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Report of Findings and Analysis

Partial Change of Occupancy Classification(s)

**Francis E. Korn Elementary School
144 Pickett Lane, Durham Connecticut**

Executive Summary

The following is an analysis of the requirements within the *2018 Connecticut State Building Code* [CSBC], the *2018 Connecticut Fire Safety Code* [CFSC] and the *2018 Connecticut State Fire Prevention Code* [CFPC] as they apply to a partial change of occupancy classification and associated alterations.

This analysis has been conducted at the request of Laura L. Francis, Town of Durham First Selectperson, 30 Town House Road, Durham, Connecticut.

Synopsis

The existing single story building has been occupied as an elementary school. It is proposed that the educational classrooms be repurposed for Town use as meeting rooms, town offices, recreation programs (youth, adult, senior), senior congregate lunches, exercise classes (adult and senior), and civic organizations. Refer to Existing and Proposed Occupancy/Use Configuration schematics at the end of this report on Pages 20 and 21.

The existing portions of the building used as assembly, administrative offices, and associated toilet rooms, storage rooms and utility areas remain unchanged.

Located adjacent the main school building is a separate one-story “portable classroom” building.

Building Description

Main School Building.

The existing building is a circa 1963 one-story above grade structure of unprotected noncombustible (II-B) construction. The building is approximately 29,823 square feet in area and was most recently occupied as an elementary school containing classrooms, assembly spaces (cafeteria w/associated kitchen, media center, and a gymnasium/auditorium), administrative offices and associated toilet rooms, storage rooms and utility areas.

The building is not fully sprinklered. Sprinkler protection is limited to storage rooms, janitor's closets, boiler and other mechanical rooms, electrical rooms, and the kiln room. The building is equipped with a fire alarm system providing audible and visible occupant notification.

Portable Classroom Building.

The "portable classroom" building is a circa 2000 one-story above grade structure of unprotected wood-frame (V-B) construction. The building is approximately 1,850 square feet in area and contains two classrooms. The building is separated from the main school building by a distance of 20'-6", however it is connected to the main building by a covered walkway constructed of wood.

Regulatory Approach

As required by CSBC Section 101.4.7 and permitted by CFSC Part III Section 101.1.3, the *2015 International Existing Building Code [IEBC]* amended by the *2018 Connecticut Amendments* has been used to evaluate this partial change of occupancy classification.

In accordance with IEBC Sections 1001.2.2.1 and 1012.1.1.1 where a portion of an existing building is changed to a new occupancy classification and that portion is not separated from the remainder of the building with fire barriers having a fire-resistance rating as required by the Building Code ¹, the entire building shall comply with all of the requirements of IEBC Chapter 9 applied throughout the building for the most restrictive occupancy classification within the building as well as the requirements of IEBC Chapter 10.

¹ CSBC Table 508.4 requires walls separating Assembly and Business occupancies have at least a 2-hour fire resistance rating in buildings not protected throughout by an automatic fire sprinkler system.

See detailed analyses specific to each building in attached Addendums 1 and 2 – Pages 4 and 13.

Findings

Main School Building.

Continued use of the Gymnasium/Auditorium, Cafeteria & associated kitchen, Media Center is permitted.

Portions of the building currently containing classrooms and classified as educational occupancy can be reclassified as a Business occupancy to accommodate Town use as meeting rooms, town offices, recreation programs (youth, adult, senior), senior congregate lunches, exercise classes (adult and senior), and civic organizations.

CSBC Section 303.1.2 will permit one or more existing classrooms to be used for assembly purposes provided the occupant load of the room does not exceed 49 persons. The Code classifies this use as a small assembly space and considers the room to be part of the business occupancy.

Introduction of new assembly spaces consisting 750 square feet and greater or occupancy by 50 or more persons constitute a new Assembly Occupancy and will require the installation of an automatic fire sprinkler system throughout the building due to the 12,000 square foot fire area thresholds of CSBC/CFSC Section 903.2.1.3.

In addition, the Code will permit portions of the building to be used as a Group S-2 low-hazard storage occupancy. Refer to Addendum 2 Page 13 for a detailed description of S-1 moderate hazard and S-2 low hazard storage occupancies and contents.

The Art room can be used for the storage of combustible items (S-1 moderate hazard storage) since the walls and door separating the room from other portions of the building satisfy the 1-hour fire rated separation requirement for incidental use areas and the area of the room is less than 10-percent of the buildings floor in accordance with CSBC Sections 509 and CFSC Section 420. Other existing storage rooms that are protected by the sprinkler system can also be used for combustible items (S-1 moderate hazard storage). Note that the 10-percent floor area limitation is applicable to the aggregate of all S-1 storerooms.

Installation of a sprinkler system throughout the building affords greater flexibility in the introduction of other occupancies such as day-care facilities.

Feel free to contact me should you have any questions or comments.


Electronically signed

Addendum 1

Main School Building Partial Change of Occupancy Classification

Existing Educational to Business and S-2 Low Hazard Storage

As required by CSBC Section 101.4.7 and permitted by CFSC Part III Section 101.1.3, the *2015 International Existing Building Code* [IEBC] amended by the *2018 Connecticut Amendments* has been used to evaluate this partial change of occupancy classification.

In accordance with IEBC Sections 1001.2.2.1 and 1012.1.1.1 where a portion of an existing building is changed to a new occupancy classification and the portion undergoing the change is not separated from the remainder of the building with fire barriers having a fire-resistance rating as required by the Building Code, the entire building shall comply with all of the requirements of IEBC Chapter 9 applied throughout the building for the most restrictive occupancy classification within the building as well as the requirements of IEBC Chapter 10. Due to the interior walls not satisfying the fire resistance ratings required by Table 508.4 – Required Separation of Occupancies of the separation of Assembly, Business and S-2 Low hazard occupancies.

A separate analysis has been performed to document compliant use of the portable classroom building as an S-1 Moderate Hazard Storage Occupancy since many of the items identified by the Town do not fall within the S-2 low hazard classification and the quantities of S-1 items to be stored may exceed the capacity of the currently sprinklered storage rooms and the Art room that meet the requirements for Incidental Use Areas. More S-1 Storage areas can be created if the building were to be fully sprinklered or just rooms dedicated to S-1 storage.

S-1 storage rooms can be in the A/ B/ S-2 when treated as incidental use areas when separated from other portions of the building by 1-hour fire barriers and provided the aggregate area of these rooms does not exceed 10-percent of the building's floor area. [IEBC Section 1002.1 Item 8, CSBC Section 509, and CFSC Part III Section 430] Refer to the Building Construction portion of this Addendum below.

In accordance with IEBC Section 1012.1.3, the partial change of occupancy classification is based on the relative degree of hazard between different occupancy classifications as determined in accordance with the categories specified in Tables 1012.4, 1012.5 and 1012.6.

The evaluation determined that the change from an E - Educational occupancy to a B - Business occupancy and/or S-2 – Low hazard storage occupancy results in a change to a lesser hazard in IEBC Table 1012.4 – Life Safety and Exits and IEBC Table 1012.5 – Heights and Areas, and an equal hazard in IEBC Table 1012.6 – Exposure of Exterior Walls as shown below

TABLE 1012.4 HAZARD CATEGORIES AND CLASSIFICATIONS: Life Safety and Exits	
Relative Hazard	Occupancy Classification
1 (Highest Hazard)	H
2	I-2, I-3, I-4
3	A, E , I-1, M, R-1, R-2, R-4
4	B , F-1, R-3, S-1
5 (Lowest Hazard)	F-2, S-2 , U

In accordance with IEBC Section 1012.4.2 a change of occupancy is made to an equal or lesser hazard category (higher number) as shown in Table 1012.4, existing elements of the means of egress shall comply with the requirements in Part IV of the 2018 CFSC as permitted by Sections 905, 805.2, and 101.10. Newly constructed or configured means of egress shall comply with the requirements of Chapter 10 of the Connecticut State Building Code and Fire Safety Code Part III. Refer to the Means of Egress portion of this Addendum below.

TABLE 1012.5 HAZARD CATEGORIES AND CLASSIFICATIONS: Heights and Areas	
Relative Hazard	Occupancy Classification
1 (Highest Hazard)	H
2	A-1, A-2, A-3, A-4, I, R-1, R-2, R-4
3	E , F-1, S-1, M
4 (Lowest Hazard)	B , F-2, S-2 , A-5, R-3, U

In accordance with IEBC Section 1012.5.2 a change of occupancy is made to an equal or lesser hazard category as shown in Table 1012.5, the height and area of the existing building shall be deemed acceptable.

TABLE 1012.6

HAZARD CATEGORIES AND CLASSIFICATIONS: Exposure of Exterior Walls	
Relative Hazard	Occupancy Classification
1 (Highest Hazard)	H
2	F-1, M, S-1
3	A, B , E , I, R
4 (Lowest Hazard)	F-2, S-2 , U

In accordance with IEBC Section 1012.6.2 012.6.2 a change of occupancy is made to an equal or lesser hazard category as shown in Table 1012.6, existing exterior walls, including openings, shall be accepted.

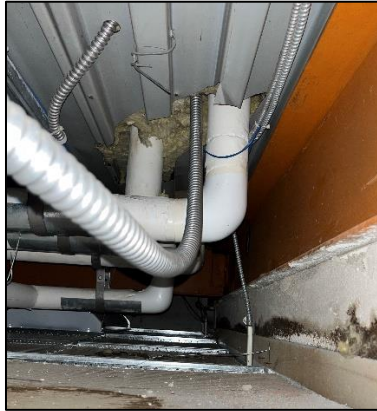
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 In accordance with Sections 1005, 1012.4.2, 905, and 805.2, the existing interior room and egress arrangements are permitted to continue in accordance with CFSC Part IV Section 39.2.4.3 Items (1) & (2) governing the number of means of egress in Existing Business Occupancies. This section permits a single exit for a room or area with a total occupant load of fewer than 100 persons, provided the exit discharges directly to the outside at the level of exit discharge and the total travel distance to the outside does not exceed 100 feet.

Building Construction

- Resultant the increased hazard associated with fire exposure to the main school building from the portable classrooms if used for S-1 storage, the exterior walls of the portable classroom building must satisfy the Building Code requirements for exterior walls based on fire separation between the two buildings. Refer to the Building Construction portion of Addendum 2. [IEBC Table 1012.6 & IEBC Section 1012.6.1]
- Based on the differing construction types of the two buildings, the covered wood walkway connecting the buildings must be removed to create separate buildings which allows each to be separately classified as to construction type versus the entire structure being reduced to the lesser construction type of V-B. [CSBC Section 503.1.2]



- Incidental Use Areas for S-1 Moderated hazard storage.
 - In existing storage rooms that are sprinkler protected, the walls enclosing the room must resist the passage of smoke by having the walls and steel beams extend tightly to the underside of the roof deck. All pipe or wire penetrations require sealing with a noncombustible caulk material. Room doors must be self-closing, positive latching, and not have louvers.
 - The Art room can be used for the storage of combustible items since the walls and door separating the room from other portions of the building satisfy the 1-hour fire rated separation requirement for incidental use areas and the area of the room is less than 10-percent of the buildings floor in accordance with CSBC Sections 509 and CFSC Section 420. Other existing storage rooms that are protected by the sprinkler system can also be used for combustible storage. Note that the 10-percent floor area limitation is applicable to the aggregate of all S-1 storerooms.
 - To create a new S-1 storeroom, the sprinkler system must be extended into the room, or the room must be separated from other portions of the building by 1-hour fire barriers. The walls between classrooms and those between classrooms and the corridor can be evaluated as having a 1-hour fire resistance rating. The concrete masonry unit (CMU) walls extend to the underside of a bare steel beam supporting the roof, which unfortunately affords no fire resistance. The fire resistance rating of the beam can be upgraded to 1-hour by the application of an intumescent paint coating, spray-on cementitious materials, or encasing the beam with a 1-hour metal stud/sheetrock assembly. All pipe or wire penetrations require sealing with a listed fire rated thru-penetration caulk or packing material. Additionally, the existing room/corridor must be changed to a 1-hour fire protection rated door assembly. No work need be performed on an exterior wall.



Fire Protection Systems

- An automatic fire sprinkler system is not required resultant the partial change of occupancy to Business and/or S-2 Low hazard storage. [IEBC Sections 1012.2.1 & 1004.1; CSBC & CFSC Part III Section 903.2]
- A manual fire alarm system is not required resultant the partial change of occupancy to Business and/or S-2 Low hazard storage. [IEBC Sections 1012.2.2 & 1004.1; CSBC & CFSC Part III Section 907.2]
- The existing fire alarm system is required to be maintained throughout the building as it is a requirement for the existing assembly occupancies based on occupant load. [CFSC Part IV Section 13.3.4.1.1]

Means of Egress

- Resultant the lesser hazard associated when portions of the main building are used as a Business Occupancy and S-2 Low Hazard Storage, the existing interior room and egress configuration are permitted to continue unchanged in accordance with CFSC Part IV Chapters 39 and 42 governing means of egress in existing Business and Storage Occupancies. [IEBC Sections 1005, 1012.4.2, 905, 805.2, and 101.10]
 - Number of exits - Business. The building is provided with more than the minimally required two exits. [CFSC Part IV Section 39.2.4.1]
 - Number of exits - Storage. A single means of egress is permitted from any story or section of a one-story ordinary hazard storage occupancy provided the occupant load is 30 or less persons and the travel distance is 100-feet or less. [CFSC Part IV Section 42.2.4.1(1)(a)]

- Accessible means of egress. Accessible means of egress is not required in existing building, even those undergoing changes of occupancy and/or alterations. [IEBC Sections 1012.8.1 & 705.1 Exception 2; CFSC Part IV Sections 7.5.4.1]
- Arrangement of means of egress – Business. Means of egress is arranged in accordance with Section 7.5. No corridor exceeds the 50-foot dead-end limit, no common path of travel exceeds the 75-foot limit, and no travel distance exceeds the 200-foot limit. [CFSC Part IV Sections 39.2.5 & 39.2.6]
- Arrangement of means of egress - Storage. Means of egress is arranged in accordance with Section 7.5 and shall not exceed the limitations in Table 42.2.5. The 50-foot dead-end corridor limit is not applicable to areas without corridors. Additionally, the 50-foot common path of travel limit, and 200-foot travel distance limit are not applicable due to the single exit permission. [CFSC Part IV Section 42.2.5, Table 42.2.5, Section 42.2.6 & Tables 42.2.6]
- Corridors. With consideration that each occupied room used for the newly created Business occupancy has an exit door directly to the exterior of the building, the corridor walls do not require a fire resistance rating. [IEBC Section 101.10; CFSC Part IV Sections 39.3.6 & 42.3.6]
- Occupant Load – Business. The combined occupant load of the existing administration area (28 persons) plus the portions of the building reclassified from Educational to Business (152 persons) occupancy is 180 persons. 254 persons less than the prior educational occupant load of 434 persons due the occupant load being calculates at 100 square foot per person versus the 20/50 square foot factors used for classrooms/labs. Note that the occupant load of a Business occupancy is based on the gross floor area of the space which includes rooms, corridors, toilet rooms, etc. Refer Tables 1 and 2 below for occupant loads based on current and proposed building uses. [CFSC Part IV Section 39.1.7 & Table 7.3.1.2]
- Occupant Load – Storage. Is not a calculated number of persons based on net or gross floor area. It determined on the basis of the probable population of the space under consideration. [CFSC Part IV Section 42.1.7 & Table 7.3.1.2]

Table 1 - Current Main Building Area Occupancy/Use Allocations		
Occupancy/Use	Floor Area	Occupant Load

Assembly Occupancies ^a	8,211 ^e	691
Educational Occupancies ^b	10,190 ^e	406
Administrative & Offices ^c	2,756 ^f	28
Misc. Support Rooms ^d	2,357 ^f	<u>12</u>
		1,137

Footnote a: Net floor areas of Gym/Auditorium, Cafeteria & associated kitchen, media center.

Footnote b: Net floor area of 14 classrooms: Rooms 123 – 129, 141 – 145, 162, & 164

Footnote c: Gross floor area of Rooms 103, 106 – 114, 153, & 156 - 158.

Footnote d: Toilet, storage, & utility rooms.

Footnote e: Net floor area.

Footnote f: Gross floor area.

Table 2 - Proposed Main Building Area Occupancy/Use Allocations		
Occupancy/Use	Floor Area	Occupant Load
Assembly Occupancies ^a	8,211 ^e	691
Business Occupancies ^b	15,250 ^{f, g}	152 ^g
Administrative & Offices ^c	2,756 ^f	28
Misc. Support Rooms ^d	2,107 ^f	<u>7</u>
		878

Footnote a: Net floor areas of Gym/Auditorium, Cafeteria & associated kitchen, media center.

Footnote b: Gross floor area of 14 former classrooms: Rooms 123 – 129, 141 – 145, 162, & 164, including egress corridors and toilet rooms.

Footnote c: Gross floor area of Rooms 103, 106 – 114, 153, & 156 - 158.

Footnote d: Storage, & utility rooms.

Footnote e: Net floor area.

Footnote f: Gross floor area.

Footnote g: Occupant loads may increase or decrease slightly depending on the amount of floor area used for meeting rooms classified as Small Assembly Spaces in accordance with CSBC Section 303.1.2 & CFSC Chapter 3 or S-2 Low hazard storage outside of a protected storeroom.

Accessibility

- With consideration of the existing educational occupancy within the building, the following features required for a partial change of occupancy classification are compliant. [IEBC Sections 1012.1.4, 1012.8, 906, 806, & 705; 2010 ADA Standards]
 - At least one accessible building entrance [CSBC 1105]
 - At least one accessible route from an accessible building entrance to primary function areas. First floor only. [CSBC 1103.2.16]
 - Interior and exterior signage. [CSBC 1111]
 - Accessible parking and one accessible passenger loading zone, when parking and/or passenger loading zones are provided. [CSBC 1106]

- At least one accessible route connecting accessible parking and accessible passenger loading zones to an accessible entrance. [CSBC 1104]
- At least one accessible toilet room. [CSBC 1109.2.4]
- Accessible means of egress is not required. See Means of Egress portion above for specifics.

Structural

- Uniform and concentrated loads. The loads imposed by the proposed patterns of use and contents within the office occupancy are similar to the those that imposed by the current educational use in CSBC Table 1607.1. [IEBC 1007.1, 907, 807, & 707]
- Additional loads. The proposed changes in occupancy result in change of Risk Category from III to II in Table 1604.5. [IEBC1007.2 & 1007.3]

Electrical

- Electrical service shall be upgraded to meet the with the National Electrical Code for the new occupancy. [IEBC 1008 & 808]

With consideration of the existing classroom use, the use of the building for business and dead storage should not require electrical upgrades based on the change in occupancy.

Mechanical

- Mechanical ventilation shall be increased to meet the with the International Mechanical Code for the new occupancy when an increased demand occurs. [IEBC 1009 & 809]

With consideration of the existing classroom use, use of the building for business and dead storage does not require mechanical system upgrades based on the change in occupancy.

Plumbing

- Plumbing fixtures and piping shall be upgraded to meet the with the International Plumbing Code for the new occupancy when an increased demand occurs. [IEBC 1010 & 810]

- Minimum Plumbing Fixture Count Analysis. [CSBC Section 2902]

USE	OL	WATER CLOSETS			LAVATORIES		
		Ratio	Req'd	Provided	Ratio	Req'd	Provided
E	406	1:50	10	10	1:50	10	10
B	152	1:25 first 50 + 1:50 remainder	3	10	1:40 first 80 + 1:80 remainder	2	10

With consideration of the existing classroom use, use of the building for business and dead storage does not require plumbing system upgrades based on the change in occupancy. The plumbing fixture count associated with the existing assembly use areas was not addressed as they remain unchanged.

Building Maintenance.

All exterior egress routes require attention due to trip hazards resulting from dissimilar settling of asphalt and concrete components.

In addition to recommissioning the building’s operating systems, i.e. mechanical, electrical, HVAC, and plumbing for optimal performance the Connecticut State Fire Prevention Code contains specific requirements for the inspection, testing, and maintenance of fire protection features.

In general, devices, equipment, systems, levels of protection or other Code required features shall be continuously maintained in proper working order accordance through the inspection, testing, and maintenance requirements of this Code and applicable NFPA standards. [CSFPC Section 4.5.8.1]

Specific requirements for the inspection, testing, and maintenance of building features:

- Fire Alarm System. Inspection and testing in accordance with NFPA 72, the *Fire Alarm Code* at quarterly, semi-annual, and annual intervals.
- Fire Sprinkler System. Inspection and testing in accordance with NFPA 25, the *Standard for Inspection, Testing, and Maintenance of Water-Base Fire Protection Systems* at quarterly, semi-annual, and annual intervals.
- Emergency Lighting & Illuminated Exit Signs. Functional testing for 30-seconds monthly and 1.5-hours annually in accordance with the *Connecticut Fire Safety Code*.

- Fire Extinguishers. Inspection and maintenance in accordance with NFPA 10, the *Standard for Portable Fire Extinguishers* at monthly and annual intervals.
- Means of Egress. Prior to each opening of the assembly areas to the public the building owner or agent shall inspect the means of egress to ensure it is maintained free of obstructions, and correct any deficiencies found.

Note that written records of inspections and are required to be maintained and be available for inspection by the Fire Marshal.

Addendum 2

Portable Classroom Building Partial Change of Occupancy Classification

Existing Educational to Moderate Hazard S-1 Storage

As required by CSBC Section 101.4.7 and permitted by CFSC Part III Section 101.1.3, the *2015 International Existing Building Code* [IEBC] amended by the *2018 Connecticut Amendments* has been used to evaluate this partial change of occupancy classification.

In accordance with IEBC Section 1001.2.2, where an existing building is changed to a new occupancy classification the entire building shall comply with all of the requirements of IEBC Sections 1002 through 1012 and Chapter 9 applied throughout the building.

This separate analysis has been performed to document compliant use of the portable classroom building as an S-1 Moderate Hazard Storage Occupancy since many of the items identified by the Town do not fall within the S-2 low hazard classification and the quantities of S-1 items to be stored may exceed the capacity of the currently sprinklered storage rooms and/or incidental use areas. It is acceptable to for this building to hose both an S-1 and S-2 Low Hazard Storage Occupancy without the need for additional requirements as the building is compliant with the requirements for the S-1 higher hazard.

S-1 Moderate hazard storage contents consist of combustible items that burn with ease and present a significant fuel load. Examples of stored items within this classification include, but are not limited to, books, paper supplies, cardboard and cardboard boxes, clothing, coats, footwear, furniture, upholstery, mattresses, etc.

S-2 Low hazard storage contents consist of non-combustible items, i.e. items that do not readily burn. It is acceptable for non-combustible items to be packaged in combustible materials as long as the quantity of packaging is kept to an insignificant level. A simple guideline to follow is the “single thickness” rule, which is when a noncombustible item is put in one layer of cardboard packaging material. Examples of stored items within this classification include, but are not limited to, beverages up to and including 16-percent alcohol, chalk, crayons, dairy products in nonwaxed coated paper containers, dry cell batteries, empty cans, food products, foods in noncombustible containers, fresh fruits and vegetables in nonplastic trays or containers, frozen foods, glass, metal

cabinets, metal desks with plastic tops and trim, mirrors, porcelain and pottery, and packaged appliances such as washing machines.

Note also that if the top of combustible storage is greater than 12-feet in height and is arranged in closely packed piles or on shelves the hazard is increased, Part III of the Connecticut Fire Safety Code will require an automatic sprinkler system.

Hazardous materials in amounts that exceed the maximum allowable quantities specified in Tables CSBC Tables 307.1(1) & 307.1(2) and CSFC Part III Tables 5003.1.1(1) & 5003.1.1(2) will result in reclassification as an H- High Hazard Occupancy.

The following list of items for storage provided by the Town constitute S-1 Moderate hazard storage:

- Knitting and Puzzle gathering
- Farmer Market storage: tables, some supplies from vendors.
- Adult stairs, bands, exercise mats.
- Pool table, pool balls and sticks
- Furniture: 2 couches, 2 recliners, 2 coffee tables, 1 big chair, office work desk, shelves for food pantry, 1 rocking chair, 10 cushioned chairs, 2 magazine racks, 1 filing cabinet, 3 storage cabinets.
- Wall TV, Wall pictures. Hanging quilt, Piano, Piano bench
- Folding Chairs 75, Folding Tables 14, 1 small built stage.
- Bulletin boards
- Assorted Medical supplies
- emergency food rations
- Blow up tent and supplies
- Animal Rescue gear - kennels, leashes, collars, cold weather rescue gear,
- Sheltering supplies - cots, pillows, bedding, etc.
- Assorted other non-hazardous emergency supplies
- Small Honda Suitcase style generator 2000watt - gasoline
- Wheeled 5000watt generator - gasoline
- 8000 watt trailer generator (diesel - 50gal?)
- propane heater & 20lb tanks *
- 1 trailer light tower (diesel - 50 gal?) (will be 2 at Korn, possibly more)

* Use and storage of LP-Gas (propane) containers is prohibited within buildings.
Refer to the Connecticut Fire Prevention Code and NFPA 58 for exceptions

The following list of items for storage provided by the Town constitute S-2 Low hazard storage:

- Food Bank Storage: Open by appointment for foods.
- Adult exercise weights
- Plants
- Folding Chairs 75, Folding Tables 14
- Wall mirrors for exercising
- Steamer table, Microwave, Kitchen supplies, 1 small freezer, 1 large refrigerator, 1 stove.

In accordance with IEBC Section 1012.1.3, the partial change of occupancy classification is based on the relative degree of hazard between different occupancy classifications as determined in accordance with the categories specified in Tables 1012.4, 1012.5 and 1012.6.

The evaluation determined that the change from an E - Educational occupancy to an S-1 – Moderate hazard storage occupancy results in a change to a lesser hazard in IEBC Table 1012.4 – Life Safety and Exits, an equal hazard in and IEBC Table 1012.5 – Heights and Areas, and a greater hazard in IEBC Table 1012.6 – Exposure of Exterior Walls as shown below

TABLE 1012.4 HAZARD CATEGORIES AND CLASSIFICATIONS: Life Safety and Exits	
Relative Hazard	Occupancy Classification
1 (Highest Hazard)	H
2	I-2, I-3, I-4
3	A, E , I-1, M, R-1, R-2, R-4
4	B, F-1, R-3, S-1
5 (Lowest Hazard)	F-2, S-2, U

In accordance with IEBC Section 1012.4.2 a change of occupancy made to an equal or lesser hazard category (higher number) as shown in Table 1012.4, existing elements of the means of egress shall comply with the requirements in Part IV of the 2018 CFSC as permitted by Sections 905, 805.2, and 101.10. Newly constructed or configured means of egress shall comply with the requirements of Chapter 10 of the Connecticut State Building Code and Fire Safety Code Part III. Refer to the Means of Egress portion of this Addendum below.

TABLE 1012.5 HAZARD CATEGORIES AND CLASSIFICATIONS: Heights and Areas	
Relative Hazard	Occupancy Classification
1 (Highest Hazard)	H

2	A-1, A-2, A-3, A-4, I, R-1, R-2, R-4
3	E, F-1, S-1, M
4 (Lowest Hazard)	B, F-2, S-2, A-5, R-3, U

In accordance with IEBC Section 1012.5.2 a change of occupancy to an equal or lesser hazard category as shown in Table 1012.5, the height and area of the existing building shall be deemed acceptable.

To be considered a separate and independent building, the covered walkway constructed of wood must be demolished. Refer to the Building Construction portion of this Addendum below.

TABLE 1012.6 HAZARD CATEGORIES AND CLASSIFICATIONS: Exposure of Exterior Walls	
Relative Hazard	Occupancy Classification
1 (Highest Hazard)	H
2	F-1, M, S-1
3	A, B, E, I, R
4 (Lowest Hazard)	F-2, S-2, U

In accordance with IEBC Section 1012.6.1 a change of occupancy to a higher hazard category as shown in Table 1012.6, existing exterior walls, including openings, shall have fire resistance and exterior opening protectives as required by the Building Code. Refer to the Building Construction portion of this Addendum below.

Building Construction

- Resultant the increased hazard associated with fire exposure to the main school building from the portable classrooms when used for S-1 storage, the exterior walls of the portable classroom building must satisfy the Building Code requirements for exterior walls based on fire separation between the two buildings. [IEBC Table 1012.6 & IEBC Section 1012.6.1]
- Based on the differing construction types of the two buildings, the covered wood walkway connecting the buildings must be removed to create separate buildings which allows each to be separately classified as to construction type versus the entire structure being reduced to the lesser construction type of V-B. [CSBC 503.1.2]



- Given that the measured distance between the portable classroom building (Type V-B construction) and the main school building (Type II-B construction) is 20'-6", an imaginary lot line can be established between the two buildings equidistant from each building resulting in a fire separation distance of 13'-3".
- Based on the 13'-3" distance from the exterior face of each building to the imaginary lot line, the occupancies present within each building, and the construction types, the exterior wall of each building is permitted to non-fire resistance rated. [CSBC Tables 601 & 602]
- Additionally, since neither building based on construction type is required to have fire resistance rated exterior bearing walls, non-bearing exterior walls, or primary structural frame, door and window openings are exempt from the protected wall opening limitations in CSBC Table 705.8. [CSBC 705.8.1 Exception 2]

Fire Protection Systems

- Neither an automatic fire sprinkler system or fire alarm system is required. [IEBC Sections 1012.2.1 & 1012.2.2; CSBC & CFSC Part III Section 903.2.9 & 907]

Means of Egress

- Resultant the lesser hazard associated when the portable classrooms when used for S-1 storage, the existing interior room and egress configuration are permitted to continue unchanged in accordance with CFSC Part IV Section 42.2 governing means of egress in existing Storage Occupancies. [IEBC Sections 1005, 1012.4.2, 905, 805.2, and 101.10]
- As currently arranged, each @ 940 square foot classroom has a single door to the exterior with a travel distance of @ 55-feet. Access to grade is via a ramp within the covered walkway.

- Number of exits. A single means of egress is permitted from any story or section of a one-story ordinary hazard storage occupancy provided the occupant load is 30 or less persons and the travel distance is 100-feet or less. CFSC Part IV Section 42.2.4.1(1)(a).
- Arrangement of means of egress. Means of egress, arranged in accordance with Section 7.5 and shall not exceed the limitations in Table 42.2.5. The 50-foot dead-end corridor limit is not applicable to areas without corridors. Additionally, the 50-foot common path of travel limit, and 200-foot travel distance limit are not applicable due to the single exit permission. CFSC Part IV Section 42.2.5, Table 42.2.5, Section 42.2.6 & Tables 42.2.6.
- Occupant Load. Is not a calculated number of persons based on net or gross floor area. It determined on the basis of the probable population of the space under consideration. CFSC Part IV Section 42.1.7 & Table 7.3.1.2.

Accessibility

- With consideration of the existing educational occupancy within the building, the following features required for a complete change of occupancy classification are compliant. [2010 ADA Standard; IEBC Sections 1012.1.4, 1012.8, 906, 806, & 705]
 - At least one accessible building entrance [CSBC 1105]
 - At least one accessible route from an accessible building entrance to primary function areas. First floor only. [CSBC 1103.2.16]
 - Interior and exterior signage. [CSBC 1111]
 - Accessible parking and one accessible passenger loading zone, when parking and/or passenger loading zones are provided. [CSBC 1106]
 - At least one accessible route connecting accessible parking and accessible passenger loading zones to an accessible entrance. [CSBC 1104]
 - At least one accessible toilet room. [CSBC 1109.2.4]

Structural

- Uniform and concentrated loads. The loads imposed by use of the building as a storage occupancy exceed the loads for a school building in CSBC Table 1607.1. [IEBC 1007.1, 907, 807, & 707]

Evaluation of the load carrying capability of the existing floor system by an registered design professional is required.

- Additional loads. Both existing and proposed uses are within Risk Category II in Table 1604.5 – no change. [IEBC1007.2 & 1007.3]

Electrical

- Electrical service shall be upgraded to meet the with the National Electrical Code for the new occupancy. [IEBC 1008 & 808]

With consideration of the existing classroom use, the use of the building for business use does not require electrical upgrades based on the change in occupancy.

Mechanical

- Mechanical ventilation shall be increased to meet the requirements of the International Mechanical Code for the new occupancy when an increased demand occurs. [IEBC 1009 & 809]

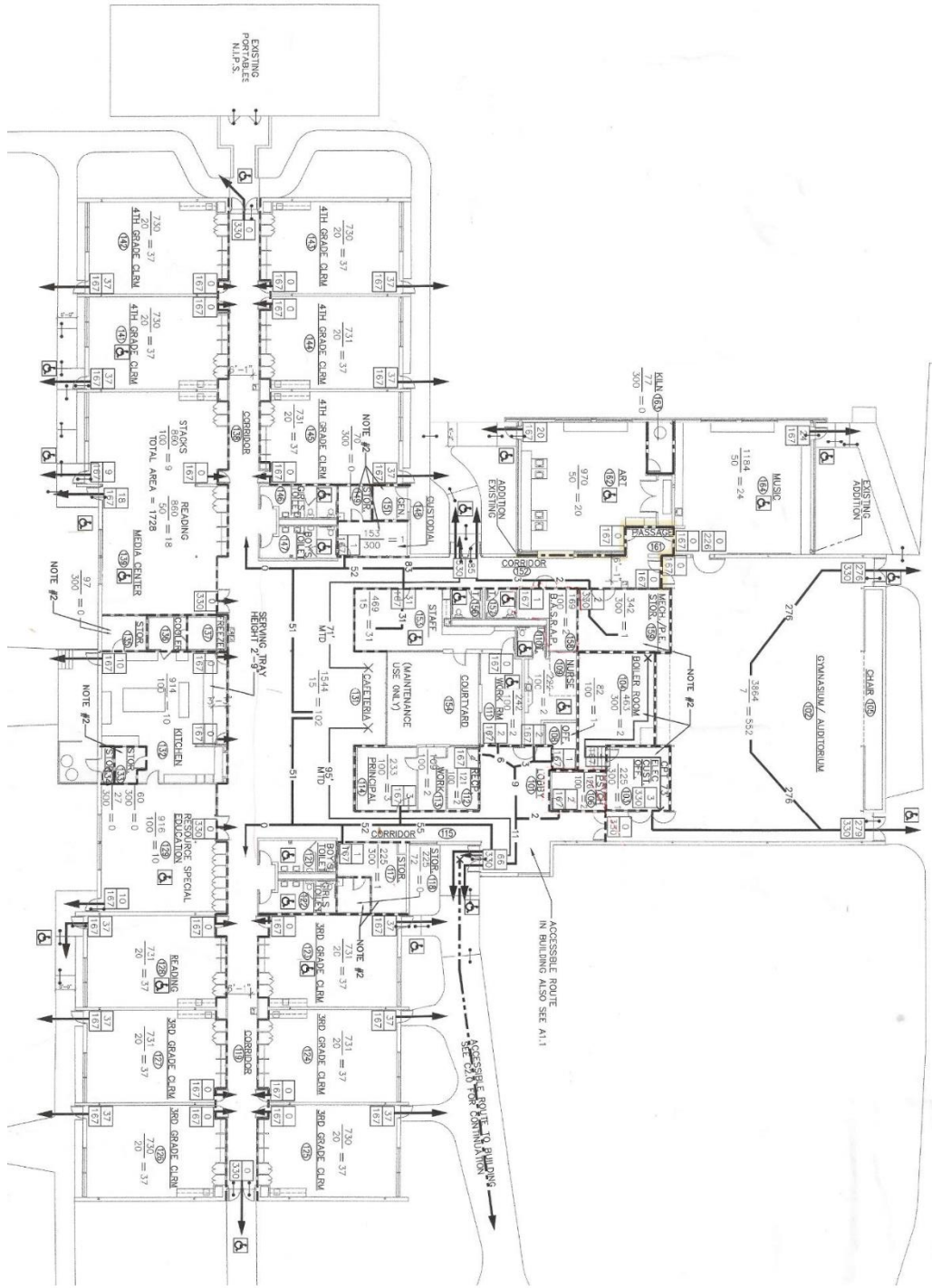
With consideration of the existing classroom use, use of the building with lesser occupant loads does not require mechanical system upgrades based on the change in occupancy.

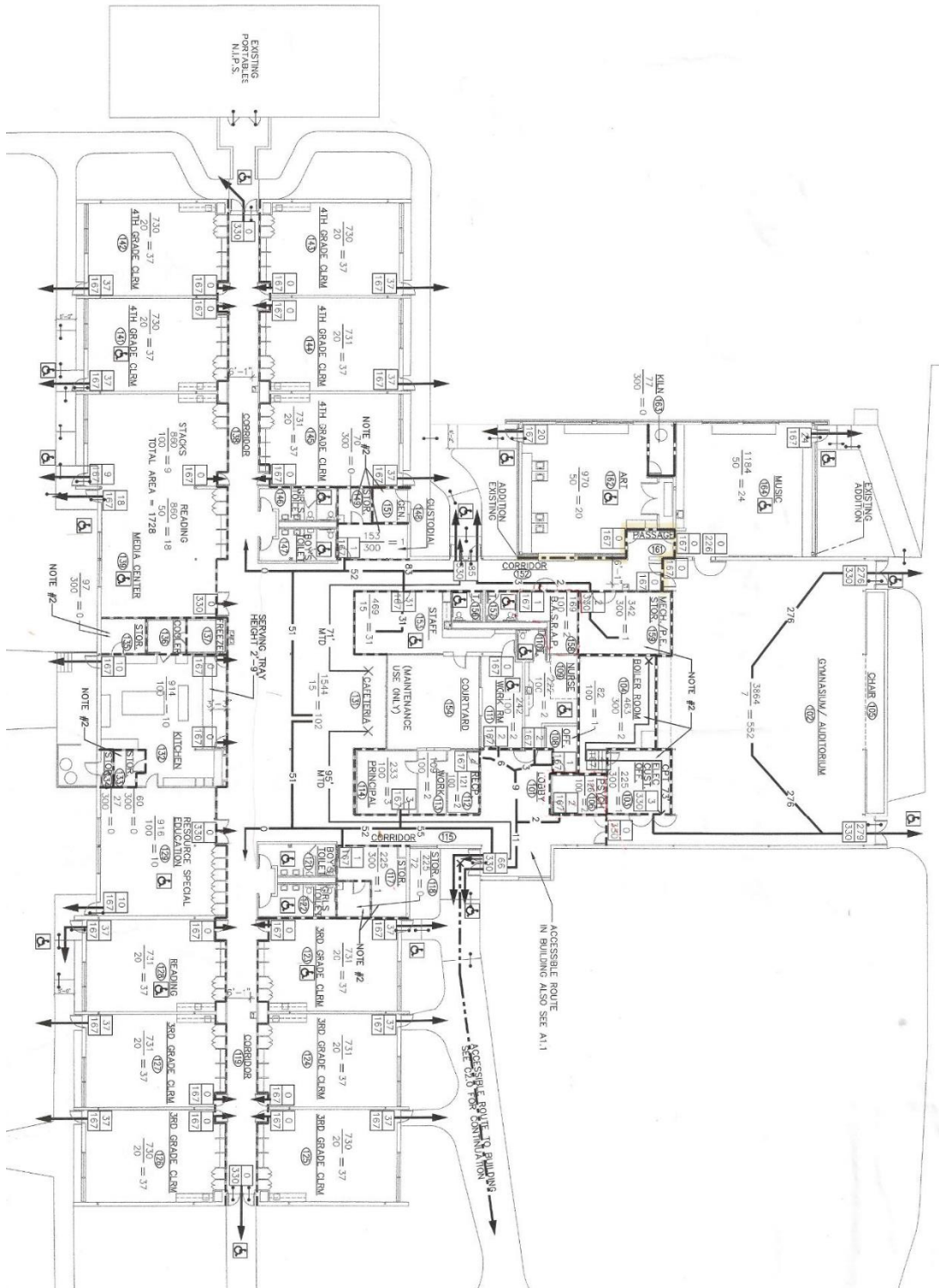
Plumbing

- Plumbing fixtures and piping shall be upgraded to meet the with the International Plumbing Code for the new occupancy when an increased demand occurs. [IEBC 1010 & 810]

With consideration of the existing classroom use, use of the use of the building with lesser occupant loads does not require plumbing system upgrades based on the change in occupancy.

Existing Occupancy/Use Configuration





Proposed Occupancy/Use Configuration

