

2012 APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS (EXCEPT 1 AND 2 FAMILY DWELLINGS AND TOWNHOUSES)

Name of Project: HAYNES / LACEWELL POLICE AND FIRE TRAINING FACILITY
Address: 3100 HURST STREET, WILMINGTON, NC
Proposed Use: LAW ENFORCEMENT FIRARMS AND FIRE DEPARTMENT TRAINING

Table with columns: Designer, Firm, Name, Lic. #, Phone #, Email. Lists various design firms and their contact information.

2012 EDITION OF NC CODE FOR: New Construction, Addition, Upfit, Existing, Reconstruction, Alteration, Repair, Renovation.

BASIC BUILDING DATA
Construction Type: I-A, II-A, III-A, IV, V-A, I-B, II-B, III-B, V-B
Sprinklers: No, Partial, Yes
Standpipes: No, Class I, Class II, Class III, Wet, Dry

Table with columns: FLOOR, GROSS BUILDING AREA, EXISTING (SQ FT), NEW (SQ FT), SUBTOTAL. Lists floor areas for ADMIN and MAT ROOM.

ALLOWABLE AREA
Occupancy: Assembly, Business, Educational, Factory, Hazardous, Institutional, Mercantile, Residential, Storage, Utility and Miscellaneous.

Accessory Occupancies: Assembly, Business, Educational, Factory, Hazardous, Institutional, Mercantile, Residential, Storage, Utility and Miscellaneous.

Incidental Uses (Table 509): Furnace room, Rooms with boilers, Refrigerant machine room, Hydrogen cut off rooms, Incinerator rooms, Paint shops, Laboratories, Laundry rooms, Group I-3 cells, Commercial kitchens, Waste and linen collection rooms, Stationary storage battery systems, Gallons or a lithium capacity of 1,000 pounds, emergency power, Rooms containing equipment, Group I-2 shops, Group I-2 commercial kitchens, Group I-2 shops, Group I-2 shops.

Special Uses: 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427
Special Provisions: 509.2, 509.3, 509.4, 509.5, 509.6, 509.7, 509.8, 509.9

Mixed Occupancy: No, Yes
Separation: 0 Hr
Exception:
Incidental Use Separation (509)
This separation is not exempt as a Non-Separated Use (see exceptions)
Non-Separated Use (508.3)
The required type of construction for the building shall be determined by applying the height and area limitations for each of the applicable occupancies to the entire building.

Actual Area of Occupancy A
Allowable Area of Occupancy A
Actual Area of Occupancy B
Allowable Area of Occupancy B
T = 1.00

Table with columns: STORY NO, DESCRIPTION AND USE, (A) BLDG AREA PER STORY (ACTUAL), (B) TABLE 509.1 AREA, (C) AREA FOR FRONTAGE INCREASE, (D) AREA FOR SPRINKLER INCREASE, (E) ALLOWABLE AREA OR UNLIMITED, (F) MAXIMUM BUILDING AREA. Row 1: ADMIN, 13,616, 9,500, 5,901, 28,500, 43,901.

- 1 - Frontage area increases from Section 506.2 are computed that:
a. Perimeter which fronts a public way or open space having 20 feet minimum width = 460' (F)
b. Total Building Perimeter = 528' (P)
c. Ratio (F/P) = .871 (F/P)
d. Minimum Width of Public Way = 30' (W)
e. Percent of Increase Increase 1 = 100 [(F/P) - 0.25] x W/30 = 82.12 (%)
2 - The sprinkler increase per Section 506.3 is as follows:
a. Multi-story Building 1 = 200%
b. Single story Building 1 = 300%
3 - Unretained area applicable under conditions of Section 507
4 - Maximum Building Area = total number of stories in the building x E (506.4)
5 - The maximum area of parking garages must comply with 408.3.5. The maximum area of air traffic control towers must comply with Table 412.1.2

Table with columns: ALLOWABLE HEIGHT, INCREASE FOR SPRINKLERS, SHOWN ON PLANS, CODE REFERENCE. Type of Construction: II-B, Building Height in Feet: 19' 0", Building Height in Stories: 2.

Table with columns: BUILDING ELEMENT, FIRE SEPARATION DISTANCE (FEET), RATING, DETAIL # AND SHEET #, DESIGN # FOR RATED ASSEMBLY, DESIGN # FOR PENETRATION, DESIGN # FOR RATED JOINT. Rows include Structural Frame, Ceiling, Walls, Exterior, Interior, Nonbearing Walls and Partitions, Floor Construction, Roof Construction, Shaft Enclosures - Exit, Shaft Enclosures - Other, Control Separation, Occupancy Separation, Party/Wall Separation, Smoke Barrier Separation, Tenant Room Separation, Incidental Use Separation.

LIFE SAFETY SYSTEM REQUIREMENTS
Emergency Lighting: No, Yes
Exit Signs: No, Yes
Fire Alarms: No, Yes
Smoke Detection Systems: No, Yes, Partial
Panic Hardware: No, Yes

LIFE SAFETY PLAN REQUIREMENTS
NOTE: ITEMS NOT CHECKED ARE NOT APPLICABLE TO THIS PROJECT
Life Safety Plan Sheet #: G101
Fire and/or smoke rated wall locations (Chapter 7)
Assumed and real property line locations
Exterior wall opening area with respect to distance to assumed property lines (705.5)
Existing structures within 30' of the proposed building
Occupancy types for each area as it relates to occupant load calculation (Table 1004.1.1)
Occupant loads for each area
Exit access travel distance (1016)
Common path of travel distances (1014.3 & 1028.8)

Dead end lengths (1018.4)
Clear exit widths for each exit door
Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.1)
Actual occupant load for each exit door
A separate schematic plan indicating where fire rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation
Location of doors with panic hardware (1008.1.10)
Location of doors with delayed egress locks and the amount of delay (1008.1.9.7)
Location of doors with electromagnetic egress locks (1008.1.9.8)
Location of doors equipped with hold-open devices
Location of emergency escape windows (1029)
The square footage of each fire area (902)
The square footage of each smoke compartment (407.4)
Note any code exceptions or table notes that may have been utilized regarding the items above

Table with columns: LOT OR PARKING AREA, TOTAL # OF PARKING SPACES, # OF ACCESSIBLE SPACES PROVIDED, TOTAL # ACCESSIBLE PROVIDED. Row 1: SITE, N/A, 133, 7.

STRUCTURAL DESIGN
DESIGN LOADS:
Importance Factors: Wind (Ib), Snow (S), Seismic (E)
Live Loads: Roof, Floor
Ground Snow Load: 10 psf
Wind Load: Basic Wind Speed, Exposure Category, Wind Base Shears (for MMFRS)

SEISMIC DESIGN CATEGORY: A, B, C, D
Provide the following Seismic Design Parameters:
Occupancy Category (Table 1604.5)
Spectral Response Acceleration
Site Classification (Table 1604.6)
Data Source: Field, Assumed, Historical Data
Basic Structural System (check one):
Dual with Special Moment Frame
Dual with Intermediate RC or Special Steel
Moment Resisting Inverted Pendulum
Analysis and Design: Equivalent Lateral Force, Modal
Architectural/Structural Components anchored: Yes, No
AS REQUIRED BY ASCE 7-05 FOR COMPONENTS WITH Ip = 1.5

SPECIAL INSPECTIONS REQUIRED: Yes, No PER NC SBC 2012 SECTION 1704.1.2

Table with columns: USE, WATER CLOSURES, URINALS, SHOWERS, REMAINING FIXTURES. Rows include MALE, FEMALE, MALE, FEMALE, TUBS, SHOWER, ACCESSIBLE.

ENERGY SUMMARY
ENERGY REQUIREMENTS
The following data shall be considered minimum and any special attribute required to meet the energy code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If energy cost budget method, state the annual energy cost budget vs. allowable annual energy cost budget.
Climate Zone: 3, 4, 5
Method of Compliance: Prescriptive (Energy Code), Performance (Energy Code), Prescriptive (ASHRAE 90.1), Performance (ASHRAE 90.1)

THERMAL ENVELOPE
Roof/Ceiling Assembly (each assembly)
Description of assembly
Insulation entirely above deck
U-Value of total assembly
R-Value of insulation
Skylights in each assembly
U-Value of skylight
Total square footage of skylights in each assembly
Exterior Walls (each assembly)
Description of assembly
Insulated precast panels w/irrigating
U-Value of total assembly
R-Value of insulation
Openings (windows or doors with glazing)
U-Value of assembly
Shading coefficient
Projection factor
Low-E required, if applicable
Door R-Values
Walls below grade (each assembly)
Description of assembly
U-Value of total assembly
R-Value of insulation
Floors over unconditioned space (each assembly)
Description of assembly
U-Value of total assembly
R-Value of insulation
Floors slab on grade (each assembly)
Description of assembly
U-Value of total assembly
R-Value of insulation
Horizontal thermal requirement
Slab heater

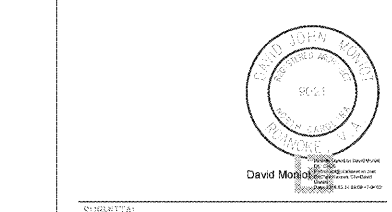
MECHANICAL SUMMARY
MECHANICAL SYSTEMS, SERVICE SYSTEMS, AND EQUIPMENT
Thermal Zones: winter dry bulb, summer dry bulb
Interior design conditions: winter dry bulb, summer dry bulb, relative humidity
Building heating load: 256,328 BTU/H
Building cooling load: 39.3 TONS
Mechanical Space Conditioning System
Unitary: description of unit, packaged RTU, DX cooling, gas heat, heating efficiency, cooling efficiency, size category of unit
Boiler: Size category, if oversized, state reason
Chiller: Size category, if oversized, state reason
List equipment efficiencies: RTU-1: 10.8 EER, 17.5 IEER, 80%; RTU-2: 12.1 EER, 18.8 IEER, 80%; RTU-3: 11.2 EER, 17.6 IEER, 80%; RTU-4: 11.7 EER, 19.3 IEER, 80%

ELECTRICAL SUMMARY
ELECTRICAL SYSTEM AND EQUIPMENT
Method of Compliance: Prescriptive, Performance
Energy Code: Prescriptive, Performance
ASHRAE 90.1: Prescriptive, Performance
Lighting Schedule
Lamp type required in fixture: See Schedule on E-002
Number of lamps in fixture: See Schedule on EL501
Ballast type used in fixture: See Schedule on EL501
Number of ballasts in fixture: See Schedule on EL501
Total wattage per fixture: See Schedule on EL601
Total interior wattage specified vs. allowed (whole building or space by space): 6,480 vs 12,118
Total exterior wattage specified vs. allowed: 708 vs 1,068
Equipment schedules with motors (not used for mechanical systems)
506.2.1 More Efficient Mechanical Equipment
506.2.2 Reduced Lighting Power Density
506.2.3 Energy Recovery Ventilation Systems
506.2.4 Higher Efficiency Service Water Heating
506.2.5 On-Site Supply of Renewable Energy
506.2.6 Automatic Daylighting Control Systems

HAYNES / LACEWELL POLICE AND FIRE TRAINING FACILITY

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SEALS



SUBMITTAL
4 MAY 2018
CONSTRUCTION DOCUMENTS

REVISIONS

REVISIONS

CODE ANALYSIS - ADMINISTRATION

GI002

DESIGN: DJM
DRAWN: ZLT
REVIEW: JCS
CN 5938

Owner Plans