

Lillington Grace Church of the Nazarene

401 South Street, Lillington, N. C. 27546

May 18, 2020

Name of Project: LILLINGTON GRACE CHURCH OF THE NAZARENE
 Address: 401 SOUTH STREET, LILLINGTON Zip Code: 27546
 Proposed Use: CHURCH-RELIGIOUS
 Owner or Authorized Agent: BRAD BYERS Phone #: 910-385-7763 E-Mail
 Owned By: City/County Private State
 Code Enforcement Jurisdiction: City: County: HARNET

CONTACT: William A. Gold, P.E.
 DESIGNER FIRM NAME LICENSE # TELEPHONE # E-MAIL
 Architectural
 Civil
 Electrical
 Fire Alarm
 Plumbing
 Mechanical
 Sprinkler-Standpipe
 Structural EXISTING STRUCTURE
 Retaining Walls >5' High
 Other** (Life Safety) Meridian Engineering, P.A. William A. Gold 05282 252-522-2587 wgold2@sudtenlink.net

2018 NC BUILDING CODE: New Building Shell/Core 1st Time Interior Completions
 Addition Phased Construction-Shell Core
 2018 NC EXISTING BUILDING CODE: Prescriptive Alteration Level I Historic Property
 Repair Alteration Level II Change of Use
 Chapter 14 Alteration Level III

CONSTRUCTED: (date) CURRENT USE(S) (Ch. 3): NOT IN USE
 RENOVATED: (date) PROPOSED USE(S) (Ch. 3): A3

OCCUPANCY CATEGORY (Table 1604.5): Current: Proposed: II

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 NFPA 13 NFPA 13R NFPA 13D
 Standpipes: No Class I II III Wet Dry
 Primary Fire District: No Yes Flood Hazard Area: No Yes
 Special Inspections Required: No Yes

FLOOR	EXISTING (sq. ft.)	NEW (sq. ft.)	SUB-TOTAL
3rd Floor			
2nd Floor			
Mezzanine		5,200	5,200
1st Floor			
Basement			
TOTAL		5,200	5,200

ALLOWABLE AREA
 Primary Occupancy Classification(s):
 Assembly A-1 A-2 A-3 A-4 A-5
 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-3 Condition 1 2
 I-2 Condition 1 2
 I-3 Condition 1 2 3 4 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 Occupancy Classification(s):
 Incidental Uses (Table 509):
 This separation is not exempt as a Nonseparated Use (see exceptions).
 Special Uses (Chapter 4 - List Code Sections):
 Special Provisions: (Chapter 5 - List Code Sections):
 Mixed Occupancy: No Yes Separation: 2 HR Hr. Exception: -
 Non-Separated Use (508.3)
 Separated Use (508.3) - 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.
 Select one

$$\frac{\text{Actual Area of Occupancy A}}{\text{Allowable Area of Occupancy A}} + \frac{\text{Actual Area of Occupancy B}}{\text{Allowable Area of Occupancy B}} \leq 1$$

$$\frac{3600/6000}{3600/6000} + \frac{1600/6000}{1600/6000} = 0.87 \leq 1.00$$

STORY NO	DESCRIPTION AND USE	(A) BLDG. AREA PER STORY (ACTUAL)	(B) TABLE 508.3 AREA	(C) AREA FOR FRONTAGE INCREASE ¹	(D) ALLOWABLE AREA PER STORY OR UNLIMITED ^{2,3}
1	A-3	5,200	6,000	-	6,000

LIFE SAFETY PLAN REQUIREMENTS
 Life Safety Plan Sheet # B-2
 Fire and/or smoke rated wall locations (Chapter 7)
 Assumed and real property line locations (if not on the site plan)
 Exterior wall opening area with respect to distance to assumed property lines (705.8)
 Occupancy Use for each area as it relates to occupant load calculation (Table 1004.1.2)
 Occupant loads for each area
 Exit access travel distances (1017)
 Common path of travel distances (Tables 1006.2.1 & 1006.3.2(1))
 Dead end lengths (1020.4)
 Clear exit widths for each exit door
 Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.3)
 Actual occupant load for each exit door
 A separate schematic plan indicating where fire rated fire/ceilinging and/or roof structure is provided for purposes of occupancy separation
 Location of doors with panic hardware (1010.1.10)
 Location of doors with delayed egress locks and the amount of delay (1010.1.9.7)
 Location of doors with electromagnetic egress locks (1010.1.9.9)
 Location of doors equipped with hold-open devices
 Location of emergency escape windows (1030)
 The square footage of each fire area (202)
 The square footage of each smoke compartment for Occupancy Classification I-2 (407.5)
 Note any code exception or table notes that may have been utilized regarding the items above.

1 Use most restrictive
 2 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) = (F/P)
 d. W = Minimum width of public way = (W)
 e. Percent of frontage increase (I) = 100 [(F/P) - 0.25] x W/30 = (%)
 3 Unlimited area applicable under conditions of Section 507.
 4 Maximum Building Area-total number of stories in the building x D (maximum 3 stories) (506.2).
 5 The maximum area of open parking garages must comply with Table 406.5.4. The maximum area of air traffic control towers must comply with Table 412.3.1.
 6 Frontage increase is based on the un-sprinklered area value in Table 506.2.

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE
Building Height in Feet (Table 504.3)	Feet 5B	Feet 5B	Table 504.3
Building Height in Stories (Table 504.4)	Stories 2	Stories 1	Table 504.4

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING PROVIDED	DETAILS AND SHEET #	DESIGN RATED ASSEMBLY	SHEET # FOR RATED PENETRATION	SHEET # FOR RATED JOINTS
Structural Frame, including columns, girders, trusses		0				
Bearing Walls						
Exterior Walls		N/A				
North		0				
East		0				
West		0				
South		0				
Interior						
Nonbearing Walls and Partitions						
Exterior Walls		0				
North		0				
East		0				
West		0				
South		0				
(Trent Road)		0				
Interior Walls and Partitions						
Floor Construction including supporting beams and joists		0				
Floor Ceiling Assembly						
Columns Supporting Floors						
Roof Construction including supporting beams and joists		0				
Roof Ceiling Assembly						
Columns Supporting Roof						
Shaft Enclosures - Exit	N/A	0				
Shaft Enclosures - Other	N/A					
Corridor Separation	N/A					
Occupancy/Fire Barrier Separation	2 HR			UL U-384 FLOOR TO BOTTOM OF ROOF DECK		
Fairy/Fire Wall Separation	N/A					
Smoke Barrier Separation	N/A					
Smoke Partition	N/A					
Tenant/Dwelling Unit/Sleeping Unit Separation	N/A					
Incidental Use Separation	N/A					

FIRE SEPARATION DISTANCE (FEET) FROM PROPERTY LINES	DEGREE OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOW ON PLANS (%)
> 50'	UP/NS	UNLIMITED	< 5%

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

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STRUCTURAL DESIGN
 DESIGN LOADS: *** NOTE: EXISTING UNITS BY EAST COAST MODULAR***
 Importance Factors: Wind (I_w) 1.0
 Snow (I_s) 1.0
 Seismic (I_e) 1.0
 Live Loads: Roof 30 psf
 Mezzanine psf
 Floor 125 psf
 Ground Snow Load: 15 psf
 Wind Load: Basic Wind Speed 90 mph (ASCE-7-16)
 Exposure Category B
 *** NOTE: EXISTING UNITS BY EAST COAST MODULAR***

SEISMIC DESIGN CATEGORY A B C D
 Provide the following Seismic Design Parameters:
 Occupancy Category (Table 1604.5) I II III IV
 Spectral Response Acceleration S_s %g S₁ %g
 Site Classification (ASCE 7) A B C D E F
 Data Source: Field Test Presumptive Historical Data
 Basic structural system (check one)
 Bearing Wall Dual w/Special Moment Frame
 Building Frame Dual w/Intermediate RC or Special Steel
 Moment Frame Inverted Pendulum
 Analysis Procedure: Simplified Equivalent Lateral Force Dynamic
 Architectural, Mechanical, Components Anchored? Yes No
 LATERAL DESIGN CONTROL: Earthquake Wind

SOIL BEARING CAPACITIES:
 Field Test (provide copy of test report) psf
 Presumptive Bearing capacity 2000 psf
 Pile size, type, and capacity

TOTAL UNITS	ACCESSIBLE UNITS REQUIRED	ACCESSIBLE UNITS PROVIDED	TYPE - A UNITS REQUIRED	TYPE - A UNITS PROVIDED	TYPE - B UNITS REQUIRED	TYPE - B UNITS PROVIDED	TOTAL # ACCESSIBLE UNITS PROVIDED
N/A							

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES		# OF ACCESSIBLE SPACES PROVIDED			TOTAL # ACCESSIBLE UNITS PROVIDED
	REQUIRED	PROVIDED	REGULAR WITH 5' ACCESS AISLE	13' ACCESS AISLE	8' ACCESS AISLE	
TOTAL						

SEE SITE PLAN BY OTHERS

USE	WATERCLOSETS (URINALS)			LAVATORIES			SHOWERS/TUBS	DRINKING FOUNTAINS	
	MALE	FEMALE	UNISEX	MALE	FEMALE	UNISEX		REGULAR	ACCESSIBLE
EXISTING	2	3	1	2	2	3	1	1	1
NEW									
REQUIRED	2	3	1	2	2	3	1	1	1

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 performance method, state the annual energy cost for the standard referenced design versus the annual energy costs for the proposed design.
 Existing Building Envelope complies with Code: (If checked, the remainder of this section is not applicable).
 Exempt Building: Provide Code or Statutory Reference:
 Climate Zone: 3A 4A 5A

EXISTING MODULAR UNITS
 Method of Compliance:
 Energy Code: Performance Prescriptive
 ASHRAE 90.1: Performance Prescriptive
 Other: Performance (specify source)
 THERMAL ENVELOPE: (Prescriptive method only)
 Roof/Ceiling Assembly (each assembly)
 Description of Assembly: METAL ROOF WITH R-19 INSULATION
 U-Value of Total Assembly: 0.052
 R-Value of Insulation: R19 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: 2X4 WOOD STUDS
 U-Value of Total Assembly: 0.077
 R-Value of Insulation: R13 R-Value of Insulation:
 Openings (windows or doors with glazing)
 U-Value of Assembly: 0.61
 Solar heat gain Coefficient: NA
 Projection Factor: YES
 Door R-Values: 0.07
 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: 2X10 WOOD JOISTS
 U-Value of Total Assembly: 0.067
 R-Value of Insulation: R15 R-Value of Insulation:
 Floors Slab on Grade (each assembly)
 Description of Assembly:
 U-Value of Total Assembly:
 R-Value of Insulation:
 Horizontal/Vertical Requirement:
 Slab Heated:

Walls below grade (each assembly) NONE
 Description of Assembly
 U-Value of Total Assembly
 R-Value of Insulation
 Floors Over Unconditioned Space (each assembly) NONE
 Description of Assembly
 U-Value of Total Assembly
 R-Value of Insulation
 Floors Slab on Grade
 Description of Assembly
 U-Value of Total Assembly
 R-Value of Insulation
 Horizontal/Vertical Requirement
 Slab Heated

MECHANICAL SUMMARY
 MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT
 Thermal Zone Zone 4A
 winter dry bulb 16 F
 summer dry bulb 94 F
 Interior design conditions
 winter dry bulb 72 F
 summer dry bulb 75 F
 relative humidity 50
 Building heating load 670M BTUH
 Building cooling load 35.0 TONS
 Mechanical Spacing Conditioning System
 Unitary
 description of unit
 heating efficiency
 cooling efficiency
 size category of unit
 Boiler
 Size category: If oversized, state reason: N/A
 Chiller
 Size category: If oversized, state reason: N/A
 List equipment efficiencies
 motor horsepower N/A Less Than 1 HP
 number of phases 1Ø
 minimum efficiency 12 Seer
 motor type Inverter Cond. Motors
 number of poles N/A

ELECTRICAL SUMMARY
 ELECTRICAL SYSTEM AND EQUIPMENT SEE ELECTRICAL DRAWINGS
 Method of Compliance:
 Energy Code: Prescriptive Performance
 ASHRAE 90.1: Prescriptive Performance
 Lighting schedule (each fixture type)
 lamp type required in fixture
 number of lamps in fixture Existing Fixtures & Lights
 ballast type used in fixture Existing Fixtures & Lights
 number of ballasts in fixture Existing Fixtures & Lights
 total wattage per fixture Existing
 total interior wattage specified vs. allowed Existing
 total exterior wattage specified vs. allowed Existing
 Additional Prescriptive Compliance
 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

SCHEDULE OF DRAWINGS

D-1 APPENDIX "B"
 SITE PLAN BY OTHERS

S-1 FOUNDATION PLAN
 B-1 FLOOR PLAN
 B-2 LIFE SAFETY

REVISIONS

DATE	MARK	DESCRIPTION

DRAWN BY VDS SCALE
 FILE: LILLINGTON GRACE CHURCH NOTED
 APPVD. BY WAG
 DATE 5-18-20
 DRAWING NUMBER
 APPENDIX "B"
 1
 REVISED 5-18-20

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WILLIAM A. GOLD
 5/19/20