FORM F3 BUILDING CODE ANALYSIS FORM

PROJECT: Millbrook Elementary School DISTRICT: Aiken County Public School District

SUBMITTAL: ☐ SCHEMATIC ☐ DESIGN DEVELOPMENT ☒ CONSTRUCTION DOCUMENT

DATE: 10.17.19 CODE & EDITION: 2015 IBC GUIDE EDITION: 2018

BASIC BUILDING CODE INFORMATION

DESIGNATED AREAS OF BUILDING	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6
CONSTRUCTION CLASSIFICATION TYPE (IBC 602)	IIB	IIB	N/A			
OCCUPANCY GROUP (indicate all) (IBC 302) (Note IBC 508.5)	E, A-3, B, S*	E, B, S*	N/A			
OCCUPANCY GROUP (indicate most restrictive) (IBC Table 503)	E	E	N/A			
Does building require mixed Use Area Separation? (IBC 508.2.5)	☒ no ☐ yes	☒ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes
Does building have Accessory Occupancy (ies)? What percent of story is accessory occupancy? (IBC 508.2)	☐ no ☒ yes 1,570 SF 7.0 %	☐ no ☒ yes 2,402 SF 7.2 %	☐ no ☐ yes N/A SF N/A %	☐ no ☐ yes SF %	☐ no ☐ yes SF %	☐ no ☐ yes SF %
Mixed Occupancy (IBC 508)	☐ no ☒ yes	☐ no ☒ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes
Non separated (IBC 508.3)	☐ no ☒ yes	☐ no ☒ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes
Separated (IBC 508.4) (IBC 508.5)	☒ no ☐ yes	☒ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes
OTHER FIRE PROTECTION SYSTEMS, DEVICES or FEATURES. If the building has any special or notable fire protection or safety feature or hazard the designers should list them here, describe the performance characteristics and refer to location in construction documents. (e.g. fire extinguishers, smoke-evacuation/control/compartments. Note IBC 414.1.3.)	Fire Extinguisher, Fire Alarm	Fire extinguisher, Fire Alarm, Fire Sprinkler	N/A			

* Business and Storage occupancies are accessory to Educational occupancy in Areas 1 and Area 2, as they account for less than 10 percent of the floor area. per IBC Section 508.2.3 and 508.2.4. Area 1 also contains an Assembly occupancy area, but per IBC Table 508.4, no seperation is required.

BUILDING AREA

DESIGNATED AREAS OF BUILDING	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6
AREA LIMIT BY PER STORY (IBC Table 503) (Do not indicate increases for sprinklers & street frontage.)	14,500 SF	14,500 SF	N/A SF	SF	SF	SF
MAXIMUM AREA MODIFICATION PER STORY FROM EQUATION 5-1 OF IBC (Insert equation from IBC 506.1 with completed calculations in this box) (Equation 5-1) Aa = At + (At x If) + (At x Is) Aa = Allowable area per floor (square feet). At = Tabular area per floor in accordance with Table 503. If = Area increase factor due to frontage (percent) as calculated in accordance with Section 506.2. Is = Area increase due to sprinkler protection as calculated in accordance with Section 506.3. (Repeat equation for each story of differing occupancies, IBC 506.5.2) Note: footnote "a," from table 601						
Total Designed Area of Building	22,420* SF	54,815 SF	N/A SF	SF	SF	SF
MAXIMUM AREA PER STORY	14,500 SF	43,500 SF	N/A SF	SF	SF	SF
TOTAL ALLOWED AREA OF BUILDING (Summary of all stories)	14,500 SF	87,000 SF	N/A SF	SF	SF	SF
AREA AS DESIGNED PER STORY (Repeat for each story)	22,420* SF	35,438 SF	N/A SF	SF	SF	SF
Total Designed Area of Building	22,420* SF	54,815 SF	SF	SF	SF	SF

*Area 1 is an existing building. As a Level 2 Alteration, only the Work Areas are required to meet current codes and regulations. Per IEBC section 804.2.2, a fire sprinkler system is not required, per condition 2. The work area is 26% of the floor area.

BUILDING HEIGHT

DESIGNATED AREAS OF BUILDING		Area 1		Area 2		Area 3	
HEIGHT		DESIGNED	ALLOWED	DESIGNED	ALLOWED	DESIGNED	ALLOWED
Without any Allowable Increase (IBC Table 503)	In Feet	25	55	32	55		
	In Stories	1	2	2	2		
Allowable Height Increase (IBC 504.2)	In Feet	N/A	N/A	6	20		
	In Stories	N/A	N/A	0	1		
Total Height including any Allowable Increase	In Feet	25	55	32	75		
	In Stories	1	2	2	3		

BUILDING HEIGHT

DESIGNATED AREAS OF BUILDING		Area 4		Area 5		Area 6	
HEIGHT		DESIGNED	ALLOWED	DESIGNED	ALLOWED	DESIGNED	ALLOWED
Without any Allowable Increase (IBC Table 503)	In Feet						
	In Stories						
Allowable Height Increase (IBC 504.2)	In Feet						
	In Stories						
Total Height including any Allowable Increase	In Feet						
	In Stories						

Per IBC Chapter 10. List individual space occupancy load on life safety or architectural plans.

BUILDING DESIGN OCCUPANT LOAD

DESIGNATED AREAS OF BUILDING	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6
Story 1	329	298				
Story 2	N/A	483				
Story	N/A	N/A				
Total	329	[illegible]				

GENERAL FIRE PROTECTION REQUIREMENTS

DESIGNATED AREAS OF BUILDING	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6
SEPARATIONS						
Fireblocking Required (IBC Section 717)	☒ no ☐ yes	☒ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes
Draftstopping Required (IBC Section 717)	☒ no ☐ yes	☒ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes
Smoke Control System Required (IBC Section 909)	☒ no ☐ yes	☒ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes
Smoke Barriers Required (IBC Sections 407 and 408)	☒ no ☐ yes	☒ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes
Smoke Partitions Required (IBC Section 407)	☒ no ☐ yes	☒ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes
Fire Partition Required (IBC Section 420)	☐ no ☒ yes	☒ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes
Fire Barrier Required (IBC Section 707)	☒ no ☐ yes	☒ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes
ALARM & DETECTION						
Fire Alarm System Required (IBC Section 907)	☐ no ☒ yes	☐ no ☒ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes
Emergency Alarm System Required (IFC 908)	☒ no ☐ yes	☒ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes
SUPPRESSION						
Standpipes Required (IBC Section 905)	☒ no ☐ yes	☒ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes
Sprinklers Required (IFC Section 903)	☒ no ☐ yes	☐ no ☒ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes
Sprinklers Provided?	☒ no ☐ yes	☐ no ☒ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes
Portable extinguishers required (IFC 906)	☐ no ☒ yes	☐ no ☒ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes
Other suppression systems required (IFC 904)	☒ no ☐ yes	☒ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes
Smoke & heat vents required (IFC 910)	☒ no ☐ yes	☒ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes

OTHER FIRE AND LIFE SAFETY FEATURES

DESIGNATED AREAS OF BUILDING	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6
AREA OF REFUGE						
Separation required (IBC 1007.6.2)	☒ no ☐ yes	☒ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes
Two-way communication provided (IBC 1007.6.3)	☒ no ☐ yes	☒ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes
Instruction provided (IBC 1007.6.4)	☒ no ☐ yes	☒ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes
EXTERIOR AREA FOR ASSISTED RESCUE						
Separation required (IBC 1007.8)	☒ no ☐ yes	☒ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes
Identification provided (IBC 1002.8.3)	☒ no ☐ yes	☒ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes
OTHER						
	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes
	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes
	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes
	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes
	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes
	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes
	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes
	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes
	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes
	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes	☐ no ☐ yes

FIRE RESISTANCE RATING OF BUILDING ELEMENTS

DESIGNATED AREAS OF BUILDING		Area 1	Area 2	Area 3	Area 4	Area 5	Area 6
Structural Frame (IBC Table 601)	As Required, Hrs	0	0				
	As Designed, Hrs	0	0				
	Testing Agency & Design No.(UL, FM, etc)	N/A	N/A				
	Wall/Partition Key Code	N/A	N/A				
Bearing Walls, Exterior (IBC Table 601)	As Required, Hrs	0	0				
	As Designed, Hrs	0	0				
	Testing Agency & Design No.(UL, FM, etc)	N/A	N/A				
	Wall/Partition Key Code	N/A	N/A				
Bearing Walls, Interior (IBC Table 601)	As Required, Hrs	0	0				
	As Designed, Hrs	0	[illegible]				
	Testing Agency & Design No.(UL, FM, etc)	N/A	N/A				
	Wall/Partition Key Code	N/A	N/A				
Nonbearing Walls & Partitions, Exterior (IBC Table 601 & 602)	As Required, Hrs	0	0				
	As Designed, Hrs	0	0				
	Testing Agency & Design No.(UL, FM, etc)	N/A	N/A				
	Wall/Partition Key Code	[illegible]	N/A				

FIRE RESISTANCE RATING OF BUILDING ELEMENTS

DESIGNATED AREAS OF BUILDING		Area 1	Area 2	Area 3	Area 4	Area 5	Area 6
Nonbearing Walls & Partitions (IBC Table 601 & 602) Exterior Interior	As Required, Hrs	0	0				
	As Designed, Hrs	0	0				
	Testing Agency & Design No.(UL, FM, etc)	N/A	N/A				
	Wall/Partition Key Code	N/A	N/A				
Floor Construction including supporting beams & joists (IBC Table 601)	As Required, Hrs	0	0				
	As Designed, Hrs	0	0				
	Testing Agency & Design No.(UL, FM, etc)	N/A	N/A				
	Wall/Partition Key Code	N/A	N/A				
Roof Construction including supporting beams & joists (IBC Table 601)	As Required, Hrs	0	1				
	As Designed, Hrs	0	1				
	Testing Agency & Design No.(UL, FM, etc)	N/A	UL P719*				
	Wall/Partition Key Code	N/A	N/A				
Fire Walls (IBC Section 706)	As Required, Hrs	N/A	3				
	As Designed, Hrs	N/A	3				
	Testing Agency & Design No.(UL, FM, etc)	N/A	UL 904				
	Wall/Partition Key Code	N/A	431-3				

*Reference IBC Section 706.6.1 Stepped Buildings. 1-Hour rated roof assembly is provided per Exception 1.

FIRE RESISTANCE RATING OF BUILDING ELEMENTS

DESIGNATED AREAS OF BUILDING		Area 1	Area 2	Area 3	Area 4	Area 5	Area 6
Fire Barriers (IBC Section 707)	As Required, Hrs	N/A	N/A				
	As Designed, Hrs	N/A	N/A				
	Testing Agency & Design No.(UL, FM, etc)	N/A	N/A				
	Wall/Partition Key Code	N/A	N/A				
Shaft Enclosures (IBC Section 708)	As Required, Hrs	N/A	N/A				
	As Designed, Hrs	N/A	N/A				
	Testing Agency & Design No.(UL, FM, etc)	N/A	N/A				
	Wall/Partition Key Code	N/A	N/A				
Fire Partitions (IBC Section 709)	As Required, Hrs	1	0				
	As Designed, Hrs	1	0				
	Testing Agency & Design No.(UL, FM, etc)	UL 905 / U419*	N/A				
	Wall/Partition Key Code	411-8 / Corridor Ceiling*	N/A				
Opening & Protective Listing by Category (fire shutters, doors, etc.) (IBC Section 715)	As Required, Hrs	20 MIN	3				
	As Designed, Hrs	20 MIN	3				
	Testing Agency & Design No.(UL, FM, etc)	N/A	N/A				
	Wall/Partition Key Code	N/A	N/A				

*Reference IBC Section 708.4 Exception 3. Corridor ceilings may be constructed as corridor walls. U419 is then applied as horizontal 1-hour rated construction.

FIRE RESISTANCE RATING OF BUILDING ELEMENTS

DESIGNATED AREAS OF BUILDING		Area 1	Area 2	Area 3	Area 4	Area 5	Area 6
Others (as required by Designer)	As Required, Hrs	N/A	N/A				
	As Designed, Hrs	N/A	N/A				
	Testing Agency & Design No.(UL, FM, etc)	N/A	N/A				
	Wall/Partition Key Code	N/A	N/A				

FLOOD HAZARD INFORMATION and FLOOD LOADS

FLOOD HAZARD AREA	
Base Flood Elevation (NGVD or FIRM)	N/A MSL
Design Flood Elevation IBC 1612.5 and ASCE 24	N/A MSL
NON HIGH-VELOCITY WAVE ACTION	
Elevation of Lowest Proposed Floor (Meet ASCE 24 Section 2.6.2.1)	493.8 MSL
Dry floodproofing ASCE 24	☒ no ☐ yes
HIGH-VELOCITY WAVE ACTION	
Elevation of bottom of Lowest Horizontal Structural Member of lowest floor	N/A MSL
Flotation restraint (ASCE 24)	☒ no ☐ yes
Breakaway wall per ASCE 24	☒ no ☐ yes

Per IBC Chapter 16 and ASCE 7 – Structural tables may be shown on initial Structural Sheet of the drawings or on Sheet with other code information. List floor design loads on structural plans.

STRUCTURAL DESIGN INFORMATION. AREA

OCCUPANCY CATEGORY (IBC Table 1604.5)		CLASSROOMS	CORRIDORS	STAIRS			
LIVE LOAD FOR EACH OCCUPANCY TYPE (IBC Figure 1608.2 or ASCE 7)	Floor Live Load, L	40 PSF	80 PSF	100 PSF	PSF	PSF	PSF
	Roof Live Load, L_r	20 PSF	20 PSF	20 PSF	PSF	PSF	PSF
	Ground Snow Load, P_g	10 PSF	10 PSF	10 PSF	PSF	PSF	PSF
MISCELLANEOUS LOADS BY SPECIAL USE AREA (ARCHITECTURAL, MECHANICAL, DATA CENTER, ETC., ASCE 7)		PSF	PSF	PSF	PSF	PSF	PSF

GENERAL NOTES

A REFERENCE SHEET G1.11 FOR ADDITIONAL OSF FORM F-3 TABLES.

B REFERENCE SHEET G2.00 FOR BUILDING AREA KEY PLAN. **AREA 3 IS NOT INCLUDED IN THE SCOPE OF THIS PROJECT. ONLY LIMITED SCOPE WILL OCCUR IN THIS AREA, INCLUDING FIRE ALARM UPGRADES.**

C PER OSF, DRINKING FOUNTAINS ARE ONLY REQUIRED FOR INCREASES IN OCCUPANCY FROM THE EXSITING BUILDING.

D **THE SITE AND EXISTING BUILDING(S) WILL BE OCCUPIED DURING CONSTRUCTION.**

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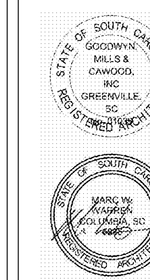

ISSUE	DATE
BID DOCUMENTS	10.24.19

DRAWN BY: MJW
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MILLBROOK ELEMENTARY SCHOOL - ADDITION AND RENOVATIONS
255 E PINE LOG RD, AIKEN, SC 29803
GMC # ACOL180004

OSF F-3 CODE TABLES

G1.10

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