



COMcheck Software Version 3.9.3
Envelope Compliance Certificate

90.1 (2010) Standard

Section 1: Project Information

Project Type: New Construction
Project Title:

Construction Site: Owner/Agent: Designer/Contractor:

Section 2: General Information

Building Location (for weather data): Rutherfordton, North Carolina
Climate Zone: 4a
Building Space Conditioning Type(s): Nonresidential
Vertical Glazing / Wall Area Pct.: 5%

Building Type: Floor Area
Fire Station: 3717

Section 3: Envelope Assemblies

Envelope PASSES: Design 2% better than code.

Climate-Specific Requirements:

Component Name/Description	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U-Factor(s)
Roof 1: Attic Roof with Wood Joists	3717	38.0	0.0	0.027	0.027
Exterior Wall 1: Wood-Framed, 16" o.c.	3782	21.0	5.0	0.045	0.089
Window 1: Metal Frame, Perf. Type: Energy code default, Double Pane with Low-E, Clear, SHGC 0.68	182	---	---	0.900	0.550

(a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements.

Section 4: Compliance Statement

Compliance Statement: The proposed envelope design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed envelope system has been designed to meet the 90.1 (2010) Standard requirements in COMcheck Version 3.9.3 and to comply with the mandatory requirements in the Requirements Checklist.

David Pearce - Project Manager
David Benza
10/16/14
Name - Title Signature Date

Project Title: Report date: 10/06/14
Data filename: G:\114-111 Henrietta EMS\Documents\Design\Calculations\M14-111 Henrietta EMS COMcheck.cck Page 1 of 1

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

Name of Project: NEW SOUTHEASTERN EMS FOR RUTHERFORD COUNTY NORTH CAROLINA
Address: US HIGHWAY 221 ALT., Zip Code 28114
Proposed Use: EMS STATION
Owner or Authorized Agent: DANNY SEARCY Phone # 828.287.6300 E-Mail danny.searcy@rutherfordcountync.gov
Owned By: City/County Private State
Code Enforcement Jurisdiction: City County RUTHERFORD State

LEAD DESIGN PROFESSIONAL: MARK B. PATTERSON
DESIGNER FIRM NAME LICENSE # TELEPHONE # E-MAIL
Architectural ESD ARCHITECTURE MARK B. PATTERSON 6262 (704) 373-1900 mpatterson@esdarch.com
Civil ODOM & ASSOCIATES DAVID ODOM 2036 (828) 241-4445 david@odomengineering.com
Electrical KENIGT SMITH HARD GRIFFIN MARK ARRINGTON 12440 (704) 521-2112 marrington@msug.com
Fire Alarm KENIGT SMITH HARD GRIFFIN CRAIG CAMPION 11250 (704) 521-2112 ccampion@msug.com
Plumbing KENIGT SMITH HARD GRIFFIN CRAIG CAMPION 11250 (704) 521-2112 ccampion@msug.com
Mechanical KENIGT SMITH HARD GRIFFIN CRAIG CAMPION 11250 (704) 521-2112 ccampion@msug.com
Sprinkler- Standpipe -- -- -- -- --
Structural SOLID ROCK STRUCTURAL SCOTT NESTMORELAND 21444 (704) 894-6415 info@solidrockstructural.com
Retaining Walls >5' High -- -- -- -- --
Other -- -- -- -- --

2012 EDITION OF NC CODE FOR: New Construction Addition Upfit
EXISTING: Reconstruction Alteration Repair Renovation
CONSTRUCTED (date): ORIGINAL USE(S) (Ch. 3):
RENOVATED: (date): CURRENT USE(S) (Ch. 3):
PROPOSED USE(S) (Ch. 3):

BUILDING DATA
Construction Type: I-A I-B II-A II-B III-A III-B IV V-A V-B

Mixed construction: No Yes Types: NFPA 13 NFPA 13R NFPA 13D

Sprinklers: No Partial Yes

Standpipes: No Yes Class I II III Wet Dry

Fire District: No Yes Flood Hazard Area: No Yes

Building Height: 28.2 Feet Number of Stories: 1
Mezzanine: No Yes
Gross Building Area:

FLOOR, ROOM OR SPACE DESIGNATION	EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL
5th Floor	--	--	--
4th Floor	--	--	--
3rd Floor	--	--	--
2nd Floor	--	--	--
1st Floor	--	3,717	3,717
Drive-Thru Canopy	--	--	--
TOTAL	--	3,717	3,717

OCCUPANCY REQUIREMENTS

FLOOR, ROOM OR SPACE DESIGNATION	OCCUPANCY	AREA OCCUPANCY	SQUARE FOOTAGE	NUMBER OF OCCUPANTS
BAYS AREA	(S-2) GARAGE	200 GR255	1466	8
RESIDENTIAL SIDE	(R-2) RESIDENTIAL	200 GR255	2247	12
TOTAL NUMBER OF OCCUPANTS: 20				

EXIT REQUIREMENTS
NUMBER AND ARRANGEMENT OF EXITS

FLOOR, ROOM OR SPACE DESIGNATION	MINIMUM # NUMBER OF EXITS		TRAVEL DISTANCE		ARRANGEMENT MEANS OF EGRESS ¹ (SECTION 1014.2)	
	REQUIRED	SHOWN ON PLANS	ALLOWABLE TRAVEL DISTANCE (TABLE 1008.1)	ACTUAL TRAVEL DISTANCE SHOWN ON PLANS	REQUIRED MIN. DISTANCE BETWEEN EXIT DOORS	ACTUAL DISTANCE SHOWN ON PLANS
BAYS AREA	1	1	122	67'-0"	N/A	N/A
RESIDENTIAL SIDE	2	2	250	82'-0"	26'-0"	31'-3"
---	---	---	---	---	---	---
---	---	---	---	---	---	---

¹ Corridor dead ends (Section 1018.4)
² Single exits (Table 1021.2), Spaces with one means of egress (Table 1015.1)
³ Common Path of Travel (Section 1014.3)

EXIT WIDTH

USE GROUP OR SPACE DESCRIPTION	AREA ¹ sq. ft.	AREA ¹ PER OCCUPANT (TABLE 1004.1)	CALCULATED OCCUPANT LOAD (a)		EGRESS WIDTH PER OCCUPANT (TABLE 1005.1)		REQUIRED WIDTH (a)(b) x c		ACTUAL WIDTH SHOWN ON PLANS
			STAIR	LEVEL	STAIR	LEVEL			
BAYS AREA	1466	1466 / 200	8	N/A	0.2	N/A	1.6	N/A	34
RESIDENTIAL SIDE	2247	2247 / 200	12	N/A	0.2	N/A	2.4	N/A	68

¹ See Table 1004.1.1 to determine whether net or gross area is applicable.
² See definition "Area, Gross" and "Area, Net" (Section 1002)
³ Minimum stairway width (Section 1009.1); min. corridor width (Section 1018.2); min. door width (Section 1008.1.1)
⁴ Minimum width of exit passageway (Section 1023.2)
⁵ The loss of one means of egress shall not reduce the availability capacity to less than 50 percent of the total required. (Section 1005.1)
⁶ Assembly occupancies (Section 1028)

ALLOWABLE AREA

Occupancy: A-1 A-2 A-3 A-4 A-5

Assembly Business

Educational

Factory F-1 Moderate F-2 Low

Hazardous H-1 Detonate H-2 Deflagrate H-3 Combust H-4 Health H-5 HPM

Institutional I-1 I-2 I-3 I-4 I-5

Mercantile

Residential R-1 R-2 R-3 R-4

Storage S-1 Moderate S-2 Low High-piled

Parking Garage Open Enclosed Repair Garage

Utility and Miscellaneous

Accessory Occupancies: A-1 A-2 A-3 A-4 A-5

Assembly Business

Educational

Factory F-1 Moderate F-2 Low

Hazardous H-1 Detonate H-2 Deflagrate H-3 Combust H-4 Health H-5 HPM

Institutional I-1 I-2 I-3 I-4 I-5

Mercantile

Residential R-1 R-2 R-3 R-4

Storage S-1 Moderate S-2 Low High-piled

Parking Garage Open Enclosed Repair Garage

Utility and Miscellaneous

Incidental Uses (Table 508.2.1):
 Furnace room where any piece of equipment is over 400,000 Btu per hour input
 Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower
 Refrigerant machine room
 Hydrogen cutoff rooms, not classified as Group H
 Incinerator rooms
 Paint shops, not classified as Group H, located in occupancies other than Group F
 Laboratories and vocational shops, not classified as Group H, located in a Group E or I-2 occupancy
 Laundry rooms over 100 square feet
 Group I-3 cells equipped with padded surfaces
 Group I-2 waste and linen collection rooms
 Waste and linen collection rooms over 100 square feet
 Stationary storage battery systems having a liquid electrolyte capacity of more than 50 gallons, or a lithium-ion capacity of 1,000 pounds used for facility standby power, emergency power or uninterruptible power supplies
 Rooms containing fire pumps
 Group I-2 storage rooms over 100 square feet
 Group I-2 commercial kitchens
 Group I-2 bundles equal to or less than 100 square feet
 Group I-2 rooms or spaces that contain fuel-fired heating equipment

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

Mixed Occupancy: No Yes Separation: 1 Hr. Exception: ---

Incidental Use Separation (508.2)
This separation is not exempt as Non-Separated Use (see exemptions).
Non-Separated Mixed Occupancy (508.3.2)
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. The most restrictive type of construction, so determined, shall apply to the entire building.
Separated Use (508.4) - See below for area calculations
For each story, the area of the occupancy shall be such that the sum of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1.

Actual Area of Occupancy A + Actual Area of Occupancy B
Allowable Area of Occupancy A + Allowable Area of Occupancy B <= 1

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 503.1 AREA	(C) AREA FOR OPEN SPACE INCREASE ¹	(D) AREA FOR SPRINKLER INCREASE ²	(E) ALLOWABLE AREA OF UNLIMITED ³	(F) MAXIMUM BUILDING AREA ⁴
1	EMS	3717	1000	N/A	N/A	N/A	N/A
---	---	---	---	---	---	---	---
TOTAL	---	---	---	---	---	---	---

¹ Frontage area increases from Section 506.2 are computed thus:
a. Perimeter which fronts a public way or open space having 20 feet minimum width = --- (F)
b. Total Building Perimeter = --- (P)
c. Ratio (F/P) x --- (F/P) = --- (F/P)
d. W = Minimum width of public way = --- (W)
e. Percent of frontage increase = 100 [(F/P) - 0.25] x W/30 = --- (%)
² The sprinkler increase per Section 506.3 is as follows:
a. Multi-story building: 1/2 200 percent
b. Single-story building: 1/2 200 percent
³ Unlimited area applicable under conditions of Section 507
Group A motion picture (507.10); Malls (402.6); and H-2 aircraft paint hangars (507.8).
⁴ Maximum Building Area = total number of stories in the building x E (506.4)
⁵ The maximum area of open parking garages must comply with 406.3.5. The maximum area of air traffic control towers must comply with table 412.1.2

ALLOWABLE HEIGHT

Type of Construction	ALLOWABLE (TABLE 503)	INCREASE FOR SPINNERS	SHOWN ON PLANS	CODE REFERENCE
Building Height in Feet	Feet 40'	Feet + H + 20 = N/A	Feet 26'-2"	---
Building Height in Stories	Stories 1	Stories + 1 = N/A	Stories 1	---

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION AND DISTANCE (FEET)	RATING		DETAILS AND SHEET #	DESIGN # FOR RATED ASSEMBLY	DESIGN # FOR RATED PENETRATION	DESIGN # FOR RATED JOINTS
		REQD	PROVIDED (W/ REDUCTIONS)				
Structural frame, including columns, girders, trusses	230	N/A	N/A	N/A	N/A	N/A	N/A
Bearing walls	230	N/A	N/A	N/A	N/A	N/A	N/A
Exterior	230	N/A	N/A	N/A	N/A	N/A	N/A
North	230	N/A	N/A	N/A	N/A	N/A	N/A
East	230	N/A	N/A	N/A	N/A	N/A	N/A
West	230	N/A	N/A	N/A	N/A	N/A	N/A
South	230	N/A	N/A	N/A	N/A	N/A	N/A
Interior	230	N/A	N/A	N/A	N/A	N/A	N/A
Working walls and partitions	230	N/A	N/A	N/A	N/A	N/A	N/A
Exterior	230	N/A	N/A	N/A	N/A	N/A	N/A
North	230	N/A	N/A	N/A	N/A	N/A	N/A
East	230	N/A	N/A	N/A	N/A	N/A	N/A
West	230	N/A	N/A	N/A	N/A	N/A	N/A
South	230	N/A	N/A	N/A	N/A	N/A	N/A
Interior walls and partitions	230	N/A	N/A	N/A	N/A	N/A	N/A
Floor construction including supporting beams and joists	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roof construction including supporting beams and joists	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Shafts - Exit	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Shafts - Other	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Conduit Separation	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Occupancy Separation	N/A	1 HR	1 HR	3/A-4.3	UL* 505	SEE FME	SEE FME
Party/Wall Separation	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Smoke Barrier Separation	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tenant Separation	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Incidental Use Separation	N/A	N/A	N/A	N/A	N/A	N/A	N/A

¹ Indicate section number permitting reduction
 No special inspections required for this project SPECIAL INSPECTIONS REQUIRED

The following sheets comprise the required schedule of special inspections for this project. The construction divisions which require special inspections for this project are as follows:

<input checked="" type="checkbox"/> IT-1 Verification of Soils	<input checked="" type="checkbox"/> IT-10 Inspection of Structural Steel Fabricators
<input checked="" type="checkbox"/> IT-2 Excavation and Fill	<input type="checkbox"/> IT-11 Structural Masonry
<input type="checkbox"/> IT-3 Piling and Drilling Piers	<input type="checkbox"/> IT-12 Welding
<input type="checkbox"/> IT-4 Modular Retaining Walls	<input type="checkbox"/> IT-13 High Strength Bolts & Steel Framing Insp.
<input type="checkbox"/> IT-5 Reinforced Concrete	<input type="checkbox"/> IT-14 Sprayed Fire-Resistance Materials
<input type="checkbox"/> IT-6 Post Tension Slab	<input type="checkbox"/> IT-15 Exterior Insulation and Finish System
<input type="checkbox"/> IT-7 Pre-cast Concrete Erection	<input checked="" type="checkbox"/> IT-16 Seismic Resistance
<input type="checkbox"/> IT-8 Pre-stressed Concrete	<input type="checkbox"/> IT-17 Smoke Control
<input type="checkbox"/> IT-9 Inspection of Pre-cast Fabricators	<input type="checkbox"/> IT-18 Dentention Basin
	<input type="checkbox"/> IT-19 Special Cases

Check the above boxes for the special inspection required for this project and list below specific special inspections required under chapter 17.

LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting: No Yes
Exit Signs: No Yes
Fire Alarm: No Yes
Smoke Detection Systems: No Yes Partial
Panic Hardware: No Yes

Life Safety Plan Sheet # A-00

Fire and/or smoke rated wall locations (Chapter 7)
 Assumed and real property line locations (Refer to Site Drawings)
 Exterior wall opening area with respect to distance to assumed property lines (705.8)
 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 distances (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

ACCESSIBLE DWELLING UNITS (SECTION 1107)

Total Units	Accessible Required	Accessible Provided	Type A Units Required	Type A Units Provided	Type B Units Required	Type B Units Provided	Total Accessible Units Provided
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

ACCESSIBLE PARKING (SECTION 1106)

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES		# OF ACCESSIBLE SPACES PROVIDED		TOTAL # ACCESSIBLE PROVIDED
	REQUIRED	PROVIDED	REGULAR WITH ACCESS ASBLE	VAN SPACES WITH ACCESS ASBLE	
PARKING	---	---	---	---	---
TOTAL	---	---	---	---	---

STRUCTURAL DESIGN
THIS SECTION PROVIDED IN STRUCTURAL DRAWINGS

PLUMBING FIXTURE REQUIREMENTS

SPACE	EXISTING	WATERCLOSETS		URINALS		LAVATORIES		SHOWERS/TUBS		DRINKING FOUNTAINS	
		MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	REGULAR	ACCESSIBLE		
NEW	---	1	1	0	0	1	1	1	1	0	0
REQUIRED	---	1	1	0	0	1	1	1	1	0	0

SPECIAL APPROVALS
Special approval: (Local Jurisdiction, Department of Insurance, OSC, DPI, DHHS, ICC, etc., describe below)

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 energy cost budget.

Method of Compliance: Prescriptive (Energy Code) Performance (Energy Code)
 Prescriptive (ASHRE 90.1) Performance (ASHRE 90.1)

Climate Zone: 3 4 5

NOTE: ENVELOPE PASSES BY 2%, REFER TO COMCHECK INCLUDED WITH SUBMITTAL

Roofing Assembly (each assembly)
Description of assembly: REFER TO WALL SECTIONS
U-Value of total assembly: 0.027
R-Value of insulation: R-58
Skylights in each assembly: N/A
U-Value of skylight: N/A
Total square footage of skylights in each assembly: N/A

Exterior Walls (each assembly)
Description of assembly: REFER TO WALL SECTIONS
U-Value of total assembly: 0.041
R-Value of insulation: R-21 + 5
Openings (windows or doors with glazing): REFER TO WALL SECTIONS
U-Value of assembly: 0.30
Shading coefficient: N/A
Projection factor: 0.33
Low e required, if applicable: YES
Door R-Values: 0.30

Walls adjacent to unconditioned space (each assembly)
Description of assembly: N/A
U-Value of total assembly: N/A
R-Value of insulation: N/A
Openings (windows or doors with glazing): N/A
U-Value of assembly: N/A
Low e required, if applicable: N/A
Door R-Values: N/A

Walls below grade (each assembly)
Description of assembly: N/A
U-Value of total assembly: N/A
R-Value of insulation: N/A

Floors over unconditioned space (each assembly)
Description of assembly: N/A
U-Value of total assembly: N/A
R-Value of insulation: N/A

Floors slab on grade
Description of assembly: REFER TO WALL SECTIONS
U-Value of total assembly: 0.67
R-Value of insulation: R-15
Horizontal/vertical requirement: N/A
Slab heated: N/A

MECHANICAL, SERVICE, ELECTRICAL SYSTEMS AND EQUIPMENT METHOD OF COMPLIANCE:
THIS SECTION PROVIDED IN MECHANICAL AND ELECTRICAL DRAWINGS

P:\2014\14-190-000 Henrietta EMS and Library\CD's\A-0.0 COVER.dwg, Plotted: Oct 07, 2014 10:54am



1300 South Mint Street, Suite 300, Charlotte, NC 28203
Email: esd@esdarch.com • Fax: 704-373-0902 • Phone: 704-373-1900

NEW SOUTHEASTERN EMS
FOR
RUTHERFORD COUNTY