RESOLUTION #20-0827-04

ADOPTING BY INCORPORATION BY REFERENCE A STANDARD CODE KNOWN AS 2017 OHIO FIRE CODE PERTAINING TO FIRE, FIRE HAZARDS, AND FIRE PREVENTION, AND ALSO ADOPTING A LOCAL FIRE CODE PURSUANT TO 2017 OHIO FIRE CODE § 103.1 KNOWN AS LIBERTY TOWNSHIP, DELAWARE COUNTY, OHIO SUPPLEMENT TO THE 2017 OHIO FIRE CODE, PURSUANT TO OHIO REVISED CODE § 505.373.

WHEREAS, pursuant to Ohio Revised Code § 505.373, the Board of Trustees of Liberty Township, Delaware County, Ohio ("Board") is authorized to adopt by incorporation by reference a standard code pertaining to fire, fire hazards, and fire prevention prepared and promulgated by the state or any department, board, or other agency of the state, or any such code prepared and promulgated by a public or private organization that publishes a model or standard code; and,

WHEREAS, the standard code known as 2017 Ohio Fire Code ("OFC") as contained in the Ohio Administrative Code ("OAC") Ch. 1301:17-7 *et seq.* pertains to fire, fire hazards, and fire prevention and has been prepared and promulgated by the State of Ohio, Department of Commerce, Division of State Fire Marshal; and,

WHEREAS, pursuant to OFC § 103.1, the Board is further authorized to adopt and enforce a local fire code in accordance with the provisions of Ohio law; and,

WHEREAS, even in jurisdictions adopting a local fire code pursuant to the OFC, the OFC remains in effect and is enforceable at all locations in the state in accordance with the applicable provisions of the Ohio Revised Code and OFC; and,

WHEREAS, the Board desires to adopt by incorporation by reference the OFC and further adopt a local fire code constituting an additional set of fire safety regulations for Liberty Township, Delaware County, Ohio (the "Township") in accordance with the Ohio Revised Code and the OFC.

NOW THEREFORE BE IT RESOLVED BY THE BOARD OF TRUSTEES OF LIBERTY TOWNSHIP, DELAWARE COUNTY, OHIO AS FOLLOWS:

1. Pursuant to Ohio Revised Code § 505.373, the Board hereby adopts by incorporation by reference the standard code known as 2017 Ohio Fire Code ("OFC") as contained in OAC Ch. 1301:7-7 *et seq.*, and including all appendices, attachments, and exhibits thereto, as the standard code pertaining to fire safety regulations governing the Township.
2. Pursuant to OFC § 103.1, the Board hereby adopts and shall enforce a local fire code known as Liberty Township, Delaware County, Ohio Supplement to the 2017 Ohio Fire Code ("Supplement"), attached hereto as Exhibit A, and by this reference made a part of this resolution, and including all forms, appendices, attachments, and exhibits thereto, as an additional set of fire safety regulations governing the Township.
3. The Board recognizes and understands that the Supplement shall not and does not modify, repeal, invalidate, or otherwise nullify any provisions of the OFC, and that the OFC remains in effect and is enforceable at all locations in the Township.

4. Complete copies of the OFC and Supplement shall be kept on file with the Township Fire Department and Township Fiscal Officer.
5. Pursuant to Ohio Revised Code § 505.373, after adoption of this resolution, a notice shall be posted by the Township Fiscal Officer in five (5) conspicuous places in the Township for thirty (30) days, clearly identifying the OFC and Supplement, stating the purpose of the OFC and Supplement, and stating that complete copies of the OFC and Supplement are on file with the Township Fiscal Officer for inspection by the public and also on file with the Delaware County Law Library, and that the Township Fiscal Officer has copies available for distribution to the public available at cost.
6. Pursuant to Ohio Revised Code § 505.373, the above notice shall further be published in a newspaper of general circulation in the Township for once a week for three (3) consecutive weeks or as required by Ohio Revised Code § 7.16.
7. Pursuant to Ohio Revised Code § 505.373, if the State of Ohio, Department of Commerce, Division of State Fire Marshal shall hereafter amend the OFC, the Township may adopt the amendment(s) or change(s) by incorporation by reference in the same manner as provided for adoption of the original code.
8. Adoption of this resolution shall supersede and rescind any standard codes pertaining to fire, fire hazards, and fire prevention previously adopted and enforced in the Township.
9. All formal actions of this Board concerning and relating to the passage of this Resolution were adopted in an open meeting of the Board, and all deliberations of this Board and of any of its committees that resulted in such formal action were in meetings open to the public in compliance with all legal requirements, including Ohio Revised Code § 121.22.
10. This Resolution shall be in full force and effect immediately upon adoption.

Motion made by Eichhorn and seconded by Newell

Vote: ____ Mrs. Eichhorn yes Mr. Newell yes Mr. Gemperline yes

This Resolution shall be in force and become effective immediately upon its execution.

08-27-2020
Date

Shyra A. Eichhorn, Trustee

Bryan Newell, Trustee

Mike Gemperline, Trustee

CERTIFIED BY:

Rick Karr, Fiscal Officer

Liberty Township, Delaware County, Ohio
Supplement to the 2017 Ohio Fire Code

The Liberty Township Board of Township Trustees ("Board") is authorized by Ohio Revised Code ("ORC") § 505.373, to adopt by incorporation by reference a standard code pertaining to fire, fire hazards, and fire prevention prepared and promulgated by the state or any department, board, or other agency of the state, or any such code prepared and promulgated by a public or private organization that publishes a model or standard code. Accordingly, the Board enforces the 2017 Ohio Fire Code ("OFC") as contained in the Ohio Administrative Code ("OAC") Ch. 1301:7-7 *et seq*. in Resolution No. 20-0827-04

This Supplement to the 2017 Ohio Fire Code ("Supplement") is adopted and is enforceable pursuant, but not limited, to ORC § 505.373, OFC §§ 103 and 104. This Supplement amends and/or deletes the OFC and constitutes an additional set of fire safety regulations applicable in Liberty Township, Delaware County, Ohio ("Township"). This Supplement does not and shall not be interpreted to modify, repeal, invalidate, or otherwise nullify any provisions of the OFC.

This Supplement replaces and supersedes any and all prior amendments, supplements, rules, and/or regulations adopted by the Board that amend, delete, and/or supplement the 2017 OFC.

(A) Fire Code Official (OFC § 202)

For purposes of this Supplement and consistent with the definition of the term "Fire Code Official" as defined in OFC § 202, the appointed and acting Fire Chief for the Township and/or his or her designee shall be the "Fire Code Official" in and for Liberty Township, Delaware County, Ohio.

(B) Authority of Fire Code Official

The Fire Code Official shall have that authority and may exercise such authority as conferred on the Fire Code Official by the ORC, OAC, OFC and this Supplement.

(C) Applications and Permits

1. Per OFC Section 104.2 Applications and permits – 104.2.2.1, the Fire Code Official shall receive applications, review construction documents, issue permits for operations regulated by the OFC, inspect the premises for which such permits have been issued, enforce compliance with the provisions of the OFC and participate in the plan review process regarding fire protection systems, including but not limited to inspection of premises and issuance of citations,

(D) Permits (OFC § 105)

1. **Permit Required:** The following permits are required and shall be obtained prior to any installation, construction, or operation:

    a. Mandatory Permits as specified by OFC § 105.1.1.1 *et seq*.

    b. Discretionary Permits as specified by OFC § 105.1.1.2 *et seq*.

        i. Required Operational Permits as specified by OFC § 105.6 *et seq*.

        ii. Required Constructions Permits as specified by OFC § 105.7 *et seq*.

2. **Permit Application:** To obtain a permit, any person or entity seeking to obtain such permit shall complete and submit the appropriate application for the permit to the Fire Code Official.

3. **Permit Fees:** Pursuant to OFC § 105.8, the Fire Code Official has established the permit fees contained in the *Permit Fee Schedule, Liberty Township Fire Department, Liberty Township, Delaware County, Ohio* ("Schedule"). Such Schedule may from time-to-time be amended. The applicable permit fee as contained in the most current Schedule shall, as required by OFC § 105.1.1, be paid in-full at the time application for the permit is filed and prior to issuance of the permit.

(E) Tests (OFC § 104.9.2)

1. **Scheduling:** If the Fire Code Official requires tests, consistent with OFC § 104.9.2, as evidence of compliance with the provisions of the OFC, the owner of the building(s), structure(s), and/or premises or person responsible for the building(s), structure(s), and/or premises where such testing is required, shall schedule the required tests with the Fire Code Official. The tests shall be scheduled with the Fire Code Official at least twenty-four hours (24 hrs.) prior to the actual date and time of the scheduled occurrence of the tests and at a date and time when the Fire Code Official is able to attend and witness the tests.

2. **Cost of Test:** The test(s) shall be arranged and performed at no cost to the Township.

3. **Test Fees:** The applicable test fee as contained in the Schedule shall be paid in-full at the time the tests are scheduled. The Fire Code Official shall not attend or witness the tests until the applicable test fee has been paid in-full.

(F) Inspection (OFC § 106)

1. **Scheduling:** The Fire Code Official is authorized by OFC § 106, *et seq*. to conduct inspections. If the Fire Code Officials determines that an inspection is necessary, the owner of the building(s), structure(s), and/or premises or person responsible for the building(s), structure(s), and/or premises where such testing is required, shall schedule the building(s), structure(s), and/or premises inspection with the Fire Code Official. The inspection shall

be scheduled with the Fire Code Official at least twenty-four hours (24 hrs.) prior to the actual date and time of the scheduled occurrence of the inspection and at a date and time when the Fire Code Official is able to attend the inspection.

2. **Cost of Inspection:** The inspection shall be arranged and performed at no cost to the Township.

3. **Test Fees:** The applicable construction inspection fee as contained in the Schedule shall be paid in-full at the time the inspection is scheduled. The Fire Code Official shall not attend the inspection until the applicable test fee has been paid in-full.

(G) Submission of Construction Documents (OFC § 105.4)

1. **Format:** Construction documents, prepared by a registered design professional, shall be submitted to the Fire Code Official in the form and manner prescribed by OFC 105.4.1, *et seq*. The documents 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 all provisions of the OFC, relevant laws, and this Supplement.

   The submittal shall consist of two (2) identical sets of construction documents, one (1) paper media and one (1) electronic media, meeting the following format requirements:

   a. **Paper Media:** One (1) full set of shop drawings on paper measuring. Drawing shall be 30" X 42"at standard engineered scale (1:10, 1:20, 1:30, 1:40, 1:50, 1:60).

   b. **Electronic Media:** One (1) electronic Auto CAD base drawing of each sheet at a standard engineered scale (1:10, 1:20, 1:30, 1:40, 1:50, 1:60) and with TIFF image. The documents shall be submitted in PDF or JPEG on CD Rom in a hard plastic protective (jewel) case.

2. **Contents:** In addition to any other content requirements contained in the OFC, other applicable laws, and this Supplement, construction documents submitted with an application for a permit shall, as applicable to the permit sought, include the following documents and the additional documents/information required by such documents:

   - ☐ *Commercial Site Plan Submission Checklist*
   - ☐ *Underground Fire Protection Plan Submittal Checklist*
   - ☐ *Aboveground Fire Protection Plan Submittal Checklist*
   - ☐ *Wet Chemical Extinguishing/Hood System Plan Submittal Checklist*
   - ☐ *Clean Agent Fire Protection Plan Submittal Checklist*
   - ☐ *Fire Alarm System Submittal Checklist*
   - ☐ *Required Fire Flow Estimate Form.*

(H) Unsafe Buildings (OFC § 110 and OFC § 311.5 *et seq.*) Markings Identifying Unsafe Buildings. Buildings deemed unsafe by the Liberty Township Fire Prevention Bureau shall

have the following posting. ****WARNING**** **This property has been deemed UNSAFE by the Liberty Township Fire Department and has been placarded with a Red X to warn firefighters of the unsafe conditions. No unauthorized entry is permitted or removal of the placard without the approval of the fire official. Unauthorized entry or removal of the placard could subject that person doing such to criminal or other penalties under Ohio Law.**

a) Once determined that the building is unsafe, Fire Prevention shall placard the building to alert firefighters that the building and/or structure is unsafe.
b) Placards shall be applied to the front of the structure and be visible from the street. Additional placards shall be applied to the side of each entrance and on the penthouses.
c) Placards shall be 24"x24" with a red background, white reflective stripes, and white reflective 2" border.
d) Placards shall bear the date posted, most recent inspection, and unauthorized removal warning.
e) Placard symbol **White Square** shall mean that the building had normal structural conditions at the time of marking.
f) Placard symbol **White Square with ** shall mean that structural or interior hazards exist and interior fire-fighting or rescue operations should be conducted with extreme caution.
g) Placard symbol **White Square with X** shall mean that structural or interior hazards exist to a degree that consideration should be given to limit fire-fighting to exterior operations only, with entry only occurring for known life hazards.
h) The use of this placard shall be informational only and shall not in any way limit the discretion of the on-scene incident commander.
i) Placards shall be removed once the unsafe conditions have been eliminated.

(I) Hazard Communications – Material Safety Data Sheets (MSDS) (OFC § 407.2)

1. **Format**: Material Safety Data Sheets ("MSDS"), as required by OFC § 407.2, shall be provided in either of the following formats:

    a. **Paper Media.**

    b. **Electronic Media**: MSDS provided on electronic media shall be provided on a flash or thumb drive. The MSDS shall be in PDF format and shall be readily accessible and able to be viewed using standard and generally accepted software.

2. **Location:** MSDS (paper media or electronic media) shall be located to the right side of the main front door (facing the door from the outside) no more than three feet (3') inside the door. The top of the holder of the MSDS shall be a maximum of seventy-five inches (75") above the finished floor. The location shall be approved by the Fire Code Official.

(J) Fire Apparatus Access Roads (OFC § 503 *et seq*.)

In addition to compliance with all applicable provisions of the OFC, OAC, ORC, and any other source of applicable local, state, or federal law, Fire Apparatus Access Roads are subject to the following:

1. **Definition:**

"Fire Apparatus Access Road" ("FAAR") shall have the same meaning as such term is defined in OFC § 502.1.

2. **Timing of Installation:**

Installation of FAARs shall occur at the time required by OFC § 501.4.

3. **Specifications:**

In addition to compliance with all applicable specifications and requirements contained in OFC § 503 *et seq.*, any other applicable provision of the OFC, OAC, ORC, and any other source of applicable local, state, or federal law, all FAARs shall comply with all of the following requirements:

a. **Proximity of FAAR to Facilities, Buildings, or Portions of Buildings:** FAARs shall meet all requirements contained in OFC § 503.1.1. The Fire Code Official will not increase the dimension of one hundred fifty feet (150') upon the basis of the exception contained in OFC § 503.1.1.1. The exceptions contained in OFC § 503.1.2 and 503.1.3 for increasing such dimension may be considered.

b. **Common Access Drives:** A common access drive ("CAD") is a type of FAAR. CADs shall comply with all specifications and requirements contained in OFC Appendix D, except the following:

i. The width of the pavement surface of a CAD of one hundred fifty feet (150') in lineal length or less shall be no less than twenty feet (20') at any point along the length of the CAD.

ii. A CAD exceeding one hundred fifty feet (150') in lineal length shall include additional pavement width at intervals of every four hundred feet (400') located on the approved fire hydrant side of the CAD. The additional pavement width shall increase the otherwise required or maintained width of the CAD by no less than six feet (6') and the additional pavement shall extend along the CAD for a length of no less than forty feet (40').

c. **Authority to Require Increased Width:** Notwithstanding any other provision of the OFC or this Supplement, the Fire Code Official, pursuant to OFC § 503.2.2, shall have authority to require an increase in the minimum access width of a FAAR.

d. **Surface:** Per OFC § 503.2.3, the Fire Code Official, based on the fire department's apparatuses, has determined the minimum imposed load a FAAR must be capable of supporting. At a minimum, a FAAR shall be capable of supporting the following loads:

   i. The FAAR shall be designed and maintained to support an imposed load of no less than eighty thousand pounds (80,000 lbs.)

   ii. At all times, the FAAR, inclusive of the base and surface, shall be capable of supporting the above required load. The capacity of the FAAR to support such a load shall be maintained for the life and existence of the building(s), structure(s), and/or premises for which the FAAR provides access.

e. **Required Access:** The accessibility to a fire department apparatus by way of a FAAR shall comply with all requirements contained in the OFC. In addition to such requirements, FAAR access shall comply with the following provisions of OFC Appendix D:

   i. Pursuant to OFC Appendix D102.1, facilities, buildings or portions of buildings hereafter constructed shall be accessible to the fire department apparatus on at least three (3) sides by way of an approved FAAR with an asphalt, concrete or other approved driving surface capable of supporting the imposed load of fire apparatus weighing at least eighty thousand pounds (80,000 lbs.).

   ii. Residential drives that exceed one hundred fifty feet (150') in length shall require an additional six feet (6') by forty feet (40') pull-off every four hundred feet (400') that will support the imposed load of fire apparatus weighing at least eighty thousand pounds (80,000 lbs.). Minimum width shall be fourteen feet (14').

f. **Load:** The surface of a FAAR shall comply with all requirements contained in the OFC, including, but not limited to, OFC § 503.2.3. In addition to such requirements, the surface of a FAAR shall also comply with the following:

   i. During construction, the FAAR shall have a base of hard-packed aggregate. The surface material of the FAAR shall be hard-packed aggregate, concrete, or asphalt.

   ii. Upon and following completion of construction and prior to occupancy of any building(s), structure(s), and/or premises for which the FAAR provides access, the final surface of the FAAR shall be installed and in-place. The FAAR shall have and be maintained as having a base of hard-packed aggregate and a surface of either concrete or asphalt.

iii. Grass pavers are an unacceptable surface for a FAAR. At no time shall grass pavers be used as a surface for a FAAR.

g. **Turning Radius:** Per OFC § 503.2.4, the Fire Code Official has determined the minimum turning radii for a FAAR. The minimum turning radii of a FAAR shall be sixty-five feet (65') outside and thirty-five feet (35') inside.

h. **Grade:** Per OFC § 503.2.7, the Fire Code Official, based on the fire department's apparatuses, has determined the maximum grade for a FAAR. The maximum grade for a FAAR, including but not limited to that portion of a FAAR within the right-of-way of a public or private road, shall be ten percent (10%).

i. **Angles of Approach and Departure:** Per OFC § 503.2.8, the Fire Code Official, based on the fire department's apparatuses, has determined the limits for angles of approach and departure for a FAAR. The maximum acceptable angle of approach and departure of a FAAR shall be ninety degrees (90°) and maximum ten percent (10%) grade.

j. **Marking:** Markings designating and identifying a FAAR as a FAAR shall comply with all requirements contained in the OFC, including, but not limited to, OFC § 503.3. In addition to such requirements, markings designating and identifying a FAAR as a FAAR shall comply with the following:

i. Twelve inch (12") by eighteen inch (18") signs reading "No Parking – Fire Lane" shall be placed on both sides of a FAAR. Such signs to be displayed on both sides of each sign post or holder.

ii. The above required signs shall be placed at regular intervals along the length of the FAAR. The maximum separation of these signs shall be no greater three hundred feet (300').

iii. With the prior consent of the Fire Code Official, curb painting reading "No Parking – Fire Lane" and fire lane striping may be used in addition to or in lieu of the above required signs. (See Commercial Site Plans Submittal Checklist).

k. **Security Gates:** Security gates across a FAAR shall comply with all requirements contained in the OFC and OAC, including, but not limited to, OFC § 503.6. In addition to such requirements, security gates across a FAAR shall meet the following requirements:

i. A Knox Box® residential hinged door key box for emergency operations or unlocking shall be placed and maintained in an obvious and easily accessible location near the gate. The location of the Knox Box® shall be

approved by the Fire Code Official prior to installation. A key to operate the security gate shall be continuously maintained in the Knox Box®. A key to the Knox Box® shall be provided to the Fire Code Official.

ii. If the security gate is equipped with electric opener, a siren operated sensor shall be required. Such sensor and security gate shall be maintained in operational condition.

l. **Traffic Light Priority Control Systems:** In the event that a traffic light is required for any development, a GPS Priority Traffic Light Control System or equivalent shall be installed at the developer's expense and shall be compatible with the GPS equipment of Liberty Township and any applicable mutual aid departments without modifications.

m. **Aerial Fire Apparatus Access Roads:** Aerial FAARs shall comply with all provisions of OFC Appendix D105.

n. **Access Road Width with a Hydrant:** FAARs including a fire hydrant shall comply with OFC Appendix D103.1, and accompanying Figure D103.1.

o. **One- or Two-Family Residential Developments:** In relation to FAARs, one- or two-family dwelling residential developments shall comply with all provisions of OFC Appendix D107.1.

i. One- or two-family dwelling residential developments with over thirty (30) dwellings shall require two (2) remote FAARs approved in accordance with OFC Appendix D104.3.

4. **Certifications Required Prior to Commencing Aboveground Construction:**

Prior to any aboveground construction of any building(s), structure(s), and/or premises for which the FAAR provides access, the following certifications shall be made, signed, and submitted to the Fire Code Official:

a. A professional engineer, properly and validly licensed in the State of Ohio, shall certify that the FAAR is engineered, designed and calculated to comply with the requirements of this Supplement and all other applicable requirements for a FAAR imposed by the OFC, OAC, ORC, and any other applicable source of local, state, or federal law.

If a temporary road base and/or surface (i.e. hard-packed gravel) is to be used for the FAAR during construction, the professional engineer shall base his/her calculations and certification on the actual material to be installed and used during construction as the temporary road base and/or surface and <u>not</u> on the existence of

any surface material to be installed in the future and later used as the road surface (i.e. a final road surface such as concrete or asphalt).

b. The installing contractor or an authorized representative of the installing contractor shall certify that the FAAR was installed as designed and per the engineering and design documents generated by the designing professional engineer.

c. The building(s), structure(s), and/or premises owner or an authorized representative of the owner shall certify that the FAAR has been installed prior to any aboveground construction and that the FAAR will be maintained throughout construction or for as long as the owner owns the building(s), structure(s), and/or premises to the standards of this Supplement and all other applicable requirements for a FAAR imposed by the OFC, OAC, ORC, and any other source of applicable local, state, or federal law.

The above certifications shall be made on an *Initial Certification of Fire Apparatus Access Road* form ("Initial Form"). The Initial Form can be obtained from the Fire Code Official or online from the Township website (www.libertytwp.org) under Fire Prevention.

The Initial Form shall be fully completed and the certifications on the Initial Form shall be signed by each of the above named individuals as appropriate to the certification. The Initial Form shall be submitted to and accepted by the Fire Code Official prior to any above ground construction of any building(s) or structure(s). Aboveground construction of any building(s) or structure(s) shall not begin until the Initial Form has been accepted by the Fire Code Official.

5. **Maintenance:**

The FAAR shall be maintained to the standards contained in this Supplement and all other applicable standards for a FAAR imposed by the OFC, OAC, ORC, and any other source of applicable local, state, or federal law for the life and existence of the building(s), structure(s), and/or premises for which the FAAR provides access.

6. **Prohibition Against Obstruction:**

A FAAR shall at all times remain open and fully unobstructed. The prohibition against obstructing a FAAR as contained in OFC § 503.4 shall be strictly enforced at all times, including during the construction.

7. **Certifications Required Post Construction:**

Upon full and final completion of construction of the FAAR (i.e. occurring generally when construction of the building(s), structure(s), and/or premises for which the FAAR provides access are complete, the final surface has been applied to the FAAR, and all markings

designating and identifying the FAAR as a FAAR are in place), the following certifications shall be made, signed, and submitted to the Fire Code Official:

a. A professional engineer, properly and validly licensed in the State of Ohio, shall certify that the as designed and fully complete FAAR (i.e. with the final road surface installed) is engineered, designed and calculated to comply with the requirements of this Supplement and all other applicable requirements for a FAAR imposed by the OFC, OAC, ORC, and any other applicable source of local, state, or federal law.

b. The installing contractor or an authorized representative of the installing contractor shall certify that the fully complete FAAR was installed as designed and per the engineering and design documents generated by the designing professional engineer.

c. The building(s), structure(s), and/or premises owner or an authorized representative of the owner shall certify that the FAAR has been fully and completely installed and that the FAAR will be maintained to the standards contained in this Supplement and all other applicable standards for a FAAR imposed by the OFC, OAC, ORC, and any other source of applicable local, state, or federal law for the life and existence of the building(s), structure(s), and/or premises for which the FAAR provides access or for as long as the owner owns the building(s), structure(s), and/or premises.

The above certifications shall be made on a *Final Certification of Fire Apparatus Access Road* form ("Final Form"). The Final Form can be obtained from the Fire Code Official or online from the Township website (www.libertytwp.org) under Fire Prevention.

The Final Form shall be fully completed and the certifications on the Final Form shall be signed by each of the above named individuals as appropriate to the certification. The Final Form shall be submitted to and accepted by the Fire Code Official upon full and final completion of construction of the FAAR. Occupancy of any building(s) or structure(s) shall not occur until the Final Form has been accepted by the Fire Code Official.

(K) Premises Identification (OFC § 505)

Each new and existing building shall be identified by proper premises identification in accordance with OFC § 505. In addition to compliance with all applicable provisions of the OFC, OAC, ORC, and any other source of applicable local, state, or federal law, premises identification shall be subject to the following:

1. **Address Numbers:** All address numbers, building numbers, or approved building identification, in addition to meeting the requirements of OFC § 505.1, shall meet all of the following requirements:

a. **Font:** Each letter and number shall be in a plainly legible typeface font.

b. **Height:** Each letter and number shall be a minimum of six inches (6") in height.

c. **Width:** Each letter and number shall be a minimum of three-quarters of an inch (¾") in stroke width.

d. **Contrast and Color:** All letters and numbers shall be of a consistent bold and plainly visible color that contrasts with their background.

e. **Reflectivity:** Each letter and number shall be placed using reflective paint or reflective adhesive characters.

f. **Location:** All letters and numbers shall be located on both the front and back doors of a building.

2. **Large Single-Address Buildings:** All single-address buildings exceeding five thousand (5,000) square feet with more than one (1) door, in addition to meeting the requirements of OFC § 505, shall meet all of the following requirements:

a. **Letters:** The exterior and interior of all doors shall be labeled with letters alphabetically from "A" through "Z".

b. **Font:** Each letter shall be in a plainly legible typeface font.

c. **Height:** Each letter shall be six inches (6") in height.

d. **Width:** Each letter shall be three-quarters of an inch (¾") in stroke width.

e. **Contrast and Color:** Each letter shall be of a consistent bold and plainly visible color that contrasts with its background.

f. **Reflectivity:** Each letter shall be placed using reflective paint or reflective adhesive characters.

g. **Location:** Door "A" shall be the main front door where the fire alarm remote and/or the Knox Box® is located. Lettering of the doors shall proceed clockwise alphabetically around the building, with interior letters located no more than twenty-four inches (24") off finished floor.

h. **Application:** These requirements shall apply to all doors, including, but not limited to, loading dock doors.

(L) Key Boxes (OFC § 506)

Key boxes, as required by OFC § 506.1 and in addition to complying with all requirements contained in the OFC and OAC, shall meet the following requirements:

1. **Definition:** "Key box" shall have the same meaning as such term is defined in OFC § 502.1.

2. **Type:** For purposes of OFC § 506.1, only Knox Box®, 3200 Series or newer, residential hinged door key boxes shall be approved key boxes.

    a. **Locks:** For purposes of OFC § 506.1.1, only Knox® Padlocks maintained in operational condition shall be approved locks installed on gates or similar barriers when required by the Fire Code Official, with the following exception:

        i. **Post Indicator Valves:** For purposes of OFC § 506.1.1, all post indicator control valves ("PIV's") shall be equipped with a breakaway lock. Such locks shall be approved by the Fire Code Official prior to installation and shall be maintained in operational condition.

3. **Location:** All commercial buildings, each tenant space, and all sprinkler room doors shall be equipped with the Knox Box®. In all cases, the Knox Box® shall be located to the right exterior of the main front door of any building, with a minimum of forty-eight inches (48") off finished grade ("OFG") and to the top of the Knox Box®. The location of the Knox Box® shall be approved by the Fire Code Official prior to installation. A key to access the door and/or opening shall be continuously maintained in the Knox Box®. A key to the Knox Box® shall be provided to the Fire Code Official.

(M) Fire Protection Water Supplies (OFC § 507 *et seq.*)

In addition to compliance with all applicable provisions of the OFC, OAC, ORC, and any other source of applicable local, state, or federal law, fire protection water supplies shall comply with the following:

1. **Fire Flow:** Per OFC § 507.3, the approved method for determination of fire flow requirements for any Group A, B, E, I, M, R, S, F, H or U use groups as classified by OAC 4101:1-3-01 shall comply with all specifications and requirements contained in OFC Appendix B.

    (A) **Residential Areas:** Areas with a Residential zoning designation within the Township shall be developed with a minimum one thousand gallons per minute (1,000 gpm) at twenty pounds per square inch (20 psi) residual pressure flow from hydrants that are spaced no more than six hundred feet (600') apart. Distribution lines for Residential areas shall be a minimum of six inches (6") in diameter and must be interconnected or looped to a water main sized at a minimum of ten inches

(10") in diameter. Dead end lines not served from such a water main shall be a minimum of eight inches (8") in diameter.

(B) **Commercial Areas:** Areas with a Commercial zoning designation within the Township shall be developed with a minimum one thousand gallons per minute (1,000 gpm) at twenty pounds per square inch (20 psi) residual pressure flow from hydrants that are spaced no more than four hundred feet (400') apart and located within forty feet (40') of all sprinkler and standpipe connections. Distribution lines for Commercial areas containing buildings less than twenty thousand (20,000) square feet in area (to be considered "high-value occupancy") shall be a minimum of eight inches (8") in diameter and must be interconnected or looped to a larger capacity water main. Dead end lines not served from such a water main shall be a minimum of ten inches (10") in diameter, or located at least one thousand feet (1,000') from a large capacity water line.

(C) **Industrial Areas:** Areas with an Industrial zoning designation within the Township (to be considered "High Value / High Risk" areas) shall provide water mains with hydrants that are spaced no more than three hundred feet (300') apart with proper flows needed for internal suppression systems and shall provide one thousand gallons per minute (1,000 gpm) at all hydrants that supply standpipes and must be located within forty feet (40') of all sprinkler and stand pipe connections. Each planned occupancy shall provide a report from a registered engineer regarding plans for supplying water to the occupancy.

2. On-Site Fire Hydrants: Per OFC § 507.5.1, on-site fire hydrants and mains shall be required by the Fire Code Official wherever a portion of a facility or building hereafter constructed or moved into or within the jurisdiction is more than four hundred feet (400') from any hydrant on a FAAR, as measured by an approved route around the exterior of the facility or building.

(A) **Location:** On-site fire hydrants shall be placed along the FAAR around the facility or building. The location of on-site fire hydrants and mains shall be approved by the Fire Code Official prior to installation.

(B) **Specifications:** In addition to compliance with all applicable specifications and requirements contained in OFC § 507 *et seq.*, any other applicable provision of the OFC, OAC, ORC, and any other source of applicable local, state, or federal law, all on-site fire hydrants shall comply with the following requirements:

i. **Inspection, Testing and Maintenance:** Fire hydrant systems shall be installed, inspected and approved per 2016 National Fire Protection Association® ("NFPA") 24, as referenced in the OFC. In addition, fire hydrant systems shall be installed, inspected and approved per requirements of Del-Co Water Company, Inc. ("Del-Co"). At all times, fire hydrant systems shall be maintained in operational condition.

ii. **Proximity of On-Site Fire Hydrants to FAAR, Intersecting Streets and Roads, and/or Other Hydrants:** On-site fire hydrants shall be placed along the FAAR around the facility or building, according to the following:

1. There shall be a maximum distance of four hundred feet (400') between on-site fire hydrants.

2. Fire hydrants shall be placed within fifty feet (50') of intersecting streets or roads.

3. Fire hydrants shall be placed within one hundred fifty feet (150') of the terminus of a FAAR.

iii. **Appearance:**

1. **Private Fire Hydrants and PIV's:** All private fire hydrants and private PIV's shall be painted Safety Green. A white band measuring a minimum of three inches (3") shall be placed using reflective paint around the complete circumference of the fire hydrant bonnet.

2. **Del-Co Fire Hydrants:** All Del-Co fire hydrants shall be painted red. A white band measuring a minimum of three inches (3") shall be placed using reflective paint around the complete circumference of the fire hydrant bonnet.

2. **Bollards:** In accordance with OFC § 507.5.6, bollards shall be placed near fire hydrants, PIV's, and fire department connections in order to prevent damage. Bollards shall be placed to allow unobstructed access to fire protection water supplies at all times. The Fire Code Official shall approve the location of bollards prior to installation.

(N) Fire Protection Equipment Identification and Access (OFC § 509)

Fire equipment identification and access shall comply with all applicable provisions of the OFC, including, but not limited to, OFC § 509. In addition to such requirements, fire protection equipment identification and access shall comply with the following:

Identification: Per OFC § 509.1, Fire protection equipment shall be identified in an approved manner. Rooms containing controls for air conditioning systems, sprinkler risers and valves, or other fire detection, suppression or control elements shall be identified for the use of the fire department. Approved signs required to identify fire protection equipment and equipment location shall be constructed of durable materials, permanently installed and readily visible. All signs shall be approved by Liberty Township Fire Prevention.

a. **Letters:** The exterior and interior of all fire protection equipment doors shall be labeled with letters.

b. **Font:** Each letter shall be in a plainly legible typeface font.

c. **Height:** Each letter shall be a minimum of four inches (4") in height.

d. **Width:** Each letter shall be a minimum of one half inch (½") in stroke width.

e. **Contrast and Color:** Each letter shall be of a consistent bold and plainly visible color that contrasts with its background.

f. **Reflectivity:** Each letter shall be placed using reflective paint or reflective adhesive characters.

1. **509.1.1 Utility identification.** Identification is required by the fire code official, gas shutoff valves, electric meters, service switches and other utility equipment shall be clearly and legibly marked to identify the unit or space that it serves. Identification shall be made in an approved manner, readily visible and shall be maintained. All signs shall be approved by Liberty Township Fire Prevention.

2. **509.2 Equipment access.** Approved access shall be provided and maintained for all fire protection equipment to permit immediate safe operation and maintenance of such equipment. *Unobstructed access to fire protection equipment shall be maintained at all times.* Storage, trash and other materials or objects shall not be placed or kept in such a manner that would prevent such equipment from being readily accessible.

(O) Electrical Equipment, Wiring and Hazards (OFC § 605 *et seq.*)

Electrical equipment, wiring and hazards shall comply with all applicable provisions of the OFC, including, but not limited to, OFC § 605. In addition to such requirements, electrical equipment, wiring and hazards shall comply with the following:

1. **Labeling:** Per OFC § 605.3.1, doors into electrical control panel rooms shall be marked with a plainly visible and legible sign stating "ELECTRICAL ROOM". In addition to compliance with these requirements, the marking of doors into electrical control panel rooms shall comply with the following:

    a. **Font:** Each letter shall be in a plainly legible typeface font.

    b. **Height:** Each letter shall be a minimum of four inches (4") in height.

    c. **Width:** Each letter shall be a minimum of one half inch (½") in stroke width.

d. **Contrast and Color:** Each letter shall be of a consistent bold and plainly visible color that contrasts with its background.

e. **Reflectivity:** Each letter shall be placed using reflective paint or reflective adhesive characters.

(P) Elevator Recall and Maintenance (OFC § 607)

Elevator recall and maintenance shall comply with all applicable provisions of the OFC, including, but not limited to, OFC § 607. In addition to such requirements, elevator recall and maintenance shall comply with the following:

1. **Elevator Keys:** Per OFC § 607.7, the approved location for keys for elevator car doors and fire-fighter service keys shall be within the first floor elevator lobby of every building. Such keys shall be located in a Knox® Elevator Key Box 1400 Series. The Knox® Elevator Key Box shall be red in color and keyed per the Knox® PS code in current effect by the Fire Code Official and the Liberty Township Fire Department. The location of the Knox® Elevator Key Box shall be approved by the Fire Code Official prior to installation.

(Q) Stationary Storage Battery Systems (OFC § 608)

Outdoor Stationary Storage Battery Systems

(a) **Scope**

This section governs the design, installation, operation and maintenance of outdoor stationary storage battery systems for all energy storage uses, including stationary storage battery systems installed on a mobile trailer (or other form of mobile installation). This section does not govern the design, installation, operation and maintenance of:

(1) indoor stationary storage battery systems;

(2) stationary storage battery systems specifically designed and used for an emergency, standby or uninterruptible power supply; and

(3) outdoor stationary storage battery systems with an aggregate rated energy capacity of not more than 250 kWh that are component of individual motor vehicle charging station and used for the purpose of motor vehicle charging

(b) **Definitions.** The following terms shall, for the purposes of this section and as used elsewhere in the rules, have the meaning shown herein:

Flow battery. A storage battery that stores and generates an electrical current by ion exchange through a membrane separating liquid electrolytes.

Lead acid battery. A storage battery that is comprised of lead electrodes immersed in sulfuric acid electrolyte, including vented (flooded) or valve regulated lead acid (VRLA) batteries, as those terms are defined in OFC 202.

Lithium-ion (Li-ion) battery. A lithium-ion battery, as that term is defined in OFC 202.

Nickel cadmium (Ni-Cd) battery. A nickel cadmium battery, as that term is defined in OFC 202.

Nickel metal hydride (NiMH) battery. An alkaline storage battery in which the positive active material is nickel oxide, the negative active material is a hydrogen-absorbing alloy, and the electrolyte is potassium hydroxide.

Stationary storage battery system. A rechargeable electrochemical energy storage system, consisting of one or more interconnected storage batteries, inverters and other electrical equipment, designed as a stationary installation (or mounted to a trailer for mobile use) to provide electrical power. Stationary storage battery systems typically include associated fire protection, explosion mitigation, and ventilation and/or exhaust systems.

Storage battery unit. A storage battery system in the configuration in which it was tested and listed to Underwriters Laboratories Standard 9540 (UL Standard 9540), including any cabinet or other enclosure.

(c) **General Provisions**

(1) **Applicability.** This section supplements OFC 608.1 by addressing stationary storage battery systems that are installed outdoors for energy storage uses. Rooftop installations are deemed outdoor installations solely for purposes of this section. The design and installation of stationary storage battery systems shall also comply with the requirements of the Delaware County Code Compliance and the City of Powell Building department.

(2) **Battery system size thresholds.** Stationary storage battery systems are classified by small, medium or large for each type of battery technology, as set forth in Table 1 of this section. The size of the stationary storage battery system is based on the energy storage/generating capacity of such system, as rated by the manufacture, and includes any and all storage battery units operating as a single system. Table 1 is not applicable to multiple battery systems operating independently at a single premises, which are subject to OFC 608.1.

Table 1
Stationary Storage Battery System Size Thresholds

Battery Technology	Aggregate Rated Energy Capacity

	Small	Medium	Large
Lead Acid Battery	>2 kWh and <70 kWh	>70 kWh and< 500 kWh	> 500kWh
Ni-Cd Battery	>2 kWh and <70 kWh	>70 kWh and< 500 kWh	> 500kWh
NiMH Battery	>2 kWh and <70 kWh	>70 kWh and< 500 kWh	> 500kWh
Li-ion Battery	>2 kWh and <20 kWh	>20 kWh and< 250 kWh	>250kWh
Flow Battery	>2 kWh and <20 kWh	>20 kWh and< 500 kWh	> 500kWh

(3) **Battery system compliance requirements.** Stationary storage battery systems shall comply with all requirements of this section applicable to the type of installation, as specified in Table 2.

Table 2
Stationary Storage Battery System Compliance Requirements

Section	Compliance Requirement	Small	Medium	Large
(c)	General Provisions			
(c)(4)	Permit	No	Yes	Yes
(c)(5)	Supervision (Certificate of Fitness)	Yes	Yes	Yes
(c)(6)	Obligations of Owner and Operator	Yes	Yes	Yes
(c)(7)	Listing and Full-Scale Testing Standards			
(c)(7)(A)	• Listing			
	○ Lead Acid Battery_	Yes	Yes	Yes
	○ Ni-Cd or NiMH Battery	Yes	Yes	Yes
	○ Li-Ion Battery	Yes	Yes	Yes
	○ Flow Battery	Yes	Yes	Yes
(c)(7)(B)	• Full-Scale Testing			
	○ Lead Acid Battery	No	No	No[g]
	○ Ni-Cd Battery	No	No	No[g]
	○ NiMH Battery	No	No	No[g]
	○ Li-Ion Battery	Yes	Yes	Yes
	○ Flow Battery	No	No	No[g]
(c)(8)	• Manufacturer's Requirements	Yes	Yes	Yes
(c)(9)	• Multiple Battery System Approval	No	Yes	Yes
(c)(10)	• Mobile Battery Systems/Equipment Approval	Yes	Yes[b]	Yes[b]
(d)	• Equipment Approval	Yes[b]	Yes[b]	Yes[b,h]
(e)	• Installation Approval	No	No[f]	Yes
(f)	• Commissioning and Decommissioning	No[c]	Yes	Yes

(g)	General Design and Installation Requirements			
(g)(1)	• Location and Construction	Yes	Yes	Yes
(g)(2)	• Remote Monitoring	Yes	Yes	Yes
(g)(3)	• Electrical Components	Yes	Yes	Yes
(g)(3)(C)	○ Secondary Power	No	Yes	Yes
(h)	Enclosure Design and Installation Requirements			
(h)	• Human Occupancy Prohibited	N/A	Yes	Yes
(h)(1)	• Racks	N/A	Yes	Yes
(h)(2)	• Fire Extinguishing System	No[d]	No[d]	Yes
(h)(4)	• Explosion Mitigation	No[d]	No[d]	Yes
(h)(5)	• Fire Detection	No[d]	Yes	Yes
(h)(6)	• Gas Detection			
	○ Lead Acid Battery	Yes[e]	Yes	Yes
	○ Ni-Cd and NiMH Battery	Yes[e]	Yes	Yes
	○ Li-Ion Battery	No	No[d]	No[d]
	○ Flow Battery	Yes[e]	Yes	Yes
(h)(7)	• Detector Alarm Notification	No[d]	Yes	Yes
(h)(8)	• Ventilation System	No[d]	No[d]	Yes
(h)(9)	• Smoke/Gas Purge System	No[d]	No[d]	Yes
(i)	Operational and Maintenance Requirements			
(i)(1)	• Remote Monitoring of Battery Management System and Reporting	Yes	Yes	Yes
(i)(2)	• Central Station Monitoring of Fire Protection System	N/A[d]	Yes	Yes
(i)(3)	• Remote Monitoring at Constantly Attended Location	No	No	No
(i)(4)	• Technical Assistance	Yes	Yes	Yes
(i)(5)	• Emergency Management	Yes	Yes	Yes
(i)(6)	• Signage	Yes	Yes	Yes

(i)(7)	• **Maintenance**			
(i)(7)(A)	○ **Periodic Inspections**	**No**	**Yes**	**Yes**
	○ **Restoration to Service After Serious Failure**	**Yes**	**Yes**	**Yes**
(i)(7)(B)	○ **Replacement Components**	**Yes**	**Yes**	**Yes**
(i)(7)(C)	○ **Combustible Waste**	**Yes**	**Yes**	**Yes**
(i)(7)(D)	○ **Storage of Combustible Materials**	**Yes**	**Yes**	**Yes**
(j)	**Recordkeeping**	**Yes**	**Yes**	**Yes**

a. Except for multiple small battery systems installed in a single enclosure or as part of a single installation.
b. Except for battery systems tested and listed by a nationally recognized testing laboratory with installation conditions set forth in Section (Q) (c) (7) (C) of LTFD Supplement, or other approved listing based on approved test data.
c. Except for: (1) notifying the Fire Prevention Bureau of the certificate of fitness responsible for supervision of the installation; and (2) coordination of removal and transportation of small battery systems experiencing abnormal temperatures or gas emission readings as set forth in LTFD Supp. (Q) (f) (3) (C).
d. Unless required as a condition of equipment approval based on full-scale testing. The LTFD will assess the results of the full-scale testing to determine whether there are any hazards that are not resolved or mitigated by the equipment or installation design and if the installation is approved, prescribe appropriate safeguards.
e. Required for equipment approval, as an element of the storage battery unit design, not as part of a battery system enclosure.
f. Limited post-installation review by inspection unit for LTFD permit issuance only.
g. Approved test data is required for explosion mitigation measures. If no other approved test data is available, test data from UL Test Method 9540A testing will be required.
h. Except project-specific installation designs. Large installations that utilize full-scale tested and LTFD - approved storage battery units in non-standard configurations or other project-specific designs may be field-tested in accordance with UL Standard 9540 or other approved standard.

(4) **Permit.** When required by Table 2 of this section, a permit is required to maintain and operate a stationary storage battery system.

(5) **Supervision.** A stationary storage battery system shall be operated and maintained under the general supervision of a person holding a certificate of fitness who shall:

(A) be trained and knowledgeable in the installation and operation of the battery system, such as a person engaged in the design or installation of such systems;

(B) possess the manufacturer's installation and operating specifications for each battery system and any associated fire protection systems;

(C) immediately report any emergency condition affecting a battery system to the Liberty Township Fire Department (LTFD) and

(D) provide technical assistance about the stationary storage battery system installation to the LTFD in accordance with LTFD Supp. (Q) (i), and, in coordination with the battery management system monitoring facility, identify a subject matter expert (such as a representative of the manufacturer) who can provide technical assistance about the battery's design and performance in the event of an emergency condition affecting the battery system.

(6) **Obligations of owner and operator.** Both the owner of the premises at which the stationary storage battery system has been installed, and the business responsible for the battery system's operation, if any, are responsible for compliance with all battery system installation, operational and maintenance requirements, including the lawful and proper removal and disposal of the battery system.

(7) **Listing and full-scale testing standards.** The following standards are applicable to the listing and full-scale testing of stationary storage battery systems. The LTFD may accept battery systems listed and tested to later editions of these standards when necessary to address evolving standards applicable to a rapidly developing technology.

(A) **Listing.** All stationary storage battery systems shall be tested and listed by a nationally recognized testing laboratory to the following standards:

(1) Underwriters Laboratories (UL) Standard 1741 (2010 edition), entitled "Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources;"

(2) Underwriters Laboratories (UL) Standard 1973 (2018 edition), entitled "Batteries for Use in Light Electric Rail (LER) Applications and Stationary Applications;" and

(3) Underwriters Laboratories (UL) Standard 9540 (2016 edition), entitled "Energy Storage Systems and Equipment."

(B) **Full-scale testing.** When full-scale testing is required by this section, stationary storage battery systems shall be tested to Underwriters Laboratories (UL) Test Method 9540A (2018 edition), entitled "Safety Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems," or other approved standard or test data.

(C) **Listing with installation conditions.** Upon approval by the LTFD, the Delaware County Code Compliance and the City of Powell Building

Department of a listing, standard that is used to establish listings with installation conditions based upon test data, such approved listing standard shall replace the existing listing and testing standards set forth in OFC 608.1. The approved listing standard and listings shall supersede the equipment approval process set forth in OFC 608.1 and, to the extent addressed in such approved listing, the required separation distances.

(8) **Manufacturer's requirements.** Stationary storage battery systems shall be designed, installed, operated and maintained in compliance with the manufacturer's specifications.

(9) **Multiple battery systems.** Installation of more than one stationary storage battery system on a single premises requires LTFD review and approval and is subject to such additional or alternative requirements as the LTFD may impose in the interests of public safety. Multiple small stationary storage battery systems are not subject to this requirement if they:

(A) are not part of a single installation or installed in a single enclosure; and

(B) operate independently of each other and are not interconnected with other small, medium or large battery systems.

(10) **Mobile battery systems.** Stationary storage battery systems installed on a trailer or otherwise designed to be moveable for use at multiple locations shall be designed, installed, operated and maintained in compliance with the provisions of this section, including equipment approval, except as follows:

(A) Installation approval (LTFD Supp. (Q) (e)) is not required. The equipment approval application submitted to the LTFD pursuant to LTFD Supp. (Q) (d) shall include information and documentation relating to the design of the trailer and the installation of the battery system. Any limitations on the use of mobile battery systems will be addressed through conditions on the equipment approval.

(B) Compliance with commissioning and decommissioning requirements (LTFD Supp. (Q) (f)) is not required, except that decommissioning of a malfunctioning battery system shall be coordinated with the LTFD in accordance with LTFD Supp. (Q) (f) (3) (C).

(d) **Equipment Approval.** When required by Table 2 of this section, the design of each storage battery unit shall be approved by the LTFD. The manufacturer of the storage battery unit shall obtain a certificate of approval for such unit in accordance with OFC 112, 112.1 and this section. The application for such equipment approval shall include the following information and documentation and such other information and documentation as the LTFD may require:

(1) Any application filed with the Delaware County Code Compliance or City of Powell Building Department; and

(2) The manufacturer's specifications and ratings, listing documents (including failure mode/effects analysis and, when required, complete UL Test Method 9540A test data or other approved data) for, and photographs of:

(A) each type of storage battery unit;

(B) the cabinet, container or other enclosure, and if the installation consists of more than one storage battery unit, the arrangement of the storage batteries, including any rack storage (with seismic support criteria) and aisle dimensions;

(C) battery management system (BMS) operation;

(D) any fire extinguishing system intrinsic to the unit or enclosure;

(E) any fire detection and gas detection systems intrinsic to the unit or enclosure; and

(F) any ventilation and or exhaust system intrinsic to the unit or enclosure.

(e) **Installation Approval.** When required by Table 2 of this section, the design of each stationary storage battery system installation shall be approved by the LTFD. The owner shall obtain LTFD approval of the design and installation documents in accordance with this section. The application for installation approval shall include the following information and documentation and such other information and documentation as the LTFD may require:

(1) Any application filed with the Delaware County Code Compliance or City of Powell Building Department;

(2) The LTFD equipment approval for each battery system unit (or a separate application for such equipment approval);

(3) A site plan containing the following information:

(A) Exact location of the stationary storage battery system installation; including location of access panel or enclosure entrance(s);

(B) Surrounding public streets, fire apparatus access roads and pedestrian walkways;

(C) All buildings and structures on the premises (or within 100 feet, whichever is less), identified by occupancy group and construction type, and any measures to mitigate the impact of storage battery or battery system on adjoining buildings or structures or other site-specific hazard mitigation, including those required by a UL Standard 9540 hazard mitigation analysis.

(D) Any walls or fencing enclosing the installation or the premises on which it is located.

(E) All transportation and utility infrastructure, including electrical power lines, within 250 feet of the installation.

(F) Location and content of signage.

(G) Location and type of other stationary storage battery systems located on the premises or within 50 feet of the proposed installation (if 50 feet extends to other premises, as determined by visual inspection of the outdoor space or reasonable inquiry of the owner).

(H) Emergency shutdown procedures, including the location of the stationary storage battery system emergency shut down control; and

(4) A commissioning and decommissioning plan, including disposal procedures, in accordance with LTFD Supp. (Q) (f).

(f) **Commissioning and decommissioning.** Stationary storage battery systems shall be commissioned (installed and activated for use) and decommissioned (deactivated from use and removed from the premises) in accordance with the following procedures:

(1) **Commissioning.** Stationary storage battery systems shall be installed by trained and knowledgeable persons in accordance with manufacturer's specifications. Upon completion of the installation, the certificate of fitness holder assuming responsibility for supervision of the battery system shall authorize it to be activated, after confirming that the battery system is in good working order and operating in accordance with manufacturer's specifications.

(2) **Decommissioning.** The certificate of fitness holder supervising a stationary storage battery system shall be responsible for its decommissioning. The deactivation, de-energizing, dismantling and removal of the stationary storage battery system shall be conducted by trained and knowledgeable persons in accordance with manufacturer’s specifications. The owner, manufacture, installer, hazardous materials carrier or other party responsible for removal, transportation and / or disposal of the stationary storage battery system shall ensure that the battery system is lawfully decommissioned, transported and disposed of in accordance with USDOT hazardous materials regulations and

other applicable laws, rules and regulations. The owner, manufacturer or installer of stationary storage battery systems shall have an emergency management plan or protocol that includes procedures for notifications and technical assistance in accordance with LTFD Supp. (i) (4) and (5) and all other actions necessary for mitigation and decommissioning (or restoration to normal operation).

(3) **Notice to LTFD.** Notice of the commissioning and decommissioning of stationary battery systems shall be given to the LTFD and the removal of a malfunctioning system coordinated with the LTFD, as follows:

(A) **Small battery systems**. The owner or certificate of fitness holder shall notify the LTFD of the commissioning or decommissioning of a small stationary storage battery system by emailing to fireprevention@libertytwp.org no later two (2) business days after installation the battery type, manufacturer and rated energy capacity, and the name and certificate of fitness number, of the certificate of fitness holder who will be or is no longer responsible for supervision of the system.

(B) **Medium and large battery systems.** The owner shall notify the LTFD of the commissioning or decommissioning of a medium or large stationary storage system and give LTFD representatives the opportunity to attend the commissioning or decommissioning to monitor the process; familiarize themselves with a commissioned battery system installation and operation; and/or confirm the proper decommissioning of a battery system in accordance with the approved decommissioning plan. The owner shall notify the LTFD by emailing the date, location, type and size of the battery system installation to fireprevention@libertytwp.org not later that two (2) business days prior to the scheduled action. No confirmation is required and the scheduled action can proceed in the LTFD absence. If the action is rescheduled, amended notice shall be given to the LTFD in as timely a manner as circumstances allow.

(C) **Decommissioning of malfunctioning battery system.** The removal and transportation of any battery system that has given abnormal temperature or gas emission readings as a result of physical damage, exposure to fire or other actual or potential cause of damage, shall be coordinated with the LTFD Fire Prevention Bureau who may send representatives to monitor the decommissioning process. The LTFD Fire Prevention Bureau shall be notified two (2) business days prior to the scheduled action, or in, as timely a manner as circumstances allow, by calling the LTFD Fire Prevention Bureau.

(g) **General Design and Installation Requirements.** When required by Table 2 of this section, stationary storage battery systems shall be designed and installed in accordance with the following requirements:

(1) **Location and construction.** Stationary storage battery systems shall be located and constructed in accordance with the following requirements:

(A) **Outdoor location.** Stationary storage battery systems shall be located outdoors. This includes rooftops when authorized by this section. Medium and large battery systems shall not be installed in enclosed areas without direct access from a public street, or fire apparatus access road, unless full-scale testing demonstrates intrinsic safety, or hazard mitigation measures that the LTFD determines to be appropriate for the particular location are provided.

(B) **Fire Department access and water supply.** Where feasible, a direct, unobstructed pathway shall be provided from the battery system installation to the public street or fire apparatus access road on which the premises fronts. Stationary storage battery systems located more than 250 feet from a fire hydrant shall be provided with a fire hydrant or other approved water supply for firefighting operations in accordance with OFC 507.

(C) **Separation distances.** Stationary storage battery systems shall be located a minimum of 10 feet from the following exposures, except where lesser or greater distances are required by the equipment approval or installation approval based on full-scale testing data that indicate that a battery system fire will or will not adversely impact one or more of the following exposures:

(1) Lot lines;

(2) Public streets, fire apparatus access road, public walkways and other public ways;

(3) Any vehicle parking;

(4) Any building entrance, operable window, or ventilation intake;

(5) Any exit discharge or other means of egress from a building or outdoor area;

(6) Any outdoor hazardous materials or combustible materials storage facility or area;

(7) Any outdoor storage facility or area for high-piled combustible materials or other combustible items;

(8) Overhead power lines or other aboveground electrical installation, measured from the boundary of the utility easement or, if there is no easement, from the vertical plane of the installation at its widest point; and

(9) Any public utility or transportation infrastructure.

(D) Rooftop locations. Stationary storage battery systems may be located on a building rooftop, subject to the following requirements:

(1) The building roof covering or roofing system, or other approved material placed underneath the rooftop battery system installation, shall be noncombustible for a distance of five (5) feet from such installation.

(2) Rooftop battery system installations, including structural, electrical or other associated equipment, shall not obstruct the rooftop access and clear path required by OFC 504.4 for buildings 100 feet or less in height. Rooftop battery systems may be installed underneath solar panels, subject to the access and clearance requirements set forth in LTFD Supp. (Q) (g) (l) (D).

(3) There shall be access to the rooftop from a building stairway, or other means of rooftop access authorized by the Ohio Building Code. A safe, unobstructed path must be provided from the bulkhead door or other point of entry to the entrance(s) to the battery system enclosure or to the service/access panel (if any).

(4) Any dunnage or other structural support for the battery system installation shall have a minimum one (1) hour fire rating for small and medium battery systems and two (2) hours for large battery systems.

(5) On rooftops of buildings provided with a standpipe, a minimum of two (2) standpipe hose outlets shall be provided within the building bulkhead, in accordance with OFC 912, at an approved distance from the stationary storage battery system installation sufficient to ensure safety of firefighting operations. On rooftops of buildings that do not have a standpipe, an approved water supply source shall be provided for firefighting operations. If a standpipe is provided for the battery system installation, the fire department connections shall be identified by durable signage or markings conspicuously posted at street level in accordance with OFC 912.

(6) Rooftop installations shall comply with the separation distances set forth in LTFD Supp. (Q) (g) (l) (c) for means of egress; hazardous materials or combustible materials storage facility or area; overhead power lines or other aboveground electrical installation; public utility or transportation infrastructure; and other stationary storage battery system installations.

(7) Rooftop installations shall be located a reasonable distance (but not less than 10 feet) from the bulkhead entrance door or other rooftop access location pursuant to LTFD Supp. (Q) (g) (l) (D) (3).

(8) Valve-regulated lead-acid (VRLA) and flow batteries may not be installed on rooftops unless the applicant demonstrates to the satisfaction of the LTFD that the hazardous materials used in such systems can be safely stored and used on a rooftop, and the application adequately addresses leak detection, spill containment and the movement of such hazardous materials through the building.

(E) Physical Protection. Stationary storage battery system installations shall be protected from damage in accordance with the following requirements:

(1) **Temperature.** The storage battery or battery system shall be designed for operation throughout the entire expected range of ambient temperature, in accordance with manufacturers' specifications, or provided with appropriate protection from damage from extreme ambient temperatures.

(2) **Vehicle impact protection.** Where the battery system is subject to impact by a motor vehicle or other motorized equipment, such as a forklift or other powered industrial trucks, vehicle impact protection shall be provided in accordance with OFC 312.

(3) **Security.** The battery system installation shall be secured against unauthorized entry. All battery system enclosures shall be securely locked and, where appropriate, safeguarded by a chain link fence or other approved barrier.

(2) **Remote monitoring.** All stationary storage battery systems shall be designed to transmit data regarding battery system status and temperature to a remote monitoring facility.

(3) **Electrical components.** The electrical components of stationary storage battery systems shall be designed and installed in accordance with the following requirements:

(A) **Compliance with testing standard.** The electrical components of the battery system shall comply with UL Standard 9540.

(B) **Operating conditions.** The electrical components of the battery system shall be designed to operate safely during normal battery system operating conditions.

(C) **Secondary power.** A separate source of electrical power shall be provided for battery system controls and safety functions, unless the battery system is designed to power such systems for at least 30 minutes after battery system shut-down. A separate source of electrical power shall be provided for all external battery safety systems, including detection, ventilation and smoke/gas purge systems. Such secondary power can be supplied from any independent power source. If the secondary power supply is an emergency power system designed in accordance with the Ohio Building Code, it shall be capable of supplying secondary power for a duration of two hours.

(D) **Emergency shut down.** An emergency shut down control (e-stop), in the form of a red button or other approved design, designed to shut down all stationary storage battery system operations (without affecting the fire protection systems and other safety measures required by this section) shall be provided at the fire department connection, if any, utility connection or other approved, conspicuous outdoor location on the premises that is accessible to emergency response personnel and is a reasonable distance (but not less than 10 feet) from the stationary storage battery system installation. The shutdown control shall be secured in a "Knox Box" in accordance with OFC 506. Signage shall be provided as set forth in LTFD Supp. (Q) (i) (6).

(h) Enclosure Design and Installation Requirements. When required by Table 2 of this section, stationary storage battery systems housed in a shipping container or other type of outdoor enclosure (but not a storage battery system housing, except as otherwise provided in OFC 608.1(h)(3) shall be designed and installed in accordance with the following requirements:

(1) **Human occupancy prohibited.** No stationary storage battery system shall be housed in an enclosure used for human occupancy. Access to such an enclosure (whether walk-in or reach-in) shall be provided solely for maintenance purposes, including inspection, testing, servicing and repair of the battery system.

(2) **Racks.** Stationary storage battery systems may be installed on open racks within enclosures provided that water-based fire extinguishing, explosion mitigation, ventilation and smoke/gas purge systems are provided within the enclosure in accordance with OFC 608.1(h).

(3) **Fire extinguishing system.** An approved dry pipe water fire extinguishing system designed and installed in accordance with NFPA Standard 15 (2007 edition), shall be provided in stationary storage battery system enclosures. The fire department connections shall be located at an approved distance from the stationary storage battery system enclosure as to ensure the safety of firefighting operations. An external fire extinguishing system of such design and installation shall be provided for any large stationary storage battery system in an outdoor cabinet or other battery system housing.

(4) **Explosion mitigation.** Explosion mitigation shall be provided for battery system enclosures in accordance with the following requirements:

(A) **Deflagration venting.** Deflagration venting shall be provided in accordance with NFPA Standard 68 (2007 edition), based on UL Test Method 9540A or other approved test data. Such venting shall be provided and designed to vent upwards or other safe location. Vents shall not face toward any exit discharge path from a nearby building or other pedestrian walkway, or any location from which emergency response personnel may access the enclosure.

(B) **Explosion prevention.** The concentration of combustible vapors during abnormal operation may be controlled in accordance with NFPA Standard 69 (2008 edition) if a hazard mitigation analysis, based on full-scale testing or other approved test data, indicates that such mitigation measures will be effective in keeping the target lower flammability limit (LFL) within the enclosure at or below 25 percent of the LFL.

(5) **Fire detection system.** An approved automatic fire detection system shall be installed in battery system enclosures in accordance with OFC 907. System activation shall initiate alarm, shut down and hazard mitigation measures m accordance with LTFD Supp. (Q) (h) (7).

(6) **Gas detection system.** An approved gas detection system shall be installed in battery system enclosures in accordance with OFC 908. The placement of detectors shall be in accordance with manufacturer's specifications. When the level of flammable gas inside the battery system enclosure exceeds 25 percent of the LFL, the gas detection system shall initiate alarm, shut down and hazard mitigation measures in accordance with LTFD Supp. (Q) (h) (7).

(7) **Detector alarm notification.** Activation of a fire or gas detector in a battery system enclosure shall initiate the following notifications and other actions:

(A) Activate a distinct audible and visible alarm signal at the battery system installation or an approved constantly attended on-site location.

(B) Transmit an alarm signal to the fire alarm system and thereby to an approved central station.

(C) Shut down the battery system, if warranted.

(D) Activate all necessary shut down and hazard mitigation measures of the ventilation system.

(8) **Ventilation system.** An automatic mechanical ventilation system shall be provided for the space within the battery system enclosure in accordance with the Ohio Mechanical Code and the following design requirements. The ventilation system shall be designed to maintain optimal operating conditions for the stationary storage battery system in accordance with manufacturer's specifications or Institute of Electrical and Electronics Engineers (IEEE) Standard 1635/ASHRAE Standard 21 (2012 edition), whichever requires a higher level of protection. The ventilation system shall be intrinsically safe for, and/or explosion protected from, any toxic and flammable gases generated by the battery system during normal operating conditions, and shall be designed to limit the maximum concentration of toxic gases inside the battery enclosure to 25 percent of the permissible exposure limit (PEL) for such gases, unless full-scale testing demonstrates that the storage battery unit does not generate toxic gas concentrations in excess of 25 percent of PEL.

(9) **Smoke/gas purge system.** A manually operated purge system designed to exhaust heat, smoke and toxic gases generated by the stationary storage battery system during abnormal operating conditions, for use by firefighting personnel, shall be provided for a battery system enclosure. The smoke/gas purge system shall be intrinsically safe and/or explosion protected for any such toxic gases and be designed in accordance with the following requirements:

(A) Manual operation. The smoke/gas purge system shall be designed to be manually activated. A manual activation switch shall be installed at the fire department connection, if any; otherwise, near the utility connection or other approved location on the premises. The activation switch shall be identified by a conspicuously posted and durable sign that reads: "Battery System Emergency Smoke/Gas Purge." The activation switch shall be secured in a “Knox Box” in accordance with OFC 506.

(B) Exhaust venting. The smoke/gas purge system shall vent in a manner that will minimize the risk to surrounding buildings and building occupants, pedestrians, and emergency response personnel. Exhaust vents shall not face toward any exit discharge path from a

nearby building or other pedestrian walkway, or any location from which emergency response personnel may access the enclosure.

(i) **Operational and Maintenance Requirements.** Stationary storage battery systems shall be operated and maintained in accordance with this section.

(1) **Remote monitoring of battery management system and reporting.** The owner of a stationary storage battery system shall arrange for data transmissions from the battery system's battery management system to be continuously monitored (on a 24/7 basis) by a remote monitoring facility staffed by trained and knowledgeable persons retained by the manufacturer or installer of the battery system. The remote monitoring facility shall, without delay, make the following notifications in the event a battery system installed in Liberty Township / Powell exceeds or appears likely to exceed thresholds at which fire, explosion or other serious adverse consequences may result:

(A) Notify the LTFD by calling the Delaware County Communications Office (740-368-1911), to alert the LTFD to the unsafe condition;

(B) Notify the certificate of fitness holder responsible for the battery system, in a pre-arranged manner, to alert such individual to be ready to provide technical assistance to the LTFD and/or respond to the incident location in accordance with LTFD Supp. (Q) (i) (4) and (5); and

(C) Notify the manufacturer of the battery system to make a qualified representative available to provide technical assistance to the LTFD pursuant to LTFD Supp. (Q) (i) (4).

(2) **Central station monitoring of fire protection systems.** All fire protection systems protecting the battery system installation, including any fire extinguishing system, and fire and gas detection or other emergency alarm system required by this section, shall be monitored by an approved central station.

(3) **Constantly attended on-site locations.** Battery systems and fire protection systems may be monitored at a constantly attended on-site location, but such monitoring may not substitute for the remote monitoring facility and/or central station required by LTFD Supp. (Q) (i) (l) and (2), unless such substitution is approved in writing by the LTFD Prevention Bureau.

(4) **Technical assistance.** Upon request of the LTFD, both the certificate of fitness holder responsible for the battery system and the battery system manufacturer shall make available to the LTFD a representative with technical knowledge of the battery system and its operation. Such representative shall be made available as soon as possible, but in any event within 15 minutes of receipt of the LTFD request.

(5) **Emergency management.** Upon request of the LTFD, the certificate of fitness holder responsible for the battery system and an authorized representative of the owner of the premises upon which the battery system is installed shall respond to the location of the battery installation, as soon as possible but in any event within two (2) hours of notification, to assist the LTFD in addressing a fire or other emergency involving or affecting the battery system, and to take all other actions necessary for mitigation and decommissioning of the battery system, or restoration to normal operation in accordance with LTFD Supp. (Q) (i) (7).

(6) **Signage.** When required by Table 2 of this section, the following signs (or equivalent markings) shall be durably posted for each stationary storage battery system, at the locations indicated:

(A) **Warning signs.** The following warning signs shall be posted on the exterior of medium and large battery systems or battery system enclosure:

(1) "Danger: High Voltage," or equivalent signage complying with the requirements of the Electrical Code; and

(2) Hazard identification sign complying with NFPA Standard 704 (2007 edition).

(B) **Identification, emergency contact and emergency shutdown signs.** The following signs shall be posted at the fire department connection, if any, utility connection or other approved, conspicuous outdoor location on the premises that is accessible to emergency response personnel and that is a reasonable distance (but not less than 10 feet) from the stationary storage battery system installation. The signage may be posted within a marked, "Knox Box". If the location of the signage would not be readily apparent to emergency response personnel, a sign with large lettering (not less than 3 inches high) shall be posted on or adjacent to the battery installation indicating the location of the following signage:

(1) **Permit.** The permit for the installation laminated or otherwise suitably weatherproofed.

(2) **Equipment specifications.** The manufacturer and model number of the battery system and electrical rating (voltage and current).

(3) **Installation identification.** The number or other unique identifier used by the battery management system remote monitoring facility to identify the installation, which firefighters or other LTFD representatives can reference in communications with the monitoring facility.

(4) **Monitoring facility contact information.** The telephone number of the battery management system remote monitoring facility.

(5) **Certificate of fitness contact information.** The name and telephone number of the certificate of fitness holder responsible for the battery system.

(6) **Emergency shutdown procedures.** Emergency shutdown procedures for the battery energy storage system shall be posted at the battery system emergency shut down (e-stop) control and at any attended on-site location. The emergency shutdown instructions shall clearly indicate "GRID SUPPORT SYSTEM" in large letters (not less than 2 inches high) if immediate shut down of the battery system could disrupt public utility operations.

(7) **Maintenance.** The owner shall ensure that stationary storage battery systems are periodically inspected, tested, serviced and otherwise maintained in accordance with manufacturer's specifications and the requirements of this section by a person trained and knowledgeable in the specific battery system.

(A) **Periodic inspection.** When required by Table 2 of this section, the battery system shall be inspected by the certificate of fitness holder on not less than an annual basis to confirm continued compliance with applicable code, rule and permit requirements, including checking for the presence of required signage and whether any posted information needs to be updated, and confirming that all required systems are in good working order.

(B) **Restoration to service after serious failure.** Any battery system that undergoes a serious failure, including one that results in a fire, release of flammable or toxic gas, and/or physical damage to system components, shall be removed from service forthwith. The battery system shall not be restored to service until it has been evaluated by a trained and qualified person, repaired and tested, re-commissioned in accordance with LTFD Supp. (Q) (f) by a person holding a certificate of fitness.

(C) **Replacement components.** Any replacement storage battery units or other battery system components shall be designed for the same storage battery technology and/or chemistry and be compatible with the existing battery system installation. In-kind replacement of existing components (consistent with the listing for the storage battery unit or storage battery system) constitutes maintenance and does not require LTFD review and approval. Replacement of existing components with different battery technologies or chemistries (including the electrolyte chemistry in a flow battery system) or that change the storage/generating capacity or other functionality of a battery system, or other change to listed components, constitutes an alteration of the battery system and shall be submitted for LTFD review and approval, and, as applicable, Delaware County Code Compliance and City of Powell Building Department review and approval, in the same manner as an application for a new stationary storage battery system installation.

(D) **Combustible waste.** Stationary storage battery system installations shall be kept free from the accumulation of combustible waste and combustible vegetation in accordance with OFC 304.1.

(E) **Storage of combustible materials.** Combustible materials not required for battery system operation shall not be stored in battery system enclosures.

(i) **Recordkeeping Requirements.** A written record of the following information shall be maintained at the premises or other approved location by the certificate of fitness holder, and, for medium and large battery systems, by the owner or operator of the battery system:

(1) Battery system installation and commissioning;

(2) Battery system maintenance, including all inspections, servicing and repair;

(3) Battery system decommissioning and removal;

(4) Installation and maintenance of battery system fire protection systems, including all inspection, testing, servicing and repair; and

(5) Fires or other incidents involving or affecting the battery system.

(R) Fire Protection Systems (OFC § 901 *et seq.*)

Fire protection systems shall comply with all applicable provisions of the OFC, including, but not limited to, OFC § 901. In addition to such requirements, fire protection systems shall comply with the following:

1. **Construction Documents:** Per OFC § 901.2, the Fire Code Official shall require the submittal of construction documents and calculations for all fire protection systems. All construction documents and calculations shall be submitted for review prior to system installation.

    a. **Fire Alarm System Submittal Checklist:** In addition, in accordance with OFC § 901.2, the Fire Code Official shall also require the submittal of a Fire Alarm System Submittal Checklist for all fire protection systems. The Fire Alarm System Submittal Checklist shall be drafted by the Liberty Township Fire Department at the direction of the Fire Code Official. The Fire Alarm System Submittal Checklist shall be made available online or in person at the Liberty Township Fire Department. All Fire Alarm System Submittal Checklists shall be submitted for review prior to system installation.

2. **Removal of or Tampering with Appurtenances:** In accordance with OFC § 901.8.1, locks, chains, and/or tamper seals shall be installed at the direction of the Fire Code Official

on all control valves of fire protection systems and/or fire alarm panels in order to prevent tampering.

(S) Automatic Sprinkler Systems (OFC § 903 *et seq.*)

Automatic sprinkler systems shall comply with all applicable provisions of the OFC, including, but not limited to, OFC § 903. In addition to such requirements, automatic sprinkler systems shall comply with the following:

1. **Hose Threads:** Per OFC § 903.3.6, the Fire Code Official has prescribed the requirements for fire hose threads and fittings used in connection with automatic sprinkler systems. For purposes of OFC § 903.3.6, fire hose threads and fittings shall be a minimum of five-inch (5") Storz® connections (non-threaded) with a thirty-degree (30º) angle inclined towards ground level. Fire hose threads and fittings shall be maintained in operational condition and approved by the Fire Code Official prior to installation.

2. **Sprinkler System Supervision, PIV's, and Alarms:** In accordance with OFC § 903.4, the Fire Code Official has prescribed certain requirements for supervised sprinkler systems and PIV's. All supervised sprinkler systems and PIV's shall be electrically supervised by a listed fire alarm control unit. In addition, PIV handles shall be secured to the PIV with a breakaway lock. The Fire Code Official shall approve the location of PIV's prior to installation.

   (A) **Signs:** Per OFC § 903.4, PIV's shall be identified by an aluminum sign that meets the following requirements:

      (A) **Font:** Each letter shall be in a plainly legible typeface font.

      (B) **Height:** Each letter shall be six inches (6") in height.

      (C) **Width:** Each letter shall be three-quarters of an inch (¾") in stroke width.

      (D) **Contrast and Color:** Each letter shall be of a consistent bold and plainly visible color that contrasts with its background.

      (E) **Reflectivity:** Each letter shall be placed using reflective paint or reflective adhesive characters.

      (F) **Text:** Each sign shall identify what device/equipment/system is controlled by the PIV, in addition to stating the address of the building in which the PIV is located.

      (G) **Location and Attachments:** Each sign shall be attached to the PIV barrel.

(B) **Alarms:** Per OFC § 903.4.2, only weather-proof audible visual devices shall be approved audible devices to be connected to every automatic sprinkler system. These audible devices shall be maintained in operational condition and approved by the Fire Code Official prior to installation. The devices shall be located on the street side of each building, that being the side on which address numbers are displayed. Such audible visual devices shall be placed in lieu of a water flow bell.

(T) Fire Alarms and Detection Systems

Fire alarms and detection systems shall comply with all applicable provisions of the OFC and referenced NFPA standards. In addition to such requirements, fire alarms and detection systems shall comply with the following:

1. Per 2016 NFPA 72 Section 7.7.2.1 Fire Alarm Document Box, a Fire Alarm Document Box shall be installed at the area of the Main Fire Alarm Panel.

2. A Remote Fire Alarm Control Panel and a device map shall be located to the right side of the main front door (determined facing the door from the outside) no more than three (3) feet inside of the building and shall comply with 2016 NFPA 72 Sections 10.17.3.1 and 10.17.3.2.

3. Stand-Alone Remote Duct Smoke Detectors: Shall be installed per 2016 NFPA 72 Sections 17.4.7, 17.4.7.1 and 17.4.7.2. and shall be approved by the Liberty Township Fire Prevention Bureau prior to installation. All remote duct smoke detector remotes shall be resettable by key. All duct smoke detectors shall report to fire alarm panel as a supervisory alarm if fire alarm panel is provided.

4. Existing Fire Alarm Panels: The Liberty Township Fire Prevention Bureau shall enforce 2016 NFPA 72 Section 23.8.2.3.

(U) Fire Department Connections (OFC § 912)

Fire Department Connections ("FDC's") shall comply with all applicable provisions of the OFC, including, but not limited to, OFC § 912. In addition to such requirements, FDC's shall comply with the following:

1. **Location:** Per OFC § 912.2, FDC's shall be located remote from the building, at least five feet (5') behind the right-of-way of a public or private road on the street side of the building. In addition, the FDC shall be located within forty feet (40') of an approved fire hydrant. The Fire Code Official shall approve the location of FDC's prior to installation.

   (A) **Height:** The top of the FDC shall be thirty-six inches (36") off of finished grade.

   (B) **Minimum Line Size:** FDC lines shall be a minimum of six inches (6") in diameter, measured regardless of the base of the riser demand.

2. **Locking Fire Department Connection Caps:** Per OFC § 912.4.1, a Knox® five-inch (5") StorzGuard® cap shall be provided for the FDC by the installing contractor.

3. **Physical Protection:** In accordance with OFC § 912.4.3 and OFC § 312, in addition to providing physical protection for FDC's, physical protection shall also be provided for bollards.

4. **Signs:** Per OFC § 912.5, FDC's shall be identified by an aluminum sign that meets the following requirements:

    a. **Dimensions:** The sign shall measure eighteen inches (18") in height by twenty-four inches (24") in width.

    b. **Background:** The sign shall have a white background.

    c. **Font:** Each letter shall be in a plainly legible typeface font.

    d. **Text:** Each sign shall include lettering that reads "FDC." Below the "FDC" lettering, each sign shall read: "AUTOMATIC SPRINKLERS" or "STANDPIPES" or "TEST CONNECTION", or a combination thereof as applicable, in accordance with OFC § 912.4. Additionally, each sign shall state the address of the building and shall state the applicable input pump pressure if other than the required one hundred fifty pounds per square inch (150 psi).

    e. **Height:** Each letter in the top "FDC" lettering shall be six inches (6") in height. All other letters shall be two inches (2") in height.

    f. **Width:** Each letter in the top "FDC" lettering shall be one inch (1") in stroke width. All other letters shall be one-half inch (½") in stroke width.

    g. **Contrast and Color:** Each letter shall be of a consistent bold and plainly visible red color that contrasts with its white background.

    h. **Reflectivity:** Each letter shall be placed using reflective paint or reflective adhesive characters.

    i. **Location and Attachments:** Each sign shall be fastened to a sign post. In turn, the sign post shall be mechanically fastened, bolted, clamped or otherwise affixed to the back of the FDC pipe, with the sign lettering facing the FAAR. In all cases, the sign shall be plainly visible atop the FDC.

    j. **Approval:** FDC signs shall be approved by the Fire Code Official prior to installation.

(V) Incorporation by Reference of the International Fire Code

Unless otherwise provided by the ORC, OAC, OFC, this Supplement, and/or any other applicable law, any person residing, doing business, or who is physically present within the Township shall comply with the provisions of the International Fire Code (2015 Edition) ("IFC"), including all Appendices thereto. The IFC is published by the International Code Council and is hereby adopted and incorporated by reference into this Supplement. A copy of the IFC is available for inspection at the offices of the Liberty Township Fire Department.