Fire Code Plan Review Worksheet NΑ <u>OK</u> N 1 Ensure a comprehensive code study is provided: occupancy type square footage П П П number of stories П construction type allowable area formula occupant load determination (based on net or gross) rooms are identified for use and/or process fire protection systems: sprinklers fire alarm kitchen hood main/hydrant other Site Access: 2 Fire access road complies with the plans 3 Fire access road signage is required and plan details are provided and stripping (cross-hatching) may be necessary П П when determined by the fire official 4 Security gate, when provided, is detailed and the opening method complies with fire department policy 5 Emergency turn-around is in accordance with the plans П 6 Fire access road is designed to support an apparatus weighing 75,000 lb. gross vehicle weight 7 Fire access road is an all weather driving surface such as asphalt, concrete, chip-seal (oil matting) or similar. Grass П pavers with fire lane signage is permitted if a low concrete curb is provided along the edges to outline and identify the 8 Any portion of the building exterior wall shall be within 150 ft. of the fire access road 9 Grades are not to exceed 10 percent 10 As an alternate for grade exceeding 10 percent: Access grade shall not exceed 10 percent but if it does, the first portion of the grade shall be limited to 10 percent for a length of 200 ft. and then 15 percent to 20 percent for a maximum of 200 ft., repeat the cycle as necessary or as approved by fire code official 11 The dead-end fire access road(s) in excess of 150 ft. and shall be provided with a turn-around 12 The turning radius for the emergency apparatus road(s) is in accordance with local policy 13 All fire access roads shall be constructed and maintained prior to and during construction Site Water: 14 This project requires GPM fire flow, a minimum of (number of hydrants) __hydrants spaced an average of __ feet, 15 When a hydrant water flow report is required, the test shall be witnessed by the water purveyor. Existing reports may be used if a tested has been performed within 6 months of the date of the permit application or as requried by the fire official. 16 The most remote exterior portion of a nonsprinklered building is within 400 ft. or for a sprinklered building within 50-100 ft. of a hydrant, provide hydrant(s) in accordance with Towns UDO 17 Does the nearest hydrant, as shown on the site plan, exceed the allowable distance from the property? 18 Prior to the installation of private fire service water main/hydrants systems, plans shall be submitted for a permit, review, П and approval 19 As an alternate materials and method, the building may required to be protected throughout by an approved automatic sprinkler system if the required minimum water flow is not available **Emergency Plans:** 20 Required for some occupancies such as A, B, E, H, I, R and some M's as based on specific criteria, 404.2. Obtain, review, and approve the plan prior to issuing a Certificate of Occupancy.

Exterior:

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21	Large apartment complex, 5 or more buildings, large address map is detailed at each street entry point and large address placard is detailed to be approved for size and content (should include complex site layout, foot print of each building, address or 10 for each building, at least 24 in. x 36 in.), or as required by the fire official			
	Lock Box 22.			
22	Detailed on plans near the front entry and to left of entry (when facing the entry), the lock box should be mounted at about 6 ft. above ground level or as required by the fire official <u>Vehicle Impact</u>			
23	Guard posts are detailed on the plans for hydrants, tanks, generators, gas meters, etc. subject to vehicular damage			
24	Guard post details comply with NCFC; 4 in. diameter steel posts, filled with concrete, spaced up to 4 ft. from other posts, set 3 ft. deep, located 3 ft. or more from object.			
25	Other approved barriers comply based on details of location and specification data sheets			
	<u>Hydrants. private</u>			
26	Flush and pressure test criteria are on the plans, proper port height and that the direction of the ports to enable fire engine hook-up are detailed			
27	Specification data sheet is provided to verify model and brand of hydrant complies with city and fire department specifications.			
	Water Mains/Hydrants. private			
28	Required in accordance with NCFC and Town's UDO, designed in accordance with NFPA 24			
	Fire Department Connection for Sprinkler and/or Standpipes			
29	Location is in accordance with fire department policy and NCFC, design is in accordance with NFPA 13 and/or 14,			
	Exit System:			
	Exit Signs and Emergency Lights			
	Internal or external illuminated exit signs are provided			
31	Exit signs are at directional changes in hallways, visible from any direction of egress tra.vel, and where necessary, . (Exception: main exterior exit doors that are obviously an exit and rooms or areas only requiring one exit).			
32	Exit signs are flush or perpendicular to mounting surface as required for occupant to read sign age			
33	Battery backup or emergency power is provided; emergency lighting for occupancies and rooms required when there are two or more exits			
34	Signage detail is provided for the landing areas of vertical stairways more than 3 stories. Signage states location-East,			
	West, etc., terminus-roof access or not, floor number, and floors served by stairs, and is 5 ft. above the floor landing . Signs shall be an approved legible permanent design. Hardware			
35	Manually operated flush or bolt locks are not permitted on egress doors			
	Panic hardware required for each door in means of egress for Group A and E occupancies with 50 or more occupants			
	and any Group H Occupant load	Ц	Ц	Ц
37	Occupant load calculations are provided for the rooms and assembly areas, and occupant load signs are processed for assembly areas <u>Egress Width and Doorways</u>			
38	Egress width calculations are provided for egress paths and assembly areas			
39	Doorways are of adequate width for the occupant load.			
40	The number of doors for each room or area complies with NCFC			
	<u>Travel Distance</u>			
41	Travel distance for the occupancy is in accordance with NCFC			
	Fire Extinguishers:			
42	Type, size, mounting height, and travel distance are appropriate for the hazard and are detailed on the plans			
43	Room use or type of hazard and/or process is detailed on the plans.			
44	For a hazardous type business, 50 ft. travel distance or 30 ft. depending on the size of the extinguisher, check the plans.			

Fire Protection Systems:

	Automatic Sprinkler Systems		
	Required in accordance with NCFC Designed in accordance with NFPA 13		
46	Room use or type of hazard/process is detailed on the plans.		
	Valves, pipe, hanger, and sprinkler data sheets and hydraulic calculations are provided.		
48	The location of the fire department connection is in accordance with NCFC and the design is in compliance with NFPA 13.		
40	Standpipes Paris to the second to the NOTO Burine in the second to the NOTO Burine in th		
49	Required in accordance with NCFC Design is in accordance with NFPA 14		
	Fire Pumps		
50	Designed in accordance with NCFC and/or NFPA 200		
	Fire Alarms		
51	Required in accordance with NCFC Design per NFPA 72		
52	Room use or type of hazard and/or process is detailed on the plans.		
	Alternate Clean Agent Gas or Halon 53.		
53	Required in accordance with NCFC Consult the separate worksheet in this book.		
54	Room use or type of hazard and/or process is detailed on the plans.		
55	Equipment and devices data sheets, voltage and battery calculations are provided.		
56	Concentration and discharge calculations are provided.		
	Kitchen Hood System		
57	Required in accordance with NCFC Design is in accordance with the manufacturer's design and installation manual		
	Emergency Alarm		
58	Required in accordance with NCFC		
	Use and Process Specifics:		
	Group R Occupancies		
59	Smoke detectors are located in sleeping rooms, hallway and adjacent room if vaulted ceiling, also at the top of stairs and lower level		
00	Assembly Use		
	Occupant loads certificates for assembly rooms are created		
61	Exit door hardware; panic hardware is on all exit doors except main entry, no other security bolt hardware allowed with panic hardware		
62	Data sheets for fire-resistive decorative materials are provided		
	Battery Rooms		
63	Spill control method and materials are detailed		
64	When ventilation is required, calculations are provided to verify ventilation rate maintains the room atmosphere to 1		
65	percent by volume of hydrogen or a minimum ventilation rate of 1 cfm/ft2 of floor area Door signed stating room contains lead-acid batteries, energized electrical circuits, and corrosive liquids are detailed on	п	П
00	the plans		
66	Battery systems are seismically braced and room smoke detection is provided		
	Fuel-Dispensing Station		
67	Details for dispensing unit or island, and emergency shut-off location are provided, and tank construction is in accordance with NCFC Hazardous Materials		
68	Hazardous Materials NCFC always applies then the chapter specifics.	_	_
	Spill control and secondary containment, NCFC		
	Spill control and secondary containment, Not of Spill control and secondary containment shall be liquid tight, i.e. compatible floor coating,		
	Cryogenics, NCFC		
	Compressed Gases, NCFC		
	Flammable Combustible Liquids, NCFC		
	Highly Toxic and Toxic Materials, NCFC		
	Oxidizers, NCFC		
76	Unstable and Water Reactive Materials, NCFC		

High-piled Storage

piled storage is requiring demarcation lines (12 ft. above floor level) and verbiage on walls ("No storage permitted above this line by the authority of the Fire Marshal's Office.") and letter from owner agreeing that building is not	Ц	Ц	Ш
designed for nor will it be used for high-piled storage 79 The 14 items in IFC 2301 are detailed or provided, 2301.1	-	-	
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80 Aisle width and rack locations are on the plans			
81 Exterior fire access doors are on the plans			
82 Detection and suppression systems are provided			
83 Smoke removal system or heat vents or curtain boards are detailed on the plans			
84 Need product hazard classifications, quantities, location, etc, consult additional information in this book and use the Inventory Information and Rack Storage Information sheets <u>LPG Tanks</u>			
85 Location on a site plan is provided, NCFC and NFPA 58.			
Medical Gases			
86 Quantity, location and room construction are provided and detailed, NCFC			
Paint Booth. Powder Coating. Electrostatic Spray Operations			
87 Manufacture data sheets for the booth and equipment are provided			
88 Construction and ventilation details for spray booths, areas or rooms are provided.			
Welding Operations			
89 Location is detailed, signage detailed, type of gases, storage location and quantity of gases			

Site Plan Review Work Sheet	<u>NA</u>	<u>OK</u>	<u>N</u>
Access:			
1 Drawings are provided			
2 The required fire department access roads is a minimum unobstructed 20 ft. in width and 13 ft. 6 in. clear height, Check with local or state requirements that may have street planning regulations that supercede the North Carolina Fire Code (NCFC) requirements.			
3 "No Parking Fire Lane" signs are provided at AHJ prescribed locations			
4 Required fire department access roads are designed to support an apparatus with a gross axle weight of 75,000 lb, engineering specifications are provided			
5 Required fire department access roads are an all weather driving surface such as asphalt, concrete, chip seal (oil matting), or similar materials			
6 The proposed building does have an emergency vehicle access road within 150 ft. of any exterior portion of the structure, if not, a fire department access road must be provided			
7 The grade for required fire department access road does not exceed 10 percent unless approved by the Chief			
g A local jurisdiction alternative to the 10 percent grade restriction could be the following: If the grade exceeds 10 percent, the first portion of the grade shall be limited to 15 percent for a length of 200 ft. and then 15 percent to 20 percent for a maximum of 200 ft., repeat the cycle as necessary unless the building is sprinklered.			
9 No access drive grades are greater than 10 percent			
10 The access road design for a maximum grade conforms to specifications established by the fire code official			
11 The dead-end fire department access roads (s) in excess of 150 ft. is provided with an approved turn-around			
12 The turn-around cul-de-sac has an an "approved inside and a outside radius, e.g. 30 ft. 50 ft. respectively, a hammerhead design is a minimum 70 ft. Lx 20 ft. W, or another approved design may be used			
13 The turning radius for emergency apparatus roads is 30 ft. inside and 50 ft. outside radius or as approved by the code official.			
14 Fire department access roads shall be constructed and maintained for all construction sites and will be in place prior to building construction			
15 Dead-end streets in excess of 150 ft. resulting from a phased project are provided an approved temporary turnaround			

An in-depth plan review for private hydrants and private water mains will occur during the project plan review phase. 16 A fire flow test and report is provided to verify that the fire flow requirement is available. Also, refer to the note at the bottom of the page. 17 Water mains and pipe sizes are detailed on the site plan 18 All water mains and hydrants shall be installed and operate as soon as combustible П materials arrive on a construction site 19 The nearest hydrant(s) to the project structure and/or property road frontage are shown 20 Prior to the installation of private water main systems, plans shall be submitted for a permit, review and approval. 21 A hydrant is required within 400 ft. of any exterior portion of a nonsprinklered building or 50 ft. of a sprinklered building

NOTE: When a hydrant water flow report is required, the test should be witnessed by the local water purveyor and completed by a company approved by the water purveyor. The report shall provide the water pressures measured and provide the available GPM at 20 PSI residual pressure. Existing reports may be used if not dated more than 6 months ago or as approved by the code official.

Additional Comments:

Water Flow and Hydrants: