



A CODE STUDY SCHEMATIC
 REFERENCED FROM: SCALE: 1" = 20'-0"

| Category | BOCA 1999 | | NFPA 101 - 2000 | | Proposed |
|--|--|---|---|---|---|
| | Reference | Code Requirements | Reference | Code Requirements | |
| Use Group | 304.2 | B - Business (Showroom & Office) Storage 1, Mod. Haz. (Service Area) Storage 2, Low Haz. (Parts Storage) | 3.3.134.3 3.3.134.14 3.3.134.2 | New business occupancies - CH 38 Storage occupancies - CH 41 Assembly - Incidental to Business | |
| Building Construction | Table 602 | Type 2C - Non-combustible Unprotected Foundation - Concrete frost wall and slab Exterior walls - Light gage metal studs with EIFS veneer and GWB interior finish Interior walls - Light gage metal stud frame with GWB surfacing Roof - Steel trusses and beams with metal decking | NFPA 220 | Unprotected Non-Combustible: Type II (000) | |
| Height & Area Limitations | Table 503 | Area: (see: Building Area Calculations) Height (B&S2): 3 Stories / 40' Height (S1): 2 Stories / 30' | | | 39,157 S.F. |
| Height Modifications Area Modifications | 504.2 506.2 506.3 | NFPA-13 Sprinkler = Add 1 story and 20' 100% Street Frontage = Add 150% NFPA-13 Sprinkler = Add 200% (See Building Area Calculations) | | | 2 Stories/31' 1 Story/23' |
| Maximum allowable area | | | | | |
| Maximum allowable height | | Height (B&S2): 4 Stories / 60' Height (S1): 3 Stories / 40' | | | |
| Fire ratings | Table 705.2 Table 705.2 Section 1014.11 Section 740.3 Section 1011.4 Table 602 Table 602 Table 602 Table 602 | Loadbearing Ext walls - 0 hr Nonloadbearing Ext walls - 0 hr Fire enclosure of exits - 1 hour Shafts and elevator hoistways - 1 hr Exit access corridors - 0 hour (Sprinkled) Smoke Barriers - 1 hour Other nonloadbearing walls - 0 hour Interior loadbearing walls - 0 hour Floor Construction - 0 hour Roof construction - 0 hour | | | 0 hour 0 hour 1 hour 1 hour 0 hour 1 hour 0 hour 0 hour 0 hour 0 hour |
| Separation of Use | Table 313.1.2 | Shown as reduced by 1 Hour per exception to 313.1.2, Separated use groups. B to S1: 2 Hours; B to S2: 1 Hour; S1 to S2: 2 Hours | 6.1.14.1 26.1.2.3 (Exc #2) | Reference specific occupancy chapters for requirements Fire separation of occupancies not required when sprinklered. | B to S1: 2 Hours; B to S2: 1 Hour; S1 to S2: 2 Hours |
| Specific Occupancy Areas | Table 3002.1.1 Table 3002.1.1 Table 3002.1.1 | Boiler and Furnace Rooms - 1 hr or sprinkler with smoke partitions Storage 50-100 s.f. - 1 hr or sprinkler with smoke partitions Storage greater than 100 s.f. - sprinkler with smoke partitions | | | Sprinkled with smoke partitions Sprinkled with smoke partitions Sprinkled with smoke partitions |
| Opening Protectives | Table 717.1 Table 717.1 | At 1 hr Shafts & Exit Enclosures - 1 hr At other 1 hr separation assemblies - 45min | | At 1 hr vertical openings - 1 hr & At 1 hr horizontal openings: 45 minutes | 1 Hr 45 Min |
| Fire Damper Rating | Table 718.1 Table 718.1 | 1-hour rated assembly - 1-hour Unprotected floor assemblies - 1/2 hr | | | 1 Hr 1/2 Hr |
| Interior Flame Spread Index | Table 803.4 Table 803.4 Table 803.4 | Required vertical exits & passageways - I Corridors providing exit access - II Rooms or enclosed spaces - III | 7.1.4 26.3.2.2 | Interior finish of exits - Class A or B Class A, B or C in occupied spaces | Class I [A or B] Class II [A, B or C] Class III |
| Means of Egress | T1006.5 T1010.2 1010.3 1011.2 (3) 1011.2.1(1) | Length of travel < 250' (Sprinkled) Number of exits per 500 = 2 Bldgs with one Exit, B Notes (a)(c) 75' Dead ends < 50' Common path of travel < 100' | 38.2.6 7.4.1.1 38.2.5.2 38.2.5.3 | Travel distance to exits < 300' Minimum number of exits = 2 Dead ends < 50' Common path of travel = 100' max. | See Plan See Plan See Plan See Plan |
| Occupant Load | T 1008.1.2 T 1008.1.2 T 1008.1.2 | Business Areas = 1 per 100 GSF Restrooms = By count Storage areas, mechanical and equipment rooms = 1 per 300 gsf | 7.3.1.2 7.3.1.2 | | See Building Area Calculations |
| 2nd Floor Egress | T 1009.2 T 1009.2 1017.3 1014.3 1011.3 (2) T 1009.2 | Egress width capacity = 0.15"/occupant @ doors and corridors Egress width capacity = 0.2"/occupant @ stairs Minimum door opening width = 32" Minimum Stair Width = 44" Minimum corridor width = 36" Egress width capacity = 0.15"/occupant @ doors and corridors | | Capacity Factor @ Level Components = 2" | |
| 1st Floor Egress | T 1009.2 1017.3 1011.3 (1) 1014.3 | Egress width capacity = 0.2"/occupant @ stairs Minimum door opening width = 32" Minimum corridor width = 44" Minimum Stair Width = 44" | 7.2.1.2.3 T 7.2.2.2.1 12.2.3.5 7.3.4.1 | Capacity Factor @ Stairs = .3" Minimum door opening width = 32" Minimum stair width = 44" Minimum corridor width = 44" Egress width capacity = .2"/occupant @ doors and corridors = 18" Min. Capacity Factor @ Stairs = .3" x 88 = 26.4" | 34" Doors 44" Stairs 52" Corridor 34" Doors 48" Corridors 48" Stairs |
| Emergency Lighting | 1023.1 1024.1 | Exit Signs are required Emergency lighting is required | 7.10.1.2 7.9.1.1 | Exit signs are required Emergency lighting is required | Provided Provided |
| Fire Suppression Systems | 904 | Required | | | Provided |
| Fire Alarm Systems | 918.4.2 | Required | 26.3.3.2 | Required | Provided |
| Automatic Fire Detection | 919 | Required | 26.3.3.5 | Required | Provided |
| Smoke Detectors | 920 | Required | 26.3.3.5 | Required | Provided |
| Extinguishment requirements | 921.2 (2) | Portable fire extinguishers shall be installed as per NFPA 10 | 38.3.5 | Required | Provided |

Building Area Calculations

| Use Group | 1st Floor SF | Mezzanine SF | 2nd Floor SF | Total Building Square Footage | Allowable Area (1) | Area Modifications (Notes 2&3) (5) | Adjusted Allowable Square Footage (6) | Separated Use Group Building Area Ratio (7) | Floor Area Allowances SF / Occupant (8) | Occupant Load |
|--------------------------------------|---------------|--------------|---------------|-------------------------------|--------------------|------------------------------------|---------------------------------------|---|---|---------------|
| | | | | | | | | | | |
| Business Showroom | 7,256 | | | 7,256 | 14,400 | 450% | 64,800 | 11.20% | 100 | 72.6 |
| Office (includes Stairs/Elevator) | 11,937 | | 7,012 | 22,030 | 14,400 | 450% | 64,800 | 18.42% | 100 | 119.4 |
| Storage 1 (Moderate Hazard) Service | 18,532 | 784 | | 18,593 | 8,400 | 450% | 37,800 | 49.03% | 300 | 61.8 |
| Storage 2 (Low Hazard) Parts Storage | 1,312 | | 5,499 | 4,688 | 14,400 | 450% | 64,800 | 2.02% | 300 | 4.4 |
| Totals | 39,037 | 784 | 12,511 | 52,332 | | | | 80.67% | | 258.1 |

Notes:
 1. Allowable Area Limitations (BOCA 1999 Table 503)
 2. Street Frontage Increase: Add 150% (BOCA 1999 Section 506.2) for 100% building perimeter access.
 3. Automatic Sprinkler System: Add 200% (BOCA 1999 Section 506.3) for 2 story building.
 4. Separated Use Group Building Area Ratio (BOCA 1999 Section 313.1.2)
 5. Area Modification: 100% allowable + 150% street frontage + 200% sprinkler = 450%
 6. Adjusted Allowable SF = Allowable SF x Area Modifications
 7. Building Area Ratio = Actual 1st Floor SF divided by Adjusted Allowable SF, the sum of which can not exceed
 8. Floor Area Allowances (BOCA 1999 Table 1008.1.2)

B CODE STUDY
 REFERENCED FROM: SCALE: N.T.S.

FOR REFERENCE ONLY

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 Drawing Title: **CODE STUDY**
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