

Enka Middle School

3D Perspective

DESIGN TEAM

West A

(191)

Architect Form & Function Architecture, PC 9 West Walnut Street, Suite 3B Asheville, NC 28801 828-619-0301 info@ffarchitecture.com

Structural Twin Hills Structures, PLLC P.O. Box 1656 Leicester, NC 28748 828-645-34444 richard@twinhillsstructures.com

<u>DRAWING LIST</u>

GENERAL
CVR COVER SHEET
CD CODE DATA
LS LIFE SAFETY

<u>DEMO</u> D101 DEMO

STRUCTURAL S101 STRUCTURAL

ARCHITECTURAL A101 FLOOR PLAN
A201 EXTERIOR ELEVATIONS
A301 SECTIONS Enka Middle School Field House Renovation 390 Asbury Road, Candler NC

CERT. NO.

This document is an instrument of service and shall remain the property of Form & Function Architecture, PC, who retains all common law, statutory and other reserved rights, including the copyright thereto.

Copyright © 2015

Form & Function Architecure, PC

DRAWINGS ISSUED FOR:

COVER 5.16

	OCCUPANCY:			
	Assembly ☐ A-1 ☐ A-2 A-3 ☐ A-4 ☐ A-5 Factory ☐ F-1 Moderate ☐ F-2 Low F-2 Low Hazardous ☐ H-1 Detonate ☐ H-2 Deflagrate ☐ H-3 Combust ☐ H-4 Health Institutional ☐ I-1 ☐ I-2 ☐ I-3 ☐ I-4 Residential ☐ R-1 ☐ R-2 ☐ R-3 ☐ R-4		☐ H-5 HPM ☐ 5	Business Educational Mercantile
	Storage S-1 Moderate S-2 Low High-piled			Utility and Miscellaneous
	Parking Garage Open Enclosed Repair			
	ACCESSORY OCCUPANCIES:			
	Assembly A-1 A-2 A-3 A-4 A-5 Factory F-1 Moderate F-2 Low	Г	☐ H-5 HPM	Business
	HazardousH-1 DetonateH-2 DeflagrateH-3 CombustH-4 HealthInstitutionalI-1I-2I-3I-4	L	n-5 nPW	Educational
	<u>I-3 Condition</u> 1 2 3 4		5	<u>Mercantile</u>
	Residential R-1 R-2 R-3 R-4 Storage S-1 Moderate S-2 Low High-piled			Utility and Miscellaneous
	Parking Garage Open Enclosed Repair			
I	NCIDENTAL USES (Table 508.2.5) Furnace room where any piece of equipment is over 400,000 Btu per hour input		Group I-2 waste and I	inen collection rooms
	Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower		Waste and linen colle	ction rooms over 100 square feet
	Refrigerant machine room		50 gallons, or a lithiun	ttery systems having a liquid electrolyte capacity of more than n-ion capacity of 1,000 pounds used for facility standby power,
	Hydrogen cutoff rooms, not classified as Group H		emergency power or	uninterrupted power supplies
	☐ Incinerator rooms		Rooms containing fire	pumps
	Paint shops, not classified as Group H, located in occupancies other than Group F		Group I-2 storage roo	ms over 100 square feet
	Laboratories and vocational shops, not classified as Group H. located in a Group E or I-2		Group I-2 commercial	kitchens
	occupancy		Group I-2 laundries ed	qual to or less than 100 square feet
	Laundry rooms over 100 square feet			,

Group I-2 rooms or spaces that contain fuel-fired heating equipment

ALLOWABLE AREA

			(continue	ed)			
Special Uses: 413 414	402 403 415 416	☐ 404 ☐ 40 ☐ 417 ☐ 41		407	409 410 422 423	411 41 424 42	
Special Provisions:	509.2	2 509.3	509.4	509.5	509.6 5	09.7 509.8	509.9
Mixed Occupancy:	No	Yes	Separation:	Hr.	Exception:		_
	ental Use Separation separation is not exer	,	arated Use (see e	xceptions).			
The r limita const Sepa For e	Separated Use (508. equired type of constitions for each of the attraction, so determine rated Use (508.4) - ach story, the area or use divided by the al	ruction for the buil applicable occupar ed, shall apply to the See below for area f the occupancy sh	ncies to the entire ne entire building. a calculations nall be such that th	building. The r	most restrictive type	of	
Act	tual Area of Occupan vable Area of Occupa	<u>cy A</u> + _	Actual Area of Allowable Area	Occupancy B	3 <1		
		+ -			_+ = _	<1.00	
STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 503 s AREA	(C) AREA FOR OPEN SPACE INCREASE1	(D) AREA FOR SPRINKLER INCREASE2	(E) ALLOWABLE AREA OR UNLIMITED 3	(F) MAXIMUM BUILDING AREA 4
FIELD HOUSE	A3	4,974 SQFT.	6,000 SQFT.				6,000 SQ FT.

1 Open space area increases from Section 506.2 are computed thus: a. Perimeter which fronts a public way or open space having 20 feet minimum width b. Total Building Perimeter c. Ratio (F/P) d. W = Minimum width of public way e. Percent of frontage increase I = 100 [F/P - 0.25] x W/30 2 The sprinkler increase per Section 506.3 is as follows: a. Multi-story building I _s = 200 percent b. Single story building I _s = 300 percent 3 Unlimited area applicable under conditions 507.								
a. Perimeter which fronts a public way or open space having 20 feet minimum width $ = 0 (F) $ b. Total Building Perimeter $ = 0 (P) $ c. Ratio (F/P) $ = 0 (F/P) $ d. W = Minimum width of public way $ = 0 (W) $ e. Percent of frontage increase I = 100 [F/P - 0.25] x W/30 $ = 0 (\%) $ 2 The sprinkler increase per Section 506.3 is as follows: a. Multi-story building $I_s = 200$ percent b. Single story building $I_s = 300$ percent								
$ \begin{array}{llllllllllllllllllllllllllllllllllll$	1 Open	space area i	ncreases from Secti	on 506.2 are com	puted thus:			
c. Ratio (F/P) d. W = Minimum width of public way e. Percent of frontage increase I = $100 [F/P - 0.25] \times W/30$ The sprinkler increase per Section 506.3 is as follows: a. Multi-story building $I_s = 200$ percent b. Single story building $I_s = 300$ percent	a.	Perimeter v	which fronts a public	way or open space	ce having 20 feet n	ninimum width	= () (F)
 d. W = Minimum width of public way e. Percent of frontage increase I = 100 [F/P - 0.25] x W/30 2 The sprinkler increase per Section 506.3 is as follows: a. Multi-story building I_s = 200 percent b. Single story building I_s = 300 percent 	b.	Total Buildi	ng Perimeter				= 0) (P)
 e. Percent of frontage increase I = 100 [F/P - 0.25] x W/30 2 The sprinkler increase per Section 506.3 is as follows: a. Multi-story building I_s = 200 percent b. Single story building I_s = 300 percent 	C.	Ratio (F/P)					= 0	(F/P)
 The sprinkler increase per Section 506.3 is as follows: a. Multi-story building I_s = 200 percent b. Single story building I_s = 300 percent 	d.	W = Minimu	ım width of public w	ay			= 0	(W)
a. Multi-story building I_s = 200 percent b. Single story building I_s = 300 percent	e.	Percent of f	rontage increase I	= 100 [F/P - 0.25] x W/30		= 0	(%)
b. Single story building I_s = 300 percent	2 The s	prinkler incre	ase per Section 506	6.3 is as follows:				
	a.	Multi-story I	ouilding I _s = 200 per	cent				
3 Unlimited area applicable under conditions 507.	b.	Single story	building $I_s = 300 \text{ pe}$	ercent				
	3 Unlim	ited area app	licable under condit	ions 507.				

4 Maximum Building Area = total number of stories in the building x E (506.4).

ALLOWABLE HEIGHT

5 The maximum area of parking garages must comply with 406.3.5. The maximum area of air traffic control towers must comply with 412.1.2.

	ALLOWABLE (TABLE 503)	INCREASE FOR SPRINKLERS	SHOWN ON PLANS	CODE REFERENCE
Type of Construction	Тур	<u>e V - B</u>	Type V - B	
Building Height in Feet	40' - 0"	Feet = H +20' =	12' - 6"	
Building Height in Stories	1	Stories + 1 =	1	

FIRE PROTECTION REQUIREMENTS

	FIRE P	KUIEU	I IUN KEQUIKE	MENIS			
BUILDING ELEMENT	FIRE		RATING	DETAIL#	DESIGN#	DESIGN#	DESIGN#
	SEPARATION	REQ'D	PROVIDED	AND	FOR	FOR RATED	FOR RATED
	DISTANCE		(W/*	SHEET#	RATED	PENETRATION	JOINTS
	(FEET)		REDUCTION)		_ASSEMBLY_		
Structural frame							
Including columns, girders, trusses		0					
Bearing walls		0					
		U					
Exterior	>30	0					
North	>30	-					
East	>30	0					
West		0					
South	>30	0					
<u>Interior</u>		0					
Nonbearing walls and partitions							
Exterior							
North		0					
East		0					
West		0					
South		0					
Interior Walls and Partitions		0					
Floor construction		0					
Including supporting		0					
beams and joists		0					
Roof construction Including supporting beams		0					
and joists		U					
Shafts - Exit		0					
Shafts - Other		0					
Corridor Separation		0					
Occupancy Separation		0					
Part/Fire Wall Separation		N/A					
Smoke Barrier Separation		N/A					
Tenant Separation		N/A					
Incidental Use Separation		N/A					
	200	IN/A					
* Indicate section number perm	nitting reduction						

PERCENTAGE OF WALL OPENING CALCULATIONS (New Construction, Addition & Change of Use)

Fire Separation Distance (feet) from Property Lines	Degree of Openings Protection (TBL 705.8)	Allowable Area (%)	Actual Shown on Plans
-			
-			
-			

WALL LEGENDS: Check if the following are present and indicated by a wall legend on all plans:

Fire Walls 706 Fire Barriers 707 Shaft Enclosure 708 Fire Partitions 709 Smoke Barriers 710 ☐ Smoke Partitions ☐ No Rated Walls are Present

MENTS

	LIFE SAFETY SYSTEM REQUIRE	M
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 REQUIREMENTS

Life Safety Plan Sheet #: _	LS
Fire and/or smo	oke rated wall locations (Chapter 7)

Assumed and real property line locations
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 seperation

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

EXIT REQUIREMENTS NUMBER AND ARRANGEMENT OF EXITS

FLOOR ROOM OR SPACE DESCRIPTION	MINIMUM ² NUMBER OF EXITS		TRAVEL DISTA	ARRANGEMENT MEANS OF EGRESS ^{1,3} (SECTION 1014.2)		
	REQUIRED	SHOWN ON PLANS	ALLOWABLE TRAVEL DISTANCE (TABLE 1016.1)	ACTUAL TRAVEL DISTANCE SHOWN ON PLANS	REQUIRED DISTANCE BETWEEN EXIT DOORS	ACTUAL DISTANCE SHOWN ON PLANS
First Floor	2	3	200'	72' - 5 1/2"	41'	54' - 6"
First Floor	2	3	200'	72' - 5 1/2"	41'	

1 Corridor dead ends (Section 1017.3) 2 Single exits (Table 1021.2), spaces with one means of egress (Table 1016.1) 3 Common Path of Travel (Section 1014.3)

		EX	IT WIDTH	ł				
USE GROUP	(a)	(a) (b)			Е	XIT WIDTH	I (in) ^{2,3,4,5,6}	
OR SPACE DESCRIPTION	1 1		1					
		(17IDEL 1004.1.2)	STAIR	LEVEL	STAIR	LEVEL	STAIR	LEVE
LOCKER ROOM (A-3)	2,921 SQ FT.	50sf/occ = 58 occ	NA	0.2	NA	32" MIN	N/A	104"
OFFICE	524 SQ FT.	100sf/occ = 4 occ						34"
STORAGE / MECH.	351 SQ FT.	300sf/occ = 1 occ						34"
MECH.	202 SQ FT.	300sf/occ = 1 occ						34"
STORAGE #103	75 SQ FT.	300sf/occ = 1 occ						34"
STORAGE #108	40 SQ FT.	300sf/occ = 1 occ						34"
Total Inside Occupants		63 Occupants	NA	0.2	NA	32" MIN	N/A	

¹ See Table 1004.1.1 to determine whether net or gross area is applicable. See definition "Area, Gross" and "Area, Net" (Section 1002)

² Minimum stairway width (Section 1009.1); min. corridor width (Section 1017.2); min. door width (Section 1008.1)

³ Minimum width of exit passageway (Section 1020.2) ⁴ See Section 1004.5 for converging exits.

⁵ The loss of one means of egress shall not reduce the available capacity to less than 50 percent of the total required

(Section 1005.1) ⁶ Assembly occupancies (Section 1025)

ACCESSIBLE DWELLING UNITS

	(Section 1107)											
Total Units	Accessible Units Required	Accessible Units Provided	Type A Units Required	Type B Units Required	Type B Units Provided	Total Accesible Units Provided						

ACCESSIBLE PARKING (Section 1106)

***Parking Met by Exisiting ***								
TOTAL# OF PARKING SPACES		# OF ACCESSIBLE SPACES PROVIDED			TOTAL#			
REQUIRED	PROVIDED	REGULAR WITH 5' ACCESS AISLE	VAN SPACES W/		ACCESSIBLE			
			132" Aisle	8' Aisle	PROVIDED			
		TOTAL# OF PARKING SPACES	TOTAL# OF PARKING SPACES # OF ACCESSIBLE S REQUIRED PROVIDED REGULAR WITH 5'	TOTAL# OF PARKING SPACES # OF ACCESSIBLE SPACES PROVII REQUIRED PROVIDED REGULAR WITH 5' VAN SP	TOTAL# OF PARKING SPACES # OF ACCESSIBLE SPACES PROVIDED REQUIRED PROVIDED REGULAR WITH 5' VAN SPACES W/			

STRUCTURAL DESIGN

DESIGN LOADS:

Importance Factors	$\mathbf{S}: \text{Wind} (\mathbf{I}_{W})$	1.0		
	Snow (I_S)	1.0		
	Seismic (I _E)	1.0		
Live Loads:	Roof	20 psf		
	Mezzanine	N/A		
	Floor	N/A		
Ground Snow Load	Ground Snow Load:			
Wind Load:	Basic Wind Speed		90 MPH	
, ma Loud.	Exposure Category		C	
	Wind Base Shears (for MWFRS)		V_X = 5 kips	$V_y = 7 \text{ kips}$

SEISMIC DESIGN CATEGORY \(\backslash A \) \(\backslash B \) \(\backslash C \) \(\backslash D \)

Provide the following Seismic Design Parameters: I III III IV Occupancy Category (Table 1604.5) **Spectral Response Acceleration** $S_{MS} = 59\% g$ Field Test Presumptive Historical Data Site Classification **Basic Structural System (check one)** Dual w/ Special Moment Frame Bearing Wall

X Building Frame _ Dual w/ Intermediate R/C or Special Steel Moment Frame Inverted Pendulum Seismic Base Shear $V_X = 6 \text{ kips}$ $V_Y = 6 \text{ kips}$ **Analysis Procedure** Simplified X Equivalent Lateral Force

LATERAL DESIGN CONTROL: Earthquake <u>X-X</u> Wind <u>Y-Y</u>

SOIL BEARING CAPACITIES:

Field test (provide copy of test report) See Structural Drawings Presumptive bearing capacity Pile Size, type, and capacity N/A

Architectural, Mechanical, Components anchored?

SPECIAL INSPECTIONS REQUIRED:

PLUMBING FIXTURE REQUIREMENTS

EXISTING RESTROOMS

USE		WATER CLOSETS	URINALS	LAVATORIES	SHOWERS/	DRINKING FOUNTAINS	
		UNISEX		UNISEX	TUBS	REGULAR	ACCESSIB
Basement Existing	Existing						
	New	1	0	1	-	0	0
	Required	1	0	1	-	0	0
First	Existing						
	New	1	0	1	-	0	0
	Required	1	0	1	-	0	0

*Less than 25 occupants - Unisex facilities acceptable per NCBC 2902.2 Exception #2 *Less than 25 occupants total, no Drinking Fountain required per NCBC 2902.1

SPECIAL APPROVALS

SPECIAL APPROVAL: (Local Jurisdiction, Department of Insurance, OSC, DPI, DFS, ICC, etc., describe below)

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

THERMAL ENVELOPE:

Method of Compliance:

X Prescriptive __ % Glazed Wall Area

☐ Performance ☐ Energy Cost Budget

Roof/Ceiling Assembly (each assembly)

Description of assembly: TPO on Plywood decking and field applied open-cell foam insulation U-Value of total assembly: 0.025 R-Value of insulation: R-38 total Skylights in each assembly: N/A U-Value of skylight:

Total square footage of skylights in each assembly:

Exterior Walls

Description of assembly: No Changes U-Value of total assembly: R-Value of insulation: Openings (windows or doors with glazing) U-Value of assembly: 0.27 (New Windows) Shading coefficient: 0.19 Projection factor: Low "E" required, if applicable: LoE 366/EA w/Argon Door R-Values: 3.45 (New Doors)

Walls adjacent to unconditioned space:

Description of assembly: N/A U-Value of total assembly: R-Value of insulation: Openings (windows or doors with glazing) U-Value of assembly: Low "E" required, if applicable: Door R-Values:

Walls below grade

Description of assembly: NR U-Value of total assembly: R-Value of insulation:

Floors over unconditioned space

Description of assembly: NR U-Value of total assembly R-Value of insulation:

Floors slab on grade - No Changes

Slab heated: no

Description of assembly: U-Value of total assembly: R-Value of insulation: Horizontal/Vertical requirement:

ELECTRICAL SUMMARY ***NO CHANGES***

ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance: Prescriptive Performative Energy Cost Budget

Lighting Schedule:

Lamp type required in fixture Number of lamps required

Ballast type used in the fixture Number of ballast in fixtures

Total wattage per fixture

Total of interior wattage specified vs. allowed Total of exterior wattage specified vs. allowed

Equipment schedules with motors (not used for Mechanical systems)

Motor horsepower Number of phases Minimum efficiency Motor type

of poles

MECHANICAL SUMMARY ***NO CHANGES***

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Method of Compliance: Prescriptive Energy Cost Budget

Climate Zone:

Thermal Zone:

_____Winter Dry Bulb: Summer Dry Bulb: **Interior design conditions:**

— Winter Dry Bulb: _____ Summer Dry Bulb: _____ Relative Humidity: Building heating load:

Building cooling load:

Mechanical Spacing Conditioning System:

Unitary Description of unit:_____ Heating efficiency: _____ Cooling efficiency: ____ Heat output of unit: Cooling output of unit:

Total boiler output. If oversized, state reason: N/A

Total chiller capacity. If oversized, state reason: N/A

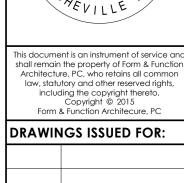
List equipment efficiencies

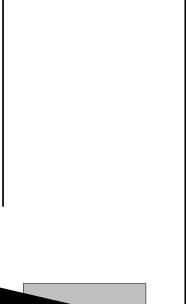
Equipment schedules with motors (mechanical systems): Motor horsepower: _____Number of phases: ____

Minimum efficiency:____ Motor type:____ # of poles: _____

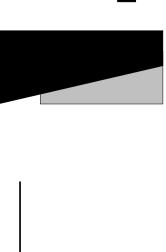
CERT. NO. 52687 nall remain the property of Form & Func

law, statutory and other reserved rights, including the copyright thereto. Copyright © 2015 Form & Function Architecure, PC





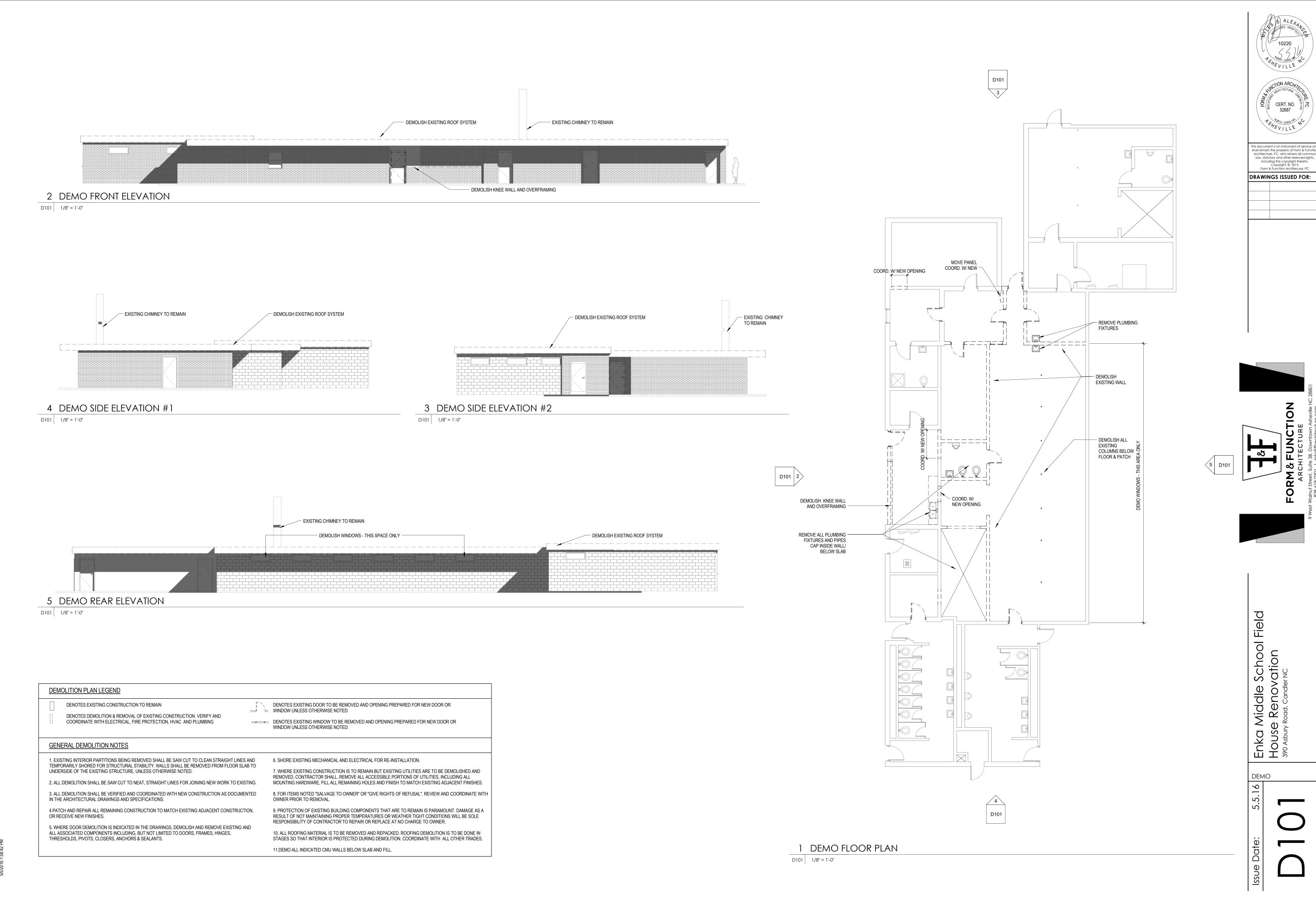




se Renovation Enka House

CODE DATA 9

Group I-3 cells equipped with padded surfaces



1 FRAMING PLAN

\$101 1/8" = 1'-0"

LADDER FRAMING 2x6 @ 24" O.C.

METAL SIDING

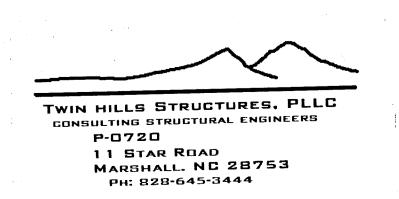
— 1/2" EXTERIOR SHEATHING W/ VAPOR BARRIER - PRE ENGINEERED TRUSS

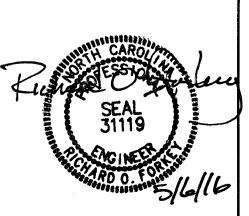
- HURRICANE TIE SIMPSON H3, OR EQUAL

- METAL FLASHING - 2x8 P.T. NAILER — EXISTING WALL AND FOOTING

2 TRUSS CONNECTION DETAIL

S101 3/4" = 1'-0"





This document is an instrument of service and shall remain the property of Form & Function Architecture, PC, who retains all common law, statutary and other reserved rights, including the copyright thereto.

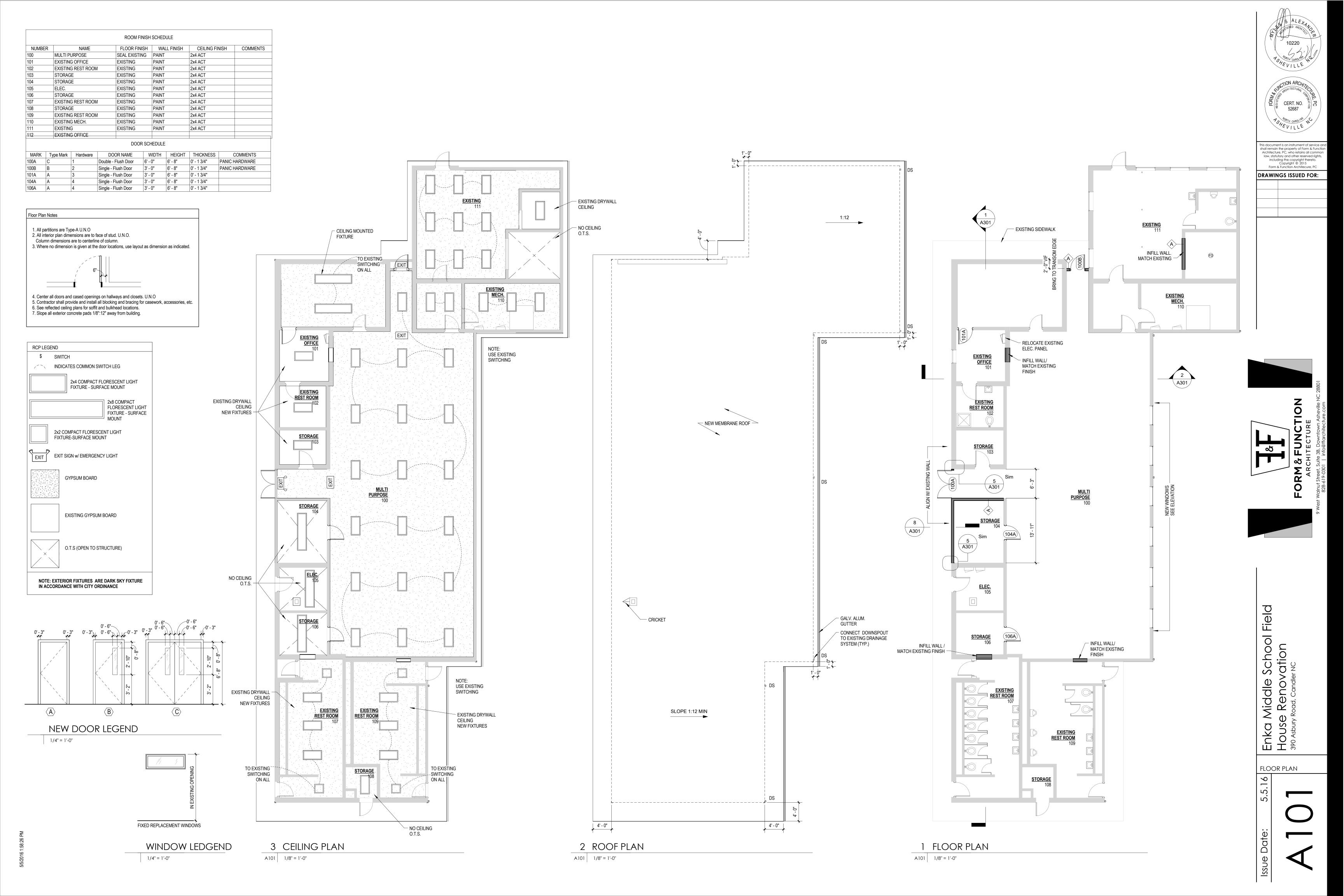
Copyright © 2016

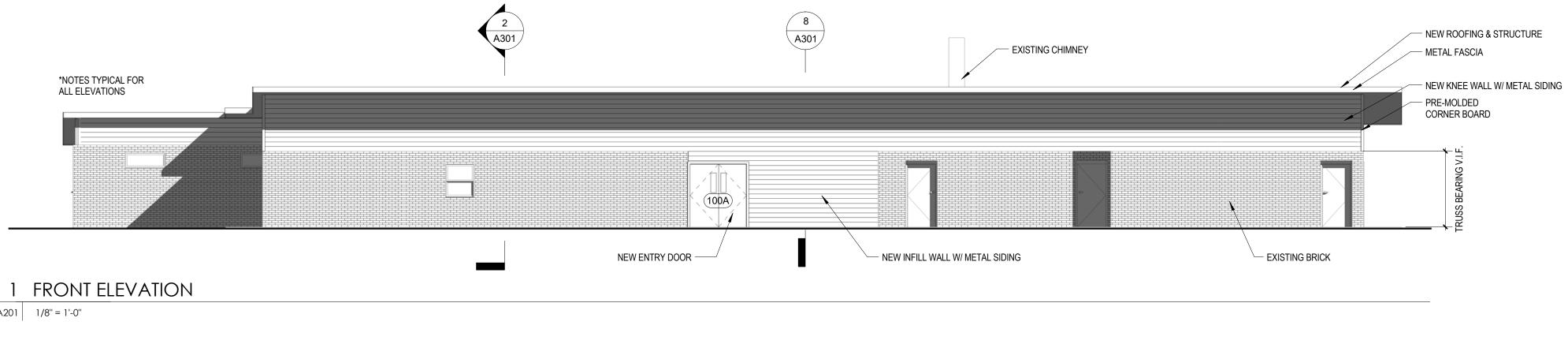
Form & Function Architecture, PC

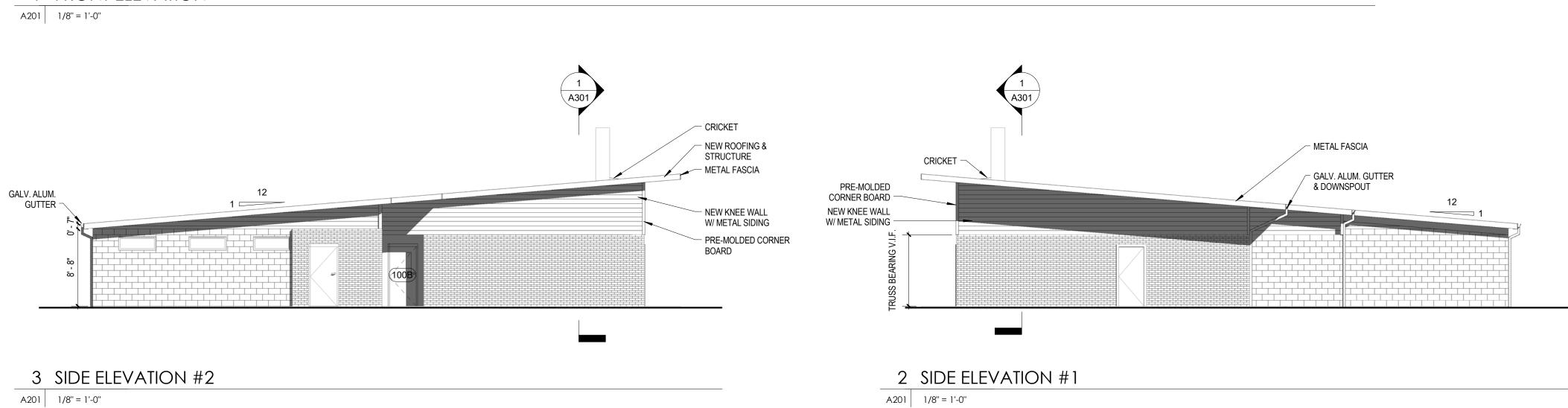
DRAWINGS ISSUED FOR:

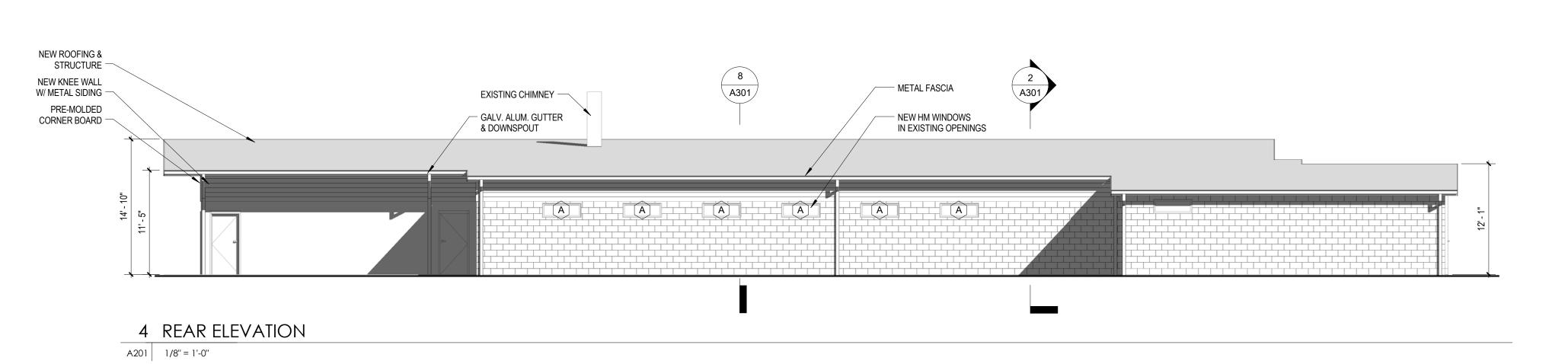
Enka Middle School Field House Renovation 390 Asbury Road, Candler NC

STRUCTURAL







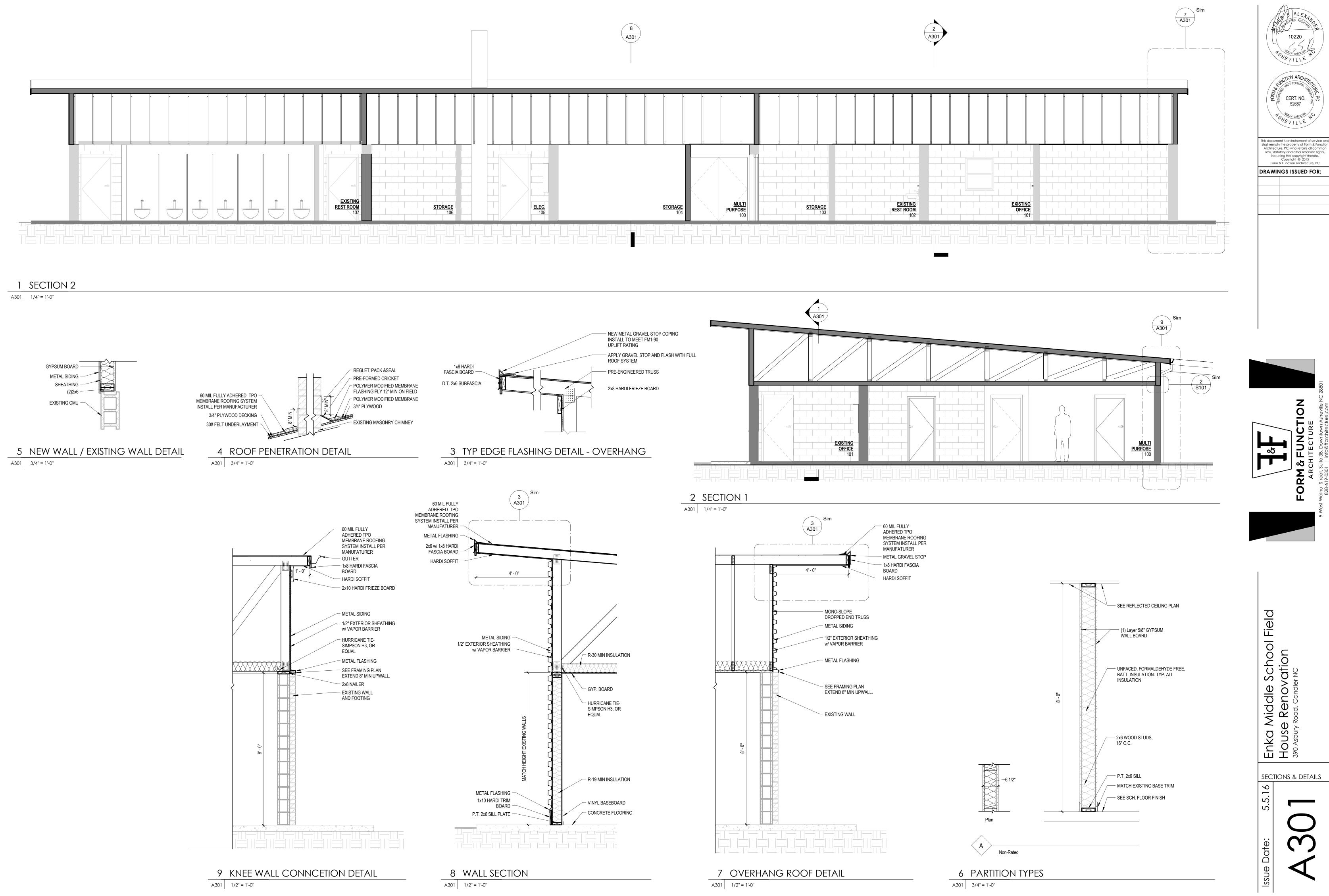


Enka Middle School Field House Renovation 390 Asbury Road, Candler NC

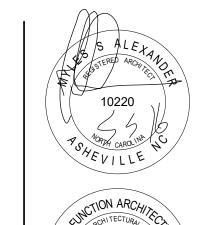
EXTERIOR ELEVATIONS

91.5.2

Issue Date:



CERT. NO. 52687



CERT. NO. 52687

This document is an instrument of service and shall remain the property of Form & Function Architecture, PC, who retains all common law, statutory and other reserved rights, including the copyright thereto.

Copyright © 2015

Form & Function Architecure, PC

DRAWINGS ISSUED FOR:

LIFE SAFETY

9

1.5.2

Issue Date:

S

Enka Middle School Field House Renovation 390 Asbury Road, Candler NC

