shall have the meanings ascribed to them as in those codes.

(Add) **202.1 Definitions.** Amend the following definitions:

(Amd) **EXISTING BUILDING.** A building or structure, or portion thereof, erected in whole or in part, for which a legal building permit and a certificate of occupancy has been issued. Buildings or structures or portions thereof erected prior to October 1, 1970 shall be deemed existing buildings regardless of the existence of a legal permit or a certificate of occupancy.

(Amd) **TECHNICALLY INFEASIBLE.** An alteration of a building or a facility that has little likelihood of being accomplished because the existing structural conditions require the removal or alteration of a load-bearing member that is an essential part of the structural frame, or because other existing physical or site constraints prohibit modification or addition of elements, spaces or features that are in full and strict compliance with the minimum requirements for new construction and that are necessary to provide accessibility. The determination of technical infeasibility shall be made jointly by the State Building Inspector and the Executive Director of the Office of Protection and Advocacy for Persons with Disabilities in accordance with the provisions of subsection (b) of section 29-269 of the Connecticut General Statutes.

CHAPTER 4 – PRESCRIPTIVE COMPLIANCE METHOD

(Amd) **402.5 Smoke alarms in existing portions of a building.** Where an addition is made to a building or structure of a Group I-4 and E day care facilities, Group I-1 or R occupancy or when one or more sleeping rooms are added or created in existing dwelling units, the entire dwelling unit or building shall be provided with smoke detectors located as required for new buildings. Such smoke detectors within existing spaces may be battery operated and are not required to be dual-powered or interconnected unless other remodeling considerations require removal of wall and ceiling coverings which would facilitate concealed interconnected wiring.

(Add) **402.6 Carbon monoxide alarms in existing portions of a building.** Where an addition is made to a building or structure of Group I-1, I-2, I-4, R, and E occupancy, the existing building shall be provided with carbon monoxide alarms in accordance with Section 915.7 of the International Building Code.

(Amd) **403.6 Smoke alarms.** When alterations requiring a permit occur in Group I-4 and E day care facilities, Group I-1 or R occupancies, or when one or more sleeping rooms are added or created in existing dwelling units, the entire dwelling unit or building shall be provided with smoke detectors located as required for new buildings. Such smoke detectors within existing spaces may be battery operated and are not required to be dual-powered or interconnected unless other remodeling considerations require removal of wall and ceiling coverings which would facilitate concealed interconnected wiring.

(Add) **403.7 Carbon monoxide alarms.** Where an alteration is made to a building or structure of Group I-1, I-2, I-4, R, and E occupancy, the existing building shall be provided with carbon monoxide alarms in accordance with Section 915.7 of the International Building Code.

(Amd) **410.4.2 Complete change of occupancy.** Where an entire building undergoes a change in occupancy, it shall comply with Section 410.4.1 and shall have all of the following accessible features:

1. At least one accessible building entrance.
2. At least one accessible route from an accessible building entrance to primary function areas.

3. Signage complying with Section 1110 of the International Building Code.
4. Accessible parking complying with Section 1106 of the International Building Code, where parking is being provided.
5. At least one accessible passenger loading zone, when loading zones are provided.
6. At least one accessible route connecting accessible parking and accessible passenger loading zones to an accessible entrance.
7. At least one accessible toilet room or toilet and bathing facility complying with Section 1109.2.3 of the International Building Code.

Where it is technically infeasible as defined in Section 202 to comply with the new construction standards for any of these requirements for a change of occupancy, the above items shall conform to the requirements to the maximum extent technically feasible.

Exception: The accessible features listed in Items 1 through 7 are not required for an accessible route to Type B units.

(Amd) **410.8.3 Lifts and limited-use/limited-application elevators in existing buildings.** Vertical or incline platform lifts, inclined stairway chairlifts and limited-use/limited-application elevators shall not be a part of an accessible route in existing buildings undergoing alteration or repair except that vertical platform lifts and limited-use/limited-application elevators shall be permitted in existing buildings where permitted in the locations set forth in Section 1109.8 of the International Building Code. Pursuant to section 29-200 of the Connecticut General Statutes, the following exceptions are allowed:

Exceptions:

1. In existing buildings principally used for meeting, gathering or assembling by any civic, religious, fraternal or charitable organization.
2. In residential buildings designed to be occupied by one or two families.
3. In new buildings for which a building permit application has been filed on or after October 1, 2004, in accordance with the State Building Code.
4. In other existing buildings and structures only if the Executive Director of the Office of Protection and Advocacy for Persons with Disabilities and the State Building Inspector jointly approve such installation.

Lifts shall comply with ICC A117.1 and shall be installed in accordance with ASME A18.1. Limited use/limited application elevators shall comply with ICC A117.1 and shall be installed in accordance with the Connecticut Safety Code for Elevators and Escalators adopted under authority of section 29-192 of the Connecticut General Statutes.

(Amd) **410.8.7 Accessible dwelling or sleeping units.** Where Group I-1, I-2, I-3, R-1, R-2 or R-4 dwelling or sleeping units are being altered or added, the requirements of Section 1107 for Accessible units and Chapter 9 for visible alarms of the International Building Code apply only to the quantity of spaces being altered or added.

(Amd) **410.8.8 Type A dwelling or sleeping units.** Where more than 20 Group R-2 dwelling or sleeping units are being altered or added, the requirements of Section 1107 for Type A units and Chapter 9 for visible alarms of the International Building Code apply only to the quantity of spaces being added or altered.

(Amd) **410.8.9 Type B dwelling or sleeping units.** Where four or more Group I-1, I-2, R-2, R-3, or R-4 dwelling or sleeping units are being added, the requirements of Section 1107 for Type B units and Chapter 9 for visible alarms of the International Building Code apply only to the quantity of the spaces being added. Where Group I-1, I-2, R-1, R-2, R-3, or R-4 dwelling or sleeping units are being altered and where the work area is greater than 50 percent of the aggregate area of the building, the requirements of Section 1107 for Type B units and Chapter 9 for visible alarms of the International Building Code apply only to the quantity of the spaces being altered.

(Amd) **410.8.11 Toilet rooms.** Where it is technically infeasible to alter existing toilet and bathing rooms to be accessible, an accessible single occupancy toilet room constructed in accordance with Section 1109.2.3 of the International Building Code is permitted. The single occupancy toilet room shall be located on the same floor and in the same area as the existing toilet or bathing rooms. At the inaccessible toilet and bathing rooms, directional signs indicating the location of the nearest accessible single occupancy toilet or bathing room shall be provided. These directional signs shall include the International Symbol of Accessibility and sign characters shall meet the visual character requirements in accordance with ICC A117.1.

CHAPTER 7– ALTERATIONS – LEVEL 1

(Amd) **702.4.1 Gas** The International Fuel Gas Code is not adopted by the State of Connecticut. Any references to the International Fuel Gas Code within the body of this code shall be considered references to requirements of NFPA 2, Hydrogen Technologies Code, NFPA 54, National Fuel Gas Code and NFPA 58, Liquefied Petroleum Gas Code, as incorporated in the Connecticut State Fire Safety and the Connecticut Fire Prevention Codes. These requirements apply to liquid petroleum storage systems, gas piping systems extending from the point of delivery to the inlet connections of appliances, the installation and operation of residential and commercial gas appliances and related accessories as covered by this code.

(Add) **704.2 Minimum standards.** In addition to the requirements of this code, means of egress in existing buildings shall meet the requirements of the provisions of Part IV of the Connecticut State Fire Safety Code for the proposed occupancy.

(Amd) **705.1.3 Lifts and limited use/limited application elevators in existing buildings.** Vertical or inclined platform lifts, inclined stairway chairlifts and limited use/limited application elevators shall not be a part of an accessible route in existing buildings undergoing alteration or repair except that vertical platform lifts and limited-use/limited-application elevators shall be permitted in existing buildings where permitted in the locations set forth in Section 1109.8 of the International Building Code. Pursuant to section 29-200 of the Connecticut General Statutes, the following exceptions are allowed:

Exceptions:

1. In existing buildings principally used for meeting, gathering or assembling by any civic, religious, fraternal or charitable organization.
2. In residential buildings designed to be occupied by one or two families.

3. In new buildings for which a building permit application has been filed on or after October 1, 2004, in accordance with the State Building Code.
4. In other existing buildings and structures only if the Executive Director of the Office of Protection and Advocacy for Persons with Disabilities and the State Building Inspector jointly approve such installation.

Lifts shall comply with ICC A117.1 and shall be installed in accordance with ASME A18.1. Limited use/limited application elevators shall comply with ICC A117.1 and shall be installed in accordance with the Connecticut Safety Code for Elevators and Escalators adopted under authority of section 29-192 of the Connecticut General Statutes.

(Amd) **705.1.10 Toilet rooms.** Where it is technically infeasible to alter existing toilet and bathing rooms to be accessible, an accessible single occupancy toilet room constructed in accordance with Section 1109.2.3 of the International Building Code is permitted. The single occupancy toilet room shall be located on the same floor and in the same area as the existing toilet or bathing rooms.

(Add) **705.1.10.1 Directional signage.** Where existing toilet or bathing rooms are being altered and are not made accessible, directional signage shall be provided indicating the location of the nearest accessible toilet or bathing facility within the facility. These directional signs shall include the International Symbol of Accessibility and sign characters shall meet the visual character requirements in accordance with ICC A117.1.

(Amd) **706.3.2 Roof diaphragms resisting wind loads in high-wind regions.** Where roofing materials are removed from more than 50 percent of the roof diaphragm or section of a building located where the ultimate design wind speed, V_{ult} determined in accordance with Appendix N of the International Building Code is greater than 115 mph (51 m/s) or in a special wind region, as defined in Section 1609 of the International Building Code, roof diaphragms, connections of the roof diaphragm to roof framing members, and roof-to-wall connections shall be evaluated for the wind loads specified in the International Building Code, including wind uplift. If the diaphragms and connections in their current condition are not capable of resisting at least 75 percent of those wind loads, they shall be replaced or strengthened in accordance with the loads specified in the International Building Code.

CHAPTER 8 – ALTERATIONS – LEVEL 2

(Amd) **804.4.3 Smoke alarms.** When alterations requiring a permit occur in Group I-4 and E day care facilities, Group I-1 or R occupancies, or when one or more sleeping rooms are added or created in existing dwelling units, the entire dwelling unit or building shall be provided with smoke detectors located as required for new buildings. Such smoke detectors within existing spaces may be battery operated and are not required to be dual-powered or interconnected unless other remodeling considerations require removal of wall and ceiling coverings which would facilitate concealed interconnected wiring.

(Add) **804.5 Carbon monoxide alarms.** Where an alteration is made to a building or structure of Group I-1, I-2, I-4, R, and E occupancy, the existing building shall be provided with carbon monoxide alarms in accordance with Section 915.7 of the International Building Code.

(Amd) **805.2 General.** The means of egress shall comply with the requirements of this section.

Exception: Where the work area and the means of egress serving it complies with Part IV of the 2016 Connecticut State Fire Safety Code.

(Amd) **805.3.3 Main Entrance – Group A.** In Group A occupancies renovated or altered to increase capacity that have a single main entrance, such main entrance shall also be the main exit. The main entrance/exit shall be of sufficient width to accommodate not less than two-thirds of the occupant load, but such width shall not be less than the total required width of all means of egress leading to the exit. The remaining exits shall be capable of providing at least one-half of the total required exit capacity.

Exception: In assembly occupancies where there is no well-defined main entrance and main exit or where multiple main entrances and main exits are provided, exits shall be permitted to be distributed around the perimeter of the building or space containing the assembly occupancy, provided the total width of egress is not less than 100 per cent of the required width.

CHAPTER 9 – ALTERATIONS – LEVEL 3

(Amd) **904.2 Fire alarm and detection systems.** Fire alarm and detection systems complying with Sections 804.4.1, 804.4.3, and 804.5 shall be provided throughout the building in accordance with the 2012 International Building Code portion of the State Building Code.

CHAPTER 10 – CHANGE OF OCCUPANCY

(Add) **1005.2 Main Entrance – Group A.** In Group A occupancies created by change of occupancy that have a single main entrance, such main entrance shall also be the main exit. The main entrance/exit shall be of sufficient width to accommodate not less than two-thirds of the occupant load, but such width shall not be less than the total required width of all means of egress leading to the exit. The remaining exits shall be capable of providing at least one-half of the total required exit capacity.

Exception: In assembly occupancies where there is no well-defined main entrance and main exit or where multiple main entrances and main exits are provided, exits shall be permitted to be distributed around the perimeter of the building or space containing the assembly occupancy, provided the total width of egress is not less than 100 per cent of the required width.

(Amd) **1012.2.1 Fire sprinkler system.** Where a change of occupancy classification occurs that requires an automatic fire sprinkler system to be provided based on the new occupancy in accordance with Chapter 9 of the 2012 International Building Code portion of the State Building Code, such system shall be provided throughout the building or portion thereof where the change of occupancy occurs.

(Amd) **1012.2.2 Fire alarm and detection system.** Where a change of occupancy classification occurs that requires a fire alarm and detection system to be provided based on the new occupancy in accordance with Chapter 9 of the 2012 International Building Code portion of the State Building Code, such system shall be provided throughout the building or portion thereof where the change of occupancy occurs. Existing alarm notification appliances shall be automatically activated throughout the building. Where the building is not equipped with an existing fire alarm system, alarm notification appliances shall be provided throughout the area where the change of occupancy occurs and shall be automatically activated.

(Amd) **1012.8.2 Complete change of occupancy.** Where an entire building undergoes a change of occupancy, it shall comply with Section 1012.8.1 and shall have all of the following accessible features:

1. At least one accessible building entrance.
2. At least one accessible route from an accessible building entrance to primary function areas.
3. Signage complying with Section 1110 of the 2012 International Building Code portion of the State Building Code.
4. Accessible parking, complying with Section 1106 of the 2012 International Building Code portion of the State Building Code, where parking is being provided.
5. At least one accessible passenger loading zone, when passenger loading zones are provided.
6. At least one accessible route connecting accessible parking and accessible passenger loading zones to an accessible entrance.
7. At least one accessible toilet room or toilet and bathing facility complying with Section 1109.2.3 of the 2012 International Building Code portion of the State Building Code.

Where it is technically infeasible as defined in Section 202 to comply with the new construction standards for any of these requirements for a change of group or occupancy, the above items shall conform to the requirements to the maximum extent technically feasible.

Exception: The accessible features listed in Items 1 through 7 are not required for an accessible route to Type B units.

CHAPTER 11 – ADDITIONS

(Amd) **1104.1 Smoke alarms in existing portions of a building.** Where an addition is made to a building or structure of a Group I-4 and E day care facilities, or Group R or I-1 occupancy, the existing building shall be provided with smoke alarms in accordance with Section 3403.5 of the International Building Code.

(Add) **1104.2 Carbon monoxide alarms in existing portions of a building.** Where an addition is made to a building or structure of Group I-1, I-2, I-4, R, and E occupancy, the existing building shall be provided with carbon monoxide alarms in accordance with Section 915.7 of the International Building Code.

CHAPTER 12 – HISTORIC BUILDINGS

(Add) **1201.1.1 Exemptions.** Exemptions may be granted to the provisions of this code for historic structures pursuant to section 29-259 of the Connecticut General Statutes.

(Amd) **1204.1.4 Toilet and bathing facilities.** Where toilet rooms are provided, at least one accessible single occupancy toilet room complying with Section 1109.2.3 of the 2012 International Building Code portion of the State Building Code shall be provided. At the inaccessible toilet and bathing rooms, directional signs indicating the location of the nearest accessible single occupancy toilet or bathing room shall be provided. These directional signs shall include the International Symbol of Accessibility and sign characters shall meet the visual character requirements in accordance with ICC A117.1.

CHAPTER 14 – PERFORMANCE COMPLIANCE METHODS

(Amd) **1401.2 Applicability.** Structures existing prior to the adoption date of the State Building Code, in which there is work involving additions, alterations or changes of occupancy, shall be made to conform to the requirements of this chapter or the provisions of Chapters 5 to 13, inclusive, of this code. The provisions in Sections 1401.2.1 to 1401.2.5, inclusive, of this code shall apply to existing occupancies that will continue to be, or are proposed to be, in Groups A, B, E, F, M, R, and S. These provisions shall not apply to buildings with occupancies in Group H or I.

CHAPTER 16 – REFERENCED STANDARDS

(Amd) National Fire Protection Association
NFPA 1 Batterymarch Park
 Quincy, MA 02269-9101

Standard reference number—year of publication	Title	Referenced in code section number
(Add) 02-11	Hydrogen Technologies Code	101.8, 704.2
(Add) 54-12	National Fuel Gas Code101.8
(Amd) 70—14	National Electrical Code607.1.1, 607.1.2, 607.1.3, 607.1.4, 607.1.5
(Amd) 99—12	Health Care Facilities 607.1.4
(Add) 720-12	Carbon Monoxide (CO) Detection and Warning Equipment	403.7, 804.5, 1104.2

AMENDMENTS TO THE 2012 INTERNATIONAL PLUMBING CODE

CHAPTER 1 – SCOPE AND ADMINISTRATION

(Amd) **101.1 Title.** The 2012 International Plumbing Code and this Section shall be known as the 2012 International Plumbing Code portion of the 2016 State Building Code, hereinafter referred to as “the code” or “this code”.

(Amd) **101.2 Scope.** The provisions of this code shall apply to the erection, installation, alteration, repairs, relocation, replacement, addition to, use or maintenance of plumbing systems within the State of Connecticut. This code shall also regulate nonflammable medical gas, inhalation anesthetic, vacuum piping, nonmedical oxygen systems and sanitary and condensate vacuum collection systems. The installation of fuel gas distribution piping and equipment, fuel gas-fired water heaters and water heater venting systems shall be regulated in accordance with Section 101.2.1. The provisions of appendices B, C, D, E, and F shall be considered part of this code.

Exceptions:

1. Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories high with separate means of egress and their accessory structures shall comply with the 2012 International Residential Code portion of the State Building Code.
2. Plumbing systems in existing buildings undergoing repair, alteration, addition or change of occupancy may comply with the 2012 International Existing Building Code portion of the State Building Code.

(Add) **101.2.1 Gas.** The International Fuel Gas Code is not adopted by the State of Connecticut. Any references to the International Fuel Gas Code within the body of this code shall be considered references to requirements of NFPA 2, Hydrogen Technologies Code, NFPA 54, National Fuel Gas Code and NFPA 58, Liquefied Petroleum Gas Code, as incorporated in the Connecticut State Fire Safety and the Connecticut Fire Prevention Codes. These requirements apply to liquid petroleum storage systems, gas piping systems extending from the point of delivery to the inlet connections of appliances, the installation and operation of residential and commercial gas appliances and related accessories as covered by this code.

(Add) **101.2.2 Electrical.** The provisions of the 2014 NFPA 70, National Electrical Code, shall apply to the installation of electrical systems, including alterations, repairs, replacement, equipment, appliances, fixtures, fittings and appurtenances thereto.

(Amd) **102.6 Historic buildings.** Pursuant to section 29-259 of the Connecticut General Statutes, exemptions may be granted to the provisions of this code for historic structures, as defined by section 10-410 of the Connecticut General Statutes, which have been classified as such in the State Register of Historic Places, as long as the provisions of subsection (b) of section 29-259 of the Connecticut General Statutes are adhered to and provided such exemptions shall not affect the safe design, use or construction of such property.

(Del) **SECTION 103 – DEPARTMENT OF PLUMBING INSPECTION.** Delete Section 103 in its entirety and replace with the following:

(Add) **SECTION 103 – ENFORCEMENT AGENCY**

(Add) **103.1 Creation of enforcement agency.** Each town, city and borough shall create an agency whose function is to enforce the provisions of this code. The official in charge thereof shall be known as the building official.

(Add) **103.2 Appointment.** The chief executive officer of any town, city or borough shall appoint an officer to administer this code, and this officer shall be known as the “building official” in accordance with section 29-260 of the Connecticut General Statutes and referred to herein as the building official, local building official, or code official.

(Add) **103.3 Employees.** In accordance with the prescribed procedures and regulations of the town, city or borough, and with the concurrence of the appointing authority, the building official shall have the authority to appoint an assistant building official, related technical officers, inspectors, plan examiners and other employees. Such employees shall have the powers as regulated by the town, city or borough, and by the State of Connecticut.

(Add) **103.4 Restriction of employees.** An official or employee connected with the agency created to enforce the provisions of this code pursuant to Section 103.1, except one whose only connection with it is that of a member of the board of appeals established under the provisions of Section 109, shall not be engaged in or directly or indirectly connected with the furnishing of labor, materials or appliances for the construction, addition, alteration, repair or maintenance of a building located in the town, city or borough in which such official or employee is employed, or the preparation of construction documents therefore, unless that person is the owner of the building. Such officer or employee shall not engage in any work that conflicts with official duties or with the interests of the agency.

(Del) **SECTION 104 – DUTIES AND POWERS OF CODE OFFICIAL.** Delete in its entirety and replace with the following:

(Add) **SECTION 104 – DUTIES AND POWERS OF BUILDING OFFICIAL**

(Add) **104.1 General.** The duties and powers of the building official shall be in accordance with the provisions of Sections 104.1 through 104.8 of the International Building Code portion of the State Building Code.

(Amd) **105.1 Modifications.** The State Building Inspector may grant modifications, variations or exemptions from, or approve equivalent or alternative compliance with, the State Building Code where strict compliance with the State Building Code would entail practical difficulty or unnecessary hardship, or is otherwise adjudged unwarranted, provided the intent of the law shall be observed and public welfare and safety be assured. Any person aggrieved by any decision of the State Building Inspector may appeal to the Codes and Standards Committee within 30 days after mailing of the decision in accordance with subsection (b) of section 29-254 of the Connecticut General Statutes.

(Add) **105.1.1 Action on application.** The application for modification, variation, exemption from or approval of equivalent or alternative compliance with the requirements of the State Building Code shall be made on a form supplied by the State Building Inspector available from the local building official or the Office of the State Building Inspector, which shall be forwarded by the applicant to the local building official. Any such application received by a local building official shall be forwarded to the State Building Inspector within 15 business days of receipt by such local

building official. The application shall include the local building official's comments on the merits of the application, and shall be signed by the local building official, acting building official or provisional building official.

(Add) **105.1.2 Records.** The application for modification, variation, exemption or approval of equivalent or alternative compliance and the decision of the State Building Inspector shall be in writing and shall be officially recorded with the application for a building permit in the permanent records of the building department.

(Add) **105.1.3 Accessibility exemption.** Any variation of or exemption from any provisions relating to accessibility to, use of and egress from, buildings and structures as required herein shall be permitted only when approved by the State Building Inspector and the Executive Director of the Office of Protection and Advocacy for Persons with Disabilities, acting jointly, pursuant to subsection (b) of section 29-269 of the Connecticut General Statutes. Any person aggrieved by the joint decision of the State Building Inspector and the Executive Director of the Office of Protection and Advocacy for Persons with Disabilities may appeal to the Codes and Standards Committee within 30 days after such decision has been rendered in accordance with subsection (b) of section 29-269 of the Connecticut General Statutes.

(Amd) **106.1 When Required.** Any owner or authorized agent who intends to construct, enlarge, alter, repair, move, demolish or change the occupancy of a building or structure, or to move a lot line that will affect any existing building or structure, or to erect, install, enlarge, alter, repair, remove, convert or replace any electrical, gas, mechanical or plumbing system, the installation of which is regulated by this code, or to cause any such work to be done, shall first make application to the building official and obtain the required permit

(Add) **106.2.1 State agency exemptions.** A state agency shall not be required to obtain a building permit from the local building official. A state agency shall obtain a building permit for construction or alteration of state buildings or structures from the State Building Inspector in accordance with the provisions of section 29-252a of the Connecticut General Statutes.

(Amd) **106.4 By whom application is made.** Pursuant to section 29-263 of the Connecticut General Statutes, application for a permit shall be made by the owner in fee or by an authorized agent. If the authorized agent is a licensed contractor, the provisions of section 20-338b of the Connecticut General Statutes shall be followed. The full names and addresses of the owner, agent and the responsible officers, if the owner or agent is a corporate body, shall be stated in the application. No permit shall be issued to a contractor who is required to be registered pursuant to chapter 400 of the Connecticut General Statutes, for work to be performed by such contractor, unless the name, business address and Department of Consumer Protection registration number of such contractor is clearly marked on the application for permit, and the contractor has presented such contractor's certificate of registration as a home improvement contractor.

(Amd) **106.5 Permit issuance.** The building official shall examine or cause to be examined applications for permits and amendments thereto within 30 days after filing and either issue or deny a permit within such 30-day period. If the application or construction documents do not conform to the requirements of this code and pertinent laws, the building official shall reject such application in writing, stating the reasons therefore. If the building official is satisfied that the proposed work conforms to the requirements of this code and applicable laws, statutes, regulations and ordinances, the building official shall issue a permit therefore as soon as practicable.

(Amd) **106.5.6 Retention of construction documents.** The building official shall retain one set of approved construction documents for a period as set forth in the records/disposition schedule adopted pursuant to chapter 188 of the Connecticut General Statutes.

Exception: In accordance with the provisions of subsection (e) of section 29-261 of the Connecticut General Statutes, upon receipt of a written request signed by the owner of plans and specifications on file for a single-family dwelling or out-building, the building official shall immediately return the original plans and specifications to the owner after a certificate of occupancy is issued with respect to the plans and specifications.

(Del) **106.6.1 Work commencing before permit issuance.** Delete without substitution.

(Amd) **106.6.2 Fee schedule.** Each municipality shall establish a schedule of fees for each construction document review, building permit, certificate of approval and certificate of occupancy. A schedule of adopted fees shall be posted in the building department for public view.

(Amd) **106.6.3 Fee refunds.** The building official is authorized to establish a refund policy.

(Add) **107.2.6 Posting of required inspections.** A schedule of required inspections shall be compiled by the code official. The schedule shall be posted in the building department for public view.

(Add) **107.8 Notification of inspection and testing results.** Notification as to passage or failure, in whole or in part, of any required inspection or test shall be made in writing by the building official or his duly authorized representative and shall be left at the job site or delivered to the permit holder. It shall be the duty of the permit holder to ascertain the results of required inspections.

(Amd) **108.4 Violation penalties.** Any person who violates any provision of this code shall be fined not less than two hundred nor more than one thousand dollars or imprisoned not more than six months or both, pursuant to section 29-254a of the Connecticut General Statutes.

(Amd) **108.5 Stop work orders.** Upon notice from the building official, work on any plumbing system that is being done contrary to the provisions of this code or in a dangerous or unsafe manner shall immediately cease. Such notice shall be in writing and shall be given to the owner of the property, or to the owner's agent, or to the person doing the work. The notice shall state the conditions under which the work is authorized to resume. Where an emergency exists, the building official shall not be required to give a written notice prior to stopping the work. Any person who shall continue any work in or about the structure 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 liable for penalties in accordance with Section 108.4.

(Del) **SECTION 109 – MEANS OF APPEAL** Delete this section in its entirety and replace with the following:

(Add) **SECTION 109 – MEANS OF APPEAL.**

(Add) **109.1 Means of appeal.** Means of appeal shall be in accordance with the provision of Section 113 of the International Building Code portion of the State Building Code.

CHAPTER 2 – DEFINITIONS

(Amd) **201.3 Terms defined in other codes.** Where terms are not defined in this code and are defined in other portions of the State Building Code, such terms shall have the meanings ascribed to them as in those codes.

(Add) **202.1 Definitions.** Add or amend the following definitions:

(Add) **BUILDING OFFICIAL.** The officer or other designated authority charged with the administration and enforcement of this code, or a duly authorized representative. Also known as the local building official or the code official.

(Amd) **REGISTERED DESIGN PROFESSIONAL.** An architect, engineer or interior designer, registered or licensed to practice professional architecture, engineering or interior design, as defined by the statutory requirements of the professional registration laws of the State of Connecticut, and acting within the scope of his or her practice.

CHAPTER 3 - GENERAL REGULATIONS

(Amd) **305.4 Freezing.** A water, soil or waste pipe shall not be installed outside of a building, or concealed in outside walls or in any place subjected to freezing temperature, unless adequate provision is made to protect such pipe from freezing by insulation or heat or both. Water service pipe shall be installed not less than 48 inches deep.

(Del) **305.4.1 Sewer depth.** Delete without substitution.

(Del) **312.10.1 Inspections.** Delete without substitution.

(Amd) **312.10.2 Testing.** Required reduced pressure principle, double check, pressure vacuum breaker, reduced pressure detector fire protection, double check detector fire protection, and spill-proof vacuum breaker backflow preventer assemblies and hose connection backflow preventers shall be tested at the time of installation by individuals or agencies qualified to perform such inspections. It shall be the responsibility of the owner to have such tests performed and copies of test reports shall be given to the local building official. The testing procedure shall be performed in accordance with one of the following standards:

ASSE 5013, ASSE 5015, ASSE 5020, ASSE 5047, ASSE 5048,
ASSE 5052, ASSE 5056, CSA B64.10 or CSA B64.10.1.

CHAPTER 4 – FIXTURES, FAUCETS AND FIXTURE FITTINGS

(Amd) **403.1 Minimum number of fixtures.** Plumbing fixtures shall be provided for the type of occupancy and in the minimum number shown in Table 403.1. Types of occupancies not shown in Table 403.1 shall be considered individually by the building official. The number of occupants shall be determined in accordance with the International Building Code. Occupancy classification shall be determined in accordance with the International Building Code.

Exceptions:

1. The following minimum fixtures shall be provided in Group R-1 bed and breakfast establishments: Water closets – one per two guest rooms; lavatories – one per two guest rooms; bathtubs/showers – one per two guest rooms. Plumbing fixtures in Group R-1 bed and breakfast establishments shall be permitted to be accessed from hallways and corridors and to be shared by guests.

2. Child washing and diaper changing facilities shall be permitted in lieu of bathtubs or showers in Group I-4 child care occupancies.

(Amd) **403.2 Separate facilities.** Where plumbing fixtures are required, separate facilities shall be provided for each sex.

Exceptions:

1. Separate facilities shall not be required for dwelling units and sleeping units.
2. Separate facilities shall not be required in structures or tenant spaces with a total occupant load, including both employee and customers, of 15 or fewer.
3. Separate facilities shall not be required in mercantile occupancies in which the maximum occupant load is 100 or fewer.
4. Toilet rooms in Educational Group E Kindergarten and day care occupancies, and in Institutional Group I-4 child day care may be designated as unisex which are primarily for children's use.

(Del) **403.2.1 Family or assisted-use toilet facilities serving as separate facilities.** Delete without substitution.

(Amd) **405.3.4 Water closet compartment.** Each water closet utilized by the public or employee shall occupy a separate compartment with walls or partitions and a door enclosing the fixture to ensure privacy.

Exceptions:

1. Water closet compartments shall not be required in a single-occupant toilet room with a lockable door.
2. Toilet rooms located in Educational Group E Kindergarten and day care occupancies, and in Institutional Group I-4 child day care and containing two or more water closets shall be permitted to have one water closet without an enclosing compartment provided the toilet room is accessed through a door or other configuration to provide privacy.
3. This provision is not applicable to toilet areas located within Group I-3 housing areas.

(Amd) **405.3.5 Urinal partitions.** Each urinal utilized by the public or employees shall occupy a separate area with walls or partitions to provide privacy. The walls shall begin at a height not greater than 12 inches (305 mm) from and extend not less than 60 inches (1524 mm) above the finished floor surface. The walls or partitions shall extend from the wall surface at each side of the urinal not less than 18 inches (457 mm) or to a point not less than 6 inches (152 mm) beyond the outermost front lip of the urinal measured from the finished backwall surface, whichever is greater.

Exceptions:

1. Urinal partitions shall not be required in a single occupant or family/assisted-use toilet room with a lockable door.

2. Toilet rooms located in Educational Group E Kindergarten and day care occupancies, and in Institutional Group I-4 child day care and containing two or more urinals shall be permitted to have one urinal without partitions provided the toilet room is accessed through a door or other configuration to provide privacy.

(Add) **412.5 Connection required.** Floor drains shall connect to the sanitary sewer system or to an on-site holding tank(s) when the discharge contains petroleum-based oil, grease, sand or other harmful or hazardous substances. Interceptors and separators shall be provided in accordance with Section 1003 when floor drains connect to the sanitary sewer system, and shall be installed in accordance with regulations promulgated by the Department of Energy and Environmental Protection. Floor drains shall not be connected to a storm sewer, a storm drainage system or a storm building drain. Floor drains shall have trap seals in accordance with Section 1002.4.

CHAPTER 6 - WATER SUPPLY AND DISTRIBUTION

(Add) **605.2.1 Lead content of drinking water pipe and fittings.** Pipe, pipe fittings, joints, valves, faucets and fixture fittings utilized to supply water for drinking or cooking purposes shall comply with NSF 372 and shall have a weighted average lead content of 0.25 percent or less.

(Amd) **608.17 Protection of individual water supplies.** An individual water supply shall be located and constructed so as to be safeguarded against contamination in accordance with the Public Health Code of the State of Connecticut adopted pursuant to section 19a-36 of the Connecticut General Statutes.

(Del) **608.17.1 through 608.17.8.** Delete subsections and referenced table without substitution.

CHAPTER 7 – SANITARY DRAINAGE

(Amd) **701.2 Sewer required.** Buildings in which plumbing fixtures are installed and premises having drainage piping shall be connected to a public sewer, where required, or an approved private sewage disposal system in accordance with the Public Health Code adopted under authority of section 19a-36 of the Connecticut General Statutes.

CHAPTER 9 – VENTS

(Amd) **903.1 Roof extension.** Open vent pipes that extend through a roof shall be terminated not less than 12 inches above the roof, except where a roof is to be used for any purpose other than weather protection, the vent extensions shall terminate not less than 7 feet above the roof.

(Del) **903.2 Frost closure.** Delete without substitution.

CHAPTER 10 - TRAPS, INTERCEPTORS AND SEPARATORS

(Amd) **1003.3 Grease interceptors.** Grease interceptors that serve plumbing systems connected to private, on-site septic systems shall comply with the requirements of Sections 1003.3.1 to 1003.3.5, inclusive and in accordance with the Public Health Code. Grease interceptors that serve plumbing systems connected via a sanitary sewer to a publicly owned treatment works shall comply with the Department of Energy and Environmental Protection's General Permit for the Discharge of Wastewater Associated with Food Preparation Establishments.

CHAPTER 12 – SPECIAL PIPING AND STORAGE SYSTEMS

(Amd) **1201.1 Scope.** The provisions of this chapter shall govern the design and installation of piping and storage systems for non-flammable medical gas systems and non-medical oxygen systems. All maintenance and operation of such systems shall be in accordance with the Connecticut State Fire Prevention Code.

CHAPTER 13 – GRAY WATER RECYCLING SYSTEMS

(Del) **1303.1 through 1303.11.** Delete subsections and referenced tables and replace with the following:

(Add) **1303.1 Subsurface landscape irrigation systems.** Subsurface landscape irrigation systems shall comply with the Public Health Code of the State of Connecticut.

CHAPTER 14 – REFERENCED STANDARDS

(Amd) National Fire Protection Association
NFPA 1 Batterymarch Park
 Quincy, MA 02269-9101

Standard reference number—year of publication	Title	Referenced in code section number
(Add) 02-11	Hydrogen Technologies Code	101.2.1
(Add) 54-12	National Fuel Gas Code 101.2.1
(Amd) 70—14	National Electrical Code502.1, 504.3, 1114.1.3

(Del) **APPENDIX A – PLUMBING PERMIT FEE SCHEDULE.** Delete Appendix A without substitution.

AMENDMENTS TO THE 2012 INTERNATIONAL MECHANICAL CODE

CHAPTER 1 – SCOPE AND ADMINISTRATION

(Amd) **101.1 Title.** The 2012 International Mechanical Code and this Section shall be known as the 2012 International Mechanical Code portion of the 2016 State Building Code, hereinafter referred to as “the code” or “this code”.

(Amd) **101.2 Scope.** This code shall regulate the design, installation, maintenance, alteration and inspection of mechanical systems that are permanently installed and utilized to provide control of environmental conditions and related processes within buildings. This code shall also regulate those mechanical systems, system components, equipment and appliances specifically addressed herein. The installation of fuel gas distribution piping and equipment, fuel-gas-fired appliances and fuel-gas-fired appliance venting systems shall be in accordance with Section 101.2.2.

Exceptions:

1. Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories high with separate means of egress and their accessory structures shall comply with the International Residential Code
2. Mechanical systems in existing buildings undergoing repair, alteration, addition or change of occupancy shall be permitted to comply with the International Existing Building Code.

(Amd) **101.2.1 Appendices.** The provisions of Appendix A shall be considered applicable to the utilization of this code.

(Add) **101.2.2 Gas.** The International Fuel Gas Code is not adopted by the State of Connecticut. Any references to the International Fuel Gas Code within the body of this code shall be considered references to requirements of NFPA 2, Hydrogen Technologies Code, NFPA 54, National Fuel Gas Code and NFPA 58, Liquefied Petroleum Gas Code, as incorporated in the Connecticut State Fire Safety and the Connecticut Fire Prevention Codes. These requirements apply to liquid petroleum storage systems, gas piping systems extending from the point of delivery to the inlet connections of appliances, the installation and operation of residential and commercial gas appliances and related accessories as covered by this code.

(Add) **101.2.3 Oil-burning equipment, piping and storage.** In addition to the requirements of this code, the installation of oil burners, equipment, and appliances used in connection therewith, including tanks, piping, pumps, control devices and accessories shall comply with NFPA 31, as incorporated in the Connecticut Fire Safety Code and the Connecticut Fire Prevention Code.

(Add) **101.2.4 Electrical.** The provisions of NFPA 70, National Electrical Code, shall apply to the installation of electrical systems, including alterations, repairs, replacement, equipment, appliances, fixtures, fittings and appurtenances thereto.

(Add) **101.2.5 Fire prevention.** References to the International Fire Code within the body of the model document shall be considered to be references to the Connecticut State Fire Safety Code.

(Amd) **102.6 Historic buildings.** Pursuant to section 29-259 of the Connecticut General Statutes, exemptions may be granted to the provisions of this code for historic structures, as defined by section 10-410 of the Connecticut General Statutes, which have been classified as such in the State Register of Historic Places, as long as the provisions of subsection (b) of section 29-259 of the Connecticut General Statutes are adhered to and provided that such exemptions shall not affect the safe design, use or construction of such property.

(Del) **SECTION 103 – DEPARTMENT OF MECHANICAL INSPECTION.** Delete Section 103 in its entirety and replace with the following:

(Add) **SECTION 103 – ENFORCEMENT AGENCY**

(Add) **103.1 Creation of enforcement agency.** Each town, city and borough shall create an agency whose function is to enforce the provisions of this code. The official in charge thereof shall be known as the building official.

(Add) **103.2 Appointment.** The chief executive officer of any town, city or borough shall appoint an officer to administer this code, and this officer shall be known as the “building official” in accordance with section 29-260 of the Connecticut General Statutes, and referred to herein as the building official, local building official, or code official.

(Add) **103.3 Employees.** In accordance with the prescribed procedures and regulations of the town, city or borough and with the concurrence of the appointing authority, the building official shall have the authority to appoint an assistant building official, related technical officers, inspectors, plan examiners and other employees. Such employees shall have the powers as regulated by the town, city or borough, and by the State of Connecticut.

(Add) **103.4 Restriction of employees.** An official or employee connected with the agency created to enforce the provisions of this code pursuant to Section 103.1, except one whose only connection with it is that of a member of the board of appeals established under the provisions of Section 109, shall not be engaged in or directly or indirectly connected with the furnishing of labor, materials or appliances for the construction, addition, alteration, repair or maintenance of a building located in the town, city or borough in which such official or employee is employed, or the preparation of construction documents therefore, unless that person is the owner of the building. Such officer or employee shall not engage in any work that conflicts with official duties or with the interests of the agency.

(Del) **SECTION 104 – DUTIES AND POWERS OF CODE OFFICIAL.** Delete in its entirety and replace with the following:

(Add) **SECTION 104 – DUTIES AND POWERS OF BUILDING OFFICIAL**

(Add) **104.1 General.** The duties and powers of the building official shall be in accordance with the provisions of Sections 104.1 through 104.8 of the International Building Code portion of the State Building Code.

(Amd) **105.1 Modifications.** The State Building Inspector may grant modifications, variations or exemptions from, or approve equivalent or alternative compliance with, the State Building Code where strict compliance with the State Building Code would entail practical difficulty or unnecessary hardship, or is otherwise adjudged unwarranted, provided the intent of the law shall

be observed and public welfare and safety be assured. Any person aggrieved by any decision of the State Building Inspector may appeal to the Codes and Standards Committee within 30 days after mailing of the decision in accordance with subsection (b) of section 29-254 of the Connecticut General Statutes.

(Add) **105.1.1 Action on application.** The application for modification, variation, exemption from or approval of equivalent or alternative compliance with the requirements of the State Building Code shall be made on a form supplied by the State Building Inspector available from the local building official or the Office of the State Building Inspector, which shall be forwarded by the applicant to the local building official. Any such application received by a local building official shall be forwarded to the State Building Inspector within 15 business days of receipt by such local building official. The application shall include the local building official's comments on the merits of the application, and shall be signed by the local building official, acting building official or provisional building official.

(Add) **105.1.2 Records.** The application for modification, variation, exemption or approval of equivalent or alternative compliance and the decision of the State Building Inspector shall be in writing and shall be officially recorded with the application for a building permit in the permanent records of the building department.

(Add) **105.1.3 Accessibility exemption.** Any variation of or exemption from any provisions relating to accessibility to, use of and egress from, buildings and structures as required herein shall be permitted only when approved by the State Building Inspector and the Executive Director of the Office of Protection and Advocacy for Persons with Disabilities, acting jointly, pursuant to subsection (b) of section 29-269 of the Connecticut General Statutes. Any person aggrieved by the joint decision of the State Building Inspector and the Executive Director of the Office of Protection and Advocacy for Persons with Disabilities may appeal to the Codes and Standards Committee within 30 days after such decision has been rendered in accordance with subsection (b) of section 29-269 of the Connecticut General Statutes.

(Amd) **106.1 When Required.** Any owner or authorized agent who intends to construct, enlarge, alter, repair, move, demolish or change the occupancy of a building or structure, or to move a lot line that will affect any existing building or structure, or to erect, install, enlarge, alter, repair, remove, convert or replace any electrical, gas, mechanical or plumbing system, the installation of which is regulated by this code, or to cause any such work to be done, shall first make application to the building official and obtain the required permit

(Add) **106.1.1 By whom application is made.** Pursuant to section 29-263 of the Connecticut General Statutes, application for a permit shall be made by the owner in fee or by an authorized agent. If the authorized agent is a licensed contractor, the provisions of section 20-338b of the Connecticut General Statutes shall be followed. The full names and addresses of the owner, agent and the responsible officers, if the owner or agent is a corporate body, shall be stated in the application. No permit shall be issued to a contractor who is required to be registered pursuant to chapter 400 of the Connecticut General Statutes, for work to be performed by such contractor, unless the name, business address and Department of Consumer Protection registration number of such contractor is clearly marked on the application for permit, and the contractor has presented such contractor's certificate of registration as a home improvement contractor.

(Add) **106.2.1 State agency exemptions.** A state agency shall not be required to obtain a building permit from the local building official. A state agency shall obtain a building permit for construction or alteration of state buildings or structures from the State Building Inspector in accordance with the provisions of section 29-252a of the Connecticut General Statutes.

(Amd) **106.4 Permit issuance.** The building official shall examine or cause to be examined applications for permits and amendments thereto within 30 days after filing and either issue or deny a permit within such 30-day period. If the application or construction documents do not conform to the requirements of this code and pertinent laws, the building official shall reject such application in writing, stating the reasons therefore. If the building official is satisfied that the proposed work conforms to the requirements of this code and applicable laws, statutes, regulations and ordinances, the building official shall issue a permit therefore as soon as practicable.

(Amd) **106.4.6 Retention of construction documents.** The building official shall retain one set of approved construction documents for a period as set forth in the records/disposition schedule adopted pursuant to chapter 188 of the Connecticut General Statutes.

Exception: In accordance with the provisions of subsection (e) of section 29-261 of the Connecticut General Statutes, upon receipt of a written request signed by the owner of plans and specifications on file for a single-family dwelling or out-building, the building official shall immediately return the original plans and specifications to the owner after a certificate of occupancy is issued with respect to the plans and specifications.

(Del) **106.5.1 Work commencing before permit issuance.** Delete without substitution.

(Amd) **106.5.2 Fee schedule.** Each municipality shall establish a schedule of fees for each construction document review, building permit, certificate of approval and certificate of occupancy. A schedule of adopted fees shall be posted in the building department for public view.

(Amd) **106.5.3 Fee refunds.** The building official is authorized to establish a refund policy.

(Add) **107.2.6 Posting of required inspections.** A schedule of required inspections shall be compiled by the code official. The schedule shall be posted in the building department for public view.

(Add) **107.7 Notification of inspection and testing results.** Notification as to passage or failure, in whole or in part, of any required inspection or test shall be made in writing by the building official or his duly authorized representative and shall be left at the job site or delivered to the permit holder. It shall be the duty of the permit holder to ascertain the results of required inspections.

(Amd) **108.4 Violation penalties.** Any person who violates any provision of this code shall be fined not less than two hundred nor more than one thousand dollars or imprisoned not more than six months or both, pursuant to section 29-254a of the Connecticut General Statutes.

(Amd) **108.5 Stop work orders.** Upon notice from the building official, work on any mechanical system that is being done contrary to the provisions of this code or in a dangerous or unsafe manner shall immediately cease. Such notice shall be in writing and shall be given to the owner of the property, or to the owner's agent, or to the person doing the work. The notice shall state the conditions under which the work is authorized to resume. Where an emergency exists, the building official shall not be required to give a written notice prior to stopping the work. Any person who shall continue any work in or about the structure 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 liable for penalties in accordance with Section 108.4.

(Del) **SECTION 109 - MEANS OF APPEAL.** Delete this section in its entirety and replace with the following:

(Add) **109.1 Means of appeal.** Means of appeal shall be in accordance with Section 113 of the 2012 International Building Code portion of the State Building Code.

CHAPTER 2 – DEFINITIONS

(Amd) **201.3 Terms defined in other codes.** Where terms are not defined in this code and are defined in other portions of the State Building Code, such terms shall have the meanings ascribed to them as in those codes.

(Add) **202.1 Definitions.** Add or amend the following definitions:

(Add) **BUILDING OFFICIAL.** The officer or other designated authority charged with the administration and enforcement of this code, or a duly authorized representative. Also known as the local building official or code official.

(Amd) **REGISTERED DESIGN PROFESSIONAL.** An architect, engineer or interior designer, registered or licensed to practice professional architecture, engineering or interior design, as defined by the statutory requirements of the professional registration laws of the State of Connecticut, and acting within the scope of his or her practice.

CHAPTER 3 - GENERAL REGULATIONS

(Amd) **301.1 Scope.** Except as may be otherwise regulated by Chapters 540 and 541 of the Connecticut General Statutes, or regulations of other state agencies, this chapter shall govern the approval and installation of all equipment and appliances that comprise parts of the building mechanical systems regulated by this code in accordance with Section 101.2.

(Amd) **301.6 Gas.** The International Fuel Gas Code is not adopted by the State of Connecticut. Any references to the International Fuel Gas Code within the body of this code shall be considered references to requirements of NFPA 2, Hydrogen Technologies Code, NFPA 54, National Fuel Gas Code and NFPA 58, Liquefied Petroleum Gas Code, as incorporated in the Connecticut State Fire Safety and the Connecticut Fire Prevention Codes. These requirements apply to liquid petroleum storage systems, gas piping systems extending from the point of delivery to the inlet connections of appliances, the installation and operation of residential and commercial gas appliances and related accessories as covered by this code.

CHAPTER 5 – EXHAUST SYSTEMS

(Amd) **505.2 Makeup air required.** Exhaust hood systems capable of exhausting in excess of 400 cubic feet per minute (0.19 m³/s) shall be provided with makeup air at a rate approximately equal to the difference between the exhaust air rate and 400 cubic feet per minute. Such makeup air systems shall be equipped with a means of closure.

Exception: Where all appliances in the house are of sealed combustion, power-vent, unvented, or electric, the exhaust hood system shall be permitted to exhaust up to 600 cubic feet per minute (0.28 m³/s) without providing makeup air. Exhaust hood systems capable of exhausting in excess of 600 cubic feet per minute (0.28 m³/s) shall be provided with a makeup air at a rate approximately equal to the difference between the exhaust air rate and 600 feet per minute. Such makeup air systems shall be equipped with a means of closure.

CHAPTER 6 – DUCT SYSTEMS

(Amd) **606.2 Where required.** Smoke detectors shall be installed where indicated in Sections 606.2.1 to 606.2.3, inclusive.

Exception: Smoke detectors shall not be required where air distribution systems are incapable of spreading smoke beyond the enclosing walls, floors and ceilings of the room or space in which the smoke is generated, or where the sole purpose of the air distribution system is to remove air from the inside of the building to the outside of the building.

(Amd) **606.2.1 Supply air systems.** Smoke detectors shall be installed in supply air systems with a design capacity greater than 2,000 cubic feet per minute in the supply air duct downstream of any filters and ahead of any branch connections.

(Amd) **606.2.2 Common supply and return air systems.** Where multiple air-handling systems share common supply or return air ducts or plenums with a combined design capacity greater than 2,000 cubic feet per minute, the supply air system shall be provided with smoke detectors in accordance with Section 606.2.1.

Exception: Individual smoke detectors shall not be required for each fan-powered terminal unit, provided such units do not have an individual design capacity greater than 2,000 cubic feet per minute and will be shut down by the activation of the smoke detectors required by Section 606.2.1.

In all cases the smoke detectors shall comply with Sections 606.4 and 606.4.1.

(Amd) **606.2.3 Return air risers.** Where return air risers serve two or more stories and serve any portion of a return air system having a design capacity greater than 15,000 cubic feet per minute, smoke detectors shall be installed at each story. Such smoke detectors shall be located upstream of the connection between the return air riser and any air ducts or plenums.

Exception: Smoke detectors are not required in the return air system where all portions of the building served by the air distribution system are protected by area smoke detectors connected to a fire alarm system in accordance with the 2016 Connecticut State Fire Safety Code. The area smoke detection system shall comply with Section 606.4.

CHAPTER 10 - BOILERS, WATER HEATERS AND PRESSURE VESSELS

(Add) **1001.1.1 Boilers and water heaters.** Boilers and water heaters shall also be governed by the regulations adopted under authority of chapter 540 of the Connecticut General Statutes.

CHAPTER 15 – REFERENCED STANDARDS

(Amd) NFPA		National Fire Protection Association 1 Battery Park Quincy, MA 02169-7471
Standard reference number— year of publication	Title	Referenced in code section number
(Add) 02-11	Hydrogen Technologies Code	101.2.2
(Add) 54-12	National Fuel Gas Code101.2.2
(Amd) 70-14	National Electrical Code301.7, 306.3.1, 306.4.1, 511.1.1.

AMENDMENTS TO THE 2012 INTERNATIONAL ENERGY CONSERVATION CODE

CHAPTER 1 [CE] – SCOPE AND ADMINISTRATION

(Amd) **C101.1 Title.** The 2012 International Energy Conservation Code and this Section shall be known as the 2012 International Energy Conservation Code portion of the 2016 State Building Code, hereinafter referred to as “the code” or “this code”.

(Add) **C101.4.7 Temporary structures.** Temporary structures shall comply with Section 108 of the 2012 International Building Code portion of the State Building Code and are exempt from this code.

(Amd) **C101.5.2 Low energy buildings.** The following buildings, or portions thereof, separated from the remainder of the building by building thermal envelope assemblies complying with this code shall be exempt from the building thermal envelope provisions of this code:

1. Those with a peak design rate of energy usage less than 3.4 British thermal units per hour per square foot (Btu/h.ft²) or 1.0 watts per square foot (watt/ft²) of floor area for space conditioning purposes.
2. Those that do not contain conditioned space.
3. Buildings and structures for which heating and cooling is supplied solely by utilization of non-purchased renewable energy sources including, but not limited to, on-site wind, on-site water or on-site solar power, or wood-burning heating appliances that do not rely on backup heat from other purchased, non-renewable sources.
4. Greenhouses.

(Add) **C101.5.3 Energy efficiency standards for products.** In addition to the requirements of this code, the testing, certification and enforcement of efficiency standards for new products sold, offered for sale or installed in the State of Connecticut shall be in compliance with section 16a-48 of the Connecticut General Statutes and regulations adopted under authority of said statute.

(Add) **C101.6 Administrative matters not provided for.** Administrative matters not covered by this code shall be in accordance with the provisions of Chapter 1 of the International Building Code portion of the State Building Code.

(Amd) **C102.1.1 Above code programs.** The State Building Inspector and the Codes and Standards Committee may deem a national, state or local energy efficiency program to exceed the energy efficiency required by this code. Such energy efficiency program may include, but not be limited to, the Leadership in Energy and Environmental Design rating system, the Green Globes USA design program, as established by the Green Building Initiative, the National Green Building Standard, as established by the National Association of Home Builders, or an equivalent rating system approved in accordance with section 29-256a of the Connecticut General Statutes.

Buildings approved in writing by such an energy efficiency program shall be considered in compliance with this code. The requirements identified as “mandatory” in Chapter 4 shall be met.

(Amd) **C103.1 General.** Two sets of construction documents and other supporting data shall be submitted to the building official at the time of application for the building permit. The construction documents and designs submitted shall be prepared by a registered design professional when required by the provisions of chapters 390 or 391 of the Connecticut General Statutes.

Exception: The building official may waive the submission of construction documents and other supporting data not required to be prepared by a registered design professional if the work proposed is not required by the provisions of this code, or the building official determines that the nature of the work applied for is such that review of the construction documents is not necessary to obtain compliance with this code.

(Amd) **C103.5 Retention of construction documents.** One set of approved construction documents shall be retained by the building official for a period as set forth in the records or disposition schedule adopted pursuant to chapter 188 of the Connecticut General Statutes.

(Amd) **C106.1 Referenced codes and standards.** The codes and standards referenced in this code shall be those listed in Chapter 5, and such codes and standards shall be considered as part of the requirements of this code to the prescribed extent of each such reference and as further regulated in Sections C106.1.1 and C106.1.2. Any reference to the ICC codes shall mean the Regulations of Connecticut State Agencies known as the State Building Code adopted pursuant to section 29-252 of the Connecticut General Statutes.

(Amd) **C107.2 Schedule of permit fees.** Each municipality shall establish a schedule of fees for each construction document review, building permit, certificate of approval and certificate of occupancy. A schedule of adopted fees shall be posted in the building department for public view.

(Del) **C107.3 Work commencing before permit issuance.** Delete without substitution.

(Del) **C108.4 Failure to comply.** Delete in its entirety and replace with the following:

(Amd) **C108.4 Unlawful continuance.** Any person who continues any work in or about the structure 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 liable for penalties in accordance with section 29-254a of the Connecticut General Statutes.

(Del) **SECTION C109 BOARD OF APPEALS.** Delete this section in its entirety and replace with the following:

(Add) **SECTION C109 MEANS OF APPEAL**

(Add) **C109.1 General.** Means of appeal shall be in accordance with Section 113 of the International Building Code portion of the State Building Code.

CHAPTER 2 [CE] – DEFINITIONS

(Amd) **C201.3 Terms defined in other codes.** Where terms are not defined in this code and are defined in other codes adopted as portions of the State Building Code, such terms shall have the meanings ascribed to them as in those codes.

(Add) **C202.1 Definitions.** Add or amend the following definitions:

(Add) **BUILDING OFFICIAL.** The officer or other designated authority charged with the administration and enforcement of this code, or a duly authorized representative. Also known as the local building official or code official.

(Amd) **CODE OFFICIAL.** See building official.

(Add) **FULL CUTOFF LUMINAIRE.** A luminaire that allows no direct light emissions above a horizontal plane through the luminaire's lowest light-emitting part.

(Add) **GREENHOUSE.** A structure or a thermally isolated area of a building that maintains a specialized sunlit environment exclusively used for, and essential to, the cultivation, protection or maintenance of plants.

CHAPTER 4 [CE] – COMMERCIAL ENERGY EFFICIENCY

(Amd) **C403.2.7 Duct and plenum insulation sealing.** All supply and return air ducts and plenums shall be insulated with a minimum of R-6 insulation where located in unconditioned spaces and a minimum of R-8 where located outside the building. Where located within a building envelope assembly, the duct or plenum shall be separated from the building exterior or unconditioned or exempt spaces by a minimum of R-8 insulation.

Minimum duct insulation values stated in Section C403.2.7 shall be installed R-values.

Exceptions:

1. Where located within equipment.
2. Where the design temperature difference between the interior and exterior of the duct or plenum does not exceed 15°F (-9°C).

All ducts, air handlers and filter boxes shall be sealed. Joints and seams shall comply with Section 603.9 of the International Mechanical Code.

(Add) **C405.6.3 Light pollution controls.** When the power for exterior lighting is supplied through the energy service to the building, luminaires used for exterior lighting shall be full cutoff luminaires.

Exceptions:

1. Luminaires with an output of 150 Watts incandescent or less, or the equivalent light output.
2. Luminaires intended to illuminate the façade of buildings or to illuminate other objects including, but not limited to flagpoles, landscape and water features, statuary and works of art.
3. Luminaires for historic lighting on the premises of an historic building as defined in the 2012 International Existing Building Code or within a designated historic district.
4. Outdoor sports facility lighting of the participant sport area.
5. Emergency exit discharge lighting.
6. Low voltage landscape lighting.

7. Sign illumination.
8. Festoon lighting as defined in the NFPA 70 National Electrical Code.
9. Temporary lighting for emergency, repair, construction, special events or similar activities.

IECC – RESIDENTIAL PROVISIONS

CHAPTER 1 [RE] – SCOPE AND ADMINISTRATION

(Amd) **R101.1 Title.** The 2012 International Energy Conservation Code and this Section shall be known as the 2012 International Energy Conservation Code portion of the 2016 State Building Code, hereinafter referred to as “the code” or “this code”.

(Add) **R101.4.7 Temporary structures.** Temporary structures shall comply with Section 108 of the 2012 International Building Code portion of the State Building Code and are exempt from this code.

(Amd) **R101.5.2 Low energy buildings.** The following buildings, or portions thereof, separated from the remainder of the building by building thermal envelope assemblies complying with this code shall be exempt from the building thermal envelope provisions of this code:

1. Those with a peak design rate of energy usage less than 3.4 British thermal units per hour per square foot (Btu/h.ft²) or 1.0 watts per square foot (watt/ft²) of floor area for space conditioning purposes.
2. Those that do not contain conditioned space.
3. Buildings and structures for which heating and cooling is supplied solely by utilization of non-purchased renewable energy sources including, but not limited to, on-site wind, on-site water or on-site solar power, or wood-burning heating appliances that do not rely on backup heat from other purchased, non-renewable sources.

(Add) **R101.5.3 Energy efficiency standards for products.** In addition to the requirements of this code, the testing, certification and enforcement of efficiency standards for new products sold, offered for sale or installed in the State of Connecticut shall be in compliance with section 16a-48 of the Connecticut General Statutes and regulations adopted under authority of said statute.

(Add) **R101.6 Administrative matters not provided for.** Administrative matters not covered by this code shall be in accordance with the provisions of Chapter 1 of the 2012 International Building Code portion of the State Building Code.

(Amd) **R102.1.1 Above code programs.** The State Building Inspector and the Codes and Standards Committee may deem a national, state or local energy efficiency program to exceed the energy efficiency required by this code. Such energy efficiency program may include, but not be limited to, the Leadership in Energy and Environmental Design Rating System, the Green Globes USA design program, as established by the Green Building Initiative, the National Green Building Standard, as established by the National Association of Home Builders, or an equivalent rating system approved in accordance with section 29-256a of the Connecticut General Statutes.

Buildings approved in writing by such an energy efficiency program shall be considered in compliance with this code. The requirements identified as “mandatory” in Chapter 4 of this code, as applicable, shall be met.

(Amd) **R103.1 General.** Two sets of construction documents and other supporting data shall be submitted to the building official at the time of application for the building permit. The construction documents and designs submitted shall be prepared by a registered design professional when required by the provisions of chapters 390 or 391 of the Connecticut General Statutes.

Exception: The building official may waive the submission of construction documents and other supporting data not required to be prepared by a registered design professional if the work proposed is not required by the provisions of this code, or the building official determines that the nature of the work applied for is such that review of the construction documents is not necessary to obtain compliance with this code.

(Amd) **R103.5 Retention of construction documents.** One set of approved construction documents shall be retained by the building official for a period as set forth in the records or disposition schedule adopted pursuant to chapter 188 of the Connecticut General Statutes.

(Amd) **R106.1 Referenced codes and standards.** The codes and standards referenced in this code shall be those listed in Chapter 5 and such codes and standards shall be considered as part of the requirements of this code to the prescribed extent of each such reference and as further regulated in Sections R106.1.1 and R106.1.2. Any reference to the ICC codes shall mean the the State Building Code adopted pursuant to section 29-252 of the Connecticut General Statutes.

(Amd) **R107.2 Schedule of permit fees.** As prescribed by law, each municipality shall establish a schedule of fees for each construction document review, building permit, certificate of approval and certificate of occupancy. The schedule shall be posted in the building department for public view.

(Del) **R107.3 Work commencing before permit issuance.** Delete without substitution.

(Del) **R108.4 Failure to comply.** Delete in its entirety and replace with the following:

(Amd) **R108.4 Unlawful continuance.** Any person who continues any work in or about the structure 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 liable for penalties in accordance with section 29-254a of the Connecticut General Statutes.

(Del) **SECTION R109 BOARD OF APPEALS.** Delete this section in its entirety and replace with the following:

(Add) **SECTION R109 MEANS OF APPEAL**

(Add) **R109.1 General.** Means of appeal shall be in accordance with Section 113 of the 2012 International Building Code portion of the State Building Code.

CHAPTER 2 [RE] – DEFINITIONS

(Amd) **R201.3 Terms defined in other codes.** Where terms are not defined in this code and are defined in other codes adopted as portions of the State Building Code, such terms shall have the meanings ascribed to them as in those codes.

(Add) **R202.1 Definitions.** Add or amend the following definitions:

(Add) **BUILDING OFFICIAL.** The officer or other designated authority charged with the administration and enforcement of this code, or a duly authorized representative. Also known as the local building official or code official.

(Amd) **CODE OFFICIAL.** See building official.

CHAPTER 4 [RE] – RESIDENTIAL ENERGY EFFICIENCY

(Amd) TABLE R402.1.3

EQUIVALENT *U*-FACTORS^a

CLIMATE ZONE	FENESTRATION <i>U</i> -FACTOR	SKYLIGHT <i>U</i> -FACTOR	CEILING <i>U</i> -FACTOR	FRAME WALL <i>U</i> -FACTOR	MASS WALL <i>U</i> -FACTOR ^b	FLOOR <i>U</i> -FACTOR	BASEMENT WALL <i>U</i> -FACTOR	CRAWL SPACE WALL <i>U</i> -FACTOR
5	0.32	0.55	0.026	0.060	0.082	0.033	0.050	0.055

a. Nonfenestration *U*-factors shall be obtained from measurement, calculation or an approved source.

b. When more than half the insulation is on the interior, the mass wall *U*-factors shall be a maximum of 0.065 in Climate Zone 5.

(Add) **R402.1.5 Vapor retarder.** Wall assemblies in the building thermal envelop shall comply with the vapor retarder requirements of Section R702.7 of the 2012 International Residential Code or Section 1405.3 of the 2012 International Building Code, as applicable.

(Add) **R402.2.13 Urea-formaldehyde insulation.** Foamed-in-place insulation shall be furnished and installed pursuant to section 29-277 of the Connecticut General Statutes. Urea-formaldehyde foamed-in-place insulation shall not be installed in any building or structure on or after June 1, 1981.

(Amd) **Table R402.4.1.1 AIR BARRIER AND INSULATION INSTALLATION.** Delete entire last row containing the topic 'Fireplace' without substitution.

(Amd) **R402.4.1.2 Testing.** The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding 3 air changes per hour in Climate Zone 5. Testing shall be conducted with a blower door at a pressure of 0.2 inches w.g. (50 Pascals). Where required by the code official, testing shall be conducted by an approved third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the code official. Testing shall be performed at any time after creation of all penetrations of the building thermal envelope.

During testing:

1. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed, beyond the intended weather stripping or other infiltration control measures;
2. Dampers, including exhaust, intake, makeup air, backdraft and flue dampers, shall be closed, but not sealed beyond intended infiltration control measures;
3. Interior doors, if installed at the time of the test, shall be open;

4. Exterior openings for continuous ventilation systems and heat recovery ventilators shall be closed and sealed;
5. Heating and cooling systems, if installed at the time of the test, shall be turned off; and
6. Supply and return registers, if installed at the time of the test, shall be fully open.

Exceptions:

1. Low-rise attached dwelling unit buildings in Climate Zone 5: For dwelling units greater than 850 square feet of floor area, the air leakage threshold shall be set at 5 air changes per hour. For dwelling units less than or equal to 850 square feet of floor area, the air leakage threshold shall be set at 6.5 air changes per hour. Testing shall be conducted with a blower door, unguarded, at a pressure of 0.2 inches w.g. (50 Pascals). If guarded blower door testing (a test with one or more adjacent units pressurized, which should eliminate any leakage between units) is being performed, this exception is not allowed and the standard testing requirements of Section 402.4.1.2 apply. Where required by the code official, testing shall be conducted by an approved third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the code official. Testing shall be performed at any time after creation of all penetrations of the building thermal envelope. For buildings with more than 7 units, a sampling protocol is allowed by an approved third party. The sampling protocol requires the first seven units to be tested without any failures. Upon successful testing of those initial seven units, remaining units can be sampled at a rate of 1 in 7. If any sampled unit fails compliance with the maximum allowed air leakage rate, two additional units in the same sample set must be tested. If additional failures occur, all units in the sample set must be tested. In addition, all units in the next sample set must be tested for compliance before sampling of further units can be continued.

2. Additions and alterations: A visual inspection of the building envelope tightness and insulation installation shall be considered acceptable when the items listed in Table 402.4.1.1, applicable to the method of construction, are field verified. Where required by the code official, an approved party independent from the installer of the insulation shall inspect the air barrier and insulation.

(Amd) **R402.4.2 Fireplaces.** New wood-burning fireplaces shall have tight-fitting flue dampers or doors, and outdoor combustion air. Where using tight-fitting doors on factory-built fireplaces listed and labeled in accordance with UL 127, the doors shall be tested and listed for the fireplace. Where using tight-fitting doors on masonry fireplaces, the doors shall be listed and labeled in accordance with UL 907.

(Add) **R403.2.1.1 Duct insulation values.** Minimum duct insulation values stated in Section 403.2.1 shall be installed R-values.

(Amd) **R403.2.2 Sealing (Mandatory).** Ducts, air handlers, and filter boxes shall be sealed. Joints and seams shall comply with either the 2012 International Mechanical Code or 2012 International Residential Code, as applicable.

Exceptions:

1. Air-impermeable spray foam products may be applied without additional joint seals.
2. Where a duct connection is made that is partially inaccessible, three screws or rivets shall be equally spaced on the exposed portion of the joint so as to prevent a hinge effect.

3. Continuously welded and locking-type longitudinal joints and seams in ducts operating at static pressure less than 2 inches of water column (500 Pa) pressure classification.

Duct tightness shall be verified by either of the following:

1. Postconstruction test: Total leakage shall be less than or equal to 8 cfm (226.5 L/min) per 100 square feet (9.29 m²) of conditioned floor area when tested at a pressure differential of 0.1 inches w.g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure. All register boots shall be taped or otherwise sealed during the test.
2. Rough-in test: Total leakage shall be less than or equal to 8 cfm (226.5 L/min) per 100 square feet (9.29 m²) of conditioned floor area when tested at a pressure differential of 0.1 inches w.g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure. All registers shall be taped or otherwise sealed during the test. If the air handler is not installed at the time of the test, total leakage shall be less than or equal to 4 cfm (113.3 L/min) per 100 square feet (9.29 m²) of conditioned floor area.

Exceptions:

1. Ducts and air handlers located entirely within the building thermal envelope.
2. Where ducts from an existing heating and cooling system are extended to an addition or are extended due to an alteration, duct systems with less than 40 linear feet (12.19 m) in unconditioned spaces.

AMENDMENTS TO THE 2014 NFPA 70, NATIONAL ELECTRICAL CODE

ARTICLE 90 – INTRODUCTION

(Amd) 90.2 Scope.

(A) Covered. This Code covers the installation of electrical conductors, equipment and raceways; signaling and communications conductors, equipment and raceways; and optical fiber cables and raceways for the following:

(1) Public and private premises, including:

- a. buildings and structures;
- b. installations in detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories in height with a separate means of egress and their accessory structures shall be in accordance with the requirements of this code or with the requirements of the 2012 International Residential Code portion of the State Building Code;
- c. utility connections, additions and alterations to mobile homes;
- d. utility connections to recreational vehicles; and
- e. floating buildings.

(2) Yards, lots, parking lots, carnivals and industrial substations.

(3) Installations of conductors and equipment that connect to the supply of electricity.

(4) Installations used by the electric utility, such as office buildings, warehouses, garages, machine shops and recreational buildings that are not an integral part of a generating plant, substation or control center.

(B) Not covered. This code does not cover the following:

(1) Installations in ships, watercraft other than floating buildings, railway rolling stock, aircraft or automotive vehicles other than mobile homes and recreational vehicles

(2) Installations underground in mines and self-propelled mobile surface mining machinery and its attendant electrical trailing cable

(3) Installations of railways for generation, transformation, transmission or distribution of power used exclusively for operation of rolling stock or installations used exclusively for signaling and communications purposes

(4) Installations of communications equipment under the exclusive control of communications utilities located outdoors or in building spaces used exclusively for such installations

(5) Installations under the exclusive control of an electric utility where such installations

- a. Consist of service drops or service laterals, and associated metering; or
- b. Are located in legally established easements, rights-of-way or by other agreements either designated by or recognized by public service commissions, utility commissions or other regulatory agencies having jurisdiction for such installations; or

- c. Are on property owned or leased by the electric utility for the purpose of communications, metering, generation, control, transformation, transmission or distribution of electric energy; or
- d. Are located by other written agreements either designated by or recognized by public service commissions, utility commissions, or other regulatory agencies having jurisdiction for such installations. These written agreements shall be limited to installations for the purpose of communications, metering, generation, control, transformation, transmission, or distribution of electric energy where legally established easements or rights-of-way cannot be obtained. These installations shall be limited to federal lands, Native American reservations through the U.S. Department of the Interior Bureau of Indian Affairs, military bases, lands controlled by port authorities and state agencies and departments, and lands owned by railroads.

(6) Installations in one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories in height with a separate means of egress and their accessory structures that are in accordance with the provisions of the 2012 International Residential Code portion of the State Building Code.

(C) Special permission. The State Building Inspector may grant an exception for the installation of conductors and equipment that are not under the exclusive control of the electric utilities and are used to connect the electric utility supply system to the service-entrance conductors of the premises served, provided such installations are outside a building or terminate immediately inside a building wall.

(Amd) **90.4 Enforcement.** Administration of this code shall be in accordance with the provisions of Chapter 1 of the 2012 International Building Code portion of the State Building Code. For the purposes of this code, the authority having jurisdiction for interpreting the rules and for granting the special permission contemplated in a number of rules is the State Building Inspector. Interpretations shall be requested verbally or in writing from the Office of the State Building Inspector. Special permission shall be requested in writing using the Request for Modification of the State Building Code form available from local building departments or from the Office of the State Building Inspector, 165 Capitol Avenue, Room 265, Hartford, CT 06106. www.ct.gov/dcs.

CHAPTER 1 – GENERAL

ARTICLE 100 – Definitions.

(Amd) **Accessible, readily (Readily Accessible).** Capable of being reached quickly for operation, renewal, or inspections without requiring those to whom ready access is requisite to actions such as to use tools, to climb over or remove obstacles, or to resort to portable ladders, and so forth. For overcurrent devices located within listed enclosures or assemblies for which access requires the use of a tool, the readily accessible requirement of this section shall not apply.

(Amd) **Authority having jurisdiction.** The organization, office or individual responsible for approving equipment, material, an installation, or a procedure. The local building official has the responsibility for approving construction documents, issuing permits, approving materials and procedures and for making inspections from time to time as the construction process requires. The State Building Inspector has the responsibility for administering the State Building Code, interpreting the State Building Code and for granting exceptions from specific rules of the State Building Code. See the definition of “Special Permission,” and Article 90.4.

(Amd) **Special Permission.** For the purposes of this code, the authority having jurisdiction for granting the special permission contemplated in a number of rules is the State Building Inspector. Special permission shall be requested in writing using the Request for Modification of the State Building Code form available from local building departments or from the Office of the State Building Inspector, 165 Capitol Avenue, Room 265, Hartford, CT 06106. www.ct.gov/dcs.

CHAPTER 2 – WIRING AND PROTECTION

(Amd) **250.50 Grounding Electrode System.** If available on the premises at each building or structure served, each item in 250.52 (A)(1) to (A)(7), inclusive, shall be bonded together to form the grounding electrode system. Where none of these grounding electrodes are available, one or more of the grounding electrodes specified in 250.52 (A)(4) to (A)(8), inclusive, shall be installed and used.

CHAPTER 3 – WIRING METHODS AND MATERIALS

(Add) **300.4.1 Drilling and notching.**

(A) Structural floor, wall, ceiling and roof members.

(1) Solid sawn lumber. Notches in solid lumber joists, rafters and beams shall not exceed one-sixth of the depth of the member, shall not be longer than one-third of the depth of the member and shall not be located in the middle one-third of the span. Notches at the ends of the member shall not exceed one-fourth the depth of the member. The tension side of members 4 inches or greater in nominal thickness shall not be notched except at the ends of the members. The diameter of holes bored or cut into members shall not exceed one-third the depth of the member. Holes shall not be closer than 2 inches to the top or bottom of the member, or to any other hole located in the member. Where the member is also notched, the hole shall not be closer than 2 inches to the notch.

Exception: Notches on cantilevered portions of rafters are permitted provided the dimension of the remaining portion of the rafter is not less than 4-inch nominal and the length of the cantilever does not exceed 24 inches.

(2) Engineered wood products. Cuts, notches and holes bored in trusses, structural composite lumber, structural glue-laminated members or I-joists are prohibited except where permitted by the manufacturer's recommendations or where the effects of such alterations are specifically considered in the design of the member by a registered design professional.

(3) Studs. Any stud in an exterior wall or interior bearing partition may be cut or notched to a depth not exceeding 25 percent of its width. Studs in nonbearing interior partitions may be notched to a depth not to exceed 40 percent of a single stud width. Any stud may be bored or drilled, provided that the diameter of the resulting hole is no greater than 40 percent of the stud width, the edge of the hole is no closer than 5/8 inch to the edge of the stud and the hole is not located in the same section as a cut or notch.

Exceptions:

1. A stud may be bored or drilled to a diameter not exceeding 60 per cent of its width, provided that such studs located in exterior walls or interior bearing partitions are doubled and not more than two successive studs are bored.
2. Approved stud shoes may be used when installed in accordance with the manufacturer's recommendations.

(4) Top plates. When wiring, conduit, piping or ductwork is placed in or partly in an exterior wall or interior bearing wall, necessitating cutting, drilling or notching of the top plate by more than 50 per cent of its width, a galvanized metal tie of not less than 0.054 inch thick (1.37 mm) (16 ga) and 1 ½ inches (38 mm) wide shall be fastened across and to the plate at each side of the opening with not less than eight 10d (0.148 inch diameter) nails at each side or equivalent. The metal tie must extend a minimum of 6 inches past the opening.

Exception: When the entire side of the wall with the notch or cut is covered by wood structural panel sheathing.

CHAPTER 4 – EQUIPMENT FOR GENERAL USE

(Amd) 440.14 Location

(Add) Exception No. 3: Where the interior section of a factory packaged split system is fed solely from the exterior section of the system and the disconnecting means for the exterior section is capable of being locked in the open position, a separate disconnecting means for the interior section shall not be required within sight from that section. The provisions for locking or adding a lock to the disconnecting means shall remain in place with or without the lock installed.

CHAPTER 5– SPECIAL OCCUPANCIES

(Amd) 525.5 Overhead Conductor Clearances

(B) Clearances to Portable Structures

(2) Over 600 Volts.

(Add) Exception: Tents erected and dismantled under the supervision of a licensed electrician or other person approved by the authority having jurisdiction may be placed within the 15 feet (4.5 m) space provided the finished height of the tent is a minimum of 10 feet (3.0 m) below the conductors.

CHAPTER 7 SPECIAL CONDITIONS

700.7 Signs.

(Amd) (A) Emergency sources. A sign shall be placed at the service-entrance equipment, at the meter location, and on any equipment up to the service entrance-equipment indicating type and location of on-site emergency power sources.

Exception: A sign shall not be required for individual unit equipment as specified in 700.12(F).

701.7 Signs.

(Amd) (A) Mandated standby. A sign shall be placed at the service entrance, at the meter location, and on any equipment up to the service entrance-equipment indicating type and location of on-site legally required standby power sources.

Exception: A sign shall not be required for individual unit equipment as specified in 701.12(G).

702.7 Signs.

(Amd) **(A) Standby.** A sign shall be placed at the service-entrance equipment, at the meter location, and on any equipment up to the service-entrance equipment that indicates the type and location of on-site optional standby power sources. A sign shall not be required for individual unit equipment for standby illumination.

AMENDMENTS TO THE 2012 INTERNATIONAL RESIDENTIAL CODE

CHAPTER 1 – SCOPE AND ADMINISTRATION

(Amd) **R101.1 Title.** The 2012 International Residential Code and this Section shall be known as the 2012 International Residential Code portion of the 2016 State Building Code, hereinafter referred to as “the code” or “this code”.

(Amd) **R101.2 Scope.** The provisions of the this code shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, removal and demolition of detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories above grade plane in height with a separate means of egress and their accessory structures.

Exceptions:

1. Live/work units complying with the requirements of Section 419 of the 2012 International Building Code may be built as one- and two-family dwellings or townhouses. Fire suppression required by Section 419.5 of the 2012 International Building Code when constructed under the 2012 International Residential Code for One- and Two-family Dwellings shall conform to Section P2904.

2. Existing buildings undergoing repair, movement, alteration or additions and change of occupancy may comply with the 2012 International Existing Building Code. The permit applicant shall make the choice to comply with this code or the 2012 International Existing Building Code at the time of application for the building permit.

(Add) R101.4 Referenced codes and regulations.

(Add) **101.4.1 Gas.** The International Fuel Gas Code is not adopted by the State of Connecticut. Any references to the International Fuel Gas Code within the body of this code shall be considered references to requirements of NFPA 2, Hydrogen Technologies Code, NFPA 54, National Fuel Gas Code and NFPA 58, Liquefied Petroleum Gas Code.

(Add) **R101.4.2 Private sewage disposal.** The International Private Sewage Disposal Code is not adopted by the State of Connecticut. Private sewage disposal systems shall be designed and installed in accordance with the Public Health Code adopted under authority of section 19a-36 of the Connecticut General Statutes. References to the International Private Sewage Disposal Code within the body of the model document shall be considered to be references to the Public Health Code.

(Add) **R101.4.3 Property maintenance.** The International Property Maintenance Code is not adopted by the State of Connecticut. Property maintenance shall be in accordance with the requirements of this code or the requirements of local property maintenance codes when such codes are adopted by the town, city or borough. References to the International Property Maintenance Code found within the body of the model document shall be considered null and void.

(Add) **R101.4.4 Connecticut State Fire Safety Code.** References to the 2012 International Fire Code within the body of the model document shall be considered to be references to the 2016 Connecticut State Fire Safety Code.

(Add) **R101.4.5 Electrical.** The provisions of Part VIII of this code or of NFPA 70, National Electrical Code, shall apply to the installation of electrical systems, including alterations, repairs, replacement, equipment, appliances, fixtures, fittings and appurtenances thereto. The permit applicant shall state which code will be followed at the time of permit application.

(Add) **R101.4.6 Demolition of structures.** The demolition of structures shall be conducted in accordance with the State Demolition Code as found in Chapter 541 of the Connecticut General Statutes.

(Amd) **R102.4 Referenced code and standards.** The codes and standards referenced in this code shall be considered part of the requirements of this code to the prescribed extent of each such reference and as further regulated in Sections R102.4.1 and R102.4.2. Any reference to the ICC codes shall mean the Regulations of Connecticut State Agencies known as the State Building Code adopted pursuant to section 29-252 of the Connecticut General Statutes.

Exception: Where enforcement of a code provision would violate the conditions of the listing of the equipment or appliance, the conditions of the listing and manufacturer's instructions shall apply.

(Amd) **R102.5 Appendices.** The following appendices of the 2012 International Residential Code are hereby specifically adopted and included in this code: E; F; G; H; K; O; P and R.

(Amd) **R102.7 Existing structures.** The legal occupancy of any building or structure existing on the date of adoption of this code shall be permitted to continue without change, except as specifically covered in this code.

(Del) **SECTION R103 – DEPARTMENT OF BUILDING SAFETY.** Delete Section R103 in its entirety and replace with the following:

(Add) **SECTION R103 – ENFORCEMENT AGENCY**

(Add) **R103.1 Creation of enforcement agency.** Each town, city and borough shall create an agency whose function is to enforce the provisions of this code. The official in charge thereof shall be known as the building official.

(Add) **R103.2 Appointment.** The chief executive officer of any town, city or borough shall appoint an officer to administer this code, and this officer shall be known as the "building official" in accordance with section 29-260 of the Connecticut General Statutes, and referred to herein as the building official, local building official or code official.

(Add) **R103.3 Employees.** In accordance with the prescribed procedures and regulations of the town, city or borough, and with the concurrence of the appointing authority, the building official shall have the authority to appoint an assistant building official, related technical officers, inspectors, plan examiners and other employees. Such employees shall have the powers as regulated by the town, city or borough, and by the State of Connecticut.

(Add) **R103.4 Restriction of employees.** An official or employee connected with the agency created to enforce the provisions of this code pursuant to Section R103.1, except one whose only connection with it is that of a member of the board of appeals established under the provisions of Section R112, shall not be engaged in, or directly or indirectly connected with, the furnishing of labor, materials or appliances for the construction, addition, alteration, repair or maintenance of a building located in the town, city or borough in which such official or employee is employed, or the preparation of construction documents therefore, unless that person is the owner of the building. Such officer or employee shall not engage in any work that conflicts with official duties or with the interests of the agency.

(Amd) **R104.1 General.** The building official is hereby authorized and directed to enforce the provisions of this code. The building official shall have the authority to adopt policies and procedures in order to clarify the application of its provisions. Such policies and procedures shall be in compliance with the intent and purpose of this code. Such policies and procedures shall not have the effect of waiving requirements specifically provided for in this code, nor shall they have the effect of establishing requirements in excess of those set forth in this code.

(Add) **R104.1.1 Rule making authority.** Pursuant to the provisions of subsection (a) of section 29-252 of the Connecticut General Statutes, the State Building Inspector and the Codes and Standards Committee shall, jointly, with the approval of the Commissioner of Administrative Services, adopt and administer a State Building Code for the purpose of regulating the design, construction and use of buildings or structures to be erected and the alteration of buildings or structures already erected and make such amendments thereto as they, from time to time, deem necessary or desirable.

(Amd) **R104.6 Right of entry.** In accordance with the provisions of subsection (d) of section 29-261 of the Connecticut General Statutes, the building official or his assistant shall have the right of entry to such buildings or structures, except single-family residences, for the proper performance of his duties between the hours of nine a.m. and five p.m., except that in the case of an emergency he shall have the right of entry at any time, if such entry is necessary in the interest of public safety. On receipt of information from the local fire marshal or from any other authentic source that any building in his jurisdiction, due to lack of exit facilities, fire, deterioration, catastrophe or other cause, is in such condition as to be a hazard to any person or persons, the building official or his assistant shall immediately make inspection in accordance with the provisions of section 29-393 of the Connecticut General Statutes.

(Amd) **R104.10 Modifications.** The State Building Inspector may grant variations or exemptions from, or approve equivalent or alternative compliance with, the State Building Code where strict compliance with the State Building Code would entail practical difficulty or unnecessary hardship, or is otherwise adjudged unwarranted, provided that the intent of the law shall be observed and public welfare and safety be assured. Any person aggrieved by any decision of the State Building Inspector may appeal to the Codes and Standards Committee within 30 days after mailing of the decision in accordance with subsection (b) of section 29-254 of the Connecticut General Statutes.

(Del) **R104.10.1 Flood hazard areas.** Delete and substitute the following:

(Add) **R104.10.1 Records.** The application for modification, variation or exemption and the decision of the State Building Inspector shall be in writing and shall be officially recorded with the application for a building permit in the permanent records of the building department.

(Add) **R104.10.2 Historic structures exemption.** Pursuant to section 29-259 of the Connecticut General Statutes, exemptions may be granted to the provisions of this code for historic structures as defined by section 10-410 of the Connecticut General Statutes, which have been classified as such in the State Register of Historic Places, as long as the provisions of subsection (b) of section 29-259 of the Connecticut General Statutes are adhered to and provided such exemptions shall not affect the safe design, use or construction of such property.

(Add) **R104.10.3 Urban homesteading property exemption.** In accordance with section 29-259 of the Connecticut General Statutes, exemptions may be granted to the provisions of this code for property acquired by an urban homesteading agency, pursuant to section 8-169r of the Connecticut General Statutes, and transferred to a qualified applicant pursuant to section 8-169s of the Connecticut General Statutes, provided such exemptions shall not affect the safe design, use or construction of such property. Exemptions shall be granted in accordance with Section R104.10 of this code.

(Add) **R104.11.2 Research reports.** Submission to the local building official of a valid research report prepared by an approved evaluation service that supports the efficacy of use of any material, appliance, equipment or method of construction not specifically provided for in this code, or that demonstrates compliance with this code, may be deemed evidence of compliance with this code.

(Amd) **R105.1 Required.** Any owner or authorized agent who intends to construct, enlarge, alter, repair, move, demolish or change the occupancy of a building or structure, or to move a lot line that will affect any existing building or structure, or to erect, install, enlarge, alter, repair, remove, convert or replace any electrical, gas, mechanical or plumbing system, the installation of which is regulated by this code, or to cause any such work to be done, shall first make application to the building official and obtain the required permit.

(Add) **R105.1.1 By whom application is made.** Pursuant to Section 29-263 of the Connecticut General Statutes, application for a permit shall be made by the owner in fee or by an authorized agent. If the authorized agent is a contractor, such contractor shall follow the provisions of section 20-338b of the Connecticut General Statutes. The applicant shall include the full names and addresses of the owner, agent and the responsible officers, if the owner or agent is a corporate body. No permit shall be issued to a contractor who is required to be registered pursuant to chapter 400 of the Connecticut General Statutes, for work to be performed by such contractor, unless the name, business address and Department of Consumer Protection registration number of such contractor is clearly marked on the application for permit, and the contractor has presented such contractor's certificate of registration as a home improvement contractor.

(Amd) **R105.2 Work exempt from permit.** Exemption from the permit requirements of this code shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code or any other laws, statutes, regulations or ordinances of the town, city or borough, or the State of Connecticut. Permits shall not be required for the following work:

Building:

1. One-story detached accessory structures used as tool and storage sheds, playhouses and similar uses, provided the floor area does not exceed 200 square feet (18.58 m²).
2. Fences not over 7 feet (2134 mm) high. Exception: Fences used as swimming pool barriers regardless of height require a permit.

3. Retaining walls that are not over 3 feet (914 mm) in height measured from finished grade at the bottom of the wall to finished grade at the top of the wall, unless supporting a surcharge.
4. Water tanks supported directly upon grade if the capacity does not exceed 5,000 gallons (18927 L) and the ratio of height to diameter or width does not exceed 2 to 1.
5. Sidewalks, driveways and on-grade concrete or masonry patios not more than 30 inches (762 mm) above adjacent grade and not over any basement or story below.
6. Painting, papering, tiling, carpeting, cabinets, countertops and similar finish work not involving structural changes or alterations.
7. Prefabricated swimming pools that are equal to or less than 24 inches (610 mm) deep.
8. Swings, non-habitable tree houses and other playground equipment.
9. Window awnings supported by an exterior wall which do not project more than 54 inches (1372 mm) from the exterior wall and which do not require additional support.
10. Decks not exceeding 200 square feet (18.58 m²) in area, that are not more than 30 inches (762 mm) above grade at any point, are not attached to a dwelling and do not serve the exit door required by Section R311.4.
11. Repairs that are limited to 25 percent of roof covering and building siding within one calendar year.

Electrical:

1. Listed cord-and-plug connected temporary decorative lighting.
2. Reinstallation of attachment plug receptacles but not the outlets therefor.
3. Replacement of branch circuit overcurrent devices of the required capacity in the same location.
4. Electrical wiring, devices, appliances, apparatus or equipment operating at less than 25 volts and not capable of supplying more than 50 watts of energy.
5. Minor repair work, including the replacement of lamps and fuses or the connection of approved portable electrical equipment to approved permanently installed receptacles.

Gas:

1. Portable heating or cooking appliances with a self-contained fuel supply.
2. Replacement of any minor part that does not alter approval of equipment or make such equipment unsafe.
3. Portable fuel cell appliances that are not connected to a fixed piping system and are not interconnected to a power grid.

Mechanical:

1. Portable heating appliances with a self-contained fuel supply.
2. Portable ventilation appliances.

3. Portable cooling units.
4. Steam, hot or chilled water piping contained within any heating or cooling equipment regulated by Chapters 18 to 24, inclusive, of this code.
5. Replacement of any minor part that does not alter approval of equipment or make such equipment unsafe.
6. Portable evaporative coolers.
7. Self-contained refrigeration systems containing 10 pounds (4.54 kg) or less of refrigerant or that are actuated by motors of 1 horsepower (746 W) or less.
8. Portable fuel cell appliances that are not connected to a fixed piping system and are not interconnected to a power grid.

Plumbing:

1. The stopping of leaks in drains, water, soil, waste or vent pipe; provided if any concealed trap, drainpipe, water, soil, waste or vent pipe becomes defective and it becomes necessary to remove and replace the same with new material, such work shall be considered as new work and a permit shall be obtained and inspection made as provided in Sections R105 and R109 of this code.
2. The clearing of stoppages or the repairing of leaks in pipes, valves or fixtures, and the removal and reinstallation of water closets, provided such repairs do not involve or require the replacement or rearrangement of valves, pipes or fixtures.

(Amd) **R105.3.1 Action on application.** The building official shall examine or cause to be examined applications for permits and amendments thereto within 30 days after filing and either issue or deny a permit within such 30-day period. If the application or construction documents do not conform to the requirements of this code and pertinent laws, statutes, regulations or ordinances, the building official shall reject such application in writing, stating the reasons therefore. If the building official is satisfied that the proposed work conforms to the requirements of this code and applicable laws, statutes, regulations and ordinances, the building official shall issue a permit as soon as practicable.

(Amd) **R105.3.1.1 Determination of substantially improved or substantially damaged existing buildings in flood hazard areas.** For applications for reconstruction, rehabilitation, addition or other improvement of existing buildings or structures located in a flood hazard area as established by Table R301.2(1), the building official shall examine or cause to be examined the construction documents and shall prepare a finding with regard to the value of the proposed work. For buildings that have sustained damage of any origin, the value of the proposed work shall include the cost to repair the building or structure to its predamaged condition. If the building official finds that the value of the proposed work equals or exceeds 50 percent of the market value of the building or structure before the damage has occurred or the improvement is started, the building official shall issue a determination of substantial damage and require that all existing portions of the entire building or structure meet the requirements of section R322.

(Add) **R105.3.1.2 Zoning approval.** Pursuant to subsection (f) of section 8-3 of the Connecticut General Statutes, no building permit shall be issued, in whole or in part, for a building, use or structure subject to the zoning regulations of a municipality without certification in writing by the official charged with the enforcement of such regulations that such building, use or structure is in conformity with such regulations or is a valid nonconforming use under such regulations.

(Amd) **R105.5 Expiration of permit.** Every permit issued shall become invalid unless the work authorized by such permit is commenced within 180 days after its issuance or if the work authorized by such permit is suspended or abandoned for a period of 180 days after the time the work is commenced. The building official may grant, in writing, one or more extensions, for periods of not more than 180 days each. The extensions shall be requested in writing and justifiable cause shall be demonstrated.

Exception: The building official may specify an expiration date of not less than 30 days, nor more than 180 days, for commencement of work under permits issued to abate unsafe conditions pursuant to Section R115 of this code. Work performed under such permits shall be completed as expeditiously as possible.

(Add) **R106.2.1 Private sewage disposal system.** The site plan shall indicate the location of a private or public sewage disposal system. Private sewage disposal systems shall be designed and installed in accordance with the requirements of the Public Health Code adopted under authority of section 19a-36 of the Connecticut General Statutes. All technical and soil data required by the Public Health Code shall be submitted with the site plan. Approval of such systems shall be by the local authority having jurisdiction. When such approval is required by the local authority having jurisdiction, written proof of such approval shall be submitted to the building official prior to issuance of a building permit.

(Amd) **R106.5 Retention of construction documents.** In accordance with the provisions of subsection (e) of section 29-261 of the Connecticut General Statutes, upon receipt of a written request signed by the owner of plans and specifications on file for a single-family dwelling or out-building, the building official shall immediately return the original plans and specifications to the owner after a certificate of occupancy is issued with respect to the plans and specifications.

(Add) **R106.6 Additional requirements.** Nontransient residential dwellings having more than 16 units or 24,000 square feet total gross area per building shall be subject to the additional requirements set forth in Section 107.6 of the 2012 International Building Code portion of the State Building Code.

(Amd) **R107.1 General.** The building official may issue a permit for temporary structures and temporary uses. Such permits shall be limited as to time of service, but shall not be permitted for more than 180 days. The building official may grant a single 180-day extension for demonstrated cause.

Exceptions: The following shall be exempt from permit requirements:

1. Tents used exclusively for recreational camping purposes.
2. Tents less than 350 square feet total area.
3. Tents 900 square feet and smaller in total area when occupied by fewer than 50 persons, which have no heating appliances, no installed electrical service, and are erected for fewer than 72 hours.

(Amd) **R107.3 Temporary power.** The building official may give permission to temporarily supply and use power in part of an electrical installation before such installation has been fully completed and the final certificate of occupancy or certificate of approval has been issued. The part covered by the temporary permission shall comply with the requirements specified for temporary lighting, heat or power in this code or in the 2014 NFPA 70, National Electrical Code, portion of the State Building Code.

(Amd) **R108.2 Schedule of permit fees.** Each municipality shall establish a schedule of fees for each construction document review, building permit, certificate of approval and certificate of occupancy. A schedule of adopted fees shall be posted for public view.

(Amd) **R108.3 Building permit valuations.** The applicant for a permit shall provide an estimated permit value at the time of application. Permit valuations shall include total value of work, including materials and labor, for which the permit is being issued, such as electrical, gas, mechanical, plumbing equipment and permanent systems. If, in the opinion of the building official, the valuation is underestimated on the application, the permit shall be denied, unless the applicant can show detailed estimates to meet the approval of the building official. Final building permit valuation shall be set by the building official.

(Del) **R108.6 Work commencing before permit issuance.** Delete without substitution.

(Add) **R109.1.4.1 Insulation inspection.** Inspection of the building air tightness and insulation installation shall be conducted in accordance with Section N1102.4.1.2.

(Add) **R109.1.5.2 Additional electrical inspections.** Required electrical inspections in addition to those required by Sections R109.1.2 and R109.1.6 shall include installations of temporary services prior to activation and installation of underground piping and conductors after trenches are excavated and bedded and before backfill is put in place.

(Add) **R109.1.7 Posting of required inspections.** The building official shall compile a schedule of required inspections and shall post the schedule in the building department for public view.

(Add) **R109.5 Notification of inspection results.** The building official or his duly authorized representative shall provide in writing, notification as to passage or failure, in whole or in part, of any required inspection and shall leave such notification at the job site or deliver such notification to the permit holder. It shall be the duty of the permit holder to ascertain the results of required inspections.

(Amd) **R110.1 Use and occupancy.** Pursuant to subsection (a) of section 29-265 of the Connecticut General Statutes, no building or structure erected or altered in any municipality after October 1, 1970, shall be occupied or used, in whole or in part, until a certificate of occupancy has been issued by the building official, certifying that such building, structure or work performed pursuant to the building permit substantially conforms to the provisions of the State Building Code. Nothing in the code shall require the removal, alteration or abandonment of, or prevent the continuance of the use and occupancy of, any single-family dwelling but within six years of the date of occupancy of such dwelling after substantial completion of construction of, alteration to or addition to such dwelling, or of a building lawfully existing on October 1, 1945, except as may be necessary for the safety of life or property. The use of a building or premises shall not be deemed to have changed because of a temporary vacancy or change of ownership or tenancy.

Exceptions:

1. Work for which a certificate of approval is issued in accordance with Section R110.9.
2. Certificates of occupancy are not required for work exempt from permit requirements under Section R105.2.

(Add) **R110.1.1 Zoning approval.** Pursuant to subsection (f) of section 8-3 of the Connecticut General Statutes, no certificate of occupancy shall be issued for a building, use or structure subject to the zoning regulations of a municipality without certification in writing by the official charged with the enforcement of such regulations that such building, use or structure is in conformity with such regulations or is a valid nonconforming use under such regulations.

(Add) **R110.1.2 Statement of professional opinion.** Pursuant to section 29-276c of the Connecticut General Statutes, no certificate of occupancy shall be issued for a proposed structure or addition to buildings classified as nontransient residential dwellings having more than 16 units or 24,000 square feet total gross area per building, until the building official has been provided with a statement signed by the architect or professional engineer and the general contractor stating that the completed structure or addition is in substantial compliance with the approved plans on file.

(Amd) **R110.4 Temporary occupancy.** The building official may issue a temporary certificate of occupancy before the completion of the entire work covered by the permit, provided such portion or portions shall be occupied safely prior to full completion of the building or structure without endangering life or public welfare. Any occupancy permitted to continue during completion of the work shall be discontinued within 30 days after completion of the work unless the building official issues a certificate of occupancy.

(Add) **R110.6 Partial occupancy.** The building official may issue a partial certificate of occupancy for a portion of the building or structure when, in the building official's opinion, the portion of the building to be occupied is in substantial compliance with the requirements of this code and no unsafe conditions exist in portions of the building not covered by the partial certificate of occupancy that are accessible from the occupied portion.

(Add) **R110.7 Prefabricated assemblies.** A certificate of approval by an approved agency shall be furnished with every prefabricated assembly, including modular housing, except where all elements of the assembly are readily accessible for inspection at the site. The building official shall inspect placement of prefabricated assemblies and the connections to public utilities and private water and septic systems at the building site, as well as any site built or installed components or equipment to determine compliance with this code. A final inspection shall be provided in accordance with Section R109.1.6.

(Add) **R110.8 Manufactured housing used as dwellings.** Provisions for foundation systems and building service equipment connections necessary to provide for the installation of new manufactured homes and for existing manufactured homes to which additions, alterations or repairs are made are contained in Appendix E.

(Add) **R110.9 Certificate of approval.** The building official shall issue a certificate of approval indicating substantial compliance with the requirements of this code for all completed work that requires a building permit but does not require a certificate of occupancy. Such work shall include, but not be limited to: fences greater than 7 feet in height; retaining walls greater than 3 feet in height; decks; garages; swimming pools; basements and attics converted to habitable space; electrical, plumbing, and mechanical repairs or alterations.

(Del) **SECTION R112 - BOARD OF APPEALS.** Delete this section in its entirety and replace with the following:

(Add) **SECTION R112 – MEANS OF APPEAL**

(Add) **R112.1 Appeal from decision of building official.** Pursuant to subsection (b) of section 29-266 of the Connecticut General Statutes, when a building official rejects or refuses to approve the mode or manner of construction proposed to be followed or the materials to be used in the erection or alteration of a building or structure, or when it is claimed that the provisions of the code do not apply or that an equally good or more desirable form of construction can be employed in a specific case, or when it is claimed that the true intent and meaning of the code has been misconstrued or wrongly interpreted or when the building official issues a written order under subsection (c) of section 29-261 of the Connecticut General Statutes, the owner of such building or structure, whether already erected or to be erected, or his authorized agent may appeal in writing from the decision of the building official to the municipal board of appeals. A person, other than such owner, who claims to be aggrieved by any decision of the building official may, by himself or his authorized agent, appeal in writing from the decision of the building official to the municipal board of appeals as provided by subsection (b) of section 29-266 of the Connecticut General Statutes.

(Add) **R112.1.1 Absence of municipal board of appeals.** In the absence of a municipal board of appeals, the provisions of subsection (c) of section 29-266 of the Connecticut General Statutes shall be followed.

(Add) **R112.1.2 State Building Inspector review.** In accordance with the provisions of subsection (d) of section 29-252 of the Connecticut General Statutes, the State Building Inspector or such inspector's designee shall review a decision by a local building official or municipal board of appeals appointed pursuant to section 29-266 of the Connecticut General Statutes, when he has reason to believe that such official or board has misconstrued or misinterpreted any provision of the State Building Code.

(Add) **R112.2 Appointment of municipal board of appeals.** A municipal board of appeals consisting of five members shall be appointed in accordance with the provisions of subsection (a) of section 29-266 of the Connecticut General Statutes.

(Add) **R112.2.1 Qualifications.** Each member of the municipal board of appeals shall be appointed from the general public. The other four members shall have at least five years of experience each in building design, building construction or supervision of building construction.

(Add) **R112.2.2 Chairman.** The board shall annually select one of its members to serve as chairman.

(Add) **R112.3 Notice of meeting.** Each appeal shall be heard in the municipality for which the building official serves within five days, exclusive of Saturdays, Sundays and legal holidays, after the date of receipt of the appeal.

(Add) **R112.4 Determination of aggrievement.** Upon receipt of an appeal from a person other than the owner or his agent, the board of appeals shall first determine whether such person has a right to appeal.

(Add) **R112.5 Appointment of a panel.** Upon receipt of an appeal from an owner or his agent, or approval of an appeal by a person other than the owner or his agent, the chairman of the municipal board of appeals shall appoint a panel of not less than three members of such board to hear such appeal.

(Add) **R112.6 Rendering of decisions.** The panel shall, upon majority vote of its members, affirm, modify or reverse the decision of the building official in a written decision upon the appeal and file such decision with the building official from whom such appeal has been taken not later than five days, exclusive of Saturdays, Sundays and legal holidays, following the day of the hearing thereon. A copy of the decision shall be mailed, prior to such filing, to the party taking the appeal.

(Add) **R112.7 Appeal to the Codes and Standards Committee.** Any person aggrieved by the decision of a municipal board of appeals may appeal to the Codes and Standards Committee within 14 days after the filing of the decision with the building official in accordance with the provisions of subsection (c) of section 29-266 of the Connecticut General Statutes.

(Add) **R112.8 Court review.** Any person aggrieved by any ruling of the Codes and Standards Committee may appeal to the Superior Court for the judicial district where such building or structure has been or is being erected in accordance with the provisions of subsection (d) of section 29-266 of the Connecticut General Statutes.

(Add) **R113.2.1 Written notice.** The building official or his duly authorized representative shall provide any notice of violation in writing to the owner of the property involved or to the owner's agent or to the person doing the work.

(Amd) **R113.4 Violation penalties.** Any person who violates any provision of this code shall be fined not less than two hundred nor more than one thousand dollars or imprisoned not more than six months or both, pursuant to section 29-254a of the Connecticut General Statutes.

(Amd) **R114.2 Unlawful continuance.** Any person who continues any work in or about the structure 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 conditions, shall be liable for penalties in accordance with Section R113.4.

(Add) **SECTION R115 - UNSAFE STRUCTURES AND EQUIPMENT**

(Add) **R115.1 General:** The procedures to be followed regarding unsafe structures and equipment shall be as set forth in Section 116 of the 2012 International Building Code portion of the State Building Code.

(Add) **SECTION R116 - EMERGENCY MEASURES**

(Add) **R116.1 General:** The procedures to be followed regarding emergency measures shall be as set forth in Section 117 of the 2012 International Building Code portion of the State Building Code.

(Add) **SECTION R117- VACANT BUILDINGS**

(Add) **R117.1 General.** Temporarily unoccupied buildings, structures, premises or portions thereof, including tenant spaces, shall be safeguarded and maintained in accordance with Section 118 of the 2012 International Building Code portion of the State Building Code.

CHAPTER 2 – DEFINITIONS

(Amd) **R201.3 Terms defined in other codes.** Where terms are not defined in this code and are defined in other portions of the State Building Code, such terms shall have the meanings ascribed to them as in those codes.

(Add) **R202.1 Definitions.** Add or amend the following definitions:

(Amd) **ACCESSORY STRUCTURE.** A structure that is accessory to and incidental to that of the dwelling(s) and that is located on the same lot.

(Amd) **ATTIC, HABITABLE.** A finished area, not considered a story and not containing any dormers, complying with all of the following requirements:

1. The occupiable floor area is at least 70 square feet (6.5 m²), in accordance with Section R304,
2. The occupiable floor has a ceiling height in accordance with Section R305, and
3. The occupiable space is enclosed by the roof assembly above, knee walls (if applicable) on the sides and the floor-ceiling assembly below.
4. Roofs of habitable attics containing dormers will be considered a story.

(Amd) **BUILDING, EXISTING.** A building or structure, or portion thereof, erected in whole or in part, for which a legal building permit and a certificate of occupancy has been issued. Buildings or structures or portions thereof erected prior to October 1, 1970 shall be deemed existing buildings regardless of the existence of a legal permit or a certificate of occupancy.

(Add) **COMPLEX.** For application of accessibility requirements, this term means any group of buildings located on a single parcel of land or on contiguous parcels of land or any building or group of buildings that are subdivided into separate occupancies and planned, financed, constructed or promoted by common management for the purpose of sale or lease of the entire complex or any subdivision thereof, excluding any single-family detached dwelling.

(Add) **ONE-FAMILY DWELLING.** A building containing one dwelling unit with not more than six lodgers or boarders where care is not provided. Also known as a single-family dwelling.

(Add) **TWO-FAMILY DWELLING.** A building containing two dwelling units with not more than six lodgers or boarders per dwelling unit where care is not provided.

(Amd) **WIND-BORNE DEBRIS REGION.** Areas south of Interstate 95 in the following municipalities: Clinton, East Lyme, Groton, Madison, New London, Old Lyme, Old Saybrook, Stonington, Waterford, and Westbrook.

Exception: Areas that are more than one mile from the coastal mean high-water line as certified by a registered design professional may be classified as being outside of a wind-borne debris region.

CHAPTER 3 – BUILDING PLANNING

(Amd) **R301.2.1 Wind design criteria.** Buildings and portions thereof shall be constructed in accordance with the wind provisions of this code using the basic wind speeds in Table R301.2(1) as determined from Appendix R. Where different construction methods and structural materials are used for various portions of a building or structure, the applicable requirements of this section for each portion shall apply. Where wind loads for windows, skylights and exterior doors are not otherwise specified, the wind loads listed in Table R301.2(2) adjusted for height and exposure per Table R301.2(3), shall be used to determine design load performance requirements for wall coverings, curtain walls, roof coverings, exterior windows, skylights, garage doors and exterior doors. Asphalt shingles shall be designed for wind speeds in accordance with Section R905 2.4. A continuous wind load path shall be provided to transmit the applicable uplift forces in Section R 802.11.1 from the roof assembly to the foundation.

(Amd) **R301.2.1.1 Other acceptable wind design methods.** The design of buildings for wind loads in accordance with one or more of the following methods is acceptable:

1. *AF&PA Wood Frame Construction Manual (WFCM)*; or
2. *ICC Standard for Residential Construction in High-Wind Regions (ICC 600)*; or
3. *ASCE Minimum Design Loads for Buildings and Other Structures (ASCE 7)*; or
4. *AISI Standard for Cold-Formed Steel Framing- Prescriptive Method For One- and Two-Family Dwellings (AISI S230)*; or
5. *International Building Code*

When ASCE 7 or the 2012 International Building Code portion of the State Building Code is used for the design of the building, the wind speed as specified in Appendix N of the 2012 International Building Code portion of the State Building Code and exposure category requirements as specified in ASCE 7 and the 2012 International Building Code portion of the State Building Code shall be used.

(Amd) **TABLE R301.2(1) CLIMATIC AND GEOGRAPHICAL DESIGN CRITERIA:**

GROUND SNOW LOAD: As set forth in Appendix R.

WIND SPEED^b (mph): Basic Wind Speed (3 second gust) shall be as set forth in Appendix R.

SEISMIC DESIGN CATEGORY: As set forth in Appendix R.

SUBJECT TO DAMAGE FROM:

- Weathering^a:** Severe
- Frost Line Depth:** 42 inches
- Termite:** Moderate to Heavy

WINTER DESIGN TEMPERATURE: 7° F

ICE BARRIER UNDERLAYMENT REQUIRED: Yes

FLOOD HAZARDS: To be determined locally.

AIR FREEZING INDEX: 1,500 or less

MEAN ANNUAL TEMPERATURE: 50°F

CLIMATE ZONE: 5A

For SI: 1 pound per square foot = 0.0479 kPa, 1 mile per hour = 0.447 m/s.

a. Weathering may require a higher strength concrete or grade of masonry than necessary to satisfy the structural requirements of this code.

b. Wind exposure category shall be determined on a site-specific basis in accordance with Section R301.2.1.4.

(Del) **FIGURE R301.2(1) ISOLINES OF THE 97½ PERCENT WINTER (DECEMBER, JANUARY AND FEBRUARY) DESIGN TEMPERATURE (°F).**

Delete without substitution.

(Del) **FIGURE R301.2(2) SEISMIC DESIGN CATEGORIES – SITE CLASS D.**

Delete without substitution.

(Del) **FIGURE R301.2(3) WEATHERING PROBABILITY MAP FOR CONCRETE^{a,b}.**

Delete without substitution.

(Del) **FIGURE R301.2(4)A BASIC WIND SPEEDS.**

Delete without substitution.

(Del) **FIGURE R301.2(4)B REGIONS WHERE WIND DESIGN IS REQUIRED.**

Delete without substitution.

(Del) **FIGURE R301.2(4)C WIND – BORNE DEBRIS REGIONS.**

Delete without substitution.

(Del) **FIGURE R301.2(5) GROUND SNOW LOADS, P_g FOR THE UNITED STATES (lb/ft²).**

Delete without substitution.

(Del) **FIGURE R301.2(6) TERMITE INFESTATION PROBABILITY MAP.**

Delete without substitution.

(Amd) **R301.2.1.3 Wind speed conversion.** When referenced documents are based on the fastest mile wind speeds, the three-second gust wind velocities, V_{3s} , of Appendix R shall be converted to fastest mile wind velocities, V_{fm} , using Table R301.2.1.3.

(Del) **R301.2.1.5 Topographic wind effects.** Delete without substitution.

(Del) **R301.2.1.5.1 Simplified topographic wind speed-up method.** Delete without substitution.

(Del) **Table R301.2.1.5.1 BASIC WIND MODIFICATION FOR TOPOGRAPHIC WIND EFFECT.**

Delete without substitution.

(Del) **FIGURE R301.2.1.5.1(1) TOPOGRAPHIC FEATURES FOR WIND SPEED-UP EFFECT.**

Delete without substitution.

(Del) **FIGURE R301.2.1.5.1(2) ILLUSTRATION OF WHERE ON A TOPOGRAPHIC FEATURE, WIND SPEED INCREASE IS APPLIED.** Delete without substitution.

(Del) **FIGURE R301.2.1.5.1(3) UPWIND OBSTRUCTION.** Delete without substitution.

(Amd) **R301.2.2.1 Determination of seismic design category.** Buildings shall be assigned a seismic design category in accordance with Appendix R. Soil site class shall be as defined in Section 1613.3.2 of the 2012 International Building Code.

(Del) **R301.2.2.1.1 Alternate determination of seismic design category.** Delete without substitution.

(Del) **R301.2.2.1.2 Alternate determination of seismic design Category E.** Delete without substitution.

(Del) **R301.2.2.4 Seismic design Category E.** Delete without substitution.

(Amd) **R301.6 Roof load.** Roofs shall be designed for the snow load indicated in Table R301.2(1).

(Del) **Table R301.6 – MINIMUM ROOF LIVE LOADS IN POUNDS-FORCE PER SQUARE FOOT OF HORIZONTAL PROJECTION.** Delete table in its entirety without substitution.

(Add) **R301.9 Ungraded lumber.** Pursuant to section 29-256b of the Connecticut General Statutes, the use of ungraded lumber is allowed in accessory structures.

(Amd) **R302.2 Townhouses.** Each townhouse shall be considered a separate building and shall be separated by fire-resistance-rated wall assemblies meeting the requirements of Section R302.1 for exterior walls.

Exception: A common 2-hour fire-resistance-rated wall assembly tested in accordance with ASTM E119 or UL 263 is permitted for townhouses if such walls do not contain plumbing or mechanical equipment, ducts or vents in the cavity of the common wall. If the adjacent townhouses are provided with an automatic residential fire sprinkler system, this wall may be a 1-hour fire-resistance-rated wall assembly. The wall shall be rated for fire exposure from both sides and shall extend to and be tight against exterior walls and the underside of the roof sheathing. Electrical installations shall be installed in accordance with Chapters 34 to 43, inclusive. Penetrations of electrical outlet boxes shall be in accordance with Section R302.4.

(Amd) **R302.2.4 Structural independence.** Each individual townhouse shall be structurally independent.

Exceptions:

1. Foundations supporting exterior walls or common walls.
2. Structural roof and wall sheathing from each unit may fasten to the common wall framing.
3. Nonstructural wall and roof coverings.
4. Flashing at termination of roof coverings over common wall.
5. Townhouses separated by a common fire-resistance-rated wall as provided in Section R302.2.

(Add) **R302.2.5 Sound transmission.** Wall and floor-ceiling assemblies separating adjacent townhouse units shall comply with Appendix K.

(Amd) **R302.3 Two-family dwellings.** Dwelling units in two-family dwellings shall be separated from each other and from common spaces serving both dwelling units by wall or floor-ceiling assemblies having not less than 1-hour fire-resistance rating when tested in accordance with ASTM E119 or UL 263. Fire-resistance-rated floor-ceiling and wall assemblies shall extend to and be tight against the exterior wall and wall assemblies shall extend to the underside of the roof sheathing. Fire-resistance-rated assemblies shall be supported to the foundation by construction with the same fire-resistance rating as the assembly supported.

Exceptions:

1. A fire-resistance rating of ½ hour shall be permitted in buildings equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13.
2. Wall assemblies need not extend through attic spaces when the ceiling is protected by not less than 5/8 inch (15.9 mm) Type X gypsum board and an attic draft stop construction as specified in Section R302.12.1 is provided above and along the wall assembly separating the dwellings. The structural framing supporting the ceiling shall also be protected by not less than ½ inch (12.7 mm) gypsum board or equivalent.

(Add) **R302.3.2 Sound transmission.** Wall and floor-ceiling assemblies separating dwelling units shall comply with Appendix K.

(Amd) **R302.5.3 Other penetrations.** Penetrations into or through the separation required in Table R302.6 shall be protected as required by Section R302.11, Item 4.

(Amd) **R302.6 Dwelling/garage fire separation.** The garage shall be separated as required by Table R302.6 except that wood structural members of the minimum dimension specified in the International Building Code for Type IV construction shall be acceptable without further protection. Openings in garage walls shall comply with Section R302.5. This provision does not apply to garage walls that are perpendicular to the adjacent dwelling unit wall.

(Amd) **TABLE R302.6 DWELLING/GARAGE SEPARATION**

SEPARATION	MATERIAL
From the residence and attics	Not less than 5/8 inch Type X gypsum board or equivalent applied to the garage side
From all habitable rooms above the garage	Not less than 5/8 inch Type X gypsum board or equivalent
Structure(s) supporting floor/ceiling assemblies used for separation required by this section	Not less than 5/8 inch Type X gypsum board or equivalent
Garages located less than 3 feet from a dwelling unit on the same lot	Not less than 5/8 inch Type X gypsum board or equivalent applied to the interior side of exterior walls that are within this area

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

(Amd) **R305.1.1 Basements.** Portions of basements that do not contain habitable space, hallways, bathrooms, toilet rooms and laundry rooms shall have a ceiling height of not less than 6 feet 8 inches (2032 mm).

Exceptions:

1. Beams, girders, ducts or other obstructions may project to within 6 feet 4 inches (1931 mm) of the finished floor.
2. Ceiling height in existing basements being converted to habitable space shall not be less than 6 feet 10 inches clear except under beams, girders, pipes, ducts or other obstructions where the clear height shall be a minimum of 6 feet 4 inches.

(Amd) **R309.1 Floor surfaces.** Garage floor surfaces shall be of approved noncombustible material. The area of floor used for parking of automobiles or other vehicles shall be sloped to facilitate the movement of liquids to an approved drain or toward the main vehicle entry doorway.

Exception: Detached garages that are separated from the dwelling by a minimum distance of 10 feet.

(Amd) **R310.1 Emergency escape and rescue openings required.** Habitable spaces located within basements, and habitable spaces within attics, and every sleeping room within the dwelling shall have at least one operable emergency escape and rescue opening. Where basements and attics contain one or more sleeping rooms, emergency egress and rescue openings shall be required in each sleeping room, but shall not be required in adjoining habitable areas of the basement or attic. Where emergency escape and rescue openings are provided, they shall have a sill height of not more than 44 inches measured from the finished floor to the bottom of the clear opening. Where a door opening having a threshold below the adjacent ground elevation serves as an emergency escape and rescue opening and is provided with a bulkhead enclosure, the bulkhead enclosure shall comply with Section R310.3. The net clear opening dimensions required by this Section shall be obtained by the normal operation of the emergency escape and rescue opening from the inside. Emergency escape and rescue openings with a finished sill height below the adjacent ground elevation shall be provided with a window well in accordance with Section R310.2. Emergency escape and rescue openings shall open directly into a public way, or to a yard or court that opens to a public way.

Exceptions:

1. Habitable basements without sleeping rooms are not required to have emergency escape and rescue openings when they are provided with two remote, code-compliant stairways.
2. In existing buildings, basements and attics being converted to habitable space without sleeping rooms are not required to have emergency escape and rescue openings.
3. The 44-inch maximum sill height shall be permitted to be measured vertically above a fixed, permanent platform, step or steps whose minimum width shall equal or exceed the operable width of the opening and shall be centered on such opening and which shall comply with Sections R311.7.5.1 and R311.7.5.2. Glazing in windows complying with this exception shall not be subject to the provisions of Section R308.4.6 or R308.4.7.

(Amd) **R310.1.4 Operational constraints.** Emergency escape and rescue openings shall be operational from the inside of the room without the use of a key or tool and the net clear opening dimensions shall be obtained by the normal operation of the opening from the inside.

Exception: Existing buildings undergoing alterations or installation of replacement windows shall be permitted to utilize removable sash to achieve the required minimum net clear openings. Such removable sash shall be capable of being removed without the use of a key or tool.

(Amd) **R311.3.1 Floor elevations at the required egress doors.** Landings or finished floors at the required egress door shall not be more than 1½ inches (38 mm) lower than the top of the threshold.

Exception: The landing or floor on the exterior side shall not be more than 8¼ inches (209.5 mm) below the top of the threshold provided the door does not swing over the landing or the floor.

Where exterior landings or floors serving the required egress door are not at grade, they shall be provided with access to grade by means of a ramp in accordance with Section R311.8 or a stairway in accordance with Section R311.7.

(Amd) **R311.3.2 Floor elevations for other exterior doors.** Doors other than the required egress door shall be provided with landings or floors not more than 8¼ inches (209.5 mm) below the top of the threshold.

Exception: A landing is not required where a stairway of three or fewer risers, including the top riser from the dwelling to the top tread, is located on the exterior side of the door, provided the door does not swing over the stairway.

(Amd) **R311.7.1 Width.** Stairways shall not be less than 36 inches in clear width at all points above the permitted handrail height and below the required headroom height. Handrails shall not project more than 4½ inches (114 mm) on either side of the stairway and the minimum clear width of the stairway at and below the handrail height, including treads and landings, shall not be less than 31½ inches (787 mm) where a handrail is installed on one side and 27 inches (698 mm) where handrails are provided on both sides.

Exceptions:

1. The width of spiral stairways shall be in accordance with Section R311.7.10.1.
2. The width of existing or replacement stairways serving existing unfinished attics or existing unfinished basements being converted to habitable space shall not be less than 32 inches (813 mm) in clear width at all points above the permitted handrail height and below the required headroom height. Handrails shall not project more than 4 inches (102 mm) on either side of the stairway and the minimum clear width of the stairway at and below the handrail height, including treads and landings, shall not be less than 28 inches (711 mm) where a handrail is installed on one side and 24 inches (610 mm) where handrails are provided on both sides.
3. Where an incline platform lift or stairway chairlift is installed on a stairway within a dwelling unit, a clear passage width not less than 20 inches (508 mm) shall be provided. If the seat and platform can be folded when not in use, the distance shall be measured from the folded position.

(Amd) **R311.7.2 Headroom.** The minimum headroom in all parts of the stairway shall not be less than 6 feet, 8 inches (2032 mm) measured vertically from the sloped line adjoining the tread nosing or from the floor surface of the landing or platform on that portion of the stairway.

Exceptions:

1. Where the nosing of treads at the side of a flight extend under the edge of a floor opening through which the stair passes, the floor opening shall be allowed to project horizontally into the required headroom a maximum of 4¾ inches (121 mm).
2. The minimum headroom in all parts of existing or replacement stairways serving existing unfinished attics or existing unfinished basements being converted to habitable space shall be 6 feet, 6 inches (1982 mm), measured as above.

(Amd) **R311.7.5.1 Risers.** The maximum riser height shall be 8 ¼ inches (209.5 mm). The riser shall be measured vertically between leading edges of adjacent treads. The greatest riser height within any flight of stairs shall not exceed the smallest by more than ¾ inch (9.5 mm). Risers shall be vertical or sloped from the underside of the nosing of the tread above at an angle not more than 30 degrees (0.51 rad) from the vertical. Open risers are permitted provided that the opening between treads does not permit the passage of a 4-inch-diameter (102 mm) sphere.

Exceptions:

1. The maximum riser height of existing or replacement stairs serving existing unfinished attics or existing unfinished basements being converted to habitable space shall be 9 inches (229 mm), measured as stated above.
2. The opening between adjacent treads is not limited on stairs with a total rise of 30 inches (762 mm) or less.

(Amd) **R311.7.5.2 Treads.** The minimum tread depth shall be 9 inches (229 mm). The tread depth shall be measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's leading edge. The greatest tread depth within any flight of stairs shall not exceed the smallest by more than ¾ inch (9.5 mm)

Exception: The minimum tread depth of existing or replacement stairs serving existing unfinished attics or existing unfinished basements being converted to habitable space shall be 8 inches (203 mm), measured as above.

(Add) **R312.1.1.1 Retaining wall guards.** Retaining walls with a difference in finished grade from the top of the wall to the bottom of the wall that is greater than 4 feet (1219 mm) shall be provided with guards complying with Section R312 when there is a walking surface, parking lot or driveway on the high side located closer than 2 feet (610 mm) to the retaining wall. For the purposes of this section, grass, planting beds or landscaped areas are not a walking surface.

(Amd) **R312.1.2 Height.** Required guards at open-sided walking surfaces, including stairs, porches or landings, shall be not less than 36 inches (914 mm) in height as measured vertically above the adjacent walking surface or the line connecting the leading edges of the treads.

Exceptions:

1. Guards on the open sides of stairs shall have a height not less than 34 inches (864 mm) measured vertically from a line connecting the leading edges of the treads.
2. Where the top of the guard serves as a handrail on the open sides of stairs, the top of the guard shall be not less than 34 inches (864 mm) and not more than 38

inches (965 mm) as measured vertically from a line connecting the leading edges of the treads.

(Amd) **R313.1 Townhouse automatic fire sprinkler systems.** When an automatic residential fire sprinkler system is to be installed in townhouses, it shall be designed and installed in accordance with Section P2904 or NFPA 13D.

(Del) **R313.1.1 Design and installation.** Delete without substitution.

(Amd) **R313.2 One- and two-family dwellings automatic fire systems.** When an automatic fire sprinkler system is to be installed in one- and two-family dwellings, it shall be designed and installed in accordance with Section P2904 or NFPA 13D.

(Del) **R313.2.1 Design an installation.** Delete without substitution.

(Amd) **R314.3.1 Alterations, repairs and additions.** When alterations, repairs or additions requiring a permit occur, or when one or more sleeping rooms are added or created in existing dwellings, the entire dwelling unit shall be provided with smoke alarms located as required for new dwellings.

Exceptions:

1. Work involving the exterior surfaces of dwellings, such as the replacement of roofing or siding, or the addition or replacement of windows or doors, or the addition of a porch or decks, are exempt from the requirements of this section.
2. Installation, alteration or repairs of plumbing, mechanical or electrical systems are exempt from the requirements of this section.

(Amd) **R314.4 Power source.** Smoke alarms shall receive their primary power from the building wiring when such wiring is served from a commercial source, and when the primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than those required for overcurrent protection.

Exceptions:

1. Smoke alarms shall be permitted to be battery operated when installed in buildings without commercial power.
2. Hard-wiring of smoke alarms in existing areas shall not be required where the alterations or repairs do not result in the removal of interior wall or ceiling finishes exposing the structure.

(Amd) **R314.5 Interconnection.** Where more than one smoke alarm is required to be installed within an individual dwelling unit in accordance with Section R314.3, the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual unit.

Exception: Interconnection of smoke alarms in existing areas shall not be required where alterations or repairs do not result in removal of interior wall or ceiling finishes exposing the structure.

(Amd) **R315.1 Carbon monoxide alarms.** For new construction, an approved carbon monoxide alarm shall be installed outside of each sleeping area in the immediate vicinity of the bedrooms and on each additional habitable level of the dwelling unit. When more than one carbon monoxide alarm is required to be installed within an individual dwelling unit the alarm devices shall be interconnected in such a manner that the actuation of one carbon monoxide alarm will activate all of the carbon monoxide alarms in the individual unit. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed.

Exception: Carbon monoxide alarms shall not be required in dwelling units not containing a fuel-burning appliance, fireplace or attached garage.

(Add) **R315.1.1 Power source.** In new construction, the required carbon monoxide alarms shall be permanently installed and shall receive their primary power from the building wiring when such wiring is served from a commercial source. When primary power from the building wiring is interrupted, they shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than those required for overcurrent protection. Carbon monoxide alarms shall be permitted to be battery operated when installed in buildings without commercial power or in buildings that undergo alterations or additions regulated by Section R315.3.

(Amd) **R315.3. Alterations, repairs and additions.** When alterations, repairs or additions requiring a permit occur, or when one or more sleeping rooms are added or created in existing dwellings, the individual dwelling shall be provided with carbon monoxide alarms located as required for new dwellings. The carbon monoxide alarms shall have a power source in accordance with Section R315.1.1.

Exceptions:

1. The carbon monoxide alarms may be battery operated or plug-in and are not required to be interconnected when other remodeling considerations do not require the removal of the appropriate wall and ceiling coverings to facilitate concealed interconnected wiring.
2. Alterations to the exterior surfaces of dwellings including, but not limited to re-roofing, residing, window replacement and the construction of decks, shall be exempt from the requirements of this section.
3. Carbon monoxide alarms shall not be required in dwelling units not containing a fuel-burning appliance, fireplace or attached garage.
4. Installation, alteration or repairs of plumbing, mechanical or electrical systems are exempt from the requirements of this section.

(Del) **SECTION R320 – ACCESSIBILITY.** Delete section in its entirety and replace with the following:

(Add) **R320 – ACCESSIBILITY**

(Add) **R320.1 Scope.** Detached one- and two-family dwellings shall be exempt from accessibility requirements. Attached multiple single-family dwellings (townhouses) shall comply with Section R320.2 for single-story townhouses and with Section R320.3 for multi-story townhouses. For the purposes of this section, a one-story above-grade townhouse with a finished basement shall be considered a multi-story townhouse. Required Type B units shall comply with ICC/ANSI A117.1, as amended.

(Add) **R320.2 Single-story townhouses.** Where there are four or more townhouses in a single structure, each single-story townhouse shall be a Type B unit.

Exception: The number of Type B units shall be permitted to be reduced in accordance with Section R320.4.

(Add) **R320.3 Multi-story townhouses.** Buildings or complexes that contain 10 or more multi-story townhouses shall have at least 10 per cent Type B units. This requirement shall be met by providing a sufficient number of single-story Type B units or by providing a sufficient number of multi-story townhouses that incorporate a Type B unit on the street floor or by a combination of the two. Multi-story townhouses that incorporate a Type B unit on the street floor shall not be required to provide accessibility to floors above or below the street floor. The Type B unit on the street floor shall include provisions for living, sleeping, eating, cooking and a complete toilet and bathing facility on that floor.

Exceptions:

1. Structures with fewer than four dwelling units.
2. The number of Type B units shall be permitted to be reduced in accordance with Section R320.4.

(Add) **R320.4 General exceptions.** Where permitted by Sections R320.2 and R320.3, the required number of Type B units shall be permitted to be reduced in accordance with Sections R320.4.1 and R320.4.2.

(Add) **R320.4.1 Site impracticality.** On a site with multiple buildings, the number of units required by Sections R320.2 and R320.3 to be Type B units may be reduced to a percentage which is equal to the percentage of the entire site having grades, prior to development, which are less than 10 percent, provided not less than 20 percent of the Type B units required by Sections R320.2 and R320.3 on the site are provided.

(Add) **R320.4.2 Design flood elevation.** The required number of Type B units shall not apply to a site where the lowest floor is required to be at or above the design flood elevation resulting in:

1. A difference in elevation between the minimum required floor elevation at the primary entrance and the closest vehicular and pedestrian arrival points, and;
2. A slope exceeding 10 percent between the minimum required floor elevation at the primary entrance and the closest vehicular and pedestrian arrival points.

(Add) **R320.5 Accessible route.** At least one accessible route shall connect accessible building or facility entrances with the primary entrance of each Type B unit within the building or complex and with those exterior and interior facilities that serve the units.

Exception: If the slope of the finished ground level between accessible facilities and buildings exceeds one unit vertical in twelve units horizontal (1:12), or where physical barriers prevent the installation of an accessible route, a vehicular route with parking that complies with Section 1106 of the 2012 International Building Code portion of the State Building Code at each public or common use facility or building is permitted in place of the accessible route.

(Add) **R320.6 Parking.** Two per cent, but not less than one, of each type of parking space provided in occupancies which are required to have Type B dwelling units shall be accessible. For each six or fraction of six accessible parking spaces, at least one shall be a van-accessible parking space.

(Add) **R320.6.1 Parking within or beneath a building.** Where parking is provided within or beneath a building, accessible parking spaces shall also be provided within or beneath the building.

Exception: Private parking garages within or beneath the building that contain no more than two parking spaces, that are reserved for the exclusive use of a specific dwelling unit and are directly accessed from that dwelling unit are not required to be accessible.

(Add) **R320.6.2 Automobile accessible parking spaces.** Pursuant to subsection (h) of section 14-253a of the Connecticut General Statutes, parking spaces for passenger motor vehicles designated for persons who are blind and persons with disabilities shall be as near as possible to a building entrance or walkway and shall be 15 feet (4572 mm) wide including 5 feet (1524 mm) of cross hatch. Cross-hatched portions shall not be shared between spaces.

(Add) **R320.6.3 Van accessible parking spaces.** Pursuant to subsection (h) of section 14-253a of the Connecticut General Statutes, parking spaces for passenger vans designated for persons who are blind and persons with disabilities shall be as near as possible to a building entrance or walkway and shall be 16 feet (4877 mm) wide including 8 feet (2438 mm) of cross hatch. Cross-hatched portions shall not be shared between spaces.

(Add) **R320.6.3.1 Van access clearance.** Pursuant to subsection (i) of section 14-253a of the Connecticut General Statutes, each public parking garage or terminal shall have 8 feet 2 inches (2489 mm) vertical clearance at a primary entrance and along the route to at least two parking spaces for passenger vans that conform to Section R320.6.3 and that have 8 feet 2 inches (2489 mm) of vertical clearance.

(Amd) **R321.1 Elevators.** Where provided, passenger elevators, limited use/limited application elevators or elevators installed in private residences shall comply with ASME A17.1 and shall be installed in accordance with regulations adopted under authority of section 29-192 of the Connecticut General Statutes. Where the provisions of this section conflict with other statutory or regulatory provisions, those requirements shall prevail.

CHAPTER 4 – FOUNDATIONS

(Amd) **R403.1 General.** All exterior walls shall be supported on continuous solid or fully grouted masonry or concrete footings, crushed stone footings, wood foundations or other approved structural systems which shall be of sufficient design to accommodate all loads according to Section R301 and to transmit the resulting loads to the soil within the limitations as determined from the character of the soil. Footings shall be supported on undisturbed natural soils or engineered fill. Concrete footings shall be designed and constructed in accordance with the provisions of Section R403 or in accordance with ACI 332.

Exception: Freestanding accessory structures with an area of 600 square feet or less and an eave height of 10 feet (3048 mm) or less.

Footings and freestanding accessory structures as exempted above shall be supported on undisturbed natural soils or engineered fill and shall be anchored to resist wind-induced uplift and overturning.

(Add) **R404.4.1 Guards.** Retaining walls with a difference in finished grade from the top of the wall to the bottom of the wall that is greater than 4 feet (1219 mm) shall be provided with guards complying with Sections R312.1.2 and R312.1.3 when there is a walking surface, parking lot or driveway on the high side located closer than 2 feet (610 mm) to the retaining wall. For the purpose of this section, grass, planting beds or landscaped areas shall not be a walking surface.

(Add) **R404.6 Deep foundations.** Deep foundations shall comply with the requirements set forth in Section 1810 of the 2012 International Building Code portion of the State Building Code.

(Add) **R405.3 Above grade drainage.** Above grade drainage systems, including but not limited to, gutters and downspouts, roof drains, and yard drains, shall not be connected to the foundation drainage system.

CHAPTER 8 – ROOF-CEILING CONSTRUCTION

(Amd) **R802.10.2.1 Applicability limits.** The provisions of this section shall control the design of truss roof framing when snow control for buildings not greater than 60 feet (18288 mm) in length perpendicular to the joist, rafter or truss span, not greater than 36 feet (10973 mm) in width parallel to the joist, rafter or truss span, not more than three stories above grade plane in height with each story not greater than 10 feet (3048 mm) high, and roof slopes not smaller than 3:12 (25-percent slope) or greater than 12:12 (100-percent slope). Truss roof framing constructed in accordance with the provisions of this section shall be limited to sites subjected to a maximum design wind speed of 110 miles per hour (49 m/s), Exposure A, B, or C, and a maximum ground snow load of 70 psf (3352 Pa). For consistent loading of all truss types, a roof snow load of 30 pounds per square foot shall be utilized.

CHAPTER 9 – ROOF ASSEMBLIES

(Amd) **TABLE R905.2.4.1(1)**
CLASSIFICATION OF ASPHALT ROOF SHINGLES PER ASTM D 7158

MAXIMUM BASIC WIND SPEED FROM APPENDIX N (mph)	CLASSIFICATION REQUIREMENT
85	D, G or H
90	D, G or H
100	G or H
110	G or H
120	G or H
130	H
140	H
150	H

For SI: 1 mile per hour = 0.447 m/s.

(Amd) TABLE R905.2.4.1(2)

CLASSIFICATION OF ASPHALT SHINGLES PER ASTM D 3161

MAXIMUM BASIC WIND SPEED FROM APPENDIX N (mph)	CLASSIFICATION REQUIREMENT
85	A, D or F
90	A, D or F
100	A, D or F
110	F
120	F
130	F
140	F
150	F

For SI: 1 mile per hour = 0.447 m/s.

CHAPTER 11 [RE] – ENERGY EFFICIENCY

(Amd) **N1101.6 (R101.5.2) Low-energy buildings.** The following buildings, or portions thereof, separated from the remainder of the building by building thermal envelope assemblies complying with this code shall be exempt from the building thermal envelope provisions of this code:

1. Those with a peak design rate of energy usage less than 3.4 Btu/h·ft² (10.7 W/m²) or 1.0 watt/ft² (10.7 W/m²) of floor area for space conditioning purposes.
2. Those that do not contain conditioned space.
3. Buildings and structures for which heating and cooling is supplied solely by utilization of non-purchased renewable energy sources including but not limited to, on-site wind, on-site water or on-site solar power, or wood-burning heating appliances that do not rely on backup heat from other purchased, non-renewable sources.

(Add) **N1101.6.1 (R101.5.3) Energy efficiency standards for products.** In addition to the requirements of this code, the testing, certification and enforcement of efficiency standards for new products sold, offered for sale or installed in the State of Connecticut shall be in compliance with section 16a-48 of the Connecticut General Statutes and regulations adopted under authority of said statute.

(Amd) **N1101.7 (R102.1.1) Above code programs.** The State Building Inspector and the Codes and Standards Committee may deem a national, state or local energy efficiency program to exceed the energy efficiency required by this chapter. Such energy efficiency program may include, but not be limited to, the Leadership in Energy and Environmental Design rating system, the Green Globes USA program, as established by the Green Building Initiative, the National Green Building Standard, as established by the National Association of Home Builders, or an equivalent rating system approved in accordance with section 29-256a of the Connecticut General Statutes.

Buildings approved in writing by such an energy efficiency program shall be considered in compliance with this chapter. The requirements identified as “mandatory” in this Chapter of this code, as applicable, shall be met.

(Add) **N1101.12.1.1.1 (R402.2.13) Urea-formaldehyde insulation.** Foamed-in-place insulation shall be furnished and installed pursuant to section 29-277 of the Connecticut General Statutes. Urea-formaldehyde foamed-in-place insulation shall not be installed in any building or structure on or after June 1, 1981.

(Amd) **N1102.4.1.2 (R402.4.1.2) Testing.** The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding 3 air changes per hour in Climate Zone 5. Testing shall be conducted with a blower door at a pressure of 0.2 inches w.g. (50 Pascals). Where required by the code official, testing shall be conducted by an approved third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the code official. Testing shall be performed at any time after creation of all penetrations of the building thermal envelope.

During testing:

1. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed, beyond the intended weather stripping or other infiltration control measures;
2. Dampers including exhaust, intake, makeup air, backdraft and flue dampers shall be closed, but not sealed beyond intended infiltration control measures;
3. Interior doors, if installed at the time of the test, shall be open;
4. Exterior openings for continuous ventilation systems and heat recovery ventilators shall be closed and sealed;
5. Heating and cooling systems, if installed at the time of the test, shall be turned off; and
6. Supply and return registers, if installed at the time of the test, shall be fully open.

Exceptions:

1. Low-rise attached dwelling unit buildings in Climate Zone 5: For dwelling units greater than 850 square feet of floor area, the air leakage threshold shall be set at 5 air changes per hour. For dwelling units less than or equal to 850 square feet of floor area, the air leakage threshold shall be set at 6.5 air changes per hour. Testing shall be conducted with a blower door, unguarded, at a pressure of 0.2 inches w.g. (50 Pascals). If guarded blower door testing (a test with one or more adjacent units pressurized, which should eliminate any leakage between units) is being performed, this exception is not allowed and the standard testing requirements of Section 402.4.1.2 apply. Where required by the code official, testing shall be conducted by an approved third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the code official. Testing shall be performed at any time after creation of all penetrations of the building thermal envelope. For buildings with more than 7 units, a sampling protocol is allowed by an approved third party. The sampling protocol requires the first seven units to be tested without any failures. Upon successful testing of those initial seven units, remaining units can be sampled at a rate of 1 in 7. If any sampled unit fails compliance with the maximum allowed air leakage rate, two additional units in the same sample set must be tested. If additional failures occur, all units in the sample set must be tested. In addition, all units in the next sample set must be tested for compliance before sampling of further units can be continued.

2. Additions and alterations: A visual inspection of the building envelope tightness and insulation installation shall be considered acceptable when the items listed in Table N

1102.4.1.1, applicable to the method of construction, are field verified. Where required by the code official, an approved party independent from the installer of the insulation shall inspect the air barrier and insulation.

(Amd) **N1102.4.2 (R402.4.2) Fireplaces.** New wood-burning fireplaces shall have tight-fitting flue dampers or doors, and outdoor combustion air. Where using tight-fitting doors on factory-built fireplaces listed and labeled in accordance with UL 127, the doors shall be tested and listed for the fireplace. Where using tight-fitting doors on masonry fireplaces, the doors shall be listed and labeled in accordance with UL 907.

(Amd) **Table N1102.4.1.1 (R402.4.1.1) AIR BARRIER AND INSULATION INSTALLATION.** Delete entire last row containing the topic 'Fireplace' without substitution.

(Add) **N1103.2.1.1 (R403.2.1.1) Duct insulation values.** Minimum duct insulation values stated in Section N1103.2.1 shall be installed R-values.

(Amd) **N1103.2.2 (R403.2.2) Sealing (Mandatory).** Ducts, air handlers, and filter boxes shall be sealed. Joints and seams shall comply with Section M1601.4.1 of this code.

Exceptions:

1. Air-impermeable spray foam products may be applied without additional joint seals.
2. Where a duct connection is made that is partially inaccessible, three screws or rivets shall be equally spaced on the exposed portion of the joint so as to prevent a hinge effect.
3. Continuously welded and locking-type longitudinal joints and seams in ducts operating at static pressures less than 2 inches of water column (500 Pa) pressure classification shall not require additional closure systems.

Duct tightness shall be verified by either of the following:

1. Post-construction test: Total leakage shall be less than or equal to 8 cfm (226.5 L/min) per 100 square feet (9.29 m²) of conditioned floor area when tested at a pressure differential of 0.1 inches w.g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure. All register boots shall be taped or otherwise sealed during the test.
2. Rough in test: Total leakage shall be less than or equal to 8 cfm (226.5 L/min) per 100 square feet (9.29 m²) of conditioned floor area when tested at a pressure differential of 0.1 inches w.g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure. All registers shall be taped or otherwise sealed during the test. If the air handler is not installed at the time of the test, total leakage shall be less than or equal to 3 cfm (85 L/min) per 100 square feet (9.29 m²) of conditioned floor area.

Exceptions:

1. The total leakage test is not required for ducts and air handlers located entirely within the building thermal envelope.
2. Where ducts from an existing heating and cooling system are extended to an addition or are extended due to an alteration, duct systems with less than 40 linear feet (12.19 m) in unconditioned spaces shall not be required to be tested in accordance with Section 403.2.2.

CHAPTER 13 – GENERAL MECHANICAL SYSTEM REQUIREMENTS

(Amd) **M1301.1 Scope.** The provisions of this chapter shall govern the installation of mechanical systems not specifically covered in other chapters applicable to mechanical systems. Installations of mechanical appliances, equipment and systems not addressed by this code shall comply with the applicable provisions of the International Mechanical Code and requirements as noted in Section R101.4.1 for Fuel Gas.

CHAPTER 15 – EXHAUST SYSTEMS

(Amd) **M1503.4 Makeup air required.** Exhaust hood systems capable of exhausting in excess of 400 cubic feet per minute (0.19 m³/s) shall be provided with makeup air at a rate approximately equal to the difference between the exhaust air rate and 400 cubic feet per minute. Such makeup air systems shall be equipped with a means of closure.

Exception: Where all appliances in the house are of sealed combustion, power-vent, unvented, or electric, the exhaust hood system may exhaust up to 600 cubic feet per minute (0.28 m³/s) without providing makeup air. Exhaust hood systems capable of exhausting in excess of 600 cubic feet per minute (0.28 m³/s) shall be provided with a makeup air at a rate approximately equal to the difference between the exhaust air rate and 600 feet per minute. Such makeup air systems shall be equipped with a means of closure.

CHAPTER 16 – DUCT SYSTEMS

(Amd) **M1601.1.1 Above-ground duct systems.** Above-ground duct systems shall conform to the following:

1. Equipment connected to duct systems shall be designed to limit discharge air temperature to a maximum of 250°F (121°C).
2. Factory-made air ducts shall be constructed of Class O or Class 1 materials as designated in Table M1601.1.1(1).
3. Fibrous duct construction shall conform to the SMACNA Fibrous Glass Duct Construction Standards or NAIMA Fibrous Glass Duct Construction Standards.
4. Minimum thickness of metal duct material shall be as listed in Table M1601.1.1(2). Galvanized steel shall conform to ASTM 653. Metallic ducts shall be fabricated in accordance with SMACNA Duct Construction Standards Metal and Flexible.
5. Use of gypsum products to construct return air ducts or plenums is permitted, provided that the air temperature does not exceed 125°F (52°C) and exposed surfaces are not subject to condensation.
6. Duct systems shall be constructed of materials having a flame spread index not greater than 200.

CHAPTER 19 – SPECIAL APPLIANCES, EQUIPMENT AND SYSTEMS

(Amd) **M1904.1 Installation.** Gaseous hydrogen shall be installed in accordance with the applicable requirements of Sections M1307.4 and M1903.1 and the 2012 International Building

Code portion of the State Building Code, and the requirements as noted in Section R101.4.1 for Fuel Gas.

CHAPTER 24 – FUEL GAS

(Amd) **G2402.3 Terms defined in other codes.** Where terms are not defined in this code and are defined in other portions of the State Building Code, such terms shall have the meanings ascribed to them as in those portions of the code.

(Amd) **G2412.2 Liquefied petroleum gas storage.** The storage system for liquefied petroleum gas shall be designed and installed in accordance with NFPA 58.

(Add) **G2412.2.1 Identification Label.** LP-Gas fuel suppliers shall affix and maintain in a legible condition, their firm name(s) and emergency telephone number(s) in a readily visible location on LP-Gas supplier-owned Department of Transportation (DOT) and American Society of Mechanical Engineers (ASME) containers installed on a consumer's premises. The firm name(s) and emergency telephone number(s) shall be at least ½ inch high and of contrasting color to the container. The emergency telephone number(s) shall be staffed 24 hours a day to ensure that the LP-Gas supplier is available in the event of an emergency at the consumer's premises. Cylinders, tanks or containers shall be filled, evacuated or transported only by the owner of the cylinder, tank or container or upon the owner's authorization.

(Amd) **G2415.3 Prohibited locations.** Piping shall not be installed in or through a circulating air duct, return, exhaust, or a clothes chute, chimney or gas vent, dumbwaiter or elevator shaft. Piping installed downstream of the point of delivery shall not extend through any townhouse unit, other than the unit served by such piping, including basements and underfloor spaces.

CHAPTER 26 – GENERAL PLUMBING REQUIREMENTS

(Add) **P2602.1.1 Individual sewage disposal systems and individual water supply systems.** Installations shall be approved in accordance with this code and the regulations enforced by the local health director in accordance with the Public Health Code of the State of Connecticut adopted pursuant to section 19a-36 of the Connecticut General Statutes.

(Del) **P2603.5.1 Sewer depth.** Delete without substitution.

CHAPTER 29 – WATER SUPPLY AND DISTRIBUTION

(Add) **P2902.5.3.1 Automatic lawn sprinkler system sensor device.** An automatic lawn sprinkler system shall be equipped with a rain sensor or switch that will automatically override the irrigation cycle in accordance with section 29-265b of the Connecticut General Statutes.

CHAPTER 31 – VENTS

(Amd) **P3103.1 Roof extension.** Open vent pipes that extend through a roof shall be terminated at least 12 inches (305 mm) above the roof, except that where a roof is to be used for any purpose other than weather protection, the vent extension shall be at least 7 feet (2134 mm) above the roof.

(Del) **P3103.2 Frost closure.** Delete without substitution.

CHAPTER 34 – GENERAL REQUIREMENTS

(Add) **E3401.2.1 Alternative compliance.** Compliance with the requirements of the 2014 NFPA 70 National Electrical Code portion of the State Building Code shall be deemed to be alternative compliance with the requirements of Chapters 34 to 43, inclusive, of this code. At the time of permit application, the permit applicant shall state which code will be followed.

CHAPTER 36 – SERVICES

(Amd) **E3608.1 Grounding electrode system.** If available on the premises at each building or structure served, each item in section E3608.1.1 to E3608.1.6, inclusive, of this code shall be bonded together to form the grounding electrode system. Where none of these grounding electrodes are available, one or more of the grounding electrodes specified in section E3608.1.3 to E3608.1.6, inclusive, shall be used.

CHAPTER 38 – WIRING METHODS

(Amd) **TABLE E3802.1 GENERAL INSTALLATION AND SUPPORT REQUIREMENTS FOR WIRING METHODS**^{a, b, c, d, e, f, g, h, i, j, k}

INSTALLATION REQUIREMENTS (Requirement applicable only to wiring methods marked “A”)	AC MC	EMT IMC RMC	ENT	FMC LFC	NM UF	RNC	SE	SR^a	USE
Where wiring methods run parallel with the framing member or furring strip, the wiring shall be not less than 1¼ inches from the edge of a furring strip or a framing member, such as a joist, rafter or stud, or shall be physically protected.	A	---	A	A	A	---	A	---	---
Bored holes in framing members for wiring shall be not less than 2 inches from the edge of the joists or rafters and 1¼ inch from the edge of studs or shall be protected with a minimum 0.0625-inch steel plate or sleeve, a listed steel plate or other physical protection.	A ^k	---	A ^k	A ^k	A ^k	---	A ^k	---	---
Where wiring methods are installed in grooves, to be covered by wallboard, siding, paneling, carpeting or similar finish, wiring methods shall be protected by 0.0625-inch thick steel plate, sleeve, or equivalent; a listed plate; or by not less than 1¼-inch free space for the full length of the groove in which the cable or raceway is installed.	A	---	A	A	A	---	A	A	A

INSTALLATION REQUIREMENTS (Requirement applicable only to wiring methods marked “A”)	AC MC	EMT IMC RMC	ENT	FMC LFC	NM UF	RNC	SE	SR^a	USE
Securely fastened bushing or grommets shall be provided to protect wiring run through openings in metal framing members.	---	---	A ^j	---	A ^j	---	A ^j	---	---
The maximum number of 90-degree bends shall not exceed four between junction boxes.	---	A	A	A	---	A	---	---	---
Bushings shall be provided where entering a box, fitting or enclosure unless the box or fitting is designed to afford equivalent protection.	A	A	A	A	---	A	---	A	---
Ends of raceways shall be reamed to remove rough edges.	---	A	A	A	---	A	---	A	---
Maximum allowable on center support spacing for the wiring method in feet.	4.5 ^{b,c}	10 ^l	3 ^b	4.5 ^b	4.5 ⁱ	3 ^{d,l}	2.5 ^e	---	2.5 ^e
Maximum support distance in inches from box or other terminations.	12 ^{b,f}	36	36	12 ^{b,g}	12 ^{h,i}	36	12	---	---

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 degree = 0.0175 rad.

a. Installed in accordance with listing requirements.

b. Supports not required in accessible ceiling spaces between light fixtures where lengths do not exceed 6 feet.

c. Six feet for MC cable.

d. Five feet for trade sizes greater than 1 inch.

e. Two and one-half feet where used for service or outdoor feeder and 4.5 feet where used for branch circuit or indoor feeder.

f. Twenty-four inches where flexibility is necessary.

g. Where flexibility after installation is necessary, lengths of flexible metal conduit and liquid tight flexible metal conduit measured from the last point where the raceway is securely fastened shall not exceed: 36 inches for trade sizes ½ through 1¼, 48 inches for trade sizes 1½ through 2 and 5 feet for trade sizes 2½ and larger.

h. Within 8 inches of boxes without cable clamps.

i. Flat cables shall not be stapled on edge.

j. Bushings and grommets shall remain in place and shall be listed for the purpose of cable protection.

k. See Sections R502.8 and R802.7 for additional limitations on the location of bored holes in horizontal framing members.

l. Where oversized, concentric or eccentric knockouts are not encountered, a raceway not greater than 18 inches in length shall not require support where it is a continuous length without couplings. Such raceways shall terminate at an outlet box, junction box, device box, cabinet, or other termination at each end of the raceway.

CHAPTER 39 – POWER AND LIGHTING DISTRIBUTION

(Amd) **FIGURE E3901.4 COUNTERTOP RECEPTACLES.** Add GFCI designation to the receptacle shown in the pictorial figure at the center island countertop.

(Add) **E3902.1.1 Bathtub or shower stall receptacles.** Each 125-volt, single phase, and 20-ampere receptacle located within 6 feet (1829 mm) of the outside edge of a bathtub or shower stall shall have ground-fault circuit interrupter protection for personnel.

(Add) **E3902.1.2 Laundry areas.** Each 125-volt, single-phase, 15- and 20-ampere receptacle installed in laundry areas shall have ground-fault interrupter protection for personnel.

(Add) **E3902.6.1 Kitchen dishwasher branch circuit.** Ground-fault circuit-interrupter protection shall be provided for outlets that supply dishwashers in dwelling unit locations.

(Del) **E3902.12 Arc-fault circuit-interrupter protection.** Delete section E3902.12 in its entirety and replace with the following:

(Add) **E3902.12 Arc-fault circuit-interrupter protection.** Branch circuits that supply 120-volt, single-phase, 15- and 20-ampere outlets installed in kitchens, family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, laundry areas and similar rooms or areas shall be protected by any of the following:

1. A listed combination-type arc-fault circuit interrupter, installed to provide protection of the entire branch circuit.
2. A listed branch/feeder-type AFCI installed at the origin of the branch-circuit in combination with a listed outlet branch-circuit type arc-fault circuit interrupter installed at the first outlet box on the branch circuit. The first outlet box in the branch circuit shall be marked to indicate that it is the first outlet of the circuit.
3. A listed supplemental arc protection circuit breaker installed at the origin of the branch circuit in combination with a listed outlet branch-circuit type arc-fault circuit interrupter installed at the first outlet box on the branch circuit where all of the following conditions are met:
 - 3.1 The branch-circuit wiring shall be continuous from the branch-circuit overcurrent device to the outlet branch-circuit arc-fault circuit interrupter.
 - 3.2 The maximum length of the branch-circuit wiring from the branch-circuit overcurrent device to the first outlet shall not exceed 50 feet (15.2 m) for 14 AWG conductors and 70 feet (21.3 m) for 12 AWG conductors.
 - 3.3 The first outlet box on the branch circuit shall be marked to indicate that it is the first outlet on the circuit.
4. A listed outlet branch-circuit type arc-fault circuit interrupter installed at the first outlet on the branch circuit in combination with a listed branch-circuit overcurrent protective device where all of the following conditions are met:
 - 4.1 The branch-circuit wiring shall be continuous from the branch-circuit overcurrent device to the outlet branch-circuit arc-fault circuit interrupter.

4.2 The maximum length of the branch-circuit wiring from the branch-circuit overcurrent device to the first outlet shall not exceed 50 feet (15.2 m) for 14 AWG conductors and 70 feet (21,3 m) for 12 AWG conductors.

4.3 The first outlet box on the branch circuit shall be marked to indicate that it is the first outlet on the circuit.

4.4 The combination of the branch-circuit overcurrent device and outlet branch-circuit AFCI shall be identified as meeting the requirements for a system combination-type AFCI and shall be listed as such.

5. Where metal outlet boxes and junction boxes and RMC, IMC, EMT, Type MC or steel-armored Type AC cables meeting the requirements of Section E3908.8, metal wireways or metal auxiliary gutters are installed for the portion of the branch circuit between the branch-circuit overcurrent device and the first outlet, a listed outlet branch-circuit type AFCI installed at the first outlet shall be considered as providing protection for the remaining portion of the branch circuit.

6. Where a listed metal or nonmetallic conduit or tubing or Type MC cable is encased in not less than 2 inches (50.8 mm) of concrete for the portion of the branch circuit between the branch-circuit overcurrent device and the first outlet, a listed outlet branch-circuit type AFCI installed at the first outlet shall be considered as providing protection for the remaining portion of the branch circuit.

Exception: AFCI protection is not required for an individual branch circuit supplying only a fire alarm system where the branch circuit is wired with metal outlet and junction boxes and RMC, IMC, EMT or steel-sheathed armored cable Type AC or Type MC meeting the requirements of Section E3908.8.

(Amd) **E3902.13 Arc-fault circuit interrupter protection for branch circuit extensions or modifications.** Where branch-circuit wiring is modified, replaced, or extended in any of the areas specified in Section E3902.12, the branch circuit shall be protected by one of the following:

1. A combination-type AFCI located at the origin of the branch circuit.
2. An outlet branch-circuit type AFCI located at the first receptacle outlet of the existing branch circuit.

Exception: AFCI protection shall not be required where the extension of the existing conductors is not more than 6 feet (1.8 m) in length and does not include any additional outlets or devices.

(Add) **E3902.14 Location of arc-fault circuit interrupters.** Arc-fault circuit interrupters shall be installed in readily accessible locations.

CHAPTER 42 – SWIMMING POOLS

(Amd) **E4204.5.2 Connections.** Connections shall be made by exothermic welding or by listed pressure connections or clamps that are labeled as being suitable for the purpose and that are made of stainless steel, brass, copper or copper alloy. Connection devices or fittings that depend solely on solder shall not be used. Sheet metal screws shall not be used to connect bonding conductors or connection devices. Thread forming machine screws that engage not less than two threads are permitted.

CHAPTER 44 – REFERENCED STANDARDS

(Amd) National Fire Protection Association
NFPA 1 Batterymarch Park
 Quincy, MA 02269

Standard reference number— year of publication	Title	Referenced in code section number
(Add) 02-11	Hydrogen Technologies Code	R101.4.1
(Add) 54-12	National Fuel Gas Code	R101.4.1
(Amd) 70-14	National Electrical Code	E3401.1, E3401.2, E4301.1, E4303.2, E4304.3, E4304.4
(add) 720-12	Carbon Monoxide Detection and Warning Equipment	R316.4

APPENDIX E - MANUFACTURED HOUSING USED AS DWELLINGS

(Amd) **AE101.1 General.** The provisions of Appendix E shall be applicable only to a manufactured home used as a single dwelling unit and shall apply to the following:

1. Construction, alteration and repair of any foundation system necessary to provide for the installation of a manufactured home unit.
2. Construction, installation, addition, alteration, repair or maintenance of the building service equipment necessary for connecting manufactured homes to water, fuel or power supplies and sewage systems.
3. Alterations, additions or repairs to existing manufactured homes. The construction, alteration, moving, demolition, repair and use of accessory buildings and structures and their building service equipment shall comply with the requirements of the State Building Code.

These provisions shall not be applicable to the design and construction of manufactured homes and shall not be deemed to authorize either modifications or additions to manufactured homes where otherwise prohibited.

Exception: In addition to these provisions, new and replacement manufactured homes to be located in flood hazard areas as determined locally shall meet the applicable requirements of Section R322 of this code.

(Amd) **AE600.1 General.** The provisions of Sections AE601 to AE606, inclusive, are applicable only upon request of the building permit applicant with the approval of the local building official.

(Amd) SECTION AE606 REFERENCED STANDARDS

ASTM C 270 – 07 Specification for Mortar for Unit Masonry.....AE602

(Amd) **APPENDIX F – PASSIVE RADON GAS CONTROLS**

(Amd) **AF101.1 General.** This appendix contains radon-resistant construction techniques for new construction.

(Add) **AF101.2 Radon Mitigation Preparation Construction Technique.** All newly constructed detached one- and two-family dwellings and townhouses shall be provided with radon mitigation preparation construction in accordance with Section AF104 of this code.

Exceptions:

1. Radon-resistant construction technique complying with Section AF103 of this code.
2. Such systems shall not be required in existing buildings undergoing repair, addition or alteration. In the case of an addition to an existing building, this exception also applies to the new construction.

(Add) **AF102.2 Definitions.** Add or amend the following definitions.

(Add) **ENCLOSED CRAWL SPACE.** A crawl space that is enclosed with foundation walls inclusive of any windows, doors, access openings and required vents.

(Add) **GAS-PERMEABLE LAYER.** A gas-permeable layer shall consist of one of the following:

1. A uniform layer of clean aggregate that is not less than 4 inches (102 mm) thick. The aggregate shall consist of material that will pass through a 2-inch (51 mm) sieve and be retained by a ¼-inch (6.4 mm) sieve.
2. A uniform layer of sand (native or fill) that is not less than 4 inches (102 mm) thick and that is overlain by a soil gas collection mat or soil gas matting installed in accordance with the manufacturer's instruction.

(Amd) **SOIL-GAS-RETARDER.** A continuous membrane of 6-mil (0.15 mm) polyethylene or other approved equivalent material used to retard the flow of soil gases into a dwelling.

(Amd) **SUBMEMBRANE DEPRESSURIZATION SYSTEM.** A system designed to achieve lower submembrane air pressure relative to basement or crawl space air pressure by use of a vent drawing air from beneath the soil-gas-retarder membrane.

(Del) **SUBSLAB DEPRESSURIZATION SYSTEM (Active).** Delete without substitution.

(Amd) **SUBSLAB DEPRESSURIZATION SYSTEM (Passive).** A system designed to achieve lower subslab air pressure relative to indoor air pressure by use of a vent pipe drawing air from beneath concrete floor slabs or other floor assemblies that are in contact with the ground.

(Add) **VENT PIPE.** Not less than a 3-inch diameter (76 mm) ABS or PVC gas-tight pipe extending from the gas permeable layer through the roof.

(Del) **SECTION AF103 REQUIREMENTS.** Delete this section in its entirety and replace with the following:

(Add) **SECTION AF103 PASSIVE RADON-RESISTANT SYSTEM REQUIREMENTS**

(Add) **AF103.1 General.** The following techniques of a passive submembrane or subslab depressurization system shall be installed during construction.

(Add) **AF103.2 Entry routes.** Potential radon entry routes shall be closed in accordance with Sections AF103.2.1 to AF103.2.7, inclusive, of this code.

(Add) **AF103.2.1 Floor openings.** Openings around bathtubs, showers, water closets, pipes, wires or other objects that penetrate concrete slabs, or other floor assemblies, shall be filled with a polyurethane caulk or expanding foam applied in accordance with the manufacturer's instructions.

(Add) **AF103.2.2 Sumps.** Sumps open to soil or serving as the termination point for subslab or exterior drain tile loops shall be covered with a gasketed or sealed lid. Sumps used as the suction point in a subslab depressurization system shall have a lid designed to accommodate the vent pipe. Sumps used as a floor drain shall have a lid equipped with a trapped inlet.

(Add) **AF103.2.3 Foundation walls.** Hollow block masonry foundation walls shall be constructed with a continuous course of solid masonry, one course of masonry grouted solid, or a solid concrete beam at or above grade. Where a brick veneer or other masonry ledge is installed, the course immediately below that ledge shall be solid masonry, one course of masonry grouted solid, or a solid concrete beam. Joints, cracks or other openings around penetrations of both exterior and interior surfaces of foundation walls below grade shall be filled with polyurethane caulk.

(Add) **AF103.2.4 Dampproofing.** The exterior surfaces of foundation walls below grade shall be dampproofed in accordance with Section R406.

(Add) **AF103.2.5 Air-conditioning systems.** Entry points, joints or other openings into air-conditioning systems in enclosed crawl spaces shall be sealed.

Exception: Systems with gasketed seams or that are otherwise sealed by the manufacturer.

(Add) **AF103.2.6 Ducts.** Ductwork passing through or beneath a slab within a dwelling shall be of seamless material unless the air-conditioning system is designed to maintain continuous positive pressure within such ducting. Joints in such ductwork shall be sealed.

Ductwork located in enclosed crawl spaces shall have seams and joints sealed by closure systems in accordance with Section M1601.4.1.

(Add) **AF103.2.7 Crawl space access.** Access doors and other openings or penetrations between basements and adjoining crawl spaces shall be closed, gasketed or sealed.

(Add) **AF103.3 Basements or enclosed crawl spaces with floors.** In dwellings with basements or enclosed crawl spaces with soil floors, the following components of a passive sub-membrane depressurization system shall be installed during construction.

Exception: Basements or enclosed crawl spaces that are provided with continuously operated mechanical exhaust system in accordance with Section R408.3.

(Add) **AF103.3.1 Soil-gas-retarder.** The soil in basements and enclosed crawl spaces shall be covered with a soil-gas-retarder. The soil-gas-retarder shall be lapped not less than 12 inches (305 mm) at joints and shall extend to foundation walls enclosing the basement or crawl space. The soil-gas-retarder shall fit closely around any pipe, wire or other penetrations of the material. Punctures or tears in the material shall be sealed or covered with additional sheeting.

(Add) **AF103.3.2 “T” fitting and vent pipe.** A 3- or 4-inch “T” fitting shall be inserted beneath the soil-gas-retarder and be connected to a vent pipe. The vent pipe shall extend through the conditioned space of the dwelling and terminate not less than 12 inches (305 mm) above the roof in a location not less than 10 feet (3048 mm) away from any window or other opening into the conditioned spaces of the building that is less than 2 feet (610 mm) below the exhaust point. The vent pipe shall be the same diameter throughout its length and shall be supported in accordance with section P2605.

(Add) **AF103.4 Basements or enclosed crawl spaces with concrete floors or other floor systems and slab-on-grade dwellings.** The following components of a passive subslab depressurization system shall be installed during construction in slab-on-grade dwellings or in dwellings with basements or crawl spaces with concrete or other floor systems.

(Add) **AF103.4.1 Sub-slab preparation.** A layer of gas-permeable material shall be placed under concrete slabs and other floor systems that directly contact the ground and are within the walls of the dwelling.

(Add) **AF103.4.2 Soil-gas-retarder.** A soil-gas-retarder shall be placed on top of the gas-permeable layer prior to casting the slab or placing the floor assembly. The soil-gas-retarder shall cover the entire floor area with separate sections lapped not less than 12 inches (305 mm). The soil-gas-retarder shall fit closely around any, pipe, wire or other penetrations of the material. Punctures or tears in the material shall be sealed or covered.

(Add) **AF103.4.3 “T” fitting and vent pipe.** Before a slab is cast or other floor system is installed, a “T” fitting shall be inserted below the slab or other floor system and the soil-gas-retarder. The “T” fitting shall be connected to a vent pipe. The vent pipe shall extend through the conditioned space of the dwelling and terminate not less than 12 inches (305 mm) above the roof in a location not less than 10 feet (3048 mm) away from any window or other opening into the conditioned spaces of the building that is less than 2 feet (610 mm) below the exhaust point. The vent pipe shall be the same diameter throughout its length and shall be supported in accordance with section P2605.

(Add) **AF103.5 Drain tile and sump used for depressurization.** As an alternative to inserting a vent pipe into a “T” fitting, a vent pipe may be inserted directly into an interior perimeter drain tile loop or through a sump cover where the drain tile or sump is exposed to the gas-permeable layer.

(Add) **AF103.6 Multiple vent pipes.** In dwellings where interior footings or other barriers separate the gas-permeable layer, each area shall be fitted with an individual vent pipe. Vent pipes shall connect to a single vent that terminates not less than 12 inches above the roof or each individual vent pipe shall terminate separately not less than 12 inches above the roof. The vent pipe shall be the same diameter throughout its length and shall be supported in accordance with section P2605.

(Add) **AF103.7 Combination foundations.** Where basement or crawl space floors are on different levels, each level shall have a separate vent pipe. Multiple vent pipes may be connected to a single vent pipe that terminates above the roof.

(Add) **AF103.8 Vent pipe drainage.** Components of the radon vent pipe system shall be installed to provide positive drainage to the ground beneath the soil gas-retarder.

(Add) **AF103.9 Vent pipe identification.** Exposed and visible interior vent pipes shall be identified with not less than one label on each floor and in accessible attics. The label shall read: "Radon Reduction Systems."

(Add) **AF103.10 Power source and access for future radon fan.** To provide for future installation of a radon fan, an electrical circuit terminated in an approved box shall be installed during construction in the anticipated location of the radon fans. An accessible clear space 24 inches (610 mm) in diameter by 3 feet (914 mm) in height adjacent to the vent pipe shall be provided at the anticipated location of a future radon fan.

(Add) **SECTION AF104 RADON MITIGATION PREPARATION**

(Add) **AF104.1 Soil-gas-retarder.** A continuous membrane of 6-mil (0.15 mm) polyethylene or other approved equivalent material used to retard the flow of soil gases into a dwelling shall be installed under the floor slab in accordance with R506.2.3.

(Add) **AF104.2 "T" fitting and vent pipe.** Before a slab is cast or other floor system is installed, a 3-inch "T" fitting shall be inserted beneath the soil-gas-retarder. The "T" fitting shall be surrounded by aggregate consisting of material that will pass through a 2-inch (51 mm) sieve and be retained by a ¼-inch (6.4 mm) sieve not less than an 8-inch deep by 24-inch diameter hole. The aggregate shall be wrapped in filter fabric or equivalent material. The "T" fitting shall be connected to a 3-inch diameter (76 mm) ABS or PVC gas-tight pipe extending from the basement through the conditioned space of the dwelling and terminate not less than 12 inches (305 mm) above the roof in a location not less than 10 feet (3048 mm) away from any window or other opening into the conditioned spaces of the building that is less than 2 feet (610 mm) below the exhaust point. The vent pipe shall be the same diameter throughout its length and shall be supported in accordance with section P2605.

(Add) **AF104.2.1 Combination foundations.** Where basement or crawl space floors are on different levels, each level shall have a separate vent pipe. Multiple vent pipes shall be permitted to be connected to a single vent pipe that terminates above the roof.

(Add) **AF104.2.2 Drain tile and sump used for depressurization.** As an alternative to inserting a vent pipe into a "T" fitting, a vent pipe shall be permitted to be inserted directly into an interior perimeter drain tile loop or through a sump cover.

(Add) **AF104.3 Floor openings.** Openings around bathtubs, showers, water closets, pipes, wires or other objects that penetrate concrete slabs, or other floor assemblies, shall be filled with a polyurethane caulk or expanding foam applied in accordance with the manufacturer's instructions. In addition, slab joints inclusive of cracks, penetrations, expansion joints and the slab to foundation connections, shall be filled with polyurethane caulk.

(Add) **AF104.4 Sumps.** Sumps open to soil or serving as the termination point for subslab or exterior drain tile loops shall be covered with a gasketed or sealed lid. Sumps used as the suction point in a subslab depressurization system shall have a lid designed to accommodate the vent pipe. Sumps used as a floor drain shall have a lid equipped with a trapped inlet.

(Add) **AF104.5 Waterproofing and dampproofing.** The exterior surfaces of foundation walls below grade shall be waterproofed or dampproofed in accordance with Section R406.

(Add) **AF104.6 Power source and access for future radon fan.** To provide for future installation of a potential radon fan, a ¾ inch electrical compliant conduit from the basement or room or space that the electrical panel is located to the attic shall be installed during construction. This conduit is intended to and dedicated for accommodating electrical wiring should a radon mitigation fan be installed. The conduit shall be capped in both the basement and in the attic. An accessible clear space 24 inches (610 mm) in diameter by 3 feet (914 mm) in height adjacent to the vent pipe shall be provided in the attic or at an acceptable location of a potential radon fan.

(Add) **AF104.7 Labeling.** The ¾ inch electrical conduit shall be labeled at the top and bottom and specifically state: “Reserved for a Potential Radon Reduction Mechanical System”.

The 3-inch diameter (76 mm) ABS or PVC gas-tight pipe shall be labeled at the bottom and in the attic and shall specifically state: “Reserved for a Potential Radon Reduction Mechanical System”.

APPENDIX G – SWIMMING POOLS, SPAS AND HOT TUBS

(Add) **AG102.1.1 Definitions.** Amend the following definition to read as follows:

RESIDENTIAL. That which is situated on the premises of a detached one- or two-family dwelling, or a one-family townhouse not more than three stories in height where the pool is intended to be used by the owners and invited guests.

(Amd) **AG105.2 Outdoor swimming pool.** Delete items 10, 10.1 and 10.2 and replace with the following:

10. Where an above-ground or on-ground pool structure is used as a barrier or where the barrier is mounted on top of the pool structure, and the means of access is a ladder or steps, the ladder or steps shall be surrounded by a barrier that meets the requirements of section AG105.2, Items 1 to 9, inclusive.

(Add) **AG105.6 Temporary enclosure.** A temporary enclosure shall be installed prior to the electrical bonding inspection of any in-ground swimming pool unless the permanent barrier specified in Section AG105.2 is in place prior to the commencement of the installation. The temporary enclosure shall be a minimum of 4 feet (1219) in height, shall have no openings that will allow passage of a 4-inch sphere and shall be equipped with a positive latching device on any openings.

(Add) **AG105.7 Pool alarm.** Pursuant to section 29-265a of the Connecticut General Statutes, no building permit shall be issued for the construction or substantial alteration of a swimming pool at a residence occupied by, or being built for, one or more families unless a pool alarm is installed with the swimming pool. As used in this section, “pool alarm” means a device that emits a sound of at least 50 decibels when a person or an object weighing 15 pounds or more enters the water in a swimming pool.

Exception: Hot tubs and portable spas shall be exempt from this requirement.

(Add) **APPENDIX R – WIND SPEEDS, SEISMIC DESIGN CATEGORIES and GROUND SNOW LOADS**

Municipality	Basic Wind Speed (3-second gust) (mph)	Seismic Design Category ¹		Ground Snow Load, <i>P_g</i> (psf)
		Site (Soil) Class A-D	Site (Soil) Class E	
Andover	100	B	B	30

Municipality	Basic Wind Speed (3-second gust) (mph)	Seismic Design Category ¹		Ground Snow Load, P_g (psf)
		Site (Soil) Class A-D	Site (Soil) Class E	
Ansonia	100	B	B	30
Ashford	100	B	B	35
Avon	100	B	B	35
Barkhamsted	100	B	B	40
Beacon Falls	100	B	B	30
Berlin	100	B	B	30
Bethany	100	B	B	30
Bethel	100	B	C	30
Bethlehem	100	B	B	35
Bloomfield	100	B	B	35
Bolton	100	B	B	30
Bozrah	105	B	B	30
Branford	100	B	B	30
Bridgeport	100	B	C	30
Bridgewater	100	B	C	35
Bristol	100	B	B	35
Brookfield	90	B	C	35
Brooklyn	100	B	B	35
Burlington	100	B	B	35
Canaan	90	B	B	40
Canterbury	105	B	B	35
Canton	100	B	B	35
Chaplin	100	B	B	35
Cheshire	100	B	B	30
Chester	105	B	B	30
Clinton ²	105	B	B	30
Colchester	100	B	B	30
Colebrook	90	B	B	40
Columbia	100	B	B	30
Cornwall	90	B	B	40
Coventry	100	B	B	30
Cromwell	100	B	B	30
Danbury	90	B	C	30
Darien	100	B	C	30
Deep River	105	B	B	30
Derby	100	B	B	30
Durham	100	B	B	30
Eastford	100	B	B	40
East Granby	100	B	B	35
East Haddam	105	B	B	30
East Hampton	100	B	B	30
East Hartford	100	B	B	30
East Haven	100	B	B	30
East Lyme ²	105	B	B	30
Easton	100	B	C	30

Municipality	Basic Wind Speed (3-second gust) (mph)	Seismic Design Category ¹		Ground Snow Load, P_g (psf)
		Site (Soil) Class A-D	Site (Soil) Class E	
East Windsor	100	B	B	35
Ellington	100	B	B	35
Enfield	100	B	B	35
Essex	105	B	B	30
Fairfield	100	B	C	30
Farmington	100	B	B	35
Franklin	105	B	B	30
Glastonbury	100	B	B	30
Goshen	90	B	B	40
Granby	100	B	B	35
Greenwich	100	B	C	30
Griswold	105	B	B	30
Groton ²	105	B	B	30
Guilford	100	B	B	30
Haddam	100	B	B	30
Hamden	100	B	B	30
Hampton	100	B	B	35
Hartford	100	B	B	30
Hartland	100	B	B	40
Harwinton	100	B	B	35
Hebron	100	B	B	30
Kent	90	B	B	40
Killingly	100	B	B	40
Killingworth	100	B	B	30
Lebanon	100	B	B	30
Ledyard	105	B	B	30
Lisbon	105	B	B	30
Litchfield	100	B	B	40
Lyme	105	B	B	30
Madison ²	100	B	B	30
Manchester	100	B	B	30
Mansfield	100	B	B	35
Marlborough	100	B	B	30
Meriden	100	B	B	30
Middlebury	100	B	B	35
Middlefield	100	B	B	30
Middletown	100	B	B	30
Milford	100	B	B	30
Monroe	100	B	C	30
Montville	105	B	B	30
Morris	100	B	B	35
Naugatuck	100	B	B	30
New Britain	100	B	B	30
New Canaan	100	B	C	30
New Fairfield	90	B	C	35
New Hartford	100	B	B	40
New Haven	100	B	B	30

Municipality	Basic Wind Speed (3-second gust) (mph)	Seismic Design Category ¹		Ground Snow Load, <i>P_g</i> (psf)
		Site (Soil) Class A-D	Site (Soil) Class E	
Newington	100	B	B	30
New London ²	105	B	B	30
New Milford	90	B	B	35
Newtown	100	B	C	30
Norfolk	90	B	B	40
North Branford	100	B	B	30
North Canaan	90	B	B	40
North Haven	100	B	B	30
North Stonington	105	B	B	30
Norwalk	100	B	C	30
Norwich	105	B	B	30
Old Lyme ²	105	B	B	30
Old Saybrook ²	105	B	B	30
Orange	100	B	B	30
Oxford	100	B	B	30
Plainfield	105	B	B	35
Plainville	100	B	B	35
Plymouth	100	B	B	35
Pomfret	100	B	B	40
Portland	100	B	B	30
Preston	105	B	B	30
Prospect	100	B	B	30
Putnam	100	B	B	40
Redding	100	B	C	30
Ridgefield	100	B	C	30
Rocky Hill	100	B	B	30
Roxbury	100	B	B	35
Salem	105	B	B	30
Salisbury	90	B	B	40
Scotland	105	B	B	30
Seymour	100	B	B	30
Sharon	90	B	B	40
Shelton	100	B	C	30
Sherman	90	B	C	35
Simsbury	100	B	B	35
Somers	100	B	B	35
Southbury	100	B	B	35
Southington	100	B	B	30
South Windsor	100	B	B	30
Sprague	105	B	B	30
Stafford	100	B	B	35
Stamford	100	B	C	30
Sterling	105	B	B	35
Stonington ²	105	B	B	30
Stratford	100	B	C	30

Municipality	Basic Wind Speed (3-second gust) (mph)	Seismic Design Category ¹		Ground Snow Load, P_g (psf)
		Site (Soil) Class A-D	Site (Soil) Class E	
Suffield	100	B	B	35
Thomaston	100	B	B	35
Thompson	100	B	B	40
Tolland	100	B	B	35
Torrington	90	B	B	40
Trumbull	100	B	C	30
Union	100	B	B	40
Vernon	100	B	B	30
Voluntown	105	B	B	30
Wallingford	100	B	B	30
Warren	90	B	B	40
Washington	90	B	B	35
Waterbury	100	B	B	35
Waterford ²	105	B	B	30
Watertown	100	B	B	35
Westbrook ²	105	B	B	30
West Hartford	100	B	B	30
West Haven	100	B	B	30
Weston	100	B	C	30
Westport	100	B	C	30
Wethersfield	100	B	B	30
Willington	100	B	B	35
Wilton	100	B	C	30
Winchester	90	B	B	40
Windham	100	B	B	30
Windsor	100	B	B	35
Windsor Locks	100	B	B	35
Wolcott	100	B	B	35
Woodbridge	100	B	B	30
Woodbury	100	B	B	35
Woodstock	100	B	B	40

Footnotes:

1. If Site Class F is present, the Short Period Spectral Response Acceleration (S_{DS}) shall be determined according to Section 1613.3 of the *International Building Code*, and the Seismic Design Category shall be determined in accordance with Table 301.2.2.1.1.
2. Areas south of Interstate 95 in this municipality are classified as a Wind-Borne Debris Region. See Section R202 for exceptions.



The Key To Affordable Housing

Connecticut Housing Finance Authority

Construction Guidelines:
Technical Services/
Asset Management
(TSAM) and Capital
Improvement Guide (CIG)
2016

These Guidelines are effective January 1, 2016

Construction Guidelines: Technical Services/Asset Management (TSAM)
Capital Improvement Guide (CIG)

January 2016

Introduction

The Construction Guidelines: Technical Services/Asset Management (TSAM) and Capital Improvement Guide (CIG), were developed by CHFA for use by owners, property managers, developers, and other interested parties including internal CHFA staff members, to provide assistance when considering various repair, replacement reserve requests and capital improvements to projects that have been financed by CHFA and are in the CHFA portfolio. These guidelines are meant to assist those with the CHFA process for reviewing specific projects and the questions that may arise. In addition, these guidelines reflect the Multifamily Design, Construction and Sustainability Standards – CHFA (the Standards) which promote safe and healthy home environments, as well as energy-efficiency and “green” building measures.

Technical Services/Asset Management Guide

The following provides guidance for three different types of remediation:

- Classification A, minor repairs; owners/property managers generally coordinate this work;
- Classification B, minimal rehabilitation; may require an architect/engineer; and,
- Classification C, capital improvements/large scale repairs generally require an architect/engineer.

Depending on the type of classification, CHFA may require one or more of the following: the Owner (O), a CT-licensed/insured Building and/or Home Inspector, or HUD-approved Inspector (I), insured FHA 203K Compliance Consultant (C), Architect (A), Professional Engineer (PE), Licensed Environmental Consultant (LEC), or Approved Vendor (AV) to be actively engaged in the remediation process.

CHFA prefers the use of design professionals (A and PEs), whenever possible, to determine and develop the scope of work to be included in the bid documents, coordinate bids and certify that the work has been completed in accordance with current building codes and the Standards. CHFA reserves the right to require a design professional on any and all replacement/repair construction projects, subject to the scope and complexity of the proposed project.

I. Classification A (minor repairs) – see list of items and descriptions under CIG section

1. If the Owner will be completing any of the Capital Improvement Projects (CIP) listed under CIG section, the Owner may certify that the work has been completed in accordance with applicable building codes, State and Federal regulations and the current Standards.
2. **CHFA Approval Process**
 - a. If the cost of the work is less than \$10,000, CHFA does not need to be involved. If the cost of the work will be greater than \$10,000, the Owner submits CHFA Escrow Release Pre-Approval Form HM 6-21 for the CIP to CHFA’s Asset Management Department for approval, along with the proposed scope of work and three (3) bid quotes. The Owner must sign the certification statement indicating that the proposed scope of work will be/has been planned, designed and completed in accordance with current building codes, State and Federal regulations and the Standards. If the CIP falls under Replacement Reserve Descriptive Codes A-2, A-9 or A-10 per CHFA Form HM 6-22, the submission must also include a Capital Improvement Schedule for Extensive Replacement.
 - b. Upon completion of the approved project, the Owner submits CHFA Request to Release Escrow Funds Form HM 6-24. The Owner must sign the certification statement indicating that the proposed scope of work has been planned, designed and completed in accordance with current building codes, State and Federal regulations and the Standards.

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II. Classification B (minimal rehabilitation) - see list of items and descriptions under CIG section

1. Classification B.1

If the Owner will be completing any of the CIP listed under CIG section, and the cost of the work is less than \$20,000, the Owner may certify that the work has been completed in accordance with applicable building codes, State and Federal regulations and the current Standards.

2. Classification B.2

If the cost of the work will be greater than \$20,000, the Owner must retain a building design professional/consultant to determine the scope of work, prepare the bid solicitation documents, and certify that the work has been completed in accordance with applicable building codes, State and Federal regulations and current Standards.

3. CHFA Approval Process for Classification B.1

- a. The Owner submits CHFA Escrow Release Pre-Approval Form HM 6-21 for the CIP to CHFA's Asset Management Department for approval, along with the proposed scope of work and three (3) bid quotes. The Owner must sign the certification statement indicating that the proposed scope of work will be/has been planned, designed and completed in accordance with current building codes, State and Federal regulations and the Standards. If the CIP falls under Replacement Reserve Descriptive Codes A-2, A-9 or A-10 per CHFA Form HM 6-22, the submission must also include a Capital Improvement Schedule for Extensive Replacement.
- b. Upon completion of the approved project, the Owner submits CHFA Request to Release Escrow Funds Form HM 6-24. The Owner must sign the certification statement indicating that the proposed scope of work has been planned, designed and completed in accordance with current building codes, State and Federal regulations and the Standards.

4. CHFA Approval Process for Classification B.2

- a. The Owner submits CHFA Escrow Release Pre-Approval Form HM 6-21 for the CIP to CHFA's Asset Management Department for approval, along with the proposed scope of work and three (3) bid quotes. The Owner's building design professional/consultant must sign the certification statement indicating that the proposed scope of work will be/has been planned, designed and completed in accordance with current building codes, State and Federal regulations and the Standards. If the CIP falls under Replacement Reserve Descriptive Codes A-2, A-9 or A-10 per CHFA Form HM 6-22, the submission must also include a Capital Improvement Schedule for Extensive Replacement.
- b. Step 3.b. noted above will be followed.

III. Classification C (capital improvements/large scale repairs) - see list of items and descriptions under CIG section

1. The Owner must retain a building design professional to determine the scope of work, prepare the bid solicitation documents, and certify that the work will be/has been planned and designed in accordance with applicable building codes, State and Federal regulations and the current Standards. If the Owner will be completing any work listed above under Classification A and/or B in conjunction with a CIP listed under Classification C, the building design professional will include the Classification A and/or B work in the Classification C project scope of work and bid solicitation documents, and certify that the proposed scope of work will be/has been planned and designed in accordance with applicable building codes, State and Federal regulations and the current Standards.

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2. CHFA Approval Process

- a. The Owner submits CHFA Form HM 6-21TS along with Site Photographs, Drawings, Project Manual/Specifications, Structural Assessment, Comprehensive Capital Needs Assessment (CNA) Schedule, Environmental Reports/Testing, and other support documentation as may be required by the scope and complexity of the proposed CIP. The Owner's building design professional must sign the certification statement indicating that the proposed scope of work has been/will be planned, designed and completed in accordance with current building codes, State and Federal regulations and the Standards.
- b. Upon determination that the submission is complete, the CHFA Asset Manager forwards the submission to the CHFA Technical Services Department for review and approval. CHFA Technical Services staff will correspond directly with the Owner and building design professionals (with a cc: to the CHFA Asset Manager), to address questions or concerns, and request additional information.
- c. Upon notification from the CHFA Asset Manager that the bid solicitation documentation is acceptable, the Owner and building design professional will obtain a minimum of three (3) bids in a competitive process, and submit the bids, the name of the Owner's recommended contractor, and CHFA Escrow Release Pre-Approval Form HM 6-21 for the CIP to the CHFA Asset Manager. The Owner's building design professional must sign the certification statement indicating that the proposed scope of work has been/will be planned, designed and completed in accordance with current building codes, State and Federal regulations and the Standards. If the CIP falls under Replacement Reserve Descriptive Codes A-2, A-9 or A-10 per CHFA Form HM 6-22, the submission must also include a Capital Improvement Schedule for Extensive Replacement.
- d. Step 2.b. noted above will be followed in response to items received in 2.c.
- e. Upon notification from the CHFA Asset Manager of the acceptability of the bid proposal and authorization to proceed, the Owner and building design professional may commence with the construction phase of the project.
- f. Upon completion of the approved project, the Owner submits CHFA's Request to Release Escrow Funds Form HM 6-24, and any required back-up information, to CHFA's Finance Department. The Owner's building design professional must sign the certification statement indicating that the proposed scope of work has been planned, designed and completed in accordance with current building codes, State and Federal regulations and the Standards.

Capital Improvement Guide

The following guide provides detailed information regarding required documents, the scope of work (if applicable), and questions/considerations. The review checklist was created to help Owners and property managers in understanding the questions and concerns typically raised by CHFA. The documentation that may be required by CHFA includes items such as bids, drawings, specifications, structural or CNA's and environmental reports or testing for the specified CIP.

The scope of work description describes the extent of the work to be performed for the repair or replacement project. The contractor's bids should match the Owner's scope of work description. The scope of work description is not required for all projects. In more complex projects, the project drawings and specifications serve as the scope of work description.

An important part of the review checklist is the "Questions to Consider" section. This section helps to clarify the appropriateness and extent of the proposed scope of work, by posing questions which would normally be

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asked by a professional building design or construction professional when assessing the repair or replacement project. Please refer to the Standards for use in seeking additional information about specific requirements for each repair type. Since CHFA is a proponent of 'green' design and energy-efficient design and methods, suggestions are offered about various sustainable, recyclable and renewable materials and ways to increase energy-efficiency and natural resource conservation.

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I. Classification A

minor repairs

(owners/property managers generally coordinate this work)

The following is a list of repairs:

- A. Air-Conditioning units in existing sleeves replacement
- B. Bathroom cabinet/countertop/flooring replacement
- C. Bathroom plumbing fixtures/controls/fittings replacement
- D. Bathroom and kitchen exhaust fans replacement
- E. Building and site termite treatment
- F. Carpet replacement
- G. Decking repair/replacement
- H. Electrical light fixtures and outlets repair/replacement
- I. Exterior painting/caulking/weatherproofing
- J. Exterior storm door replacement
- K. Gutter system repair/replacement/installation
- L. Kitchen appliance replacement
- M. Kitchen cabinet/countertop/flooring replacement
- N. Kitchen plumbing fixtures/controls/fittings replacement
- O. Laundry appliance replacement
- P. Masonry re-pointing, minor brick replacement and joint repair
- Q. Pool/tennis court/fitness center/playground repair/replacement
- R. Power washing of exterior building elements
- S. Security systems repair/replacement
- T. Tree/bush/shrub trimming or removal

The following questions/considerations are applicable for all Classification A projects:

1. Documentation of three (3) bids:
 - a. Typically three (3) bids are solicited for the work to be completed.
 - b. Verify the range of the bids received. Is there a wide discrepancy? If so, why?
 - c. How long are the bids good for and do they expire?
 - d. Are the bidders licensed Connecticut contractors licensed to perform the work they have bid upon?
 - e. Low bidder is commonly recommended unless otherwise specified.
2. Scope of Work description:
 - a. Describes the extent of the work to be performed
 - b. The description provided in the three (3) bids shall reflect a clear understanding of the contractor of the nature and scope of the work to be performed and should match the Owner's scope of work description.
 - c. Is the timeframe to complete the work acceptable?

Please refer to the Standards and consider equipment and building methods which promote a healthy and safe home environment.

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A. Air-Conditioning units in existing sleeves replacement

Questions/considerations:

- a. Are there air leaks into the apartment?
- b. What is the condition of the existing frame and trim? If wood, is it rotted or damaged?
- c. Is there any indication of water infiltration into the surrounding wall cavity?
- d. Is the existing electrical outlet and service sufficient for the new air-conditioning unit? Is the current service 60 or 100 amp per apartment? Is an upgrade needed to support the new units given the existing electrical load(s) of the apartments?

B. Bathroom cabinet/countertop/flooring replacement

Questions/considerations:

- a. What is the material of the bathroom floor? Is it 9" x 9" vinyl tile? If so, this could possibly be VAT tile, i.e. asbestos tile flooring, and therefore testing and abatement may be required.
- b. If the new flooring will be installed over existing, is the existing flooring in good condition, or is there cracking and buckling?
- c. What is the condition of the bathroom sub-floor? Is moisture or water infiltration an issue which may have caused damage to the sub-floor or walls? If walls have sustained any water damage and require re-building, moisture and mold resistant gypsum board with cement backer board is a necessity.
- d. Is mold visible or suspected?
- e. What is the condition of the gypsum wall and ceiling board?
- f. Does the floor have a floor drain? Is the existing pitch adequate for drainage?
- g. All electrical outlets shall be GFI and all should be tested and confirmed to be in good working condition. GFI's should be installed if there are none existing.
- h. Is the unit handicapped accessible? If so, are all of the appropriate grab bars installed per building code requirements? Does it have a 'roll-out' shower stall? If so, the new flooring and door threshold may need to meet local building code.
- i. Is HUD 'Severe Use' cabinetry required to be installed?
- j. Will flooring be installed so as not to void the manufacturer's warranty?

C. Bathroom plumbing fixtures/controls/fittings replacement

Questions/considerations:

- a. Will water-efficient fixtures be installed such as low-flow toilets and flow reducers for shower heads, bathtubs and lavatories?

D. Bathroom and kitchen exhaust fans replacement

Questions/considerations:

- a. Has moisture, steam or water infiltration been an on-going issue which may have caused damage to the ceiling, walls and/or cabinetry? If walls or ceilings have sustained any moisture or water damage and require re-building, moisture and mold resistant gypsum board is a necessity.
- b. What is the condition of the current venting? Is it adequate?
- c. Could there be installation of one dual control for both lighting and exhaust fan venting?

E. Building and site termite treatment

Questions/considerations:

- a. Has termite damage occurred? If so, has the damage been addressed and corrected appropriately?

F. Carpet replacement

Questions/considerations:

- a. For maintaining indoor air quality, hard floors are preferred over carpeting in dwelling units.
- b. If hardwood flooring is found to exist under carpeting, and if it is salvageable, consider refinishing the existing hardwood floor for greater aesthetics and health benefits to the residents.
- c. What is the condition of the sub-floor? Does the sub-floor need to be replaced or repaired, and to what extent?
- d. When installing the carpeting and pad, will they be installed to 'lay flat' under all heating elements, rather than 'rolling up' underneath the elements?

G. Decking repair/replacement (< 24" above finished grade)

Questions/considerations:

- a. Please consider 'green' and recycled materials and building methods which promote a healthy and safe home environment.
- b. Ensure the new deck and/or balcony including handrails and guardrails meets all current building and fire codes.
- c. Is the new deck being repaired or replaced? What is the cause of the problem?
- d. Ensure the new deck and/or balcony structure meets all applicable structural loading requirements, including live and dead loads, such as snow, wind, seismic and lateral loading.

H. Electrical light fixtures and outlets repair/replacement

Questions/considerations:

- a. What is the condition of the surrounding ceiling and/or wall? Does the ceiling and/or wall need to be replaced or repaired, and to what extent?
- b. If the outlets are located in bathrooms or kitchens near water sources, the outlets need to be GFI. All existing GFI's shall be tested and confirmed to be in good working condition.
- c. Energy-efficient bulbs should be used in all fixtures.
- d. Does the condition of the existing electrical wiring, boxes and switches support the new fixtures to be installed?
- e. Is an upgrade of the panel box from 60 to 100 amps needed? Does the panel have outdated fuses?

I. Exterior painting/caulking/weatherproofing

Questions/considerations:

- a. What is the condition of the exterior building component to be painted? If wood, is there any rot or other damage which will need to be repaired or replaced?
- b. Has the existing exterior paint been tested for lead?
- c. Has the existing caulking been tested for asbestos?
- d. If the existing painted exterior has areas of significant chipping, peeling and/or blistering of the paint, there may be a moisture infiltration problem and further investigation is needed to address the problem.
- e. If wood trim is being replaced, what is the condition of the flashing? Also, in lieu of wood trim, consider using PVC.

J. Exterior storm door replacement

Questions/considerations:

- a. What is the condition of the exterior door trim? If the door trim is wood, is there any rot or other damage which will need to be repaired or replaced?
- b. What is the condition of the existing door jamb? Are there cracks or areas where water infiltration is evident?

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- c. What is the condition of the surrounding exterior wall, siding and sheathing?
- d. Has the existing exterior trim paint been tested for lead?
- e. Does the new storm door have a 'screen' option?

K. Gutter system repair/replacement/installation

Questions/considerations:

- a. What is the condition of the existing roof? Is it due to be replaced?
- b. What is the condition of the fascia and flashing?
- c. If the gutters are being replaced, is the new gutter and downspout sizes and locations adequate for the anticipated rainwater?
- d. Will the downspouts end with a splash block and/or extenders?
- e. Is the existing grade at the building graded away from the building foundation?
- f. Is a water-reclamation method possible to recycle rainwater for other uses within the building or for irrigation?

L. Kitchen appliance replacement

Questions/considerations:

- a. Are ENERGY STAR appliances being installed?
- b. Is the existing space provided adequate in size for the new appliance?

M. Kitchen cabinet/countertop/flooring replacement

Questions/considerations:

- a. What is the material of the kitchen floor? Is it 9" x 9" vinyl tile? Is it VAT tile, i.e. asbestos tile flooring and if so, testing and abatement may be required.
- b. If the new flooring will be installed over existing, is the existing flooring in good condition, or is there cracking and buckling?
- c. What is the condition of the kitchen sub-floor? Is moisture or water infiltration an issue which may have caused damage to the sub-floor or walls? If walls have sustained any water damage and require re-building, moisture and mold resistant gypsum board with cement backer board is a necessity.
- d. Is mold visible or suspected?
- e. What is the condition of the gypsum wall and ceiling board?
- f. Does the floor have a floor drain? Is the existing pitch adequate for drainage?
- g. All electrical outlets shall be GFI and all should be tested and confirmed to be in good working condition. GFI's should be installed if there are none existing.
- h. Is the unit handicapped accessible? If so, the new flooring and door threshold will need to meet code.
- i. In units designed as barrier-free and also for the elderly, cabinetry shall meet accessibility building codes for design and clearances. Are lever handles being installed?
- j. 'Severe Use' cabinetry is required to be installed.
- k. Will flooring be installed so as not to void the manufacturer's warranty?

N. Kitchen plumbing fixtures/controls/fittings replacement

Questions/considerations:

- a. Are water-efficient measures such as flow reducers for sinks being considered?
- b. Spray hoses are not recommended due to the possibility of leaks.

O. Laundry appliance replacement

Questions/considerations:

- a. Are ENERGY STAR appliances being installed?
- b. Is the existing space provided adequate in size for the new appliance?

P. Masonry re-pointing, minor brick replacement and joint repair

Questions/considerations:

- a. Is there evidence of efflorescence on the brick wall (white staining which is evidence of water infiltration within the brick wall cavity)? If so, further investigation may be needed to determine the cause of water infiltration.
- b. Are the weep holes clogged? Are weep holes even installed in the brick coursing?
- c. If there are existing cracks in the brick wall, has the crack widened or lengthened over time? If so, a structural analysis may be required to investigate and determine the cause of the cracking.
- d. What is the condition of the flashing?
- e. What is the condition of the lintels? Are the lintels rusted? Is mortar missing from the joint at the lintel?

Q. Pool/tennis court/fitness center/playground repair/replacement

Questions/considerations:

- a. Is there any significant cracking on the walls or slab which have widened or lengthened over time? If so, a structural analysis may be required to investigate and determine the cause of the cracking.
- b. Is ponding and/or site drainage an issue?
- c. Is the existing pool leaking? Does the pool have a fence around it which meets code for safety? If there are existing cracks in the brick wall, has the crack widened or lengthened over time? If so, a structural analysis may be required to investigate and determine the cause of the cracking.
- d. Is the existing playground safe and stable? Is the play equipment age-appropriate and barrier-free for use by children of all abilities? Is the surface under the play equipment suitable? Does the surface meet building code requirements? Sand is not an appropriate surface. Many recycled materials are available which meet building code requirements and also provide a good and safe surface under play equipment.
- e. Does the fitness equipment have the appropriate safety devices installed?
- f. Is the existing electrical service adequate for the new equipment and usage?

R. Power washing of exterior building elements

Questions/considerations:

- a. What is the condition of the exterior building components to be power washed? If wood, is there any rot or other damage which will need to be repaired or replaced?
- b. What is the condition of the flashing? Have leaks been reported at doors and windows, and flashings?
- c. If power washing vinyl siding, follow instructions and spray at a perpendicular and downward angle to the siding to avoid water infiltration under the siding.

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S. Security systems repair/replacement

Questions/considerations:

- a. What is the testing schedule?
- b. If cameras are used, verify that there are no 'blind spots'.
- c. What is the procedure for fob security, if a key fob is lost?
- d. Verify that the new equipment can be accommodated by the existing electrical service.

T. Tree/bush/shrub trimming or removal

Questions/considerations:

- a. Where is the tree located? Verify the appropriate clearance needed given existing overhead wires and poles, structures and vehicles.
- b. Verify the existing utility locations underground if digging is needed. Be aware of overhead lines and poles.
- c. Be sure to create a safe zone for tree removal work, with barriers in place for the tree fall zone.
- d. Plan for the removal of the tree debris and clean-up.

II. Classification B

minimal rehabilitation
(may require an architect/engineer)

The following is a list of rehabilitation items and recommended professionals to be engaged in the process as previously defined:

- A. Air-conditioning units in existing/new sleeves replacement/installation (I/C)
- B. Air-conditioning equipment and systems (roof-top) repair/replacement/installation (PE)
- C. Asphalt roof shingle repair/replacement / installation (I/C)
- D. Bathroom and kitchen exhaust fans/systems installation (I/C)
- E. Built-up roofing repair/replacement/installation (A/PE/I)
- F. Electrical service repair/replacement (I)
- G. Exterior door replacement/installation (I/C)
- H. Exterior siding repair/replacement/installation (I/C)
- I. Hard-wired smoke detector system/carbon monoxide detector system installation (PE)
- J. Heating equipment/controls repair/replacement/installation (PE)
- K. Hot water heaters/controls replacement/installation (I/C)
- L. Single-ply roofing repair/replacement/installation (A/PE)
- M. Site paving repair/replacement/installation, including parking areas and sidewalks (I/PE)
- N. Window replacement/installation (I/C)

The following questions/considerations are applicable for all Classification B projects and require three (3) bids:

1. Possible required documents for CHFA's Technical Services review:
 - a. Drawings – plans, elevations and/or details
 - b. Project Manual/Specifications
 - c. Structural Assessment
 - d. Capital Needs Assessment
 - e. Environmental Reports/Testing

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Please refer to the Standards and consider equipment and building methods which promote a healthy and safe home environment.

A. Air-Conditioning units in existing/new sleeves replacement/installation

Questions/considerations:

- a. What is the condition of the existing sleeve and the sleeve flashing? Are there leaks apparent? Is replacement of the sleeve needed?
- b. Is there an insulated sleeve/unit cover for winter months?
- c. Are there air leaks into the apartment?
- d. What is the condition of the existing frame and trim? If wood, is it rotted or damaged?
- e. Is there any indication of water infiltration into the surrounding wall cavity?
- f. Is the existing electrical outlet and service sufficient for the new air-conditioning unit? Is the current service 60 or 100 amp per apartment? Is an upgrade needed to support the new units given the existing electrical load(s) of the apartments?

B. Air conditioning equipment and systems (roof top) repair, replacement, installation

Questions/considerations:

- a. What is the condition of the roof? Roof drains? Roof penetrations?
- b. If the roof has a parapet wall, what is the condition of the parapet?
- c. What is the condition of the roof flashing?
- d. If the dunnage or curbs exist, what is the condition? Are repairs needed?
- e. Is the roof structure able to support the new loads of the equipment?
- f. Is the existing electrical service adequate to support the new equipment?
- g. What is the condition of the ductwork and plumbing connections?

C. Asphalt roof shingle repair/replacement/installation

Questions/considerations:

- a. Does this project allow for water reclamation possibilities from the storm water runoff for use in irrigation or recycled grey-water reuse within the building to flush toilets etc.?
- b. What is the condition of the roof sub-structure – plywood sheathing, wood rafters or trusses, etc.?
- c. What is the age of the existing roof?
- d. How many layers of asphalt shingles are presently installed on the roof?
- e. May hazardous materials be present such as asbestos?
- f. What is the condition of the roof insulation, fascia and/or soffit?
- g. Is the existing roof/attic ventilation adequate? Are there attic louvers, ridge venting and soffit venting? What is the condition of these elements?
- h. Are there skylights? What is the condition of the skylights?
- i. Is there any evidence of water infiltration at the roof penetrations?
- j. What is the condition of the gutters and leaders? Are they sized adequately for the storm water runoff?
- k. What is the condition of the flashing at the roof and the flashing at the chimney?
- l. What is the condition of the chimney?

D. Bathroom and kitchen exhaust fan system installation

Questions/considerations:

- a. Has moisture, steam or water infiltration been an on-going issue which may have caused damage to the ceiling, walls and/or cabinetry? If walls or ceilings have sustained any moisture or water damage and require re-building, moisture and mold resistant gypsum board is required.
- b. What is the condition of the current venting? Is it adequate?

- c. The Standards promote the installation of one dual control for both lighting and exhaust fan venting.

E. Built-up roofing repair, replacement and installation

Questions/considerations:

- a. Does this project allow for water reclamation possibilities from the storm water runoff for use in irrigation or recycled grey-water reuse within the building to flush toilets etc.?
- b. What is the condition of the roof sub-structure – plywood sheathing, wood rafters or trusses, metal decking, concrete, etc.?
- c. What is the age of the existing roof?
- d. May hazardous materials be present such as asbestos?
- e. What is the condition of the roof insulation, fascia and/or soffit or parapet?
- f. What is the R value of the existing insulation and is it adequate and to code?
- g. Is the existing roof ventilation adequate? Are there roof vents and soffit venting? What are the condition of these elements?
- h. Are there skylights? What is the condition of the skylights?
- i. Is there any evidence of water infiltration at the roof penetrations?
- j. What is the condition of the roof drains? Are they sized adequately for the storm water runoff? Are the number of drains adequate? Are the roof drains maintained and cleaned regularly of debris?
- k. Are secondary roof drains present such as scuppers?
- l. What is the condition of the flashing at the roof and the flashing at the chimney?
- m. What is the condition of the chimney?
- n. What is the condition of any roof-top curbs or dunnage?

F. Electrical service repair, replacement and installation

Questions/considerations:

- a. What is the condition of the existing electrical wiring, conduit, boxes and switches?
- b. Is an upgrade of the panel box from 60 to 100 amp needed? Does the panel have outdated fuses? Is an overall upgrade needed? If so, please refer to Classification C – Electrical Upgrade.
- c. Does the cable and/or telephone systems need to be updated as well?
- d. Are GFI outlets installed?

G. Exterior door replacement and installation

Questions/considerations:

- a. What is the condition of the exterior door trim? If the door trim is wood, is there any rot or other damage which will need to be repaired or replaced?
- b. What is the condition of the existing door jamb? Are there cracks or areas where water infiltration is evident?
- c. What is the condition of the surrounding exterior wall, siding and sheathing?
- d. Has the existing exterior trim paint been tested for lead?

H. Exterior siding repair, replacement and installation

Questions/considerations:

- a. What is the condition of the exterior building components, such as trim and fascia boards etc.? If wood, is there any rot or other damage which will need to be repaired or replaced?
- b. What is the age of the siding? Is the existing siding asbestos?
- c. What is the general condition of the doors and windows and the flashing at each?
- d. Why is the existing siding being repaired or replaced? Is there damage to the exterior wall cavities?

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- e. Has the existing exterior paint been tested for lead?
- f. Has the existing caulking been tested for asbestos?
- g. If the existing painted exterior has areas of significant chipping, peeling and/or blistering of the paint, there may be a moisture infiltration problem and further investigation is needed to address the problem.
- h. If wood trim is being replaced, what is the condition of the flashing? Also, in lieu of wood trim, consider using PVC.

I. Hard-wired smoke detector system/carbon monoxide detector system installation

Questions/considerations:

- a. Is the existing wiring and equipment capable of supporting the new system?

J. Heating equipment/controls repair, replacement and installation

Questions/considerations:

- a. What is the energy-efficiency of the new system being proposed?
- b. Has the chimney been inspected for leaks?
- c. Is there adequate draft?
- d. Are the existing controls up-to-date and programmable? Or should they be replaced?

K. Hot water heaters/controls replacement and installation

Questions/considerations:

- a. What is the energy-efficiency of the new hot water system being proposed?

L. Single-ply roofing repair, replacement and installation

Questions/considerations:

- a. Does this project allow for water reclamation possibilities from the storm water runoff for use in irrigation or recycled grey-water reuse within the building to flush toilets etc.?
- b. What is the condition of the roof sub-structure – plywood sheathing, wood rafters or trusses, metal decking, concrete deck, etc.?
- c. What is the age of the existing roof?
- d. May hazardous materials be present such as asbestos?
- e. What is the condition of the roof insulation, fascia and/or soffit or parapet?
- f. What is the R value of the existing insulation and is it adequate and to code?
- g. Is the existing roof ventilation adequate? Are there roof vents and soffit venting? What is the condition of these elements?
- h. Are there skylights? What is the condition of the skylights?
- i. Is there any evidence of water infiltration at the roof penetrations?
- j. What is the condition of the roof drains? Are they sized adequately for the storm water runoff? Is the number of drains adequate? Are the roof drains maintained and cleaned regularly of debris?
- k. Are secondary roof drains present such as scuppers?
- l. What is the condition of the flashing at the roof and the flashing at the chimney?
- m. What is the condition of the chimney?
- n. What is the condition of any roof-top curbs or dunnage?

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M. Site paving repair, replacement and installation – including parking areas and sidewalks

Questions/considerations:

- a. What is the sub-soil condition? Has a soil report been developed for the site?
- b. The existing site drainage must be evaluated for its condition and any possible deficiencies.
- c. What is the traffic flow, parking layout and existing curbs condition?
- d. What is the condition of the sidewalks?
- e. Is the site handicapped accessible and barrier-free?

N. Window replacement and installation

Questions/considerations:

- a. Are the new windows energy-efficient?
- b. What is the condition of the window flashing?
- c. Has water infiltration at the windows been a problem or is it suspected? If so, the exterior wall cavity may be damaged, therefore further investigation may be needed.
- d. What is the condition of the gypsum board walls and paint around the window areas? Is the paint chipping or bubbling? If so, water infiltration may be an issue which warrants further investigation.
- e. What is the condition of the interior and exterior window trim? Will the trim be replaced?
- f. Will the new window style be similar in appearance and aesthetics to that of the old windows?
- g. If the windows are to be replaced in a complex served by the elderly, is minimal force required to open, close and lock the windows?

III. Classification C

(capital improvements/large scale repairs generally require an architect/engineer)

The following is a list of capital improvements/large scale repairs and recommended professionals to be engaged in the process as previously defined:

- A. Alterations to or removal of fire-rated enclosures/separations/passages/doors (A/PE)
- B. Antenna; i.e. cell tower installation (PE)
- C. Building or site structural repairs/replacement (PE)
- D. Commercial space build-out (A)
- E. Cooling plants for buildings (cooling towers, piping, ductwork, etc.) repair/replacement/installation (PE)
- F. Decking/balcony repair/replacement (>24" above finished grade) (A/PE)
- G. Electrical service upgrade (PE)
- H. Electrical switchgear repair/replacement (PE)
- I. Elevator repair/upgrade/replacement (AV/PE)
- J. Emergency generator repair/replacement/installation (PE)
- K. Energy-efficiency upgrades (building components/systems) (A/PE)
- L. Exterior fire-escape repair/replacement (A/PE)
- M. Exterior masonry repairs where movement cracks are apparent (PE)
- N. Geothermal heating/cooling system installation (PE)
- O. Heat/fire/smoke suppression systems (AV/PE)
- P. Heating plants (includes boilers/furnaces and associated piping/ductwork and chimneys/flues) (PE)
- Q. Parking structure repair/modification (A/PE)
- R. Photovoltaic/solar thermal system installation (PE)
- S. Site grading and retaining wall repair/replacement/installation (PE)
- T. Site utility (storm/sanitary drainage system, and electric/gas/phone/cable line) work (PE)

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The following questions/considerations are applicable for all Classification C projects and require three (3) bids:

1. Possible required documents for CHFA's Technical Services review:
 - a. Drawings – plans, elevations and/or details
 - b. Project Manual/Specifications
 - c. Structural Assessment
 - d. Capital Needs Assessment
 - e. Environmental Reports/Testing

Please refer to the Standards and consider equipment and building methods which promote a healthy and safe home environment.

A. Alterations to or removal of fire-rated enclosures/separations/passages/doors

Questions/considerations:

- a. What permits are required for this installation? What are the building code requirements?
- b. Does the project need to be reviewed and approved by the building department, fire marshal's office, etc.?

B. Antenna; i.e. cell tower installation

Questions/considerations:

- a. What permits are required for this installation? What are the building code requirements?
- b. Does the project need to be reviewed and approved by planning and zoning for height restrictions, etc.?
- c. What is the aesthetic impact of the installation on the building and neighborhood's appearance?
- d. Will a structural assessment need to be completed due to the increased roof, wind and lateral loading on the structure?
- e. What roof penetrations are required? All new roof penetrations shall be adequately flashed.
- f. What is the age of the existing roof? How and when will the existing roof be replaced with the new equipment in place? Will the new equipment need to be un-assembled and re-assembled after the new roof is installed?
- g. Where will the equipment be located? On the roof? On the site? Consideration will need to be given for each possibility to determine the best location given the existing roof and site constraints.

C. Building or site structural repairs/replacement

Questions/considerations:

- a. What is the cause of the structural problem at the building or site?
- b. Is water infiltration part of the on-going problem?
- c. Is the problem related to heaving soil or soil settlement?
- d. An evaluation by a PE is required to determine the underlying cause and recommended remedy to address the problem, and is to be submitted to CHFA for review and comment.
- e. The final drawings shall be submitted to CHFA for review and comment.
- f. Is the scope of work to be insured?
- g. All existing reports, logs, and on-going condition histories shall be investigated and submitted to CHFA for review.

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D. Commercial space build-out

Questions/considerations:

- a. What is the nature of the commercial space?
- b. Will zoning review and approval be required due to a possible change in use?
- c. Is the building zoned for commercial use?
- d. Are systems upgrades needed to support the new commercial use?
- e. Is the space accessible and barrier-free? If not, what are the site and building limitations?
- f. What are the parking requirements for the new use? Is parking available?
- g. Are there special equipment needs for the new commercial use? Such as a grease-trap, etc.?

E. Cooling plants for buildings – includes cooling towers, piping and ductwork repair/replace/install

Questions/considerations:

- a. What is the type of cooling system proposed? Geothermal?
- b. What is the efficiency rating of the proposed system?
- c. What is the existing system being replaced?
- d. Where will the cooling equipment be located? On the roof? On the site? Consideration will need to be given for each possibility to determine the best location given the existing roof and site constraints.
- e. What permits are required for this installation? What are the building code requirements?
- f. Does the project need to be reviewed and approved by the local planning and zoning departments for height restrictions, etc.?
- g. What is the aesthetic impact of the installation on the building and neighborhood's appearance?
- h. A structural assessment will need to be completed due to the increased roof, wind and lateral loading on the structure.
- i. What roof penetrations are required? All new roof penetrations shall be adequately flashed.
- j. What is the age of the existing roof? How and when will the existing roof be replaced with the new equipment in place? Will the new equipment need to be un-assembled and re-assembled after the new roof is installed?

F. Decking/balcony repair/replacement (> 24" above finished grade)

Questions/considerations:

- a. Does the new deck and/or balcony including handrails and guardrails meet all current building and fire codes?
- b. Why is the new deck being repaired or replaced? What is the cause of the problem?
- c. Does the new deck and/or balcony structure meet all applicable structural loading requirements, including live and dead loads, such as snow, wind, seismic and lateral loading?

G. Electrical Service upgrade

Questions/considerations:

- a. Where is the electrical service located? Above or below ground? If below ground, all underground utility locations shall be determined and avoided - Call Before You Dig.
- b. What is the condition of the existing electrical wiring, conduit, boxes and switches?
- c. Do the cable and/or telephone systems need to be updated as well?
- d. Are GFI outlets installed at all 'wet' areas?

H. Electrical Switchgear repair/replacement

Questions/considerations:

- a. Where is the electrical service located? Above 'green' or below ground? If below ground, all underground utility locations shall be determined and avoided - Call Before You Dig.
- b. What is the compatibility of the existing system and new system?
- c. What is the condition of the existing electrical wiring, conduit, boxes and switches?
- d. Does the cable and/or telephone systems need to be updated as well?
- e. Are GFI outlets installed?

I. Elevator repair/upgrade/replacement

Questions/considerations:

- a. Is the new cab compatible with the existing system and shaft?
- b. What are the ventilation requirements of the new elevator? Is air-conditioning of the elevator mechanical room required?
- c. Is a pit drain existing and/or required?
- d. What is the alternate source of power? Is an emergency generator required? Is it diesel powered?
- e. Assure that the cab size and controls are handicapped accessible and meet current codes.
- f. Where is the elevator mechanical room located? If the elevator mechanical room is located on the roof; what is the condition of the room? What is the exterior envelope condition and roof condition?

J. Emergency generator repair/replacement/installation

Questions/considerations:

- a. Is the new generator properly sized for the existing and future load requirements and amperage?
- b. What is fuel source of the generator? Is it diesel powered?
- c. Are fuel tanks required? If so, where will they be located?
- d. Where will the generator be located? What is the condition of the site where it will be located?
- e. Is the generator enclosed and fenced adequately for safety requirements? In addition to fencing, are bollards needed if located near a drive aisle or parking area?

K. Energy-efficiency upgrades (building components/systems)

Questions/considerations:

- a. Has Eversource, UI and SCG for subsidies and technical support for energy-efficiency programs been contacted?
- b. Has CT Green Bank been contacted for program and incentive information?
- c. Is the existing system infrastructure compatible with the new system?

L. Exterior fire-escape repair/replacement

Questions/considerations:

- a. Does the new fire-escape meet all current building and fire codes?
- b. Are the windows leading to the fire escape also code compliant for egress sizing?

M. Exterior masonry repairs (where movement cracks are apparent)

Questions/considerations:

- a. Is there evidence of efflorescence on the brick wall (white staining which is evidence of water infiltration within the brick wall cavity)? If so, further investigation may be needed to determine the cause of water infiltration.
- b. Are the weep holes clogged? Are weep holes even installed in the brick coursing?

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- c. If there are existing cracks in the brick wall, has the crack widened or lengthened over time? If so, a structural analysis may be required to investigate and determine the cause of the cracking.
- d. What is the condition of the flashing?
- e. What is the condition of the lintels? Are the lintels rusted? Is mortar missing from the joint at the lintel?

N. Geothermal heating/cooling system installation

Questions/considerations:

- a. Has Eversource, UI and SCG for subsidies and technical support for energy-efficiency programs been contacted?
- b. Has CT Green Bank been contacted for program and incentive information?
- c. Is the existing system infrastructure compatible with the new system?
- d. Has soil testing been done for possible soil contamination?

O. Heat/fire/smoke suppression systems

Questions/considerations:

- a. Is the existing wiring and equipment capable of supporting the new system?

P. Heating plants (includes boilers/furnaces and associated piping/ductwork and chimney/flues)

Questions/considerations:

- a. What is the energy-efficiency of the new system being proposed?
- b. Has the chimney been inspected for leaks?
- c. Is there adequate draft?
- d. Are the existing controls up-to-date and programmable? Or should they be replaced?

Q. Parking structure repair/modification

Questions/considerations:

- a. What is the cause of the structural problem at the parking structure?
- b. Is water infiltration part of the on-going problem?
- c. An evaluation by a PE is required to determine the underlying cause and recommended remedy to address the problem, and is to be submitted to CHFA for review and comment.
- d. The final drawings shall be submitted to CHFA for review and comment.
- e. Is the scope of work to be insured?
- f. All existing reports, logs, and on-going condition histories shall be investigated and submitted to CHFA for review.

R. Photo-voltaic/solar thermal system installation

Questions/considerations:

- a. Has Eversource, UI and SCG for subsidies and technical support for energy-efficiency programs been notified?
- b. Has CT Green Bank been contacted for program and incentive information?
- c. Is the existing system infrastructure compatible with the new system?
- d. Where will the new system be located? On the roof or at grade?
- e. If located on the roof, what is the age of the roof? When will the roof need to be replaced? Will the system need to be un-assembled and then re-assembled after the new roof is installed?
- f. If located at grade, what site constraints are present? Will the system disturb any underground utilities? If so, call utilities to locate lines - Call Before You Dig.

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S. Site grading and retaining wall repair/replacement/installation

Questions/considerations:

- a. What is the cause of the structural problem at the retaining wall?
- b. Is site drainage a problem?
- c. Is water infiltration part of the on-going problem?
- d. An evaluation by a PE is required to determine the underlying cause and recommended remedy to address the problem, and is to be submitted to CHFA for review and comment.
- e. The final drawings shall be submitted to CHFA for review and comment.
- f. Is the scope of work to be insured?
- g. All existing reports, logs, and on-going condition histories shall be investigated and submitted to CHFA for review.

T. Site utility (storm/sanitary drainage system, and electric/gas/phone/cable line) work

Questions/considerations:

- a. Where are the utilities and electrical services located? Above or below ground? If below ground, all underground utility locations shall be determined and avoided - Call Before You Dig.
- b. What is the compatibility of the existing system and new system?
- c. What is the condition of the existing electrical wiring, conduit, boxes and switches?
- d. Do the cable and/or telephone systems need to be updated as well?

CHFA requires that all building materials, components, fabrications, and equipment for all proposed repair, replacement and capital improvement work be completed in accordance with all applicable building codes, State and Federal regulations and should strive to comply with the current Standards. When determining the scope of work for proposed capital improvement, repair and replacement projects, consideration of the interconnection of the individual materials, components, fabrications, and equipment that comprise a fully-functioning building is strongly encouraged.

Some of the Standards are general, and are intended to be guidelines that must be applied to the local situation. It is acknowledged that individual developments may face unique site, design, financing or market constraints for which full compliance may be difficult, impractical or undesirable. It is further intended that such unique constraints are to be identified during the design review process, and that the developer/Owner request a design modification if needed and will be reviewed on a case-by-case basis.

The Standards are not intended to reduce or circumvent the requirements of current applicable building codes, and/or Federal, State and Local law. It is the responsibility of Owners/property managers, and their professional consultants (as required) to assure compliance of the design and construction with all required laws, codes and the Standards.



CONNECTICUT
HOUSING FINANCE
AUTHORITY

The Key To Affordable Housing

Connecticut Housing Finance Authority

Construction Guidelines:
Project Planning &
Technical Services
Review

2016

These Guidelines are effective July 1, 2016

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I. PROJECT PLANNING AND TECHNICAL SERVICES REVIEW

A. Introduction

1. CHFA has developed a series of “Construction Guidelines” (Guidelines) to further assist development teams through the application, planning, design and review process. Each of these Guidelines focuses on specific subjects of major interest in this process, including: Construction Cost, Environmental & Hazardous Materials, Energy Conservation and Project Planning and Technical Services Review (Technical Review Process). These Guidelines are to be used in conjunction with the Multifamily Design, Construction and Sustainability Standards (the Standards).
2. This Guideline outlines the construction document review requirements for multifamily housing financed by CHFA. It is the intent of the Standards, and the Guidelines, that multifamily housing financed through CHFA is designed to serve the needs of its residents with as much quality, durability, comfort, indoor air quality and environmental sustainability as the market and resources permit. It is acknowledged, however, that individual developments may face unique site, design, financing or market constraints, for which full compliance may be difficult or impossible. It is intended that such unique constraints be identified early in the design and underwriting review process, so that the owner/developers may request a modification of specific items that prove to be problematic. CHFA will consider such requests on a case-by-case basis.

II. DEVELOPMENT TEAM/DESIGN APPROACH

Owners/Developers should assemble an integrated development team – including a qualified architect, a general contractor (GC), and other professional consultants for the project.

A. Development Team Selection Process

CHFA encourages the owner/developer to follow an organized development team selection process whereby the owner/developer:

1. issues a Request for Qualifications (“RFQ”) for architectural/engineering services;
2. selects several candidates, from the Architectural/Engineering (“A/E”) firms, or teams, that respond to the RFQ, to be interviewed;
3. conducts the interviews, selects an architectural firm or team, and negotiates a contract; and
4. selects a GC, and negotiates a contract using the same RFQ and interview process.

B. Architect

The architect is the licensed design professional who: a) coordinates the owner/developer’s design goals, aesthetics, function, safety, economy, and future user needs; b) develops documents which enable the GC to build the project; and c) acts as the owner/developer’s representative throughout the design and construction process, to ensure that the final product meets the owner/developer’s expectations; and supervises the design team, bidding and construction administration services.

1. Architect Qualifications: The architect shall be licensed by the State of Connecticut and must have a minimum of five (5) years of relevant, multifamily residential design and construction experience. Proof of such experience, in the form of three (3) reference letters from current and/or past clients,

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performance on multifamily residential projects of similar types and sizes, must be provided. The architect's professional consultants shall submit similar documentation of relevant, multifamily residential design and construction experience in their specific disciplines.

2. Owner/Architect Agreement: The owner/developer/architect agreement shall include the following AIA contract documents:
 - a. AIA Document B101-2007 (formerly B141-1997 Part 1) – Standard Form of Agreement between owner and architect with Standard Form of Architect's Services
 - b. AIA Document B201-2007 (formerly B141-1997 Part 2) – Standard Form of Architect's Services: Design and Construction Administration
 - c. Contract documents shall be assignable to CHFA.
 - d. The construction administration portion of the architect's fee should be a minimum of 35% of the total fee, to be paid in equal monthly installments based upon the length of the agreed-upon construction schedule.
 - e. Architect's Services: The scope of the architect's services shall include the preparation of agenda, scheduling and running weekly job-site meetings with the owner/developer, GC, and any professional consultants, sub-contractors or other parties necessary to maintain work progress. The CHFA field observer will attend job meetings bi-weekly, or as otherwise may be required. The architect shall also record meeting minutes and distribute copies to all attendees, the CHFA field observer and CHFA.
 - f. The architect shall also prepare and distribute a final punch list to all parties, and verify that the work is completed by the GC.
 - g. The architect shall contract with currently-licensed professional consultants as necessary to carry out the design. All professional consultants shall be licensed by the State of Connecticut and must have a minimum of five (5) years of relevant, multifamily residential design and construction experience.
3. Insurance and Other Requirements for Design/Supervisory Architects and Professional Consultants:
 - a. Professional liability insurance in a form, amount and term satisfactory to CHFA shall be provided prior to the date of initial closing. All insurance policies must be in full force and effect as of the date of submission, and must be maintained for a period of seven (7) years after substantial completion of construction. CHFA shall be a named certificate holder on all insurance certificates.
 - b. For detailed CHFA insurance requirements, refer to the CHFA website for further information on insurance requirements.

C. Architectural Design Responsibilities

1. All architectural, planning, engineering, landscaping and other services, which contribute to drawings and specifications, shall be under the direction of the design architect. As a general rule, CHFA discourages multiple professional service contracts; however, consideration for such arrangements may be made, on a case-by-case basis. Exceptions may be made for civil engineering site work and licensed survey work contracted directly by the developer; however, the architect will be required to coordinate the civil engineering with other design work.
2. Supervising Architects for CHFA-financed rehabilitation projects must determine which existing interior building components are suitable for re-use, and which are acceptable to CHFA. Replacement building materials, components and finishes shall comply with the requirements of the Standards, and all work shall conform to applicable codes.

3. CHFA prefers the traditional design/bid/build development process, in which the owner, architect, professional consultants and contractor are separate, independent business interests. Typically, design/build development teams shall not be used; however, consideration for such arrangements may be made, on a case-by-case basis. Exceptions may be made for experienced development teams with a minimum of five (5) years of affordable multifamily development experience and/or three (3) successfully-completed projects.

Typically, construction trade or design/build contractors and sub-contractors shall not be employed to carry out design work; however, consideration for such arrangements may be made, on a case-by-case basis. Where work such as fire suppression design, irrigation design, truss design, commercial kitchen design, and modular building design is proposed to be carried out by design-build contractors, such work shall be certified by a licensed engineer, and the design architect shall be responsible for coordinating and accepting their work.

D. General Contractor

CHFA encourages constructive participation by the GC during the design process, and recommends the GC's regular input to help maintain cost control for the development.

1. The GC is responsible for the construction or development of a property, pursuant to the terms of a primary contract with the owner/developer. The GC is responsible for all means and methods such as materials, vehicles, tools and labor used in the construction of the project, in accordance with the contract documents such as construction contract, schedule, general conditions, material/systems specifications and drawings prepared by the architect. The GC manages the construction process, including planning, staffing, organizing, budgeting, scheduling and supervision.
2. GC Qualifications: The GC shall be licensed by the State of Connecticut as a major contractor, and must have a minimum of five (5) years of relevant experience in the construction of residential facilities. The GC shall provide proof of such experience by submitting a minimum of three (3) reference letters from current and/or past clients, regarding the GC's performance on residential projects of similar type and size. The GC shall provide a minimum of three (3) reference letters from major material suppliers, regarding the GC's credit account payment history.
3. Owner/GC Agreement: The agreement shall include the following AIA contract documents:
 - a. AIA Document A102-2007 (formerly A101 – 1997) Standard Form of Agreement Between owner and GC where the basis of payment is the Cost of the Work Plus a fee with a Guaranteed Maximum Price. This contract does not include bonds or permits as stipulated sum items. These costs are specific to, and defined by the construction cost. CHFA will reimburse these expenditures up to the limit of funds expended by the mortgagor or GC.

The Guaranteed Maximum Price contract is preferred. However, if a Stipulated Sum (also known as Fixed Price or Lump Sum) contract is favored by the Development Team, this will be considered by CHFA. If a contract other than the GMP is determined to be acceptable, if any hard cost savings is realized at the end of construction, this savings shall go to the owner and the savings waterfall (as described in the Multifamily Rental Housing Program Guidelines) shall be followed.

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- i. If the mortgagor's or GC's bond and/or permit expenditure is less than the amount accepted at initial closing, a credit change order shall be prepared, moving the unspent amounts of these line items onto the construction contingency.
 - ii. If the bond and/or permit expenditure is more than the amount accepted at initial closing, for fees previously unknown to the mortgagor or GC, a change order shall be prepared to fund these overages out of the construction contingency.
 - iii. Additional bond and/or permit costs generated by the change order preparation and approval process during construction will be handled separately through a final change order at the completion of construction.
 - b. AIA Document A201 – 2007 (formerly A201 – 1997) General Conditions of the Contract for Construction, with Instructions
 - c. AIA Document A312 –2010 Performance Bond, with Instructions
 - d. Contracts must be assignable to CHFA, and shall include dates for commencement and completion of construction, and provisions for liquidated damages (if any), progress payments and reduction of retainage.
4. Other Requirements for GCs:
 - a. The GC must use his own employees to perform at least 15% of the construction work, but can utilize the services of specialty trade firms such as sub-contractors to perform particular tasks under the direction and coordination of the GC in a direct contractual relationship, to complete the project.
 - b. The GC will divide the total general conditions cost into equal monthly payments based upon the length of the agreed-upon construction schedule, which will be included in the monthly payment requisitions during construction.
 - c. For detailed CHFA insurance requirements, see the CHFA website.
 - d. Refer to CHFA Procedures for bonding requirements.
5. General Contracting arrangement: The traditional owner/architect/GC (GC) construction project delivery process is preferred, in which the GC provides the material, labor, equipment (such as engineering vehicles and tools) and services necessary for the construction of the project for a guaranteed maximum price. The GC's responsibilities generally include applying for building permits, securing the property, providing temporary utilities on site, managing personnel on site, providing site surveying and engineering, disposing or recycling of construction waste, monitoring schedules and cash flows, maintaining accurate records and also hiring specialized subcontractors to portions of the construction work the GC's own employees cannot provide.
6. Construction Manager as Constructor and Construction Manager at-Risk (CM@R) agreements: Typically, the construction management project delivery method shall not be employed; however, consideration for such arrangements may be made. Exceptions may be made for experienced construction management firms with a proven record of minimum five (5) years of affordable multifamily development experience or three (3) successfully-completed affordable multifamily development projects.

These terms refer to a business relationship of owner, architect and construction manager, which entails a commitment by the construction manager to deliver the project within a Guaranteed Maximum Price (GMP). The CM as Constructor is similar to the GC during the construction phase. The CM@R delivery method is an alternative procurement process similar to longstanding private sector construction contracting, wherein the construction manager acts as consultant to the owner in the design development phase, but as the equivalent of a GC during the construction and final closing phases.

The CM as Constructor and CM@R shall work closely with the owner/developer and architect on design review, project schedule analysis, constructability review and cost control management. The CM as Constructor and CM@R shall value engineer all building systems at each of the major milestones, with a lifecycle analysis for major building elements, such as site, building envelope, HVAC and lighting. In conjunction with the architect, CM shall prepare a cost estimate and evaluate the cost estimate against the construction budget. CM shall recommend, if necessary, the appropriate action to correct and/or avoid potential cost over-runs. The CM as Constructor and CM@R shall not include a construction cost contingency in its fee proposal; construction cost contingencies shall be included as a line item in the approved Mortgagor's development budget. For detailed CHFA insurance requirements, see the CHFA website and refer to CHFA Procedures for bonding requirements.

7. Cost estimates shall reflect the best professional estimate of actual anticipated costs, while establishing internal estimating allowances consistent with good professional practices appropriate to each phase of development. Larger allowances held at early phases of development are assumed to gradually diminish to zero for the final cost estimate.

III. FIELD ENGINEERING SUBMISSION REQUIREMENTS

A. Boundary and Topographic Site Survey

The purpose of these specifications is to describe the minimum requirements for a boundary and topographic site survey for use in the design, construction and post-construction verification of "as-built" conditions. In general, the surveyor shall perform all field work necessary to accurately determine the location of property lines and existing physical conditions of the site, set monument markers, establish benchmarks and record on a Property and Topographic Survey, the information and data as required. The surveyor shall obtain such information and data from public and other records, including a review of underlying documents to current title work (within 120 days). All data and information required by these specifications shall be depicted and noted on a survey map in accordance with the pertinent portions of the current Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and Sections 20-300b-1 through 20-300b-20 of the Regulations of Connecticut State Agencies – Standards for Surveys and Maps in the State of Connecticut as adopted by the Connecticut Association of Land Surveyors, Inc. All surveys shall meet or exceed Horizontal Accuracy Class A-2 and Topographic Accuracy Class T-2, shall be signed and sealed by a Connecticut licensed professional land surveyor, and shall include the following:

1. North Arrow with appropriate source reference (record map; CT Coordinate System; NAD27; NAD83; etc.)
2. Precise legal perimeter description ("metes and bounds" or "course and distances") shall appear on the face of the survey map, preceded by identification of the appropriate street address, if available. Said description shall conform entirely to the survey. Any contiguous plot shall be described by a single perimeter description of the entire subject property. Division into parcels shall be avoided, unless such is requested so as to serve a special purpose. If the property is described as being on a filed map, the survey map shall specifically reference that filed map.
3. Two benchmarks referenced to an established datum permanent objects adjacent to the site located and described
4. All boundary lines, labeled with bearings and distances

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5. Mark all corners of the site and other boundary line intersections not previously marked by a monument. Where existing structures preclude setting monuments at the intersection of property lines, a brass pin should be set in the property line extended, tagged and so noted, along with the distance from the true corner. At least one corner of the property shall be designated by course and distance from, or by the coordinates of, a readily discernible reference marker. Depict and label position and description of each marker.
6. Designate the total area within boundary lines in both square feet and acreage. If the overall boundary is made up of individual parcels, include the area of each.
7. Easements, Encroachments, and Improvements
 - a. Indicate any and all servient and appurtenant easements by Book and Page, if any, the origin (e.g. Deed from A to B), if applicable, and nature. It is also desirable to describe an easement appurtenant to a fee parcel by using a separate parcel description.
 - b. Clearly indicate the location, dimensions and nature of (A) all encroachments upon the property; (B) all encroachments upon adjoining property, streets or alleys, by any buildings, structures or other improvements upon the property; and (C) all party walls between, with or adjoining the property and other property.
 - c. Indicate position, size and material of any and all improvements on the property, including buildings, retaining walls, decorative walls, areaways, driveways, paving, etc. Indicate the existence and location of off-site structures within 10 feet of the property lines. Indicate the location of any and all adjacent building lines. Note names of adjoining property owners.
8. Trees: Indicate location, species and size of trees over 6" in trunk diameter, measured at breast height (dbh).
9. Roads and Rights of Way: The following data shall be indicated on survey drawing for all streets, alleys, roads, highways and rights-of-way adjacent to the site:
 - a. Dimensions and distances from property lines
 - b. Type(s) and condition of material(s)
 - c. Type(s) of curbs and gutters
 - d. Elevations of sidewalks along edges nearest the site, at 20-foot intervals, at corners, and points of slope change
 - e. Elevations of tops of curbs and flow-line of gutters, at 20-foot intervals, at corners, and points of slope change
10. Sanitary Service: Development of sites without access to sanitary service is discouraged, due to the costs associated with providing well-designed, efficient on-site wastewater treatment and disposal systems. Development of sites without access to public water and sanitary services will not be funded. The following data pertaining to utilities adjacent to the site shall be depicted and noted on the survey:
 - a. Location and type of available electric service, including lines, poles and manholes
 - b. Location of water mains, hydrants and manholes, indicating size of water mains
 - c. Location and size of gas mains, including type (low or high pressure)
 - d. Location, size, direction of flow, pipe slope, and type(s) of material of sanitary, storm or combined sewer mains. Indicate public or private, and if use is exclusively for sanitary waste or storm water drainage. Indicate elevations of flow-line, "in" and "out" inverts, and locations of manholes.
 - e. If a utility is not available at the site, it shall be noted whether or not, and where service is available in the community.

- f. List the company or governmental body of jurisdiction for all utilities.
11. Topography: Elevations of the site shall be taken on a grid suitable to the topography and size of the site. Contour lines shall be at two-foot intervals. Elevations shall be marked on contour lines at regular intervals, and the reference datum shall be specifically stated.
12. Miscellaneous Information:
 - a. Note other information pertaining to site conditions, e.g. abandoned foundations, ditches, culverts, mine shafts and tunnels (if visible or known), wells, sanitary drain fields, excavations, etc. Also indicate locations of any and all waterways, wetlands, and established floodplains and floodways.
 - b. In addition to other contractual services, the surveyor shall obtain and/or verify requisite information and data from public records, including names, locations, dimensions and elevations of streets, curbs, gutters, sidewalks, established building lines, easements, utilities, proposed improvements, condemnations, etc., necessary for, and incidental to, a completed site survey, preparation of the drawing thereof, and the certification by the surveyor that the data presented meets, at a minimum, the horizontal and topographic accuracy classifications specified in the referenced standards to which the survey was prepared.
13. Coordination with Legal Survey: The survey shall meet the requirements of CHFA's Legal Department; including long-form certification language.

B. Capital Needs Assessment (C.N.A.) Report

If rehabilitation work is involved, the owner/developer shall commission CT-licensed Architectural and/or Engineering professionals to conduct a physical assessment and evaluation of all building components to remain during and after the rehabilitation. The findings shall be compiled into a Capital Needs Assessment (CNA) Report, including a written description indicating the level of the rehabilitation and 20-year replacement schedule.

In the case of a complete gutting of buildings, provide an Architectural Needs Assessment Report by an Architect, and a Structural Needs Assessment Report by a structural engineer, to identify and assess the age, appearance, condition, useful life expectancy, and structural capacity of all materials, assemblies, fabrications, equipment and systems that are to remain after the gut rehabilitation. The reports shall include the age, the material, the condition and life expectancy for such components.

CNA requirements include the following:

1. The CNA consultant(s) to be, or to consult with, licensed and insured professional architects or professional engineers.
2. A narrative description of the development, including the evaluator's overall assessment of the property condition including of the building exterior and interior, including mechanical and accessible spaces; e.g., attics, roofs, crawl spaces, etc. Any spaces not accessed shall be noted in the report. The narrative shall include property location, age, physical attributes, number of units inspected and the physical condition of the units inspected.
3. The presence of, or suspected presence of, environmental hazards, such as asbestos, lead paint or mold shall be detailed.

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4. The number of living units required to be assessed shall be as follows:
 - i. Developments with 4 – 40 units \geq 50%
 - ii. Developments with 41 – 60 units \geq 35%
 - iii. Developments with 61 – 80 units \geq 30%
 - iv. Developments with 81 – 100 units \geq 25%
 - v. Developments over 100 units \geq 20%

If determining the number of units to be assessed results in a fraction, round up to the next number.

5. The report shall include photographs of building characteristics that accurately reflect the existing conditions present.
6. Physical Assessment: The report shall further examine and analyze:
 - a. The site, including general topography, ground water drainage, bituminous/concrete pavement, bituminous/concrete walks and curbs, site amenities, water, storm, sanitary sewer, gas and electric services
 - b. Structural systems, both for substructures and super structure, including exterior wall systems, doors and windows, roofing system and drainage
 - c. Common area and unit interiors, including existing finishes (carpet, vinyl wall covering, paint, VCT, ceramic tile, etc.), appliances, cabinets, toilet fixtures, exhaust fans, range hoods, etc.
 - d. Building thermal envelope components, including an evaluation of insulation and air-sealing measures
 - e. Building mechanical systems and controls, including HVAC systems, plumbing and domestic hot water, fire protection, electrical lighting and power, communication and security systems, etc.
 - f. Any components which are non-compliant with the ADA, Section 504 or Fair Housing Guidelines. The report shall include a copy of the owner's certification that the specific development complies with all of the ADA and 504 regulations, along with compliance with Fair Housing Guidelines. If the owner is unable to so certify, then the report shall state how the owner plans to achieve compliance.
7. Energy Assessment: The report shall include a Level I – Walk-through Energy Assessment (minimum) to assess building energy efficiency, identify defects and simple, low-cost improvements, and create a list of energy conservation measures and retrofit opportunities, including implementation costs and energy savings. This inspection is based on visual verifications, study of installed equipment and operating data, analysis of historic energy use and cost, and a benchmarking comparison to the performance of similar buildings in the area. A Level II – Detailed/General Audit is preferred.
 - a. Coordinate with the utility companies and fuel vendors to analyze common area annual energy usage data. Living units to be assessed for energy efficiency shall be:
 - i. If owners are responsible for residential utility costs, coordinate with the utility companies and fuel vendors to analyze energy usage data for all units.
 - ii. If tenants are responsible for utility costs, and annual energy usage is not currently tracked by the owner, a sample of information from 10% of the residential units, including at least one of each unit type, shall be assessed.
 - b. For developments served by Municipal utilities, the CT Green Bank or CEEF may be able to provide no-, or low-cost Level I Energy Audit and assessment services and on-site testing, and financial incentives for energy conservation measures and retrofit opportunities.

8. The report shall include an interview with on-site property management and maintenance personnel to gain knowledge of past repairs, pending repairs and chronic physical deficiencies. The consultant shall obtain and include a 5-year history of the owner's capital repair expenditures for the development.
9. The report shall include a budget and an in-depth scope of work for the proposed rehabilitation work. This budget shall include expenditures and costs for all property improvements that may affect the project's future marketability. Improvements may include energy efficiency upgrades, adding central air to the development, community room additions, etc.

All proposed improvements (e.g., doors, windows, siding, roofing, paving, etc.) shall strive to comply with the Standards. Individual building materials, components, fabrications, and equipment for all proposed repair, replacement and capital improvement projects shall comply with the applicable section(s) of the current Standards. However, when determining the scope of work for proposed repair, replacement and capital improvement projects, owners and property managers are strongly encouraged to consider the interconnectedness of building materials, components, fabrications, and equipment that comprise a fully-functioning building.

10. The CNA report shall include a spreadsheet that outlines, by line item, the costs of proposed improvements expensed in year one, with a life-cycle replacement budget reflecting appropriate line item costs expensed over the proposed mortgage term, if applicable; otherwise a 20 year life-cycle is acceptable. The spreadsheet shall show all costs in today's dollars, with an appropriate rate of inflation for costs expensed over the life-cycle term. Please refer to the "Comprehensive Capital Needs Assessment Schedule", which can be found on the CHFA website.

C. Soil Boring Reports

The soil survey is to be performed under the direction of a civil engineer registered in the State of Connecticut. The entire site is to be inspected to note variations in types of soils and ground water conditions. Locations for borings are to reflect varying site conditions. Special attention is to be given to boring locations in low or marshy areas, areas where there is a history or evidence of fill or where rock may be expected.

1. Soil borings are to be made with a drilling rig, taking samples as often as the character of the soil changes, and describing it in accordance with acceptable engineering standards. Samples are to be submitted to a soil specialist for analysis.
2. The engineer is to indicate the location of borings on a boundary survey and log the borings on the site plan or on a separate document. The logs are to use an exaggerated vertical scale to indicate, with acceptable key names and symbols, the nature of soil composition at each stratum to a depth of 15 to 20 feet.
3. For sites anticipating high-rise buildings, borings are to be concentrated in the area of the anticipated building location. At least one of these borings shall be drilled to a depth of 100 feet or to hardpan.
4. Borings are to be performed after buildings have been located on the site plan. There shall be a minimum of two borings per building for low-rise structures and at least two borings per wing for mid-rise structures with a minimum of three to four borings overall for this building type. Borings shall also be carried out in parking areas and roadways.

5. The engineer shall indicate bearing capacities of soils at various levels with a recommendation for the footing/foundation type for proposed structures and shall provide a recommendation for pavement design of roads and parking.
6. The engineer shall note ground water conditions such as high water tables, flood zones, etc. and make recommendations for remedies as needed.

D. Remediation/Re-use of Existing Brownfield Sites

CHFA encourages the re-use and redevelopment of abandoned or underutilized commercial and industrial sites, where redevelopment and re-use has not occurred due to the presence or potential presence of pollution in the buildings, soil and/or groundwater, which requires remediation before, or in conjunction with, the restoration, redevelopment and re-use of the property. CHFA will recognize abandoned, underutilized commercial and industrial sites as Brownfields, if they are included by the Federal Government or the State of Connecticut on a published list of Brownfields, or can be documented to have received Brownfield remediation funds from the Federal Government or the State of Connecticut.

IV. CRITERIA FOR EVALUATING DEVELOPMENT PROPOSALS

In evaluating the suitability of a project or in selecting one proposal from several, CHFA considers a number of criteria. Regarding housing for elderly persons, particular emphasis is placed on locating these developments in close proximity to services such as medical care and senior citizens centers. If federal funding is involved, such as HOME funds, particular care must be taken in selecting sites that are fully accessible.

A. Site Selection

Ideally, development sites shall not be selected if the surroundings would detract excessively from the quality of development, or where the development would have an adverse effect upon its surroundings. By considering issues such as lot orientation, storm-water management, access to transit, and minimizing street widths early on, many environmental benefits can be accrued at later stages of the project. Site considerations include:

1. Planning and Zoning
2. Land and Soil
3. Site Utilities
4. Existing Structures
5. Site Development Cost

B. Development Costs

Overall costs of development shall be considered in relation to the quality of the resulting development, and not only to the number of dwelling units constructed. Location, available services, ease of development, type of construction, quality of materials, size and number of units and amenities provided, all contribute to overall costs. The development budget shall be prepared and evaluated for what it provides, as well as overall and per dwelling costs. It must be supported by the rents generated by the marketplace. Site improvement and building costs shall be consistent with the type and quality of the proposed development and reasonable in cost per dwelling. Costs shall be evaluated for their adequacy to provide construction which reduces the consumption of energy and the amount of maintenance required over the mortgage life of the development, and for the amenities planned in its design.

C. Project Data for Construction Cost

In order for CHFA to evaluate the construction costs for proposed developments, provide the following project data, which must be updated and re-submitted for each phase of the Technical Review Process:

1. Number of Buildings
2. Building Gross Area (Total Project Square Footage – all buildings)
3. Total Number of Units and Breakdown of Unit Type (including number of bedrooms and accessibility types)
4. Unit Net Area (Net Residential Area – each dwelling unit)
5. Total Living Unit Area
6. Total Common Area (Net Common Area – all buildings)
7. Total Commercial Area (Net Commercial Area – mixed-use buildings)

D. Area and Use Definitions for Construction Cost Calculations (for use in conjunction with the Architect SF Info Table from the Consolidated Application)

1. Building Gross Area
 - a. All floor areas, including construction and shaft spaces within the building, measured from the outside of the exterior walls; spaces only partially enclosed, such as balconies, entrance canopies, etc., are not included; basements in town houses are not included. Floor areas of non-housing, such as commercial spaces, are to be included; basements with common space that has a housing use are included.
2. Unit Net Area: The floor area inside the finished surfaces of a residential unit, inside face of all walls.
3. Residential Area: Spaces to be included in Residential Area calculations include dwelling units (including the manager’s unit), entry vestibules, lobby spaces deemed necessary for foot travel from the building entry to the elevator and from the elevator to the unit entry, corridors, elevator lobbies, elevators, receiving, mechanical/electrical/meter rooms, stairways, trash rooms and required tenant storage.
4. Common Area: Spaces to be included in Common Area calculations include community buildings, community rooms, common kitchens, offices, reception areas, maintenance areas, library areas, meeting rooms, common laundries, lounges, restrooms, mailrooms, janitor closets, craft rooms, game rooms, conference rooms, mechanical/electrical rooms for common areas and common storage space. Note: the lobby space deemed necessary for foot travel from the building entry to the elevator, and from the elevator to the unit entry, is not considered common space.
5. Commercial Area: Spaces to be included in Commercial Area calculations include all areas available for commercial lease in mixed-use buildings.
6. Parking Garage: If a parking garage is included within the footprint of the building, provide the Net Square Footage of the garage itself. If a separate garage structure is included in the project, provide the Gross Square Footage of the entire garage.

E. Project Cost Summary and Trade Payment Breakdown

The submission of the CHFA/DOH Consolidated Application exhibits for Project Cost Summary and Trade Payment Breakdown are intended as a statement of Guaranteed Maximum Price (GMP) based on the projected costs developed by the Contractor for each of the 16-divisions of the MasterFormat 1995

standard filing system for architectural, design, engineering, and construction professionals, and serves as the contractor's requisition template and cost certification template.

F. Prevailing Wages/Davis-Bacon Wages

Prevailing Wages and/or Davis-Bacon Wage Rates may be required. It is the responsibility of the applicant to determine if such requirements apply to their project. Please contact the necessary authorities to determine the applicability of prevailing wages and/or Davis-Bacon wage rates. When Prevailing Wage Rates are required by the Connecticut Department of Labor, and/or Davis-Bacon Wage Rates are required by the U.S. Department of Labor, documentation and itemization of all current required wage rates shall be provided to CHFA.

G. CHFA Very Low-Income (VLI) Construction Employment Policy

All multifamily projects funded by CHFA are required to comply with CHFA's Very Low-Income (VLI) Construction Employment Policy. Refer to this policy located on the CHFA website.

H. CHFA Cost Acceptance Limits

1. General Requirements: 9% of Total Hard Cost (max.)
2. Overhead & Profit: 7% of Total Hard Cost (max.)
3. Percentage Stacking: Percentages shall remain the same for all Change Orders; Percentage Stacking is not allowed

V. TECHNICAL SERVICES REVIEW

A. Pre-Design Meeting

It is encouraged that the owner/developer schedule a pre-design meeting with CHFA prior to submittal of a financing application as early as possible to discuss drawings, programmatic parameters and process requirements. Note that the Standards may be more restrictive in some cases than local planning and zoning requirements; as such, the local municipality's planning and zoning review/approval process should be concurrent with the CHFA application process.

B. Design Review Process

Projects will be evaluated by the CHFA Technical Services Department at full application. For all developments, including those receiving Low-Income Housing Tax Credits (both 9% and 4%) and developments financed with tax-exempt bonds, the review of construction documents is the first stage of the Technical Review Process between the development team and CHFA Technical Services.

Sufficient detail must be provided to enable the development team's estimator to determine the project cost data to be submitted on the Project Cost Summary and Exploded Trade Payment Breakdown finance application exhibits, and to facilitate CHFA Technical Services' review. Other documents required at this stage include recommendations for the phasing and schedule of the construction, site and landscape plans, structural, mechanical, electrical, plumbing and fire protection plans and other information such as soil boring documents, consistent with construction documents at varied phases of completeness as described below.

C. 40% Construction Contract Document Submission Requirements

Submit a complete CHFA/DOH Consolidated Application with all of the threshold Technical Services-related forms, exhibits, and attachments, etc., including, but not limited to one full size printed set of 40% complete Construction Drawings and Specifications, in accordance with requirements for financing consideration with dimensions on major common areas and typical units, basic layouts, types and sizes of mechanical and electrical equipment and systems, materials and operations, and typical building sections, wall sections and details. All drawings that are to be developed for use in the construction of the development shall be coordinated to allow printing on the same standard sized print pages, and all pages shall be bound together as a complete set. All drawings must include sheet titles and numbers, graphic and lettered scales, and a north arrow.

1. **Title Sheet:** Provide development location, including location map, names and contact information for the Sponsor, Architect, Landscape Architect, Site Planner, Surveyor, Engineer and any other special consultants, revision dates, index of drawings, a development data summary, a graphic/tabular analysis of the applicable Building Codes to which the proposal has been designed and a large note on the title sheet clearly indicating that the drawings are intended as “40% Construction Drawings”. Building Code requirements to be addressed in the analysis include, but are not limited to: use and occupancy classification(s), building height(s) and area(s), type(s) of construction and fire-resistance rating(s), fire protection system(s), means of egress and accessibility, and the architects square footage information table.
2. **Boundary and Topographic Survey**
3. **Site Plans:** The Design Development Site Plan shall indicate refined arrangements and functional groupings of units to scale, to create a meaningful sequence of usable spaces. Specific relationship of unit arrangement, of the structure to the site, site grading, circulation, lighting, paving, screening, setbacks, parking, play areas and recreation areas shall be presented, including:
 - a. **Zoning:** A table with information regarding the applicable requirements for the zone, use, lot area, frontage, setbacks, bulk, height, density, parking, gross and net square footage, etc. and an indication of compliance or non-compliance for each requirement.
 - b. **Structures:** Locations, shapes, sizes, arrangements and groupings of all structures
 - c. **Circulation and Parking:** Vehicular and pedestrian route layouts and materials; parking/dwelling unit relationships, location, types and number of parking spaces
 - d. **Soils:** Locations of soil borings; data and analysis of topsoil (may be a separate report)
 - e. **Utilities:** General layouts of major utilities, easements and connections; irrigation water source and pressure (if proposed)
 - f. **Recreation:** Locations and types of facilities
 - g. **Grading and Landscaping:** General character/major features of finished grading, existing and proposed contours at 2' (min.) intervals, berms and mounds, sections, etc.; storm water management/detention and retention areas; general character of plantings, screening concepts, relationship to units and open space, etc.; areas of no-disturbance/ tree and vegetation protection and areas acceptable for construction vehicles and material storage
 - h. **Lighting:** Location and character of proposed fixtures (catalog illustrations), height, wattage and photometric information and a separate Site Lighting Photometric Plan indicating conformance with CHFA-required exterior illumination levels)
4. **Residential and Community Building Plans:** Definitive designs for typical dwelling units, residential buildings and community building(s) shall be developed and submitted to CHFA. These designs shall be based on careful study of the development program and concept plan.

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- a. Residential Buildings: Provide residential building floor plans, sections and elevations of typical residential buildings at 1/8"= 1'-0" scale (min.), indicating overall dimensions, gross area, basic construction technique and exterior materials and keyed to the Site Plan, and dwelling unit floor plans for each unit type (including door and window locations, door swings, and furniture layout), indicating designation, dimensions and area of each room and space, at 1/4"=1'-0" scale (min.)
 - b. Community Buildings/Facilities: Provide community building floor plans, sections and elevations of community buildings at 1/4"= 1'-0" scale (min.), keyed to the Site Plan, and indicating overall basic dimensions, gross area, basic construction technique and exterior materials, door and window locations, door swings, and furniture layouts, and designation, dimensions and area of each room and space
 - c. Non-residential Facilities: Provide community building floor plans, sections and elevations of commercial and other non-residential facilities included in development at 1/4"= 1'-0" scale (min.), keyed to the Site Plan, and indicating overall basic dimensions, gross area, basic construction technique and exterior materials, door and window locations, door swings, and furniture layouts, and designation, dimensions and area of each room and space
 - d. All Buildings: Provide residential and non-residential building structural, HVAC, fire suppression and electrical floor plans at 1/8"= 1'-0" scale (min.), indicating designation of each room and space, system layouts and fixture, equipment and control locations
 - e. Provide a code sheet and accessibility plan outlining the major code and ADA implications of the building and project including site issues.
5. 40% Specifications: Provide one printed copy of a Construction Contract Project Manual at a 40% level of completion which defines all proposed major building components and systems in division 2 through 16, of the 5-digit-based CSI MasterFormat 1995, including Part 1 – General: Warranty information and Part 2 – Products: Manufacturer, Material/Component/Manufactured Unit and Performance information (min.). Project Manuals organized under MasterFormat 1995 are preferred, since the Project Cost Summary (Construction Schedule of Values) and Exploded Trade Payment Breakdown exhibits in the CHFA/DOH Consolidated Application, construction phase payment requisition and post-construction Cost Certification Templates are organized by 16-divisions. Use of the 50-division, six-digit code 2014 MasterFormat filing system in Project Manuals is acceptable, provided all information is re-organized into 16-divisions for CHFA/DOH application exhibits and construction cost-related forms. Provide a large note on the cover sheet clearly indicating that the specifications are intended as a “40% Project Manual”.

D. 9% LIHTC Financial Efficiency and Sustainability Review

1. Building Plans and Specifications:
 - a. Plans and Specifications $\geq 90\%$ complete may be provided. Note that, except for additional post-bid clarifying notes, details, and any necessary revisions due to value engineering, $\geq 90\%$ complete drawings and specifications are expected to include all of the elements outlined below, and to be bid- and building permit review-ready. All hard costs shall be reflected in the project cost summary.
2. Sustainable Design:
 - a. Plans and Specifications $\geq 40\%$ complete and reflecting Passive House Design and construction measures may be provided. Note that $\geq 40\%$ complete plans and specifications are expected to include all of the necessary requirements described in sections V.C. and D. above. In addition, a detailed scope of proposed Passive House design and construction measures, coordinated with section details of the proposed building thermal envelope at key intersections (footings, foundations, slabs, floors, walls, windows, doors, projections/overhangs, roofs, etc.), and a preliminary modeling analysis/output report prepared by a certified Passive House consultant

through the Passive House Planning Package (PHPP) as developed by the Passive House Institute (PHI), or through WUFI Passive, as developed by the Passive House Institute United States (PHIUS), must also be provided. It is expected that submissions under the Passive House Design category are “pre-certification-ready”; i.e., all documentation required by PHI or PHIUS to be submitted for pre-certification review must be provided, so that submission for pre-certification review can be made immediately upon notification of an award of tax credits. In order to facilitate Passive House certification by PHI or PHIUS, it is important that the development of final construction drawings be informed and guided by their pre-certification review comments. In addition, all Passive House projects must receive third-party verification of all PHIUS+ requirements during construction, provided by PHIUS+ certified raters, who are not part of the design or construction development team (this requirement applies regardless of which Passive House organization approves the pre-certification). All hard costs shall be reflected in the project cost summary.

– and/or –

- b. If the application is for the minor, moderate or substantial rehabilitation of existing buildings, as defined in the CHFA Guidelines, plans and specifications $\geq 40\%$ complete, and an Energy Conservation Plan reflecting High-performance Building Design, which provides for a projected reduction in energy consumption $\geq 33\%$, may be provided. A summary letter or report from a Professional Engineer, BPI-, RESNET HERS-, and/or ENERGY STAR-certified assessor/rater verifying the energy modeling must also be provided. All hard costs shall be reflected in the project cost summary.

– and/or –

- c. If the application is for the gut rehabilitation of existing buildings (as defined in the CHFA Guidelines) or for new construction, plans and specifications $\geq 40\%$ complete and an Energy Conservation Plan reflecting High-performance Building Design, which provides for a projected HERS Index for all proposed dwelling units ≤ 52 , based on the ENERGY STAR Qualified Home v 3.1 HERS Index Target Procedure, may be provided. For the purposes of this category, renewable energy systems may not be included in the energy modeling to artificially lower the HERS ratings. A summary letter or report from a Professional Engineer, BPI-, RESNET HERS-, and/or ENERGY STAR-certified assessor/rater verifying the energy modeling must also be provided. All hard costs shall be reflected in the project cost summary.

– and/or –

- d. If the application is for the gut rehabilitation of existing high-rise buildings (as defined in the CHFA Guidelines) or for the construction of a new high-rise building, and the building is eligible for the ENERGY STAR MFHR Program (as determined by the EPA ENERGY STAR Multifamily New Construction Program Decision Tree), plans and specifications $\geq 40\%$ complete and an Energy Conservation Plan reflecting High-performance Building Design, which provides for energy cost savings $\geq 23\%$ over ASHRAE 90.1-2007 Standards, may be provided. A summary letter or report from a Professional Engineer, BPI-, RESNET HERS-, and/or ENERGY STAR-certified assessor/rater verifying the energy modeling must also be provided. All hard costs shall be reflected in the project cost summary.

– and/or –

Plans and specifications $\geq 40\%$ complete reflecting a proposed Renewable Energy System – rooftop, building-integrated or landscape-integrated Photovoltaic (PV) electrical generation system with a minimum goal of providing $\geq 33\%$ of site lighting energy requirements, or an ENERGY STAR-qualified central geothermal HVAC system – may be provided. A summary letter or report from a Professional Engineer and/or qualified solar/geo-thermal engineer/designer describing and verifying the qualifying capacity of the proposed system must also be provided. All hard costs shall be reflected in the project cost summary.

3. Additional 9% LIHTC Financial Efficiency and Sustainability Review Guidance:
 - a. Applications submitting qualifying documentation for the various available categories of Financial Efficiency and Sustainability may be awarded points, or partial points, under more than one category. For example, qualifying Passive House Design dwelling units would most likely also meet the qualifications for High-performance Building Envelope units and, although designing for Passive House certification does not require a renewable energy system, a qualifying Renewable Energy System might also be proposed. For example, if a total of 100 units were proposed in a development application, all proposed to be new, qualifying Passive House Design units, and a qualifying Renewable Energy System were to be proposed, 100% of the available Passive House Design points would be awarded, 100% of the available High-performance Building Design points would most likely be awarded, and the available points for Renewable Energy System would also be awarded.
 - b. If an application includes a mix of new construction and rehab work, and/or a mix of dwelling units under the Passive House Design and High-performance Building Envelope categories, partial points may be awarded based upon the applicable percentage of units in each construction type and/or design category. For example, if a total of 100 units were proposed in a development application, and 50 were proposed to be new, qualifying High-performance Building Design units, and 50 were proposed to be existing units to be rehabilitated in a way that does not qualify under High-performance Building Design criteria, 50% of the available High-performance Building Design points would be awarded.

VI. 100% CONSTRUCTION CONTRACT DOCUMENTS and INITIAL CLOSING

The review of 100% complete construction documents is the second stage of the CHFA Technical Review Process between the development team and CHFA Technical Services. This phase culminates with the final documents from which the development will be constructed: construction contract documents.

A. 100% Construction Contract Document and Initial Closing Submission Requirements

1. Architect and GC qualifications, zoning approval, capital, energy and/or structural needs assessments should have been submitted with the original application. If any of these have changed, updated documents are required for review.
2. Environmental Assessment: Provide final Environmental Site Assessment and Hazardous Material Survey reports.
3. Soils Report: If not previously submitted, or if revisions to previously-submitted boring and test pit report by a licensed Geotechnical Engineer, provide additional or updated documents.
4. Energy Conservation Plan: Provide a final estimate of anticipated energy incentives from the utilities based on a Letter of Agreement (LOA) with incentive amounts, energy savings details and verification requirements.
5. Availability of Utilities: If not previously submitted, submit updated documents. If the development is existing and there are no changes to the existing utilities which are available, this may not be required.
6. Property and Topographic Survey and Legal Description: Submit two copies of the Property and Topographic Surveys, including a certification statement to CHFA, its successors and assigns; the title insurance company/companies insuring the Mortgage; the owner/developer, DOH (if applicable) and/or other interested parties; with no statement of facts objectionable to CHFA. The survey

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certification language and attendant notes should include the following basic elements in a format acceptable to CHFA, and should be used for both the pre-construction and As-built surveys:

a. Survey Certification Statement:

To: Connecticut Housing Finance Authority, [State of Connecticut/DOH/Other Lenders], [Title Insurance Company], [owner/developer] [Other Interested Parties]:

This is to certify that this map and the survey on which it is based were made in accordance with the 2016 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes items 1(existing), 2, 3, 4, 5, 6, 7(a), 8, 9, 10, 11, 13, 14, 16, 17, 18, 19, 20 and 21 of Table A thereof. The fieldwork was completed on [Date].

Date: [Certification Date]

Signature: [Licensed Land Surveyor's Signature with Professional Seal Affixed]

b. Applicable Notes (including, but not necessarily limited to):

- i. This survey map has been prepared in accordance with Sections 20-300b-1 through 20-300b-20 of the Regulations of Connecticut State Agencies and the "Standards for Surveys and Maps in the State of Connecticut" as adopted by the Connecticut Association of Land Surveyors, Inc. as a Property and Topographic Survey, the Boundary Determination Category of which is a [Resurvey or First Survey] conforming to Horizontal Accuracy Class A-2 Topographic Accuracy Class T-2. This [survey/resurvey] is intended to be used for conveyance or financing purposes, and as a base for engineering site design.
- ii. Reference is made to [List of Maps] of the [Municipality] Land Records.
- iii. Reference is made to deeds of record found in [List of Books/Pages] of the [Municipality] Land Records.
- iv. Reference is made to instruments of record as labeled hereon.
- v. Areas of the surveyed parcel(s):
 1. Total = [Sq. Ft. (Acres)]
- vi. There are no wetlands on the subject property as indicated in [Wetlands/Watercourses and Soils Report], prepared by [Soils Science and Environmental Services Consultant], [Date].
- vii. Property does not lay within a FEMA Flood Hazard Zone, as depicted on Flood Insurance Rate Map, Panel [Number], Map [Number], Effective Date: [Date].
- viii. Reference is made to map titled [Title] dated [Date], prepared by [Surveyor].
- ix. Elevations depicted hereon are based on the North Atlantic Vertical Datum of 1988 (NAVD88).
- x. Subsurface utility, structure and facility locations depicted hereon have been compiled, in part, from municipal records and field measurements. These locations must be considered as approximate, may not be complete, and other such structures may exist on site. The size, location and existence of all such features must be verified by the appropriate authorities prior to construction.

7. 100% Construction Contract Drawings: Provide one full size printed set of 100% complete Construction Drawings, in accordance with CHFA requirements. All drawings developed for use in the construction of the development shall be coordinated to allow printing on the same standard sized print pages, and all pages shall be bound together as a complete set. All drawings must include sheet titles and numbers, graphic and lettered scales, and a north arrow. Changes to previously-submitted drawings (revisions and additional notes/details, etc.) based on specific 40% review comments shall be identified in accordance with architectural graphic standards by drawing a "cloud".

- a. Title Sheet: Development location, including location map, names and contact information for the Sponsor, Architect, Landscape Architect, Site Planner, Surveyor, Engineer and any other special consultants, revision dates, index of drawings, a development data summary, a list of the applicable Building Codes, use group, building classification to which the proposal has been

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- designed and a large note on the title sheet clearly indicating that the drawings are intended as “100% construction drawings”.
- b. Boundary and Topographic Survey
 - c. Site Plans (list of typical site plan drawings):
 - i. Demolition Plan
 - ii. Road and Building Location Plan
 - iii. Site Layout Plan
 - iv. Grading Plan
 - v. Planting Plans
 - vi. Site Utility Plan
 - vii. Site Lighting and Photometric Plan
 - viii. Sewer Profiles
 - ix. Irrigation Plans
 - d. Residential and Community Building Plans (list of typical Residential and Community Building construction drawings):
 - i. Building Demolition Plans and Elevations (scale not less than 1/8"=1'0"):
 - ii. Building Foundation Plan (scale not less than 1/8"=1'0"):
 - iii. Interior Demolition Plans and Elevations (scale not less than 1/4"=1'0"):
 - iv. Building Elevations (scale not less than 1/8"= 1'-0"):
 - v. Building Roof Plan (scale not less than 1/8"= 1'-0"):
 - vi. Unit Floor Plans (scale not less than 1/4"= 1'-0"):
 - vii. Unit Interior Elevations (scale not less than 1/4"= 1'-0"):
 - viii. Building Sections (scale not less than 1/4"= 1'-0"):
 - ix. Exterior Section Details (scale not less than 3/4"= 1'-0"):
 - x. Interior Architectural Construction Details (scale not less than 1 1/2"= 1'-0"):
 - xi. Door, Window and Finish Schedules (gut rehab and new projects) and Scope of Work Matrix (less-than-gut rehab projects)
 - xii. Structural Framing Plans (Composite floor/roof plans (scale not less than 1/8"= 1'-0") and unit floor plans and mechanical equipment room plans (scale not less than 1/4"= 1'-0"))
 - xiii. Mechanical, Plumbing, Fire Protection and Electrical Plans (Composite floor/roof plans (scale not less than 1/8"= 1'-0") and unit floor plans and mechanical equipment room plans (scale not less than 1/4"= 1'-0"))
8. 100% Construction Contract Specifications: Provide one printed copy of a Construction Contract Project Manual at a 100% level of completion, which defines all required bidding, contract and general requirements in division 1, of the 5-digit-based CSI MasterFormat 1995, and technical specifications for all building materials, components, assemblies, fabrications, equipment and systems in divisions 2 through 16, including Part 1 – General, Part 2 – Products and Part 3 – Execution. Project Manuals organized under MasterFormat 1995 are preferred, since the Project Cost Summary (Construction Schedule of Values) and Exploded Trade Payment Breakdown exhibits in the CHFA/DOH Consolidated Application, construction phase payment requisition and post-construction Cost Certification Templates are organized by 16-divisions. Use of the 50-division, six-digit code 2014 MasterFormat filing system in Project Manuals is acceptable, provided all information is re-organized into 16-divisions for CHFA/DOH application exhibits and construction cost-related forms. Unless otherwise permitted by CHFA, manufacturers’ instructions shall be followed for the installation of all materials, products and equipment. Provide a large note on the cover sheet clearly indicating that the submission is intended as a “100% Project Manual”.

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9. Other Contract Documents related to the Architect:
 - a. Standard AIA owner/Architect Agreement and Amendments, if any [the fee distributed for construction administration (CA) shall be 30 - 35% of the architect's total fee as determined by CHFA based upon project cost and schedule]
 - b. Certificate of Liability Insurance naming CHFA as certificate holder
 - c. Certification that the documents adhere to all applicable codes and CHFA requirements
 - d. ADA/ Uniform Federal Accessibility Standards Compliance Certification

10. Other Contract Documents related to the GC:
 - a. Contractor's Qualifications
 - b. Standard AIA owner/Contractor Agreement, including contract time, contract sum, list of addenda, list of drawings and specs, and liquidated damages
 - c. Riders and Exhibits
 - d. Contractor's General Liability, Automobile, Umbrella, Worker's Compensation and Latent Defects insurance coverage per applicable CHFA requirements for multi-family developments under construction and/or with permanent financing, which can be found in the Multifamily Rental Housing Development Document Library section of the CHFA website
 - e. Schedule of Values
 - f. Construction Schedule: CHFA prefers Critical Path Method (CPM) construction schedules, such as those created with Primavera, Suretrack, Microsoft Project or other project scheduling and control software, in order to develop, analyze, update, monitor and report the progression of construction projects such that the owner/developer is informed quickly and accurately of project events, potential problems, and corrective actions. If Microsoft Excel-type bar charts are used, the all construction operations shall be consolidated onto one page, or a series of pages, to continuously show all concurrent work. If the project is to be divided into major sub-projects for multiple buildings, color coding the bars can keep the sub-project work together.
 - g. Performance & Payment Bonds – refer to CHFA Procedures for requirements.
 - h. List of Sub-contractor(s).
 - i. Building Permit(s).

B. Early-Start

CHFA discourages owner/developers from starting construction prior to initial closing. Early Start is entirely at the owners/developers own risk. If the owner/developer finds that there is no other viable alternative, and chooses to assume total liability for all construction costs, fees (including those for a CHFA Field Observer) and all liens and encumbrances incurred prior to initial closing and the recordation of a mortgage. A "Notification of Intent to Commence Construction" form (see CHFA website) may be executed and submitted to CHFA. Additional information and documentation such as proof of ownership of the project site/buildings/appurtenances, building permits, commencement date, construction schedule, professional service and construction contracts, insurance policies, environmental assessment and implementation plans, construction drawings and specifications, and CHFA cost breakdown forms will be required and a pre-construction meeting with the owner/developer, architect, general contractor, bonding company representative, and CHFA Field Observer and CHFA staff, must be held.

1. All support documentation submitted with the Notification of Intent to Commence Construction form must meet all the Standards, and the owner/developer will be responsible for revisions and resubmission as required by CHFA.
2. The owner/developer must understand that CHFA will not be responsible for any liens or any other objection to title, which might result from the fact that construction of a project commenced prior to the CHFA Initial Closing and the recordation of a mortgage. In addition, it must be understood that

CHFA acceptance of a prior start of construction for a development will not in any respect be deemed to obligate CHFA in any way.

VII. CONSTRUCTION

A. CHFA Construction Observation Requirements

For all developments with CHFA funding, or other funds administered by CHFA, construction observation is required by an assigned CHFA Field Observer. For all developments funded through tax credit equity only – both 9% and 4%, CHFA staff may periodically visit the development to conduct on-site observations of the construction process. Observations may occur at any time within the duration of the construction process, up to the placed-in-service date, or up to the execution of the IRS Form 8609. The observations will confirm compliance with the Standards. In addition, as-built drawings and Specifications reflecting compliance with the Standards, prepared by the GC, and verified/approved by the architect, shall be submitted prior to the execution of the IRS Form 8609.

B. Pre-Construction Meeting

After Initial Closing, a pre-construction meeting will be held at CHFA. Those attending the meeting representing the development team should include the owner, the architect, the contractor and any other project management/administrative personnel deemed necessary by the owner. Attendance by the Energy Consultant is strongly recommended. CHFA representatives will include staff from underwriting and Technical Services Departments, requisition processor and the CHFA Field Observer assigned to the project. The CHFA Field Observer shall perform bi-weekly site visits to the development and provide field reports and progress photos, among other duties and tasks as the representative for CHFA.

The purpose of the pre-construction meeting is to review CHFA-required project management and administrative procedures, responsibilities and expectations during, and immediately after, the construction phase. The typical agenda for a CHFA pre-construction meeting is outlined in the CHFA document “Pre-construction Meeting”, which can be found on the CHFA website. Subjects reviewed during the pre-construction meeting include CHFA Field Observation accommodations, requisition and lien waiver processes and submission requirements, job meeting agendas/meeting minutes, forms/documentation/record-keeping requirements, change order processes and submission requirements, project sign requirements, special testing documentation/submission requirements, stored material policy/process and submission requirements, construction schedule maintenance, photo records/submission requirements, Permission to Occupy (PTO)/first reduction of retainage process and submission requirements and final closing/reduction of retainage process and submission requirements.

C. Initial Site Meeting

Discussion and coordination of the following construction-phase logistical issues and process recommendations by the Development Team and the CHFA Field Observer at the first site meeting is recommended:

- | | |
|---|-------------------------------------|
| 1. Introductions/exchange of business cards | 21. Utility Connections and Charges |
| 2. Schedule of Values | 22. Fire Extinguishers |
| 3. List of Sub-contractors | 23. Emergency Phones |
| 4. Change Orders | 24. Insurance |
| 5. As-built Drawings | 25. Warranties and Guarantees |
| 6. Building Permits | 26. Applications for Payment |
| 7. Additional Sets of Drawings | 27. Protection and Safety |
| 8. Project Site Cleaning | 28. Project Sign |

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|---------------------------------------|--|
| 9. Deliveries and Site Access | 29. Sanitary Facilities |
| 10. Color Schedule | 30. Shop Drawings |
| 11. Start/Completion Dates | 31. Soil Erosion and Sedimentation Control |
| 12. Construction Schedule | 32. Soils Information |
| 13. Coordination of Work | 33. Substitutions |
| 14. Daily Reports | 34. Lien Waivers |
| 15. Roles of Architects and Engineers | 35. Surveyor |
| 16. Testing Requirements | 36. Minority Work Requirements |
| 17. Examination of Site | 37. Labor Rates |
| 18. Dimensions | 38. RFI Log |
| 19. Enclosures and Barricades | 39. PCO Log |
| 20. Field Office | 40. Allowance Log |

Building materials, components, fabrications, assemblies and equipment for all proposed development projects (rehabilitations and new construction), and all capital improvement repair, replacements and installations, must comply with all applicable Building Codes, State and Federal regulations. It is recommended that the project adhere to the current “*However, if a Notice of Funding Availability (NOFA) or the Qualified Allocation Plan (QAP) has different requirements, the NOFA or QAP shall take precedence.*” All finance applications must comply with CHFA Procedures and the requirements of the CHFA/DOH Consolidated Application.



CONNECTICUT
HOUSING FINANCE
AUTHORITY

The Key To Affordable Housing

Connecticut Housing Finance Authority

Construction
Guidelines:
Environmental &
Hazardous Materials
Review

2016

These Guidelines are effective January 1, 2016

CHFA Construction Guidelines: Environmental & Hazardous Materials

January 2016

The “Construction Guidelines: Environmental & Hazardous Materials” outlines the CHFA environmental review process. These Guidelines shall be followed when CHFA is providing construction financing of multifamily developments pertaining to both new construction and the rehabilitation of existing buildings and properties. CHFA may select and commission an outside, third-party CT Licensed Environmental Professional (CT LEP) (at the applicant’s expense), from a CHFA approved list to review environmental reports for conformance to these Guidelines. When required, the applicant will make a non-refundable payment for such environmental reviews.

I. Environmental Consultant Qualifications

Environmental consultants shall be licensed in the State of Connecticut with a current and active license. The Connecticut Department of Energy and Environmental Protection (CT DEEP) maintains the roster of Connecticut licensed environmental professionals (CT LEP) which can be accessed on their website. The Connecticut Department of Public Health (CT DPH) also maintains the roster for qualified parties for their Lead Program and Asbestos Program, if required. For asbestos and lead based paint issues, CT DPH requires the project consultants be on the approved lists as noted below:

- a. Licensed lead abatement consultants and contractors;
- b. Licensed asbestos consultants and contractors;
- c. In-state approved commercial environmental laboratories;
- d. Out-of-state approved commercial environmental laboratories; and
- e. Approved non-commercial environmental laboratories

The owner/developer shall contract with a CT LEP to investigate proposed development sites and existing buildings, in order to identify environmental concerns that need to comply with federal and/or state regulations. Based on the nature/conditions of the site and the types of environmental concerns initially identified by the environmental consultants, additional investigation and/or testing may be required. Based on the results of investigation and testing, site and/or building remediation and/or abatement may be required. The licensed environmental professional shall evaluate the site thoroughly via Environmental Site Assessments to give a sound and reasonable opinion regarding the findings, including whether additional site investigation and testing is warranted.

II. Types of Environmental Site Assessments

An Environmental Site Assessment (ESA) is an investigation conducted of a specific site of either vacant land or a developed piece of property. The ESA’s are generally presented in three major phases of investigation: Phase I, II and III. For certain sites, it may be cost effective to combine Phase I and Phase II or Phase II and Phase III. Environmental Site Assessments shall comply with the National Environmental Policy Act (NEPA) including current revisions published by the CT DEEP and ASTM Standard E1527-13.

Phase I Site Assessment (ESA): A Phase I Site Assessment investigation of the existing and past uses of a site for the purpose of identifying areas on a site at which pollutants may have been released into the environment is required for all projects seeking financing through CHFA. Such areas may be identified as “Areas of Concern”, “Potential Release Areas” or “Recognized Environmental Conditions”.

Based upon the owner’s environmental consultant’s findings, and/or the opinion of the CHFA third-party environmental consultant’s review/opinion, a Phase II Site Assessment may be required. Any and all areas of concern as defined in the “Site Characterization Guidance Document” should be evaluated along with any and all Recognized Environmental Conditions as defined in ASTM E1527-13. Based on the information submitted and reviewed, additional phased site investigations, testing

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and or reports may be required. Per ASTM 1527-13, the Phase I ESA is not considered current if more than 180 days old (6 months). Per CHFA funding requirements, the Phase I ESA must be considered current at the time of application for funding.

2. **Phase II Site Assessment**: A Phase II Site Assessment is an investigation of each “Area of Concern”, “Potential Release Area” or “Recognized Environmental Condition” to determine whether or not pollutants have been released to the site soils or groundwater. Based upon the owner’s environmental consultant’s findings, and/or the opinion of the CHFA third-party environmental consultant’s review/opinion, a Phase III Site Assessment may be required.
3. **Phase III Site Assessment**: A Phase III Site Assessment is an investigation that fully characterizes the nature and extent of contamination resulting from any release which has occurred on a site. While remedial actions to abate pollution may be taken at any time in the course of characterizing a site, a final remedial action plan can only be developed after a complete Phase III investigation.

III. Hazardous Materials

Hazardous materials include materials such as asbestos, lead-based paint, polychlorinated biphenyls (PCBs), and urea formaldehyde insulation (UFFI). Hazardous materials surveys can be classified into three (3) major types; a general survey, a renovation impact survey and a pre-demolition survey. In all cases, a licensed inspector (asbestos and/or lead based paint) shall oversee the survey and provide direction as needed.

A general survey is an examination of the materials used in building construction documenting the existing known hazardous materials. This survey typically does not involve destructive sampling within wall cavities, above ceilings, below flooring tiles, etc.

A renovation impact survey is an investigation of building materials when a structure will be undergoing a renovation or rehabilitation. In this survey, destructive sampling may be required to uncover any hidden hazardous materials. This type of survey is required when hazardous materials are suspected to be present and the scope of work should be utilized to inform the extent of the required testing.

The final type of survey is the pre-demolition survey which is an investigation done prior to a building or structure slated for complete demolition. This type of survey is also required prior to any demolition work occurring.

IV. Types of Hazardous Materials

A. Lead-based paint requirements

The following are requirements and additional information regarding lead-based paint testing and remediation per the CT DPH.

If during a Phase I ESA, a CT LEP identifies defective paint in a pre-1978 residential dwelling, a comprehensive lead inspection shall be conducted during Phase II ESA testing. During the Phase II ESA, since defective paint was identified in a pre-1978 residential dwelling, a comprehensive lead inspection shall be conducted by a CT DPH licensed lead consultant. The comprehensive lead inspection will test all painted surfaces on the interior/exterior of the unit, as well as common areas. In addition, dust, water and soil (only bare soil areas) shall be tested.

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The CT DPH licensed lead consultant should provide the owner's CT LEP with a lead inspection report summarizing the lead hazard findings.

If there is a child under the age of six years old in residence:

1. The CT DPH licensed lead consultant shall report their findings to CT DPH and the local director of health;
2. This will then trigger the CT Lead Poisoning Prevention Program regulations;
3. The local director of health will issue an order letter to the property owner for all lead hazards to be abated;
4. All defective lead surfaces must be abated by a CT DPH licensed lead abatement contractor;
5. Before abatement work begins, the property owner (or the CT LEP/third party firm) must submit a lead abatement plan (describing how all lead hazards and defective lead-based paint surfaces will be abated) and a lead management plan (a plan identifying all lead-based paint that is intact which will be checked by the property owner on a regular basis to ensure it remains intact) to the local health department for their approval, the plans must be written by a CT DPH licensed lead consultant who employs a CT DPH certified program planner designer;
6. Once the abatement plan is approved, lead abatement work can begin;
7. The CT DPH licensed lead abatement contractor must employ a CT DPH certified lead abatement supervisor to oversee the lead abatement work which must be performed by CT DPH certified lead abatement workers;
8. Before abatement work begins, the property owner must notify the residents 5 days in advance, as this ensures that they are safely relocated;
9. When abatement is complete, clearance dust wipes must be taken by a CT DPH licensed lead consultant;
10. Once clearance dust wipes pass, the local health department must conduct a visual assessment of the property to ensure compliance with the abatement plan; and,
11. The local health department will then issue a letter of compliance to the property owner.

If there is no child under the age of six years old in residence:

1. The property owner or the CT LEP/third party firm must hire an EPA renovation, repair and painting (RRP) certified firm to make all defective lead-based surfaces intact or as alternative, the property owner or the CT LEP/third party firm may hire a CT DPH licensed and certified lead professionals to perform lead abatement;
2. Before work begins, the property owner or the CT LEP/third party firm must complete a lead hazard remediation plan describing how all lead hazards and defective lead-based paint surfaces will be corrected. A lead management plan identifying all lead-based paint that is intact will need to be created. This plan will be checked by the property owner on a regular basis to ensure it remains intact. A CT LEP/third party firm will approve. (A director of health does not need to approve these

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plans as there are no children under the age of six years old in residence);

3. Once the lead hazard remediation plan is approved, lead remediation can begin;
4. The EPA RRP certified firm must employ at least one EPA certified renovator (who oversees the work, completes necessary paperwork and teaches other workers how to do job specific tasks;
5. When remediation is complete, clearance dust wipes must be taken by a CT DPH licensed lead consultant; and,
6. Once clearance dust wipes pass, the CT LEP/third party firm, should conduct a visual assessment of the property to ensure compliance with the remediation plan.

The following templates are available through the CT DPH:

1. Lead remediation template;
2. Lead abatement plan template;
3. Lead management plan template;
4. Checklist for lead abatement projects; and,
5. Checklist for lead-safe projects.

B. Asbestos

All current, applicable federal, state and local laws and regulations shall be followed. An asbestos renovation impact survey is an investigation of any asbestos containing building materials when a structure will be undergoing a renovation or rehabilitation. In this survey, destructive sampling may be required to uncover any hidden asbestos. This type of survey is required when hazardous materials are suspected to be present and the scope of work should be utilized to inform the extent of the required testing.

An asbestos pre-demolition survey shall be done prior to a building or structure slated for complete demolition. This type of survey is also required prior to any demolition work occurring. It is recommended that a licensed asbestos inspector or consultant be included as part of the project team to oversee and advise on any issues related to asbestos documentation and/or abatement.

C. Radon

Provide radon testing of properties where buildings will be used for residential occupancy. In the case of multiple buildings within a development, all ground level residential units shall be tested in each building; however more testing may be required given the number of buildings and apartments within a development.

If radon levels in existing buildings exceed the EPA Action Guideline of 4.0 pCi/L, or if reliable testing results are not possible, as in the cases of gut rehabs and new construction, a passive Radon Mitigation System (including attic electrical hook-ups for in-line booster fans) will need to be designed, incorporated into the drawings and specifications and installed in the project.

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Upon completion of construction, but prior to occupancy, radon testing shall be performed, and test results shall be submitted to CHFA for review. If radon test results remain above the EPA Action Guideline of 4 pCi/L, passives systems shall be made active by mechanical/electrical means, and follow-up testing results shall be submitted for review.

D. Other Environmental Concerns

Environmental surveys should also be performed for each of the following environmental concerns based on the date building construction, and/or other specific issues related to the development.

- a. Mold;
- b. Urea formaldehyde insulation (UFFI);
- c. Polychlorinated biphenyls (PCBs) / PCBs in soil;
- d. Drinking water/piping systems;
- e. Flood classification and/or flood zone;
- f. Wetland classification and designated areas; and,
- g. Lead in soil.

E. Abatement and Mitigation

Design and construction documents (drawings and specifications) shall incorporate work necessary to mitigate environmental concerns identified by CHFA and the owner's consultants unless these concerns are addressed prior to construction start and are outside the limits of the construction documents. Mitigation methods shall be in accordance with a plan prepared in conformance with applicable state and federal regulations and accepted by CHFA.

F. Environmental Attorney

The owner's environmental attorney needs to confirm review of environmental reports prepared by consultants to insure that all applicable environmental regulations specific to the property will be met, including an opinion regarding the applicability of the CT Transfer Act and whether the site meets the definition of an "Establishment" per the Act. The opinion-statement from the owner's environmental attorney will be required prior to initial closing.

G. Abatement/Remediation Costs

Upon completion of all testing, and the determination of the scope of possible abatement and/or remediation work, cost information shall be submitted for review. Costs for testing and abatement should be included in the project cost summary and exploded trade payment breakdown on the appropriate individual line items of Testing and Environmental.

H. Hazardous Material Notification Clause

In all developments involving demolition or rehabilitation, specifications shall be written to include the following:

"In carrying out the work of this contract, should the contractor encounter asbestos or other toxic materials the contractor shall:

1. *Notify all parties to this contract;*

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2. *Notify applicable State and local authorities; and (if the cleanup is to be carried out under the direction of the contractor);*
3. *Make application for permits necessary for removal (or other methods of mitigating the potential harmful effects) of such materials; and,*
4. *Upon receipt of required permits mitigate potential harmful effects of such materials in accordance with permits and applicable codes and laws."*

If the contractor is not to be responsible for mitigation, the sponsor/developer/owner shall carry out mitigation in accordance with the requirements as stated above.

III. Remediation/Re-use of Existing Brownfield Sites

The re-use and redevelopment of abandoned or underutilized commercial and industrial sites, is encouraged where redevelopment and re-use has not occurred due to the presence or potential presence of pollution in the buildings, soil and/or groundwater, which requires remediation before, or in conjunction with, the restoration, redevelopment and re-use of the property.

A Phase I ESA is required and most likely, a Phase II and III would also be needed as well as a Remediation Action Plan (RAP). After the site investigations and subsequent reports, the developer, contractor, environmental consultant and architect shall estimate the costs necessary to remove the contamination, provide the appropriate environmental remediation and restore the property to a "buildable" site.

The "soft costs" portion of the pro forma for the development shall include an additional contingency for the necessary removal of unforeseen underground debris, environmental remediation and site restoration, as may be determined during the course of normal construction activities.

Building materials, components, fabrications, assemblies and equipment for all proposed development projects – rehabilitations and new construction – should comply with the applicable sections of the current "Multifamily Design, Construction and Sustainability Standards-CHFA" (the Standards). The "Construction Guidelines: Project Planning & Technical Services Review" and the Standards define the design process and the specific recommendations for multifamily housing financed through CHFA. All applicants should strive to meet the Standards and Guidelines, must comply with CHFA Procedures and the requirements of the CHFA/DOH Consolidated Application and all current federal, state & local environmental laws & regulations.



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Connecticut Housing Finance Authority

Construction Guidelines:
Energy Conservation

2016

These Guidelines are effective June 1, 2016

Construction Guidelines: Energy Conservation

June 2016

I. Energy Conservation Guidelines

Energy efficiency is strongly encouraged. An objective of CHFA is to maximize energy conservation in all developments. These Construction Guidelines: Energy Conservation outline the energy conservation recommendations for developments funded through CHFA, and are intended to provide guidance for energy efficiency project planning, CHFA technical review and for procurement of energy conservation-related financial incentives through the utility companies.

A. Energy Efficiency

CHFA requires “beyond code” thermal efficiency and energy conservation measures in all developments. Development teams must prepare and submit an energy conservation plan with the CHFA/DOH Consolidated Application. The energy conservation plan must provide information that takes into consideration pre-development testing and energy audits of existing buildings for minor, moderate or substantial rehabilitations, and pre-development energy modeling for rehabilitation projects and new construction. An energy conservation form for submitting energy use and conservation data is included in the current Consolidated Application, and detailed energy conservation plan requirements are outlined in Section II noted below.

1. Information regarding local, state and federal incentives for renewable energy may be found through Energize CT, the Connecticut Energy Efficiency Fund (CEEF), Eversource, United Illuminating Company (UI), Connecticut Natural Gas (CNG), Southern Connecticut Gas (SCG), CT Green Bank, and the Database of State Incentives for Renewables and Efficiency (DSIRE).
2. For new and substantial rehabilitation projects, and equipment replacement the above noted companies may be able to provide technical assistance with no- or low-cost design, construction and post-construction and occupancy evaluation services, and/or financial incentives to mitigate the fees for such services by third-party energy consultants, such as:
 - a. Custom and prescriptive incentives for installing energy-saving measures;
 - b. Energy assessment services concerning building envelope components, lighting systems, building controls systems, Heating, Ventilation, and Air Conditioning (HVAC) systems, and maintenance and operations processes;
 - c. Energy assessment services concerning blower-door testing (air leaks), air sealing, ductwork testing, hot water saving measures, and insulation evaluation;
 - d. Financial incentives for purchasing and installing energy efficient equipment;
 - e. Financial incentives for repairs and replacement, including Energy Management System maintenance
 - f. Technical, engineering and implementation retro-commissioning support;
 - g. Financial incentives for energy-saving improvements such as boiler optimization and demand ventilation; and,
 - h. Funds for qualified financial incentives can be committed to a project at the Design Development phase.
3. Information regarding financial incentives that may be available through local utility companies can be found on the [Energize CT website](#). [Energize CT Residential New Construction Program](#), provides information and lists descriptions of eligible energy conservation measures, the potential financial incentives that are available, and the requirements necessary to earn the incentives.

B. Energy Efficiency Analysis

Energy Efficiency (EE) projects can save energy by altering behavior, timing, technology and systems. These include increased resident awareness through informational outreach, building control and energy management systems, building system upgrades, such as building envelope, lighting, ventilation and HVAC equipment, motors and drives, and potential Renewable Energy (RE) system retro-fit opportunities, such as geo-thermal, solar hot water and solar generation.

1. Energy Audit: Energy Audit is a term for a broad spectrum of energy studies ranging from a quick walk-through of a facility to identify major problem areas to a comprehensive analysis of the implications of alternative energy efficiency measures sufficient to satisfy the financial criteria of sophisticated investors. The main issues to be addressed by Energy Audits include:
 - a. An analysis of building and utility data, including study of the installed equipment, and energy bills;
 - b. A survey of the real operating conditions;
 - c. An understanding of building behavior and the interactions with weather, occupancy and operating schedules;
 - d. Selection and the evaluation of energy conservation measures;
 - e. An estimation of energy saving potential; and,
 - f. Identification of customer concerns and needs.

2. Identifying EE Improvements: Energy Audits must address owner questions regarding the benefits of EE improvements, such as whether to repair or replace equipment and materials, how much energy use and cost would be reduced (typically 10% - 40%), what the costs to implement the changes would be, whether the proposed initiatives would qualify incentives and/or rebates, and what return on investment (ROI) and property value increase might be realized. The results of the Energy Audit must include recommendations for EE upgrades, increased owner understanding of EE technologies, incentives and regulations, preparation for future incentive programs and progress toward pending mandates or regulations. Typical Energy Audit formats include the following:
 - a. Executive Summary;
 - b. Existing Facility Description;
 - c. HVAC and Mechanical Systems;
 - d. Lighting;
 - e. Building Envelope;
 - f. Utility Analysis;
 - g. Renewable Energy Options;
 - h. ENERGY STAR Potential;
 - i. Available Incentives; and,
 - j. Additional Benefits and Next Steps

3. Criteria for Auditors and Energy Audits: Qualified professionals should be retained to perform all energy audits. Individuals who perform energy audits have a professional engineer's license in the State of Connecticut, or be a certified auditor/assessor/rater by the Association of Energy Engineers as a Certified Energy Manager (CEM), Building Performance Institute (BPI), Residential Energy Services Network Home Energy Ratings Systems (RESNET HERS) or ENERGY STAR. Recommended criteria for the selection of a qualified auditor/assessor/rater include:
 - a. Firms offering energy audits must provide documentation of the qualifications of the individual performing the audit;
 - b. Auditors must indicate any special training or qualifications related to energy efficiency;
 - c. Auditors must indicate any limitations or restrictions in their scope of services; and,
 - d. Auditors must disclose if they have any affiliations with equipment manufacturers, vendors, distributors, installation contractors, or energy services contractors (ESCOs).

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4. Energy Audit Types/Levels: Common types/levels of energy audits are distinguished below, although the actual tasks performed and level of effort may vary with the consultant providing services under these broad headings. The only way to ensure that a proposed audit will meet your specific needs is to spell out those requirements in a detailed scope of work. Taking the time to prepare a formal solicitation will also assure the building owner of receiving competitive and comparable proposals. The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) has defined three progressive levels of energy audits: *Note: CHFA recommends a minimum Level 2 energy audit for all funding applications.*
 - a. Level 1 – Walk-through analysis/preliminary audit: Preliminary analysis made to assess building energy efficiency to identify not only simple and low-cost improvements but also a list of energy efficiency measures (EEMs) to orient the future detailed audit. This inspection is based on interviews with site personnel, visual verifications, study of installed equipment and operating data and a detailed analysis of recorded energy consumption. A Level 1 audit is intended to help understand where the building performs relative to its peers, establish a baseline for measuring improvements, decide whether further evaluation is warranted, and if so, where and how to focus that effort. The Level 1 also will outline the range of potential financial incentives available from federal, state, local, and utility sources.
 - b. Level 2 – Energy survey and analysis: Based on the results of the pre-audit, this type of energy audit consists of an energy use survey in order to provide a comprehensive analysis of the studied installation, a more detailed analysis of the facility, a breakdown of the energy use and a first quantitative evaluation of the EEMs selected to correct the defects or improve the existing installation. This level of analysis can involve advanced on-site measurements and sophisticated computer based simulation tools to evaluate precisely the selected energy retrofits. Building energy systems are evaluated in detail to define a variety of potential energy-efficiency improvements. This must include the building envelope, lighting, HVAC, Domestic Hot Water (DHW) and plug loads. This study starts with a detailed analysis of energy consumption to quantify base loads, seasonal variation, and effective energy costs, and includes an evaluation of lighting, air quality, temperature, ventilation, humidity, and other conditions that may affect energy performance and occupant comfort. The process also includes detailed discussions with the building ownership, management, and residents to explore potential problem areas, and clarify financial and non-financial goals of the program. The Level 2 audit must result in a clear and concise report to the owner and management team describing a variety of EEMs, including no- and low-cost measures, modifications to system controls and building automation, operational changes, and potential capital upgrades. The findings must include general costs and performance metrics, as well as a means for the owner to evaluate the EEMs and decide how to proceed with implementation.
 - c. Level 3 – Detailed analysis of capital-intensive modifications focusing on potential costly EEMs: This type of “investment-grade” audit provides the Owner a much more thorough and detailed understanding of the benefits, costs, and performance expectations of undertaking the system upgrades or retrofits identified by the Level 2 audit that require significant investments of capital. The ASHRAE Level-3 audit focuses on a whole-building computer simulation, where a computer program is used to very accurately model the way the brick-and-mortar building would respond to changes in the energy systems, whether those are major HVAC retrofits or architectural modifications to walls, windows, and roof. A Level 3 audit involves much more detailed data, which is used to calibrate a computer model of the facility, so that proposed changes to energy systems can be simulated with very accurate results. Combining a Level 3 audit with construction-grade cost estimating supports informed investment decisions.

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C. Typical EE Project Process

1. Initial Assessment: Energy consultants discuss goals (such as ENERGY STAR Certification) and potential EE/RE opportunities with owners and property managers;
2. Energy Audit: Energy consultants perform a building study and present recommendations, including possible utility incentives and rebates
Note: CHFA recommends a minimum sample of residential energy use information from 10% of the units, and at least one of each unit type (number of bedrooms), to be used to estimate the total residential energy usage. However, in order to obtain the most accurate Energy Audit results, current energy usage information for the residential portions of buildings should include data from as many dwelling units as possible. In developments where the residents pay for their own utilities, individual lessees will have to agree to provide such information. Owners of all developments are strongly encouraged to draft a lease rider, which permits such information to be obtained directly from the utility companies;
3. Solution Design: Energy consultants develop a scope of work for competitive bid;
4. Project Finance: Energy consultants and owners compare available options and secure funding, including utility incentives and rebates;
5. Competitive Procurement: Energy consultants solicit and analyze bids; owners sign construction and incentive contracts;
6. Installation: Energy consultants provide field observation and construction contract administration;
7. Incentives Acquisition: Energy consultants provide required test results, reports and certificates to the utilities for release of incentives and rebates; and,
8. Post-project: Energy consultants and owners may pursue ENERGY STAR certification.

II. Energy Conservation Plan

The Development team must prepare and submit an energy conservation plan with the design development submission, which takes into consideration pre-development testing and energy audits of existing buildings for minor, moderate or substantial rehabilitations, and/or pre-development energy modeling for rehabilitation projects and new construction, prepared by a professional engineer and/or BPI, RESNET HERS- or ENERGY STAR-certified assessors/raters. An energy conservation form for submitting energy use and conservation data is included in the current CHFA/DOH Consolidated Application (Exhibit 4.8.e – Energy Conservation plan).

Note: If tenants are responsible for utility costs, and usage information for all units is not currently tracked, a minimum sample of information for 10% of the units, and one of each unit type (number of bedrooms), may be used to estimate the total residential usage.

A. Rehabilitation Project Definitions

1. Minor Rehabilitation: Construction renovations to existing buildings, consisting of items such as: kitchen cabinet replacement; bathroom vanity replacement; new wall, ceiling and floor finishes in kitchens and bathrooms; A/C unit and sleeve replacement, etc.

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2. Moderate Rehabilitation: Construction renovations to existing buildings, consisting of items such as: kitchen cabinet replacement; bathroom vanity replacement; new wall, ceiling and floor finishes in kitchens, bathrooms and various other rooms in each apartment; exterior door replacement; exterior window replacement; roof replacement; exterior siding repair or replacement; new hot water heaters; hot water boilers; A/C unit and sleeve replacement; electrical service upgrade, etc.
3. Substantial Rehabilitation: Construction renovations to existing buildings, consisting of all items listed for moderate rehabilitation above, and the inclusion of up to 50% of the items listed for gut rehabilitation below.
4. Gut Rehabilitation: Construction alterations and renovations to existing buildings, consisting of complete removal, replacement or reconfiguration of: interior partitions and walls; ceiling and floor finishes; replacement of all interior doors and frames; replacement of building mechanical and electrical systems; modifications to existing structure and exterior wall systems, including window and exterior door replacements and new building insulation; replacement of existing roof system(s); replacement of all interior kitchen cabinets and bathroom vanities; painting of all rooms in each apartment and common areas, etc.

B. Energy Use and Conservation Data for Minor, Moderate or Substantial Rehabilitations

If the application is for the minor, moderate or substantial rehabilitation of existing buildings, as defined below, the energy conservation plan must include the following information:

1. A summary of all energy performance-related improvements included in the overall scope of proposed work, and information regarding the applicant's efforts to secure other energy efficiency-related funding partners, and/or government-/utility-sponsored incentive commitments.
2. Provide:
 - a. Total Current Energy Use for the past twelve months in MMBTU;
 - b. Total Projected Annual Energy Use in MMBTU;
 - c. Projected Reduction in Annual Energy Use in Percent;
 - d. Cost of Energy Performance-related Improvements in Dollars; and,
 - e. Projected Payback Period (Cost/Benefit Analysis) in Years.

C. Energy Conservation Data for Gut Rehabilitations and New Construction

If the application is for the gut rehabilitation of existing buildings, or for new construction, the Energy Conservation Plan must include the following information:

1. A summary of all energy performance-related assemblies and equipment included in the overall scope of proposed work, and information regarding the applicant's efforts to secure other energy efficiency-related funding partners, and/or government-/utility-sponsored incentive commitments.

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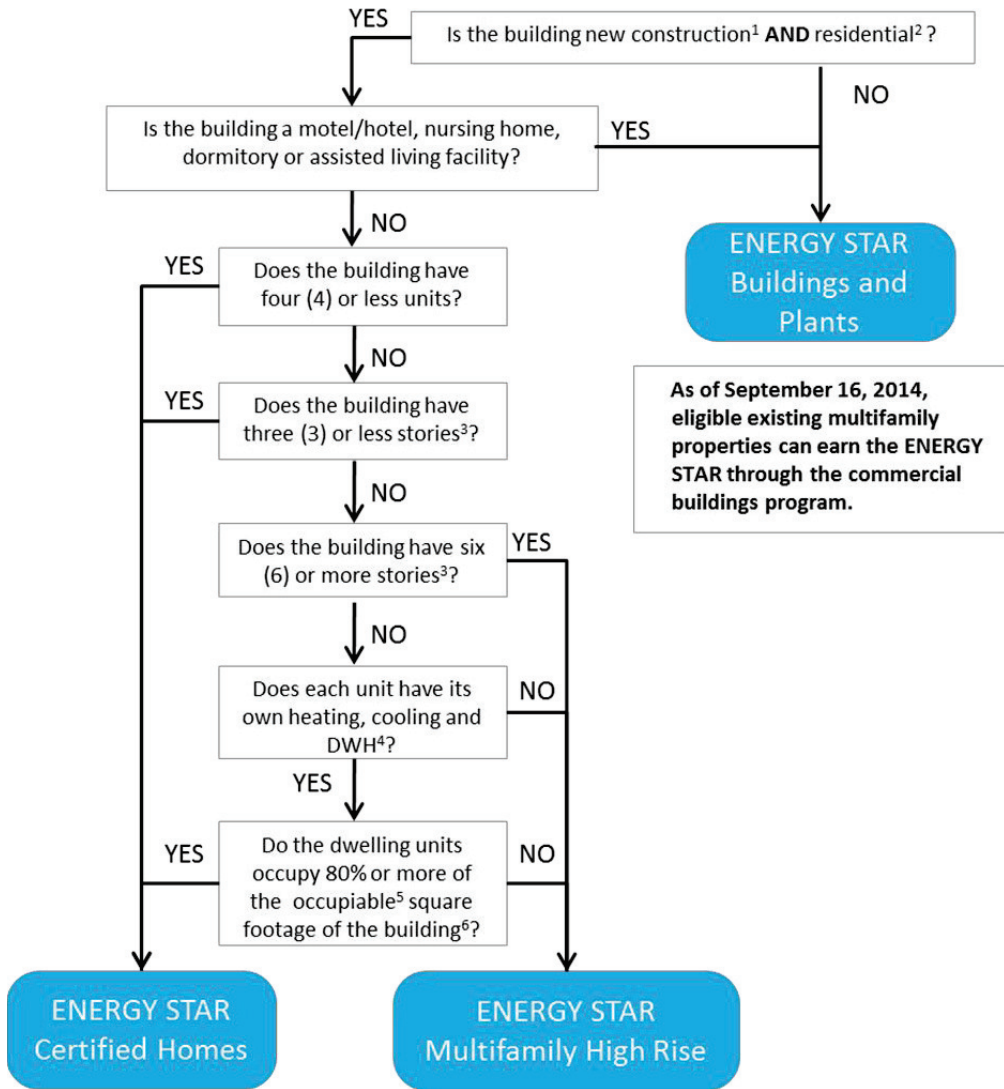
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2. Details related to HERS Index such as:
 - a. Based on the ENERGY STAR Qualified Home Version 3.1HERS Index Target Procedure, the projected ENERGY STAR HERS Index Target for the project and the proposed HERS Index for the project (\leq ENERGY STAR HERS Index Target)
– **or** –
An indication that the applicant intends to adhere to the ENERGY STAR Qualified Home Version 3.1 Prescriptive Path
 - b. Based on ENERGY STAR MFHR Version 1.2 Program (as determined by the ENERGY STAR Multifamily New Construction Program Decision Tree), the Energy Conservation Plan must demonstrate \geq 15% annual energy cost savings over ASHRAE 90.1-2007 Standards requirements
– **or** –
An indication that the applicant intends to adhere to the ENERGY STAR MFHR Version 1.2 Prescriptive Path
3. Professional Engineer and/or Certified Assessor/Rater Information: The Energy Conservation Plan must include the following information:
 - a. Energy Consultant Name/Title;
 - b. Firm Name/Address;
 - c. Email Address; and,
 - d. Telephone Number.

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D. ENERGY STAR Multifamily New Construction Decision Tree, Version 1.2



NOTES:

¹ New construction can include significant gut rehabilitations when defined as a change of use, reconstruction of a vacant structure, or when construction work requires that the building be out of service for at least 30 consecutive days.

² The primary use of the building must be for residential purpose, i.e. the residential and residential associated common area must occupy more than 50% of the building's occupiable⁵ square footage. A garage is not considered 'occupiable'. Common area includes any spaces within the building that serves a function in support of the residential part of the building that is not part of a dwelling unit. This includes spaces used by residents, such as corridors, stairs, lobbies, laundry rooms, exercise rooms, and residential recreation rooms. This also includes offices used by building management, administration or maintenance and all special use areas located in the building to serve and support the residents such as day-care facilities, gyms, dining halls, etc.

³ A story includes any above-grade floor with living or commercial space. An above-grade story is one for which more than half of the gross surface area of the exterior walls is above-grade. A floor that is 80% or more garage or other unoccupiable space is not considered a story for the purposes of this decision tree.

⁴ Four (4) and five (5) story buildings with in-unit heating and cooling and a central domestic hot water system where solar energy provides at least 50% of the domestic hot water needs for the residential units, will qualify through the ENERGY STAR Certified Homes program as long as all other eligibility requirements of that program are met.

⁵ Per ASHRAE 62.2-2010, occupiable space is any enclosed space inside the pressure boundary and intended for human activities or continual human occupancy, including, but not limited to, areas used for living, sleeping, dining, and cooking, toilets, closets, halls, storage and utility areas, and laundry areas.

⁶ For mixed-use buildings, exclude the retail/commercial area when determining the square footage of the "building".

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E. CHFA/CEEF Energy Incentive Process

To assist development funding applicants in obtaining financial incentives for energy efficiency measures, a coordinated outline of the CHFA project planning, design, and construction process, with the CEEF process for awarding energy incentives through the electric utilities serving the State of Connecticut is as follows:

CHFA	Utilities
Pre-Design Phase	Pre-Design Phase
<p>Minor, Moderate and Substantial Rehab Projects: Owner/Developer commissions a Capital Needs Assessment (CNA) report, including a comprehensive energy assessment, in accordance with CHFA CNA requirements, in order to assess the physical condition and energy efficiency of the existing facilities, to determine the scope and budget for the proposed rehabilitation, and to establish a 20-year life-cycle replacement budget</p> <p>Gut Rehab Projects: Owner/Developer commissions a Structural Needs Assessment report in accordance with CHFA requirements</p>	<p>Development Team Kick-off Meeting with CEEF Program Administrator to review available programs and incentives</p>
Design Phase	Design Phase
<p>All Rehab and New Construction Projects: Owner/Developer commissions Architect/Engineers to design project in compliance with the Multifamily Design, Construction and Sustainability Standards (“the Standards”)</p> <p>Owner/Developer submits minimum 40% complete Construction Drawings and Specifications (CDs), Energy Conservation Plan and CEEF preliminary estimate of energy incentives with the CHFA/DOH Consolidated Application</p> <p>If eligible for funding, CHFA issues a Commitment Letter</p>	<p>Architect/Engineers design qualifying EE measures into the project; CEEF Program Administrator reviews CDs for qualifying measures and provides a preliminary estimate of energy incentives</p>
<p>Architect/Engineers complete CDs; EE measures are fully modeled/detailed/specified</p>	<p>Architect/Engineers complete CDs; EE measures are fully modeled/detailed/specified</p>
<p>Development Team submits 100% CDs (hard copy) to CHFA - Tech Services reviews for compliance with the Standards</p>	<p>Owner Developer submits 100% complete CDs (.pdf or hard copy) to CEEF Program Administrator - CEEF Program Administrator reviews plans for qualifying measures</p>
<p>Tech Services may request additional information from the Architect/Engineer</p>	<p>CEEF Program Administrator may request additional information from the Architect/Engineer</p>
<p>Tech Services accepts CDs for Initial Closing - Qualifying EE measures are identified - Development Team identifies project betterments to balance EE incentive funds</p>	<p>Utility creates a Letter of Agreement (LOA) with incentive amounts, energy savings details and verification requirements</p>
<p>CHFA Initial Closing</p>	<p>LOA is signed by Utility Management and Owner/Developer - Incentive dollars are earmarked specifically for the project</p>
<p>Tech Services Pre-Construction Meeting with Development Team - EE measures/incentive tracking requirements confirmed with Owner/Developer, Architect/Engineers/Energy Professionals & GC</p>	

Construction Guidelines: Energy Conservation

June 2016

<u>CHFA</u>	<u>Utilities</u>
Construction Phase	Construction Phase
CHFA Field Observation - EE measure/incentive tracking by Owner/Developer, Architect/Engineers & GC	EE measure verification inspections/testing by HERS rater/utility staff
Project betterments implemented to balance sources and uses	Verification paperwork and other required data are submitted for utility staff review
Owner/Developer submits verification paperwork with other required information for CHFA Final Closing	Upon completion of review, project is processed for payment (larger projects can be paid in phases)
CHFA Final Closing	

Building materials, components, fabrications, assemblies and equipment for all proposed development projects – rehabilitations and new construction – shall strive to comply with the applicable sections of the current “Multifamily Design, Construction and Sustainability Standards – CHFA” (the Standards). In conjunction with the Standards, CHFA has developed a series of “Construction Guidelines” to further assist development teams through the application, planning, design and review process. The CHFA “Construction Guidelines: Project Planning & Technical Services Review” and the Standards define and the specific design recommendations and review process for multifamily housing financed.