

	FIRE SEPARATION		RATING	DETAIL # AND	DESIGN # FOR	SHEET # FOR	SHEET # FOR RATED JOINTS
BUILDING ELEMENT	DISTANCE (FEET)	REQ'D.	PROVIDED (W/ REDUCTION) *	SHEET #	RATED ASSEMBLY	RATED PENETRATION	
Structural Frame including columns, girders, trusses		1 HR @ BOILER RM & CONTROL 3	1 HR @ BOILER RM & CONTROL 3	ORIG SET G003	ORIG SET X772,N706, S729		
Bearing Walls							
Exterior							
North	>30	0	0				
East	>30	0	0				
West	>30	0	0				
South	>30	0	0				
Interior		0	0				
Non-bearing Walls and Partitions							
Exterior							
North	22'-0"	0	0				
East	>30	0	0				
West	>30	0	0				
South	22'-0"	0	0				
Interior	N/A	0	0				
Floor Construction, including sand joists	supporting beams	N/A	0				
Floor-Ceiling Assembly							
Columns Supporting Floors							
Roof Construction, including s and joists	supporting beams	N/A	N/A				
Roof-Ceiling Assembly							
Columns Supporting Roof							
Shaft Enclosures - Exit		N/A	N/A				
Shaft Enclosures - Other		1 HR @ ELEVATORS	1 HR @ ELEVATORS	ORIG SET G003, FP202,P001,M 303,E202	U905, N706, S729		
Corridor Separation		N/A	0				
Occupancy/Fire Barrier Separa	ation	N/A	N/A				
Party/Fire Wall Separation		N/A	N/A				
Smoke Barrier Separation		N/A	N/A				
Smoke Partition		N/A	N/A				
Tenant/Dwelling Unit/Sleeping	Unit Separation	N/A	N/A				
Incidental Use Separation		1 HR@BOILER RM & CONTROL ZONE 3	1 HR@BOILER RM & CONTROL ZONE 3	ORIG SET G003, FP202, P001, M303, E202	U465, N706, S729		

Floors slab on grade Description of assembly: U-Value of total assembly:

Slab heated:

R-Value of insulation:

				STRUCTURAL DESIGN (PROVIDE ON STRUCTURAL SHEETS IF APPLICABLE)
	ENERGY SUM	MARY		·
ENERGY REQUIREMENTS:			DESIGN LOADS Importance Factors:	N/A Snow (Is)
The following data shall be considered mime and any	special attribute required to meet the energ	ау	importance ractors.	Seismic (IE)
code shall also be provided. Each Designer shall furni- information for the plan data sheet. If performance me			Live Loads:	Roof psf
standard reference design vs. annual energy cost for t	the proposed design.		Live Loads.	Mezzanine psf
Existing building envelope complies with code:	No X Yes	(The remainder of this section is not applicable)		Floor
Exempt Building:	No Yes	(Provide code or statutory reference)	Ground Snow Load:	psf
Climate Zone:	]3A	5A	Wind Load:	Ultimate Wind Speed mph (ASCE-7)
Cililate Zolle.		JA		Exposure Category
Method of Compliance:	_			
Energy Code	Performance Prescriptive			
ASHRAE 90.1	Performance Prescriptive		SEISMIC DESIGN CATEGORY:	ABCD
(If "Other" specify source here)			Provide the following Seismic De	
			Risk Category (Table 160	
THERMAL ENVELOPE (Prescriptive method only)			Spectral Response Acce	
Roof/ceiling Assembly (each assembly)			Site Classification (ASCE	E7)
Description of assembly:			Data Source:	e: Field Test Presumptiv Historical Data
U-Value of total assembly:				e
R-Value of insulation:			Basic structural system	Bearing Wall Dual w/Special Moment Frame
Skylights in each assembly:				Building Frame Dual w/Intermediate R/C or Special Steel
U-value of skylight:				
Total square footage of skylights in each				Moment Frame Inverted Pendulum
assembly:			Analysis Procedure:	Simplified Equivalent Lateral Force Dynamic
Exterior Walls (each assembly)			Architectural, Mechanica	eal, Components anchored?
Description of assembly:			LATERAL DESIGN CONTROL:	Earthquake Wind
U-Value of total assembly:			SOIL BEARING CAPACITIES:	Lattriquake   Williu
R-Value of insulation:			Field Test (provide copy of	of test report) psf
Openings (windows or doors with glazing)			Presumptive Bearing cap	
U-value of assembly:			Pile, size, type, and capa	· · · · · · · · · · · · · · · · · · ·
Solar heat gain coefficient				<del></del>
Projection factor				
Door R-values				
Walls Below Grade (each assembly)				AND ELECTRICAL CLIEFTS FOR DELATER APPENDIX D'INFORMATION
Description of assembly:			SEE HVAC A	AND ELECTRICAL SHEETS FOR RELATED APPENDIX B INFORMATION
U-Value of total assembly:				
R-Value of insulation:				
_				
Floors over unconditioned space (each assembly)				
Description of assembly:				
U-Value of total assembly:				

Gross Building Area Table					
FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL		
3rd Floor	N/A	N/A			
2nd Floor	36,761	36,761	36,761		
1st Floor	58,911	58,911	58,911		
Mezzanine	N/A	N/A			
Basement	N/A	N/A			
TOTAL	95,672	95,672	95,672		

			ALLOWABLE AREA			
Primary Occupancy C	Classification					
Assembly	A-1	A-2	A-3	A-4	A-5	
Business	X					
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 Condition	1	2			
	I-2 Condition	1	2			
	I-3 Condition	1	2	3	4	5
	I-4					
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 Misce	llaneous					

_	_			
Accessory Occupancy Classification(s)	Existing: A	A-3, S-1		
Incidental Uses (Table 509)	Existing: Room	s with boilers > 15 psi, 10 hp. Lau	ndry rooms >	> 100 sf
Special Uses (Chapter 4-List Code Sections)				
Special Provisions (Chapter 5 - List Code Sections)				
Mixed Occupancy: No	X Yes	Separation: 0 Hr.	Exception:	508.2.4
X Non-Separated Use (508.3)	each of th			e determined by applying the height and area limitations for 1. The most restrictive type of construction, so determined,
Separated Use (508.4)				of the occupancy shall be such that the sum of the ratios of e floor area for each use shall not exceed 1.
Actual Area of Occupancy	A +	Actual Area of Occupancy B	<u>≤</u> 1	
Allowable Area of Occupanc	y A	Allowable Area of Occupancy B	-	
<i>N/A</i>	+	N/A	= N/A	≤1

STORY NO.	DESCRIPTION AND USE	(A) BLDG. AREA PER STORY (ACTUAL)	(B) TABLE 506.2 AREA (note 4)	(C) AREA FOR FRONTAGE INCREASE (notes 1,5)	(D) ALLOWABLE AREA PER STORY OR UNLIMITED (notes 2,3)
1	BUSINESS	58,911	69,000	17,250	86,250
2	BUSINESS	36,761	69,000	17,250	86,250
TOTAL	BLDG AREA	95,672	138,000	34,500	172,500

- 1 Frontage area increases from Section 506.3 are computed thus: a. Perimeter which fronts a public way or open space having 20 feet minimum width = 1781'-4" (F)
- b. Total Building Perimeter = 1781'-4" (P) c. Ratio (F/P) = 1<u>.00</u> (F/P)
- d. W = Minimum width of public way = 30 FT (W)
- e. Percent of frontage increase  $If = 100[F/P 0.25] \times W/30 = \underline{0.75}$  (%) 2 Unlimited area applicable under conditions of Section 507.
- 3 Maximum Building Area = total number of stories in the building x D (maximum 3 stories) (507).
- The maximum area of open parking garages must comply with Table 406.5.4.
- 5 Frontage increase is based on the unsprinklered area value in Table 506.2.

ALLOWABLE HEIGHT

		ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE (note 1)		
	Building Height in Feet (Table 504.2) (note 2)	75	36'-8"			
	Building Height in Stories (Table 504.4) (note 3)	4	2			
1	Provide code reference if the "Shown on Plans" quantity is no	ot based on Table 504.3 or 504.4.				
2	The maximum height of air traffic control towers must comply with Table 412.3.1					
3	The maximum height of open parking garages must comply w	ith Table 406.5.4.				

6 (%)

PERCENTAGE OF WALL OPENING CALCULATIONS

			LIFE SAFETY SYSTEM REQUIRMENTS
Emergency Lighting:	No	X Yes	
Exit Signs:	No	X Yes	
Fire Alarm:	No	X Yes	
Smoke Detection Systems:	No	Yes	X Partial
Carbon Monoxide Detection:	No	Yes	

		LIFE SAFETY PLAN REQUIRMENTS
ety Plan Sheet #:	G101, G102	

X 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)

X Occupancy Use for each area as it relates to occupant load calculation (Table 1004.1.2) X Occupant loads for each area

X Exit access travel distances (1017)

X Common path of travel distances (Tables 1006.2.1 & 1006.3.2(1)) X Dead end lengths (1020.4)

X Clear exit widths for each exit door X Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.3)

A separate schematic plan indicating where fire rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation

X 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) X Note any code exceptions or table notes that may have been utilized regarding the items above.

### ACCESSIBLE DWELLING UNITS (SECTION 1107) TOTAL UNITS ACCESSIBLE ACCESSIBLE UNITS PROVIDED TYPE A UNITS TYPE A UNITS TYPE A UNITS TYPE B UNITS TYPE B UNITS TYPE B UNITS TYPE B UNITS PROVIDED UNITS PROVIDED UNITS PROVIDED

### **ACCESSIBLE PARKING (SECTION 1106)**

	TOTAL # OF PARKING SPACES		TOTAL # OF PARKING SPACES # OF ACCESSIBLE SPACES PROVIDED		ING SPACES # OF ACCESSIBLE SPAC		
LOT OR PARKING AREA	REQUIRED	PROVIDED	REGULAR WITH 5'	VAN SPAC	ES WITH	TOTAL # ACCESSIBLE PROVIDED	
	REQUIRED	PROVIDED	ACCESS AISLE	132" ACCESS AISLE	8' ACCESS AISLE		
A+ET BUILDING	119	123	4		1	5	
HEATT BUILDING	26	22	1		1	2	
TOTAL	145	145	5		2	7	

### PLUMBING FIXTURE REQUIREMENTS (TABLE 2902.1)

	USE	V	VATER CLOSE	TS	URINALS		LAVATORIES		SHOWERS/ TUBS	DRINKING FOUNTAINS			
		MALE	FEMALE	UNISEX	UNINALS	MALE	FEMALE	UNISEX	SHOWENS/ TOBS	REGULAR	ACCESSIBLE		
SPACE	EXISTING	6	17	1	10	10	10	1	3	3	3		
	NEW	0	0		0	0	0		0	0	0		
	REQUIRED	16	17		N/A	10	10		N/A	3	3		

### SPECIAL APPROVALS

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



## CAPE FEAR COMMUNITY COLLEGE NE Building Lab Upfit

North Campus Advanced and Emerging Technologies Building (NE) S3 Architects PLLC 4820 Sudbury Road 321 N Front St Wilmington, NC 28401 Castle Hayne, NC 28429

PROJECT LOCATION

**Engineer** Stanford White 1620 Midtown Place Raleigh, NC 28401

**Drawing Index** 

GENERAL DRAWINGS

G000 Cover Sheet & Code Summary G101 First Floor Life Safety Plan G102 Second Floor Life Safety Plan

ARCHITECTURAL DRAWINGS A101 Overall First Floor Plan A102 Overall Second Floor Plan

A111 First Floor Lab Plans

Area Map

A121 Second Floor Lab Plans

**HVAC DRAWINGS** 

H001 Standards, Symbols & Schedules H111 Level 1 Plans H121 Level 2 Plans

H201 Details and Controls

E112 Level 1 Plans - Lighting E121 Level 2 Plans - Power E122 Level 2 Plans - Lighting E301 Electrical Details

E401 Panel Schedules E501 Lighting Fixture Schedule & Details E502 Fire Alarm and Telecom Details

E601 Electrical Distribution System

**ELECTRICAL DRAWINGS** 

Contractor shall review these plans thoroughly, make a detailed site visit, and shall immediately bring any inconsistency, site layout problem, or any E001 Standards, Symbols & Abbreviations other request for clarification to the architect for resolution prior to the delivery of any bid. Failure to do so shall cause the Contractor to be E011 Level 1 Plan - Demolition ineligible for extras relating to such matters. E021 Level 2 Plan - Demolition E111 Level 1 Plans - Power

PROJECT NOTES

is not limited to:

- Cove Base

- Fire Alarm

- Fire Suppression

- Selective Demolition

- Doors, Frames & Hardware

- Electrial Power & Lighting

- Rough Carpentry

3. Contractor shall protect existing equipment and finishes during the course of the project. Any damaged items shall be repaired or replaced by the contractor at no charge to the Owner. 4. Contractor shall submit project data for all building materials, color

selections, and shop drawings to Owner for review.

1. The Scope of Work as outlined in these Contract Documents includes, but

5. Contractor shall coordinate with all trades to provide complete working 6. Contractor shall be responsible for seeing that each subcontractor cleans

up and removes, DAILY, any and all debris generated by construction operations, making ready for all subsequent subcontractors. 7. Drawings of existing facilities are, in general, diagrammatic. Exact locations shall be determined by the Contractor from field measurements taken by Contractor's personnel. Actual arrangement of the work shall follow locations shown on the drawings within the constraints of existing equipment and construction. Dimensions shall govern these drawings and they are not to be scaled. Drawing and notes to drawings are correlative and have equal authority and priority. Should there be discrepancies in themselves or between them, Contractor shall base bid pricing on the most expensive combination of quality and/or quantity of the work indicated. In the event of discrepancies, the appropriate method of

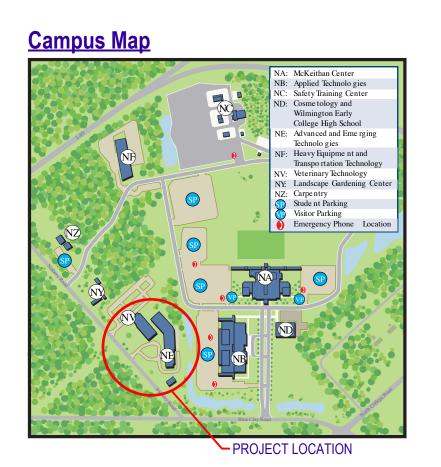
performing the work and/or items to be incorporated into the scope of the

work shall be determined by the Architect or Engineer. 8. Contractor is responsible for the safety, actions and conduct of his/her employees and subcontractors' employees while in the project area,

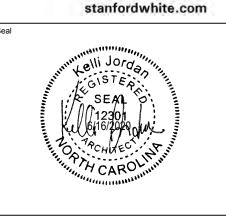
adjacent areas and in the building and its vicinity. 9. All materials, finishes, manufactured items, and equipment shall be installed in full accordance with the supplier's or manufacturer's written recommendations or these documents, whichever is more stringent.

10. All work described by these documents shall be performed in full accordance with all applicable codes.

11. All workmanship, material, and equipment shall be guaranteed for one year from date of Owner acceptance. Any failure or deterioration within this period shall be corrected by the contractor at the contractor's expense.



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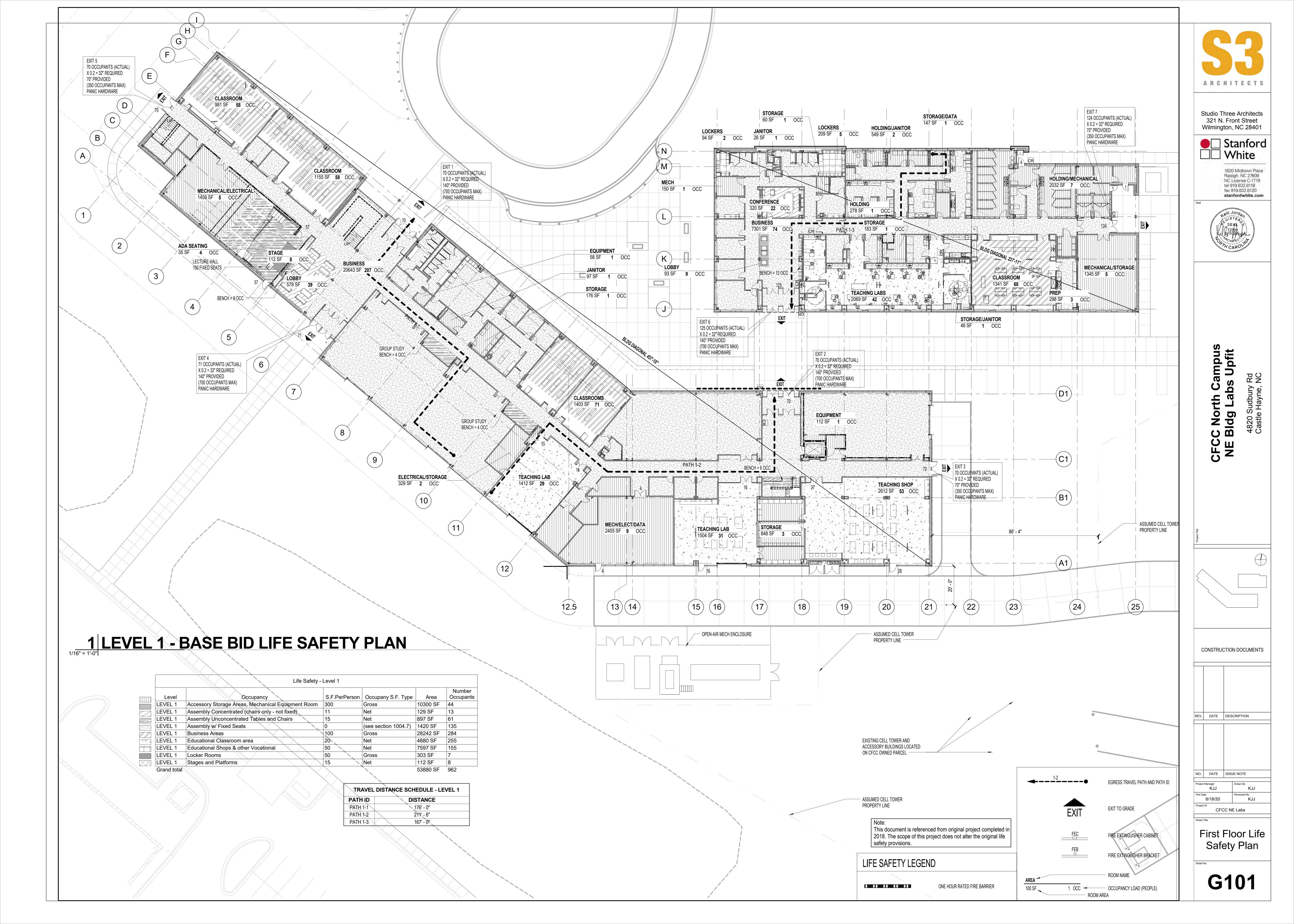
CONSTRUCTION DOCUMENTS

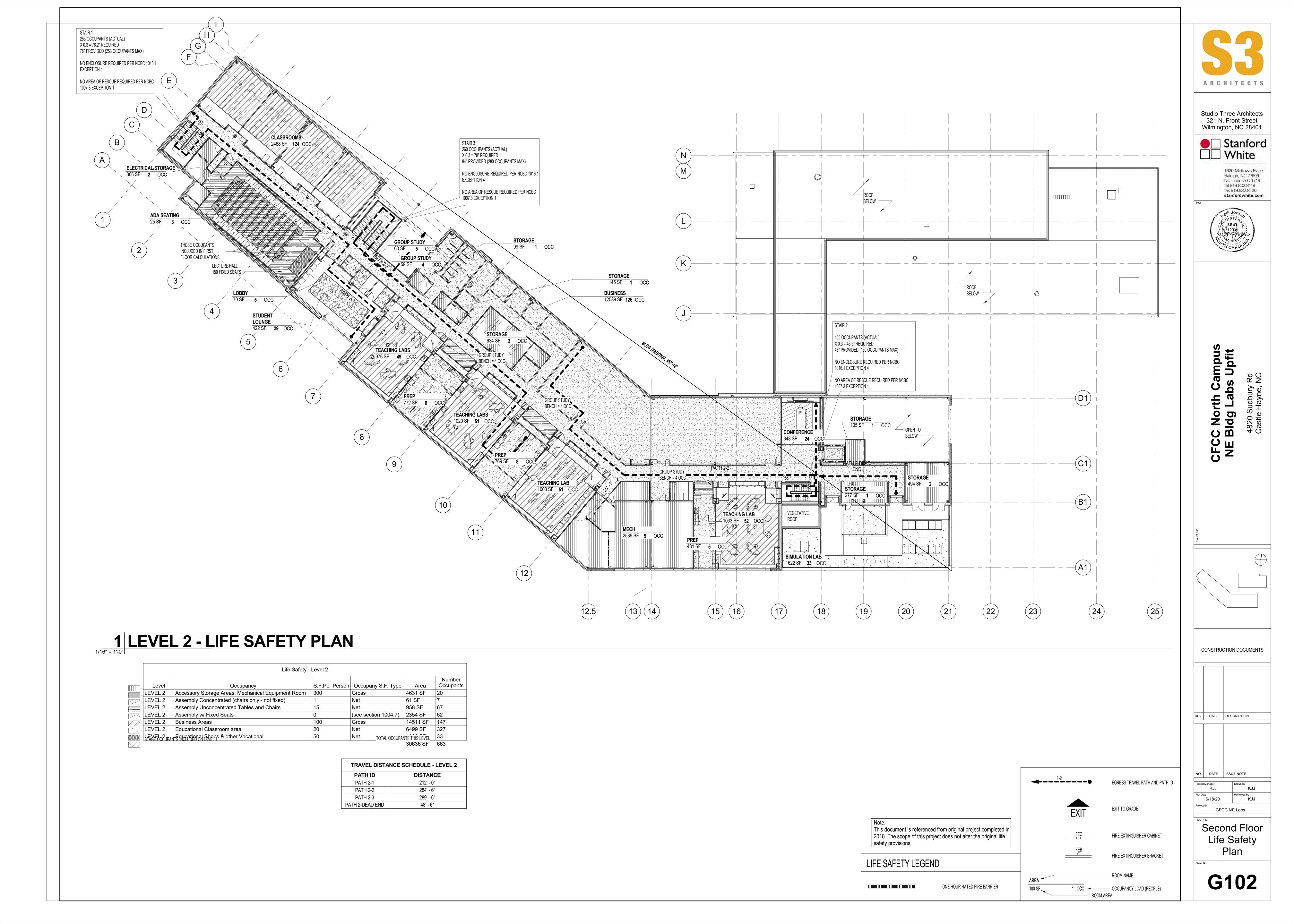
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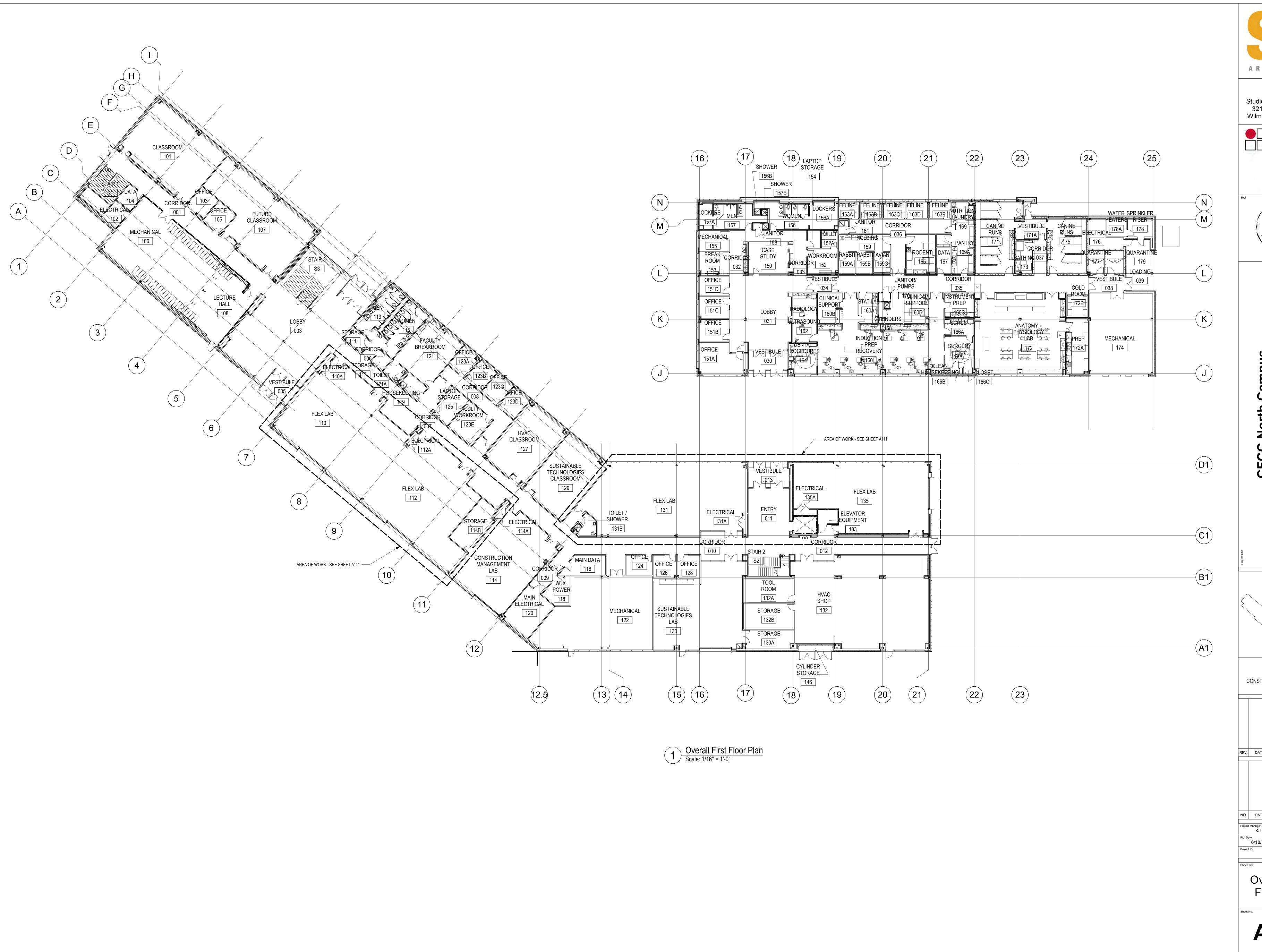
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Title Sheet & Code Summary



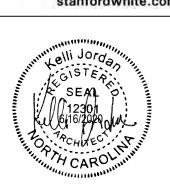




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□□ White

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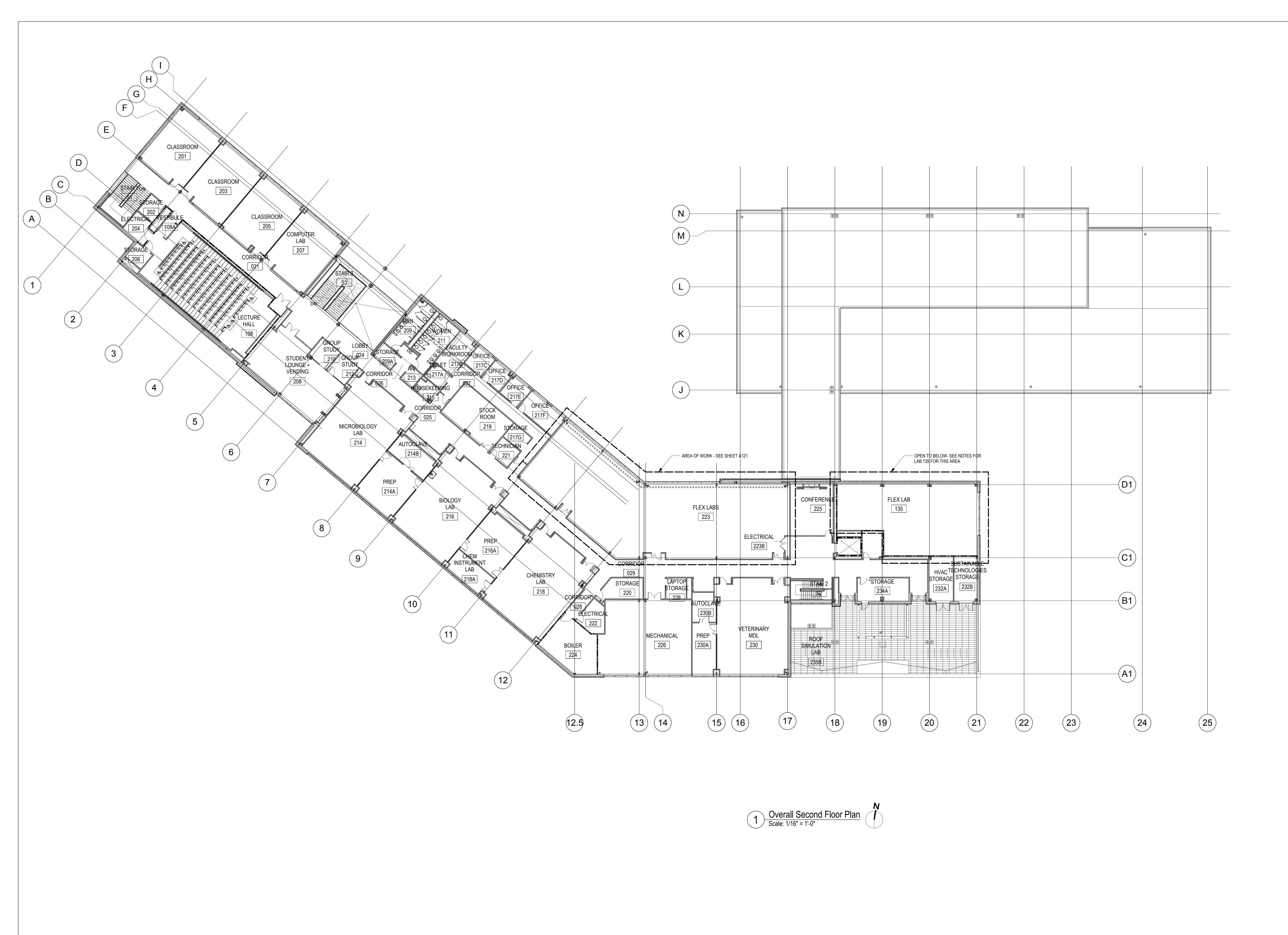
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Overall First Floor Plan

A101

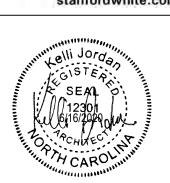




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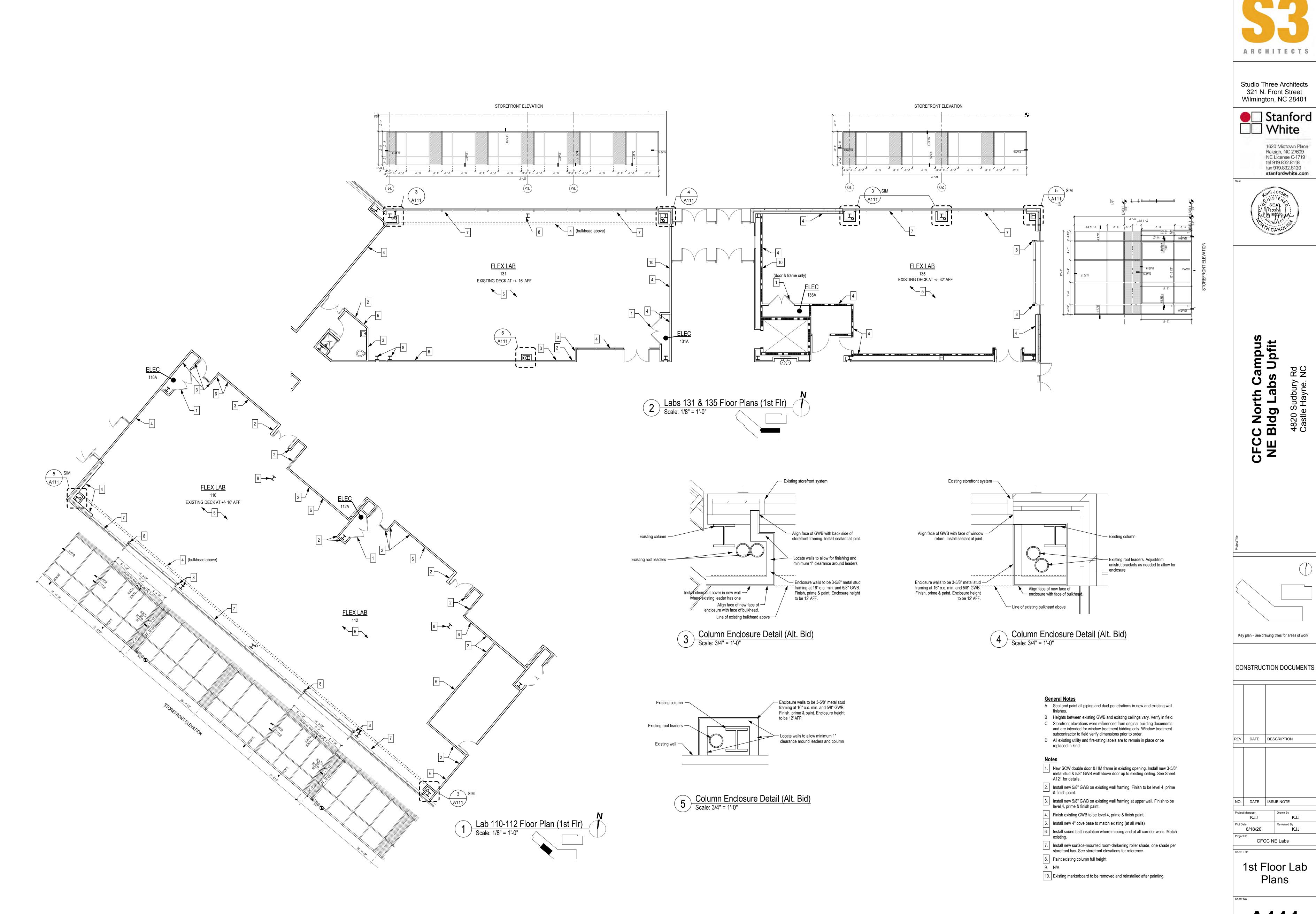
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CFCC NE Labs Overall

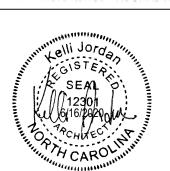
Second Floor Plan



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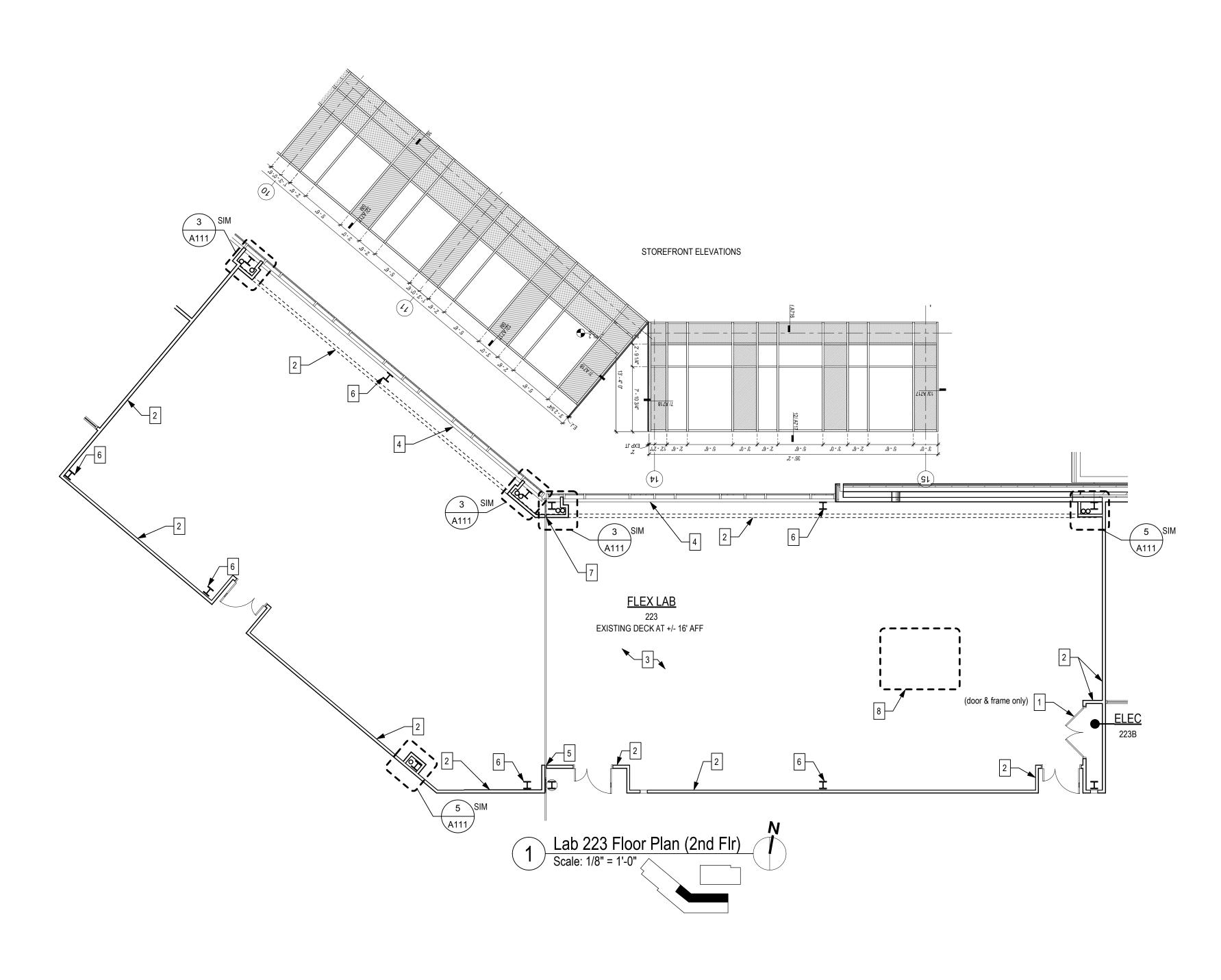


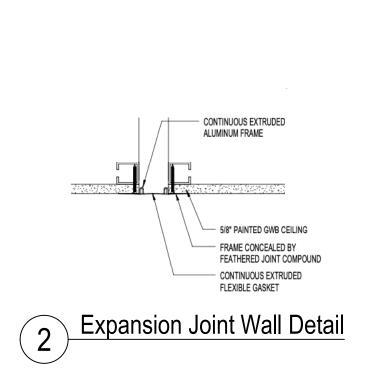
Key plan - See drawing titles for areas of work

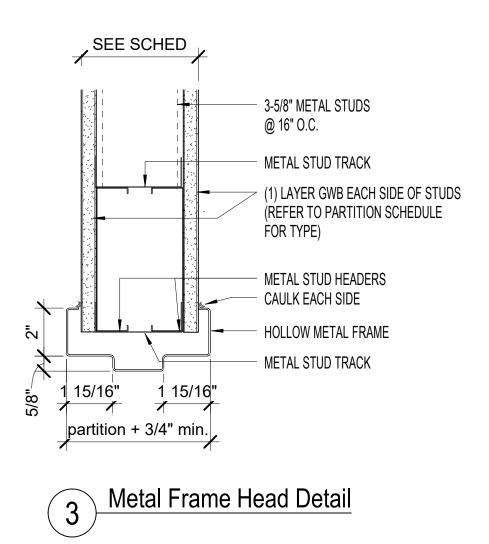
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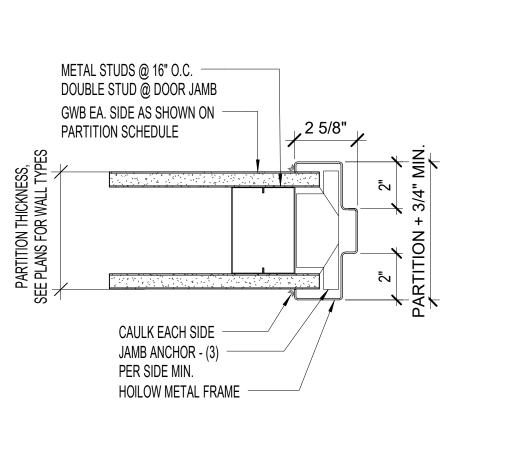
Reviewed By KJJ

1st Floor Lab

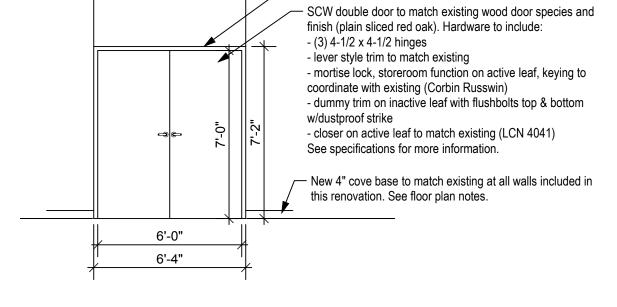








Metal Frame Jamb Detail



- Approximate location of existing structure above (+/- 16'

 New wall infill between existing walls. 3-5/8" metal studs at 16" OC with one layer 5/8" GWB each side. Attach to

adjacent existing walls and structure above. Finish and

2" Painted steel door frame anchored to existing wall.

paint (level 4).

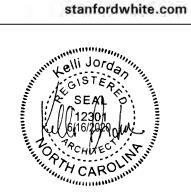
5 Door & Frame Elevation
Scale: 1/4" = 1'-0"



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TACHITEC TRAINING THE CAROLLING

CFCC North Campus
NE Bldg Labs Upfit

A Seal and paint all piping and duct penetrations in new and existing wall

B Heights between existing GWB and existing ceilings vary. Verify in field.

C Storefront elevations were referenced from original building documents and are intended for window treatment bidding only. Window treatment

1. New SCW doubl door & painted HM frame in existing opening. Install new 3-5/8" metal stud & 5/8" GWB wall above door up to existing ceiling. See

4. Install new surface-mounted room-darkening roller shades, one shade per storefront bay. See frame elevations for sizes.

/. Install expansion joint cover at new walls full-height. See detail 2/A121

8. Relocate existing fire suppression sprinkler head in this area to coordinate with new ductwork. See H121 for duct layout.

subcontractor to field verify dimensions prior to order.

D All existing utility and fire-rating labels are to remain in place or be

2. Finish existing GWB to be level 4, prime & finish paint.

B. Install new 4" cove base to match existing (at all walls)

5. Install new gasket-type expansion joint cover. See details.

replaced in kind.

Sheet A121 for details.

6. Paint existing column full height.

CONSTRUCTION DOCUMENTS

Key plan - See drawing titles for areas of work

REV. DATE DESCRIPTION

 NO.
 DATE
 ISSUE NOTE

 Project Manager
 KJJ
 Drawn By

 KJJ
 KJJ

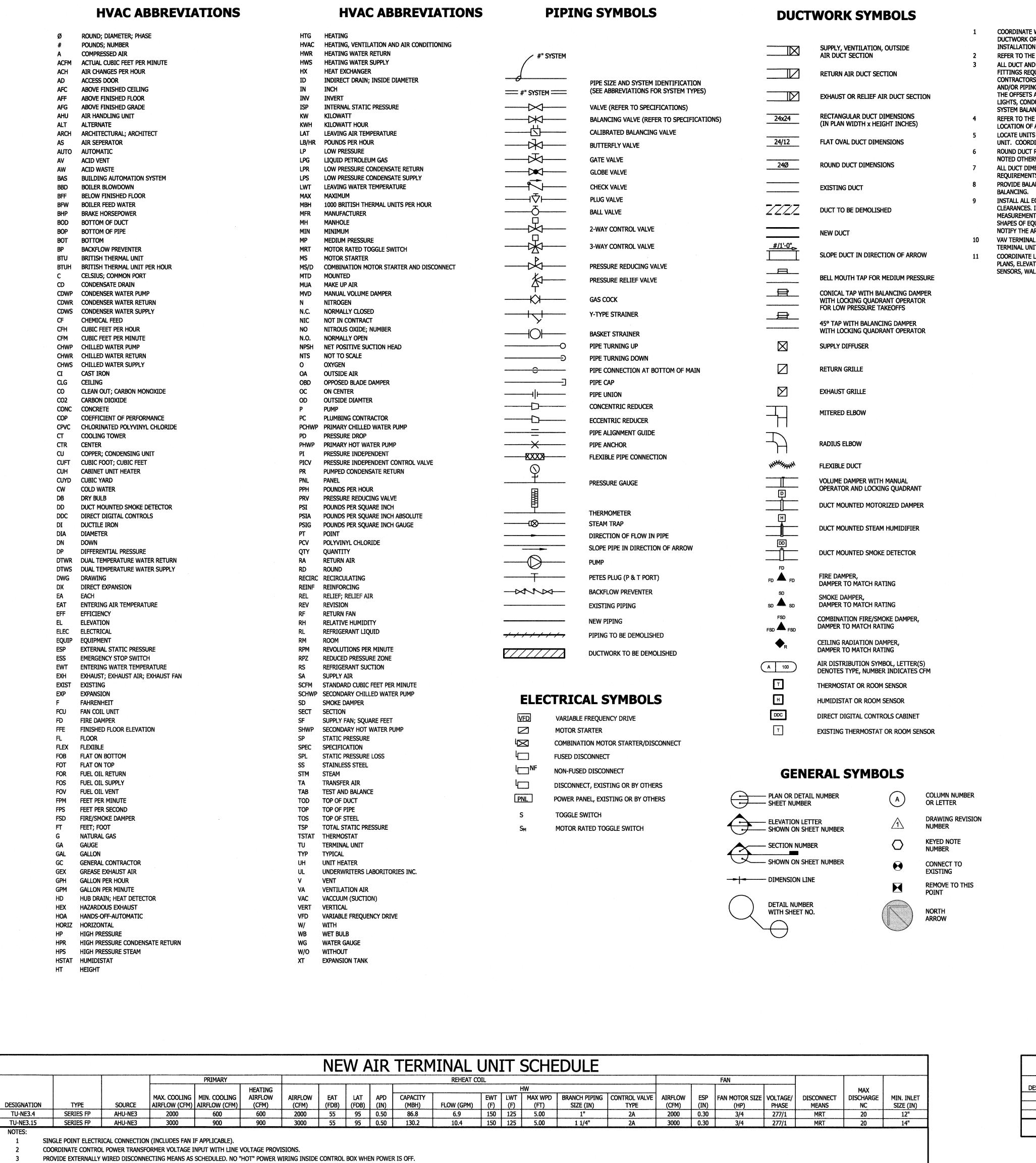
 Plot Date
 Reviewed By

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CFCC NE Labs

2nd Floor Lab Plan

**A121** 



EWT LWT CONTROL VALVE AIRFLOW SSP FAN MOTOR SIZE VOLTAGE/

TYPE

6.9 | 150 | 125 |

(CFM) (IN)

NOTES:

DESIGNATION

CONTRACTOR SHALL COORDINATE ALL CONTROL REQUIREMENTS PRIOR TO ORDERING.

AHU-NE3

ahu-ne7

REBALANCE EXISTING TERMINAL UNITS PER SCHEDULED VALUES.

MAX. COOLING MIN. COOLING AIRFLOW

EXISTING AIR TERMINAL UNIT SCHEDULE

 SERIES FP
 AHU-NE7
 3000
 900
 900
 3000
 55
 95
 130.2
 10.4
 150
 125
 3A
 3000
 0.30
 3/4
 277/1

CAPACITY

(MBH)

AIRFLOW EAT LAT

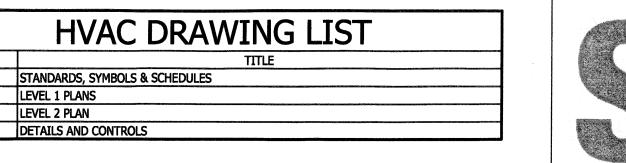
 750
 750
 2500
 55
 95
 108.5

600 2000 55 95 86.8

 3000
 55
 95
 130.2

 2500
 55
 95
 108.5

#### **HVAC GENERAL NOTES** COORDINATE WORK WITH OTHER TRADES PRIOR TO PURCHASE AND INSTALLATION OF ANY PIPING, H001 STANDARDS, SYMBOLS & SCHEDULES DUCTWORK OR EQUIPMENT. NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES PRIOR TO H111 LEVEL 1 PLANS INSTALLATION. H121 LEVEL 2 PLAN REFER TO THE ARCHITECTURAL PLANS FOR DIMENSIONS. DO NOT SCALE THESE DRAWINGS. ALL DUCT AND PIPING LAYOUTS AND LOCATIONS SHOWN ARE DIAGRAMMATIC AND DO NOT INDICATE ALL H201 | DETAILS AND CONTROLS FITTINGS REQUIRED TO COMPLETE WORK. COORDINATE THE DUCT AND PIPING LAYOUT WITH ALL CONTRACTORS PRIOR TO INSTALLATION, INCLUDING CONDUITS AND CABLE TRAYS. PROVIDE ALL DUCT AND/OR PIPING OFFSETS REQUIRED FOR THE COMPLETE INSTALLATION OF THE SYSTEM WHETHER OR NOT THE OFFSETS ARE INDICATED ON THE PLANS. INSTALL DUCTWORK AND PIPING HIGH ENOUGH TO AVOID LIGHTS, CONDUIT AND MISCELLANEOUS PIPING, BUT LOW ENOUGH TO ALLOW FOR EASY ACCESS TO SYSTEM BALANCING DEVICES. DO NOT BLOCK ACCESS TO DEVICES REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS AND ARCHITECTURAL DETAILS FOR EXACT LOCATION OF ALL CEILING AND SIDEWALL AIR DISTRIBUTION AND DEVICES. LOCATE UNITS SUCH THAT ACCESS PANELS MAY BE FULLY OPENED (VIA TILE CEILING) FOR SERVICING UNIT. COORDINATE LOCATION WITH LIGHTING FIXTURES OR ANY OTHER EQUIPMENT. APPENDIX B ROUND DUCT RUN-OUTS TO DIFFUSERS SHALL BE SAME SIZE AS INLET DIAMETER SCHEDULED, UNLESS 2018 BUILDING CODE SUMMARY NOTED OTHERWISE. FOR ALL COMMERCIAL PROJECTS ALL DUCT DIMENSIONS ARE INSIDE CLEAR. SEE DETAILS AND SPECIFICATIONS FOR INSULATION REQUIREMENTS. MECHANICAL DESIGN PROVIDE BALANCING DAMPERS WHERE INDICATED ON THE PLANS AND WHERE REQUIRED FOR SYSTEM MECHANICAL SUMMARY INSTALL ALL EQUIPMENT WITH THE MANUFACTURER'S RECOMMENDATION AND CODE REQUIRED CLEARANCES. INSURE ALL ITEMS FURNISHED WILL FIT IN THE SPACE AVAILABLE. MAKE NECESSARY FIELD MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT MEASUREMENTS TO ASCERTAIN SPACE REQUIREMENTS AND FURNISH AND INSTALL SUCH SIZES AND Thermal Zone: 2013 ASHRAE FUNDAMENTALS, WILMINGTON NC, ZONE 3 SHAPES OF EOUIPMENT THAT ARE THE TRUE INTENT AND MEANING OF THE PLANS AND SPECIFICATIONS. winter dry bulb: 23.2°F summer dry bulb: 91.2°F NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES PRIOR TO PURCHASE AND INSTALLATION. VAV TERMINAL UNIT CONNECTION SIZE SHALL MATCH INLET DIAMETER SCHEDULED. BRANCH DUCT TO Interior design conditions TERMINAL UNIT SHALL MATCH INLET, UNLESS NOTED OTHERWISE. winter dry bulb: 70°F COORDINATE LOCATIONS AND ELEVATIONS OF ALL EXPOSED MECHANICAL ITEMS WITH ARCHITECTURAL summer dry bulb: 75°F PLANS. ELEVATIONS, AND DETAILS. THESE ITEMS INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING: relative humidity: 60% MAXIMUM SENSORS, WALL DEVICES, SIDEWALL GRILLES, CONTROL PANELS, AND ALARMS. 5000 MBH 400 TONS Building cooling load: Mechanical Spacing Conditioning System description of unit: SEE PLANS AND SPECIFICATIONS cooling efficiency: size category of unit: Size category. If oversized, state reason: (2) 2500 MBH (PRESENT); (3) 2500 MBH (FUTURE) Size category. If oversized, state reason: (1) 300 TON; (1) 165 TON List equipment efficiencies: SEE PLANS AND SPECIFICATIONS

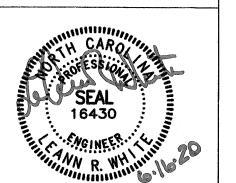


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lue  $\square$  Stanford

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Impus Upfit

No ldg C B

**CONSTRUCTION DOCUMENTS** 

REV DATE DESCRIPTION

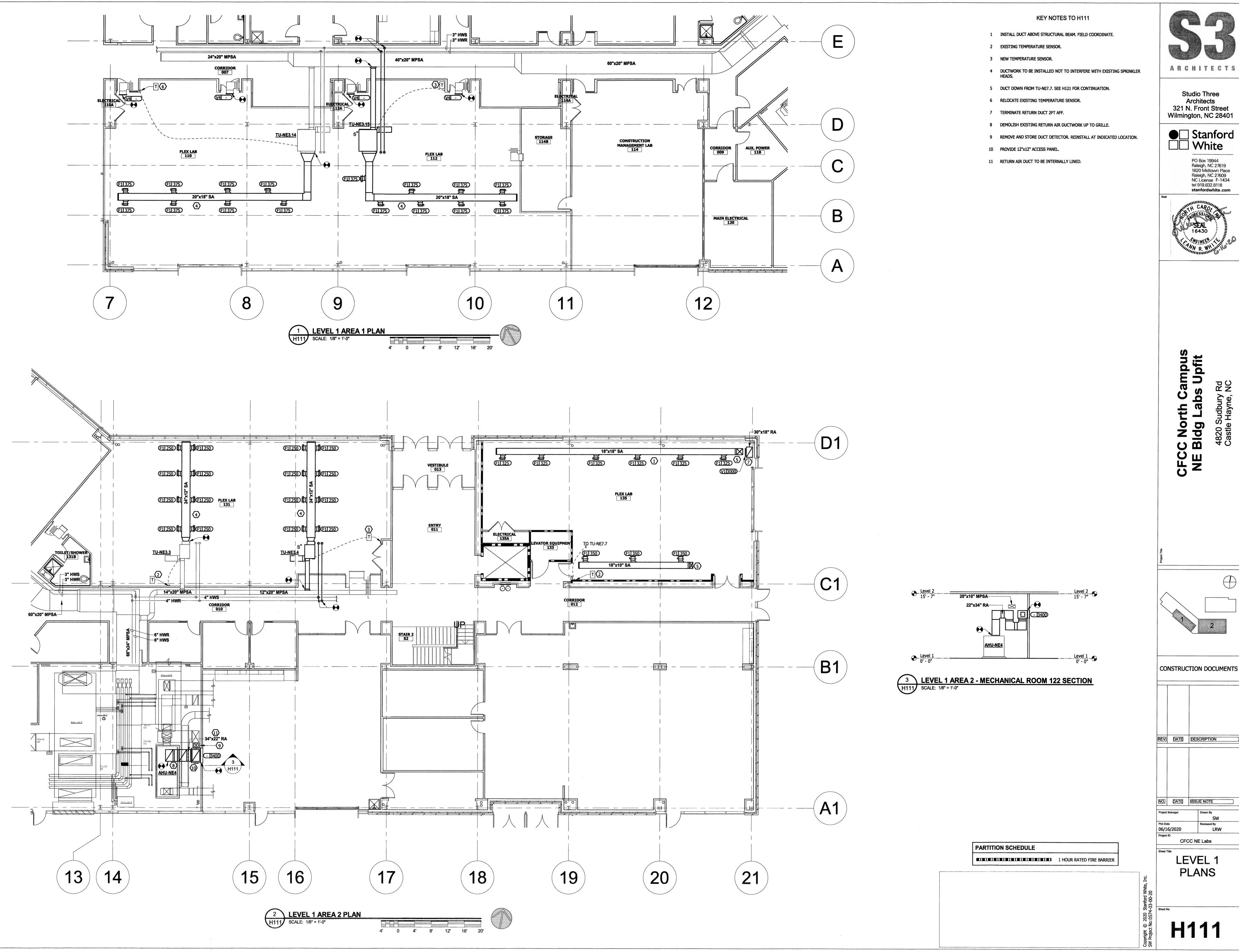
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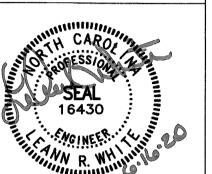
06/16/2020 CFCC NE Labs

STANDARDS, SYMBOLS & **SCHEDULES** 

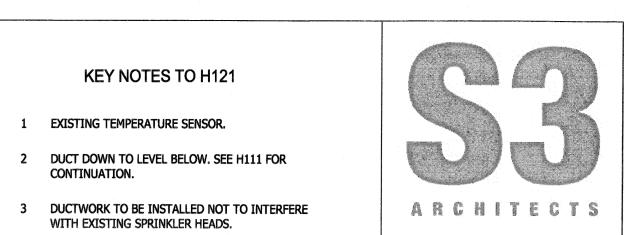
AIR DISTRIBUTION SCHEDULE (INXIN, Ø IN) NECK SIZE (INXIN, Ø IN) DESIGNATION STD BLADE SIDEWALL 375 14x10 12x8 0.1 20 STD BLADE SIDEWALL 3000 26x22 RETURN 24x20 STD BLADE SIDEWALL 1500 22x22 V4 RETURN

V1 GRILLE TO INCLUDE FILTER FRAME OPTION AND ALUMINUM FINISH.





CONSTRUCTION DOCUMENTS



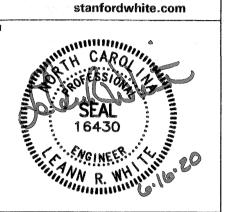
4 ROUTE DUCT ABOVE WINDOW. VERIFY LOCATION WITH ENGINEER PRIOR TO INSTALLATION.

5 REMOVE EXISTING RETURN AIR INLET ATTENUATOR AND FILTER.

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CFCC North Campus
NE Bldg Labs Upfit

CONSTRUCTION DOCUMENTS

REV DATE DESCRIPTION

NO. DATE ISSUE NOTE

Project Manager Drawn By
SW

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6/16/2020 LRW
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CFCC NE Labs

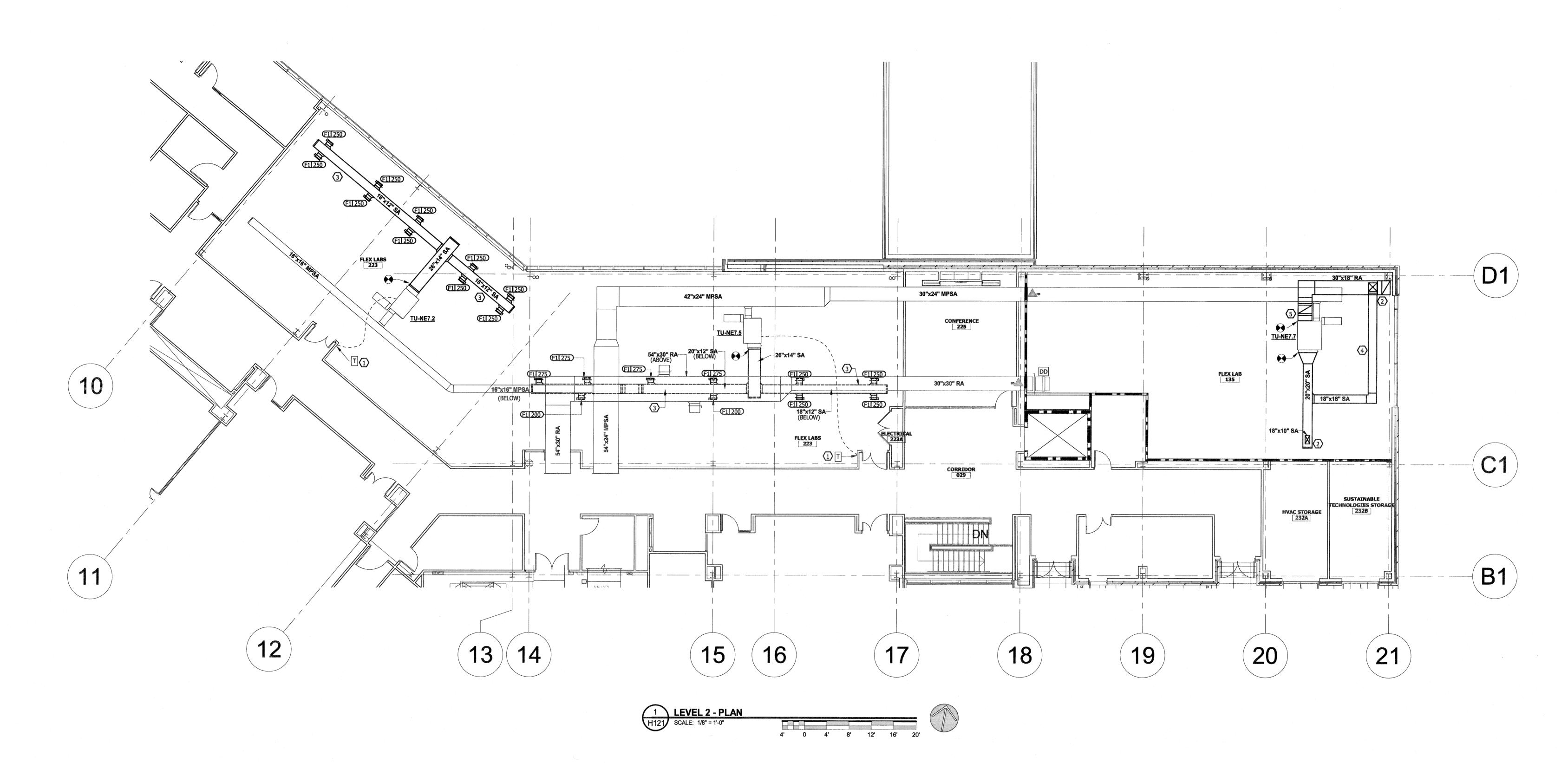
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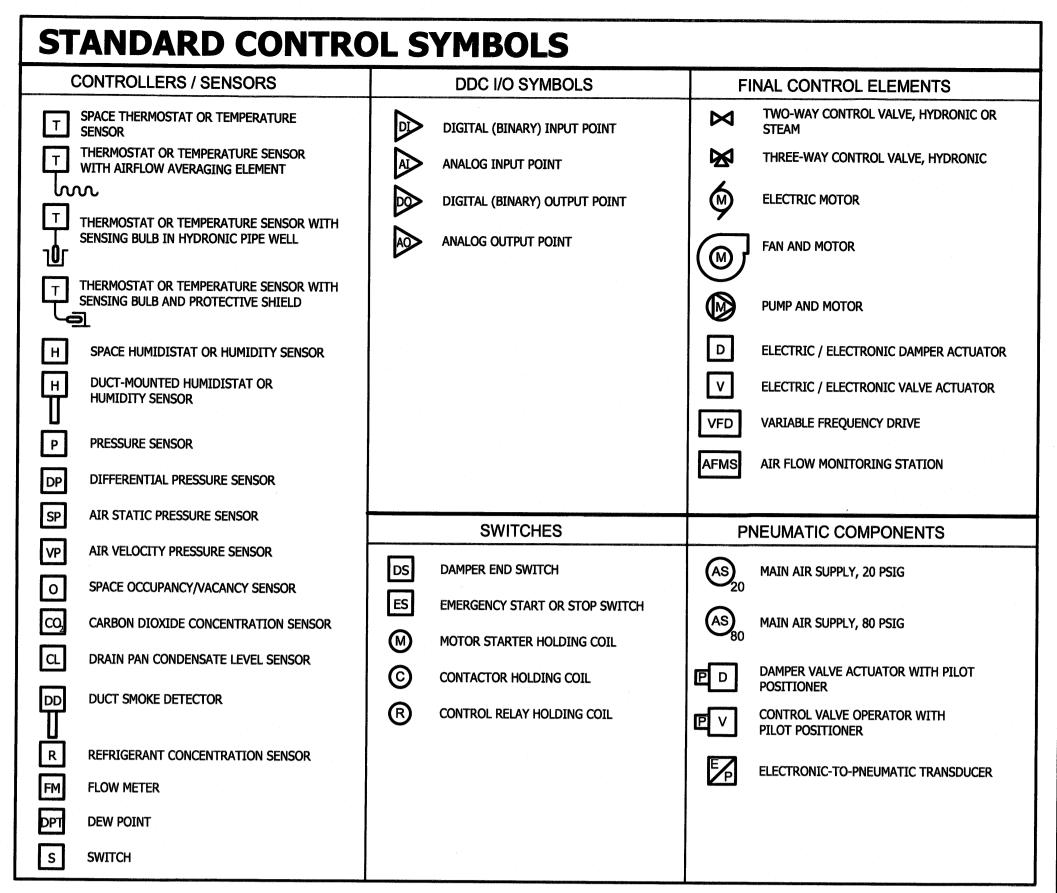
LEVEL 2 PLAN

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PARTITION SCHEDULE

THOUR RATED FIRE BARRIER





PRESSUR VACUUM SV	FLOW SW (AIR, WATER						
N.O.	N.C.	N.O.	N.C.	N.O.	N.C.	N.O.	N.C.
Ž'	T	Z	T	<b>4</b>	<b>T</b>	٦	T
	OVERLOAD						
INSTANT	OPERATING		TIMED CO		RELAY	1	
N.O.	N.C.	ENER	GIZED	DE-ENE	RGIZED		
1 1		N.O.T.C.	N.C.T.O.	N.O.T.C.	N.C.T.O.	]	
Ť	*	$\nearrow$	To	%	• 70	]	

### **DESCRIPTION**

WHERE INDICATED ON THE DRAWINGS, LOCATE ROOM CONTROLLER (S) (THERMOSTATS, HUMIDISTATS, ETC.) OR ROOM SENSORS (TEMPERATURE, HUMIDITY, CARBON DIOXIDE, AND/OR OCCUPANCY) ADJACENT TO AND AT SAME HEIGHT AS SPACE LIGHT SWITCH(ES). WHERE FEASIBLE, MULTIPLE CONTROLLERS/SENSORS SHALL BE INCORPORATED WITHIN A COMMON DEVICE OR ENCLOSURE.

70-74°F COMFORT RANGE

6/H201 SPACE CONDITION CONTROLLER/SENSOR

#### **DESCRIPTION**

THERMOSTATICALLY-CONTROLLED PRESSURE INDEPENDENT SERIES CONFIGURED FAN POWERED TERMINAL UNIT WITH PRIMARY AIR DAMPER, WITH HEATING COIL.

SEQUENCE OF OPERATION

SETPOINTS: SPACE TEMPERATURE AND HUMIDITY CONTROL SETPOINTS SHALL BE AS FOLLOWS:

MAX. TEMPERATURE: 85°F HIGH LIMIT "OFF" PERIOD: MIN. TEMPERATURE: 55°F LOW LIMIT SPACE TEMPERATURE SETPOINTS SHALL BE USER ADJUSTABLE.

MONITOR EACH SPACE TEMPERATURE, AND OCCUPANCY AS INDICATED. MONITOR TERMINAL UNIT PRIMARY AIR INLET AIRFLOW. MONITOR TERMINAL UNIT FAN STATUS

MONITOR TERMINAL UNIT DISCHARGE AIR TEMPERATURE

**SERIES CONFIGURED TERMINAL UNIT:** 

"ON" PERIOD OCCUPIED OPERATION: WHEN THE AHU SUPPLY FAN IS ENERGIZED AND THE SPACE IS OCCUPIED AS CONFIRMED BY SPACE OCCUPANCY/VACANCY SENSOR, TERMINAL UNIT SHALL OPERATE AS FOLLOWS:

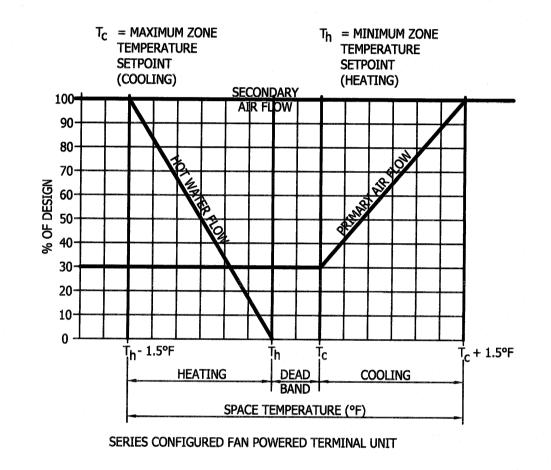
COMMAND TERMINAL UNIT FAN "ON."

IF SPACE TEMPERATURE RISES ABOVE THE MAXIMUM COMFORT SPACE TEMPERATURE SETPOINT, MODULATE PRIMARY AIR VOLUME DAMPER BETWEEN MINIMUM AIRFLOW SETPOINT AND 100% DESIGN AIRFLOW TO MAINTAIN SPACE AT MAXIMUM COMFORT SPACE TEMPERATURE SETPOINT.

IF SPACE TEMPERATURE FALLS BELOW MINIMUM COMFORT SPACE TEMPERATURE SETPOINT, MODULATE PRIMARY AIR VOLUME DAMPER TO MAINTAIN MINIMUM AIRFLOW SETPOINT AND MODULATE REHEAT COIL HOT WATER CONTROL VALVE TO MAINTAIN SPACE AT MINIMUM COMFORT SPACE TEMPERATURE SETPOINT.

"ON" PERIOD UNOCCUPIED OPERATION: WHEN THE AHU SUPPLY FAN IS ENERGIZED BUT THE SPACE BECOMES UNOCCUPIED AS CONFIRMED BY SPACE OCCUPANCY/VACANCY SENSOR, TERMINAL UNIT SHALL OPERATE AS DEFINED ABOVE EXCEPT THAT THE MINIMUM TERMINAL UNIT AIRFLOW SHALL BE RESET TO ZERO (0) CFM.

THE "ON" PERIOD CONTROL SEQUENCE DEFINED ABOVE IS ILLUSTRATED BY THE FOLLOWING GRAPHIC:



### "OFF" PERIOD TEMPERATURE LIMITS CONTROL:

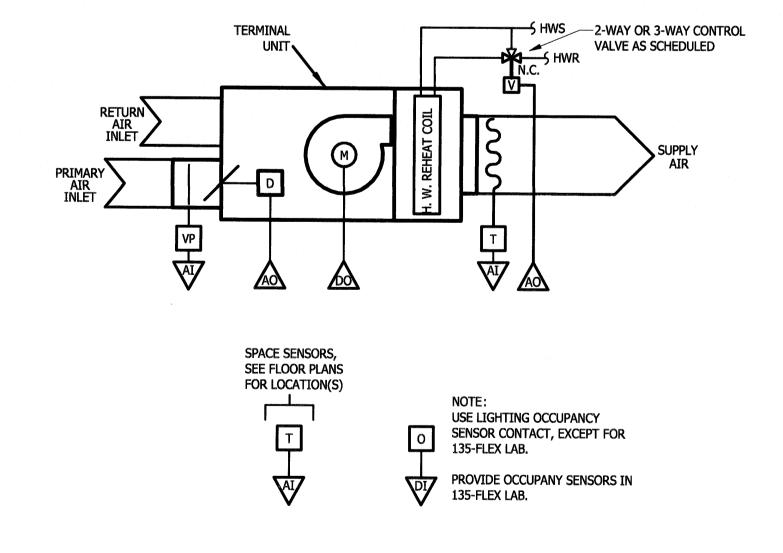
WHEN THE AHU SUPPLY FAN IS NOT ENERGIZED, COMMAND TERMINAL UNIT FAN "OFF."

IF THE SPACE TEMPERATURE EXCEEDS THE "OFF" PERIOD HIGH LIMIT TEMPERATURE, WHEN THE AHU SUPPLY FAN IS ENERGIZED AND CHILLED WATER IS AVAILABLE AS INDICATED BY THE CHILLED WATER TEMPERATURE BEING AT 50°F OR LOWER, THE TERMINAL UNIT SHALL OPERATE TO PROVIDE COOLING IN ACCORDANCE WITH ITS "ON" PERIOD SEQUENCE DEFINED ABOVE.

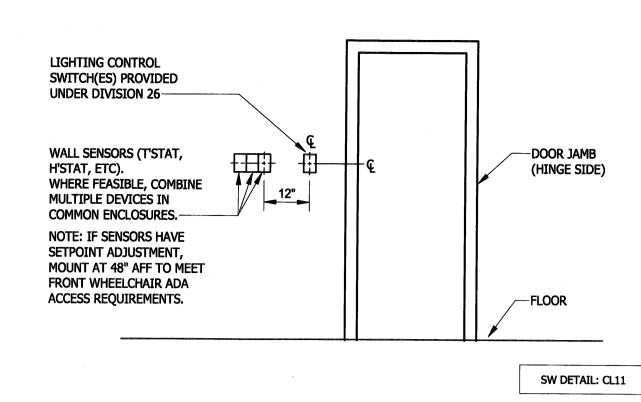
IF THE SPACE TEMPERATURE FALLS BELOW THE "OFF" PERIOD LOW TEMPERATURE LIMIT, WHEN THE AHU SUPPLY FAN IS ENERGIZED AND HOT WATER IS AVAILABLE AS INDICATED BY THE HOT WATER TEMPERATURE BEING AT 100°F OR HIGHER, THE TERMINAL UNIT SHALL OPERATE TO PROVIDE HEATING IN ACCORDANCE WITH ITS "ON" PERIOD SEQUENCE DEFINED ABOVE.

### TREND LOG AND HISTORICAL DATA: LOG AND ARCHIVE THE FOLLOWING EVERY 15 MINUTES:

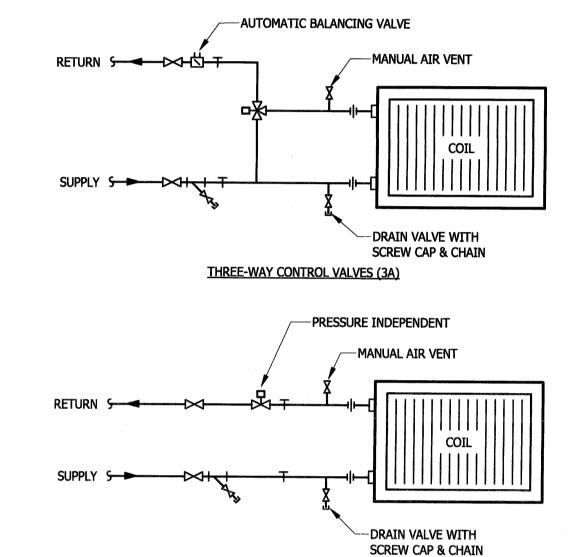
SPACE TEMPERATURE(S) SPACE OCCUPANCY/VACANCY SENSOR(S) STATUS PRIMARY AIR INLET AIRFLOW DISCHARGE AIR TEMPERATURE FAN STATUS



7/H201 FAN POWERED TERMINAL UNIT, SERIES



4 SPACE THERMOSTAT/SENSOR INSTALLATION H201 SCALE: NTS



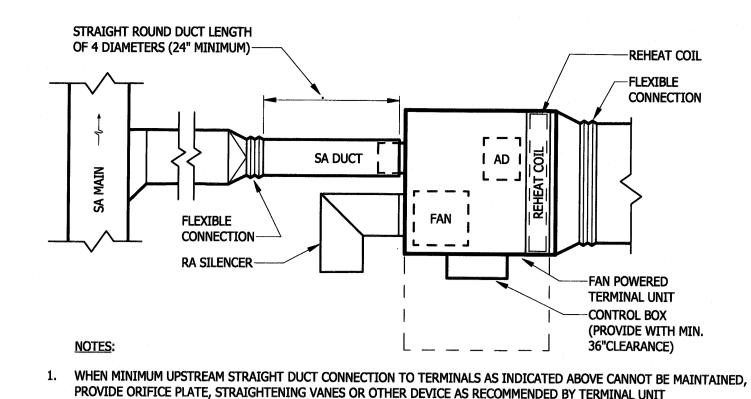
TWO-WAY CONTROL VALVES (2A)

1. REFER TO EQUIPMENT SCHEDULES AND/OR NOTES FOR APPLICATION.

2. REFER TO CONTROL SUBMITTAL FOR EXACT CONTROL VALVE PIPING ARRANGEMENTS.

SW DETAIL: CL01

SMALL HYDRONIC COIL PIPING DIAGRAMS



PROVIDE ORIFICE PLATE, STRAIGHTENING VANES OR OTHER DEVICE AS RECOMMENDED BY TERMINAL UNIT MANUFACTURER AND SUBMIT TO ENGINEER FOR REVIEW PRIOR TO INSTALLATION.

2. MANUFACTURER OF TERMINAL UNIT SHALL PROVIDE CONTROLS ON LEFT OR RIGHT SIDE AS REQUIRED BY FIELD CONDITIONS (VERIFY PRIOR TO ORDERING).

3. ARRANGE ACCESS TO FACILITATE EASY FIELD BALANCE AND MAINTENANCE OF TERMINAL UNIT.

4. MAINTAIN CLEARANCE REQUIRED BY NEC FOR UNITS WITH ELECTRIC COILS AND DISCONNECTS.

ROUND TAKE-OFF-

-RECTANGULAR DUCT

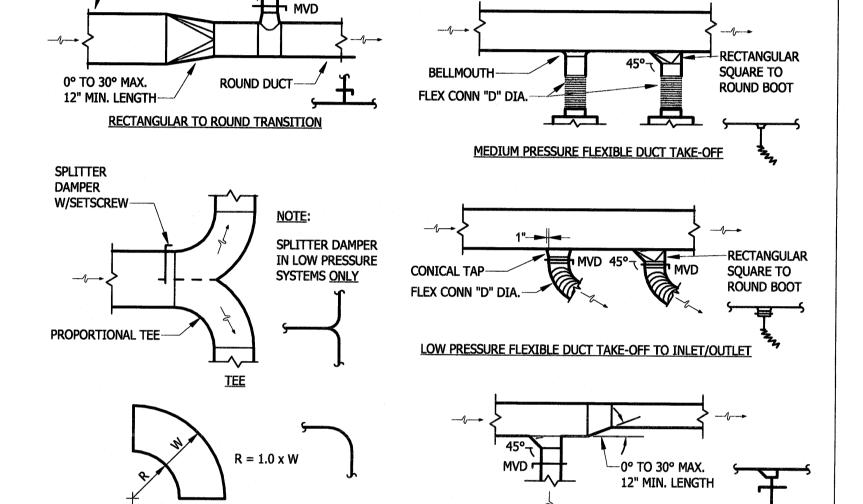
RA INLET/FILTER SHALL BE ON BACK OF UNIT. SIDE INLET/FILTER NOT ACCEPTABLE. SW DETAIL: AT01

PRESSURE CLASS DUCT.

WHERE SPACE CONFLICTS OCCUR, RECTANGULAR SQUARE

TO ROUND BOOTS ARE ACCEPTABLE FOR MEDIUM AND LOW





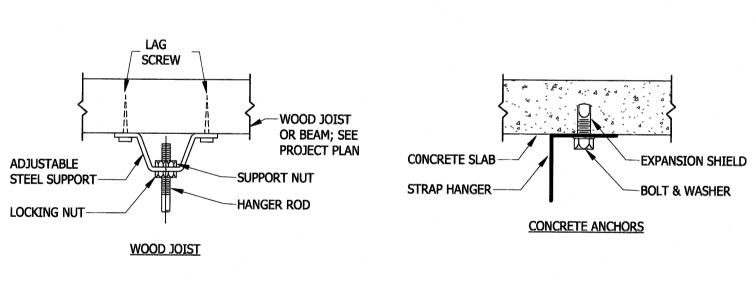
UNLESS NOTED OTHERWISE ALL MITERED 90 DEGREE ELBOWS SHALL HAVE TURNING VANES. 45 DEGREE ELBOWS SHALL NOT HAVE TURNING VANES.

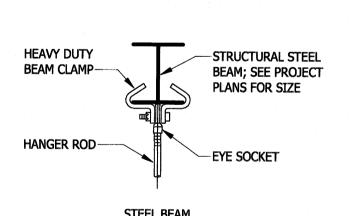
**FULL RADIUS ELBOW** 

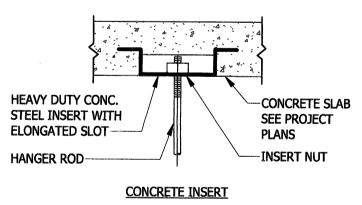
SW DETAIL: D01

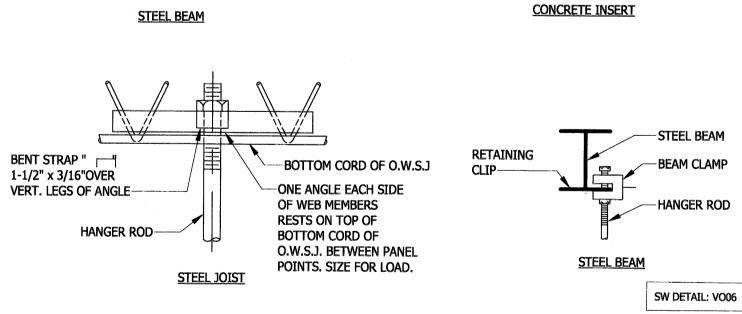
**BRANCH TAKE-OFF** 

2 STANDARD DUCT CONSTRUCTION









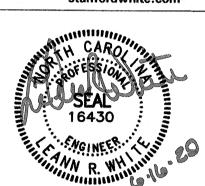


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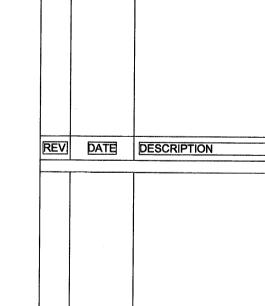
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ampus S Upfit C North C Bldg Lab

CONSTRUCTION DOCUMENTS



NO. DATE ISSUE NOTE 06/16/2020

**DETAILS AND** CONTROLS

#### **ELECTRICAL SYMBOLS ELECTRICAL ABBREVIATIONS ELECTRICAL ABBREVIATIONS** WALL MTD LIGHTING FIXTURE AND OUTLET AMPERES OR AMP METER PUN PER UNIT NAMEPLATE AC ALTERNATING CURRENT PVC POLYVINYL CHLORIDE (CONDUIT) PENDANT LIGHTING FIXTURE AND OUTLET AMP FRAME ROUND DOWNLIGHT LIGHTING FIXTURE AND OUTLET ABOVE FINISHED CEILING REV REVISION RLA RATED LOAD AMPS WALL MTD LIGHTING FIXTURE AND OUTLET ABOVE FINISHED FLOOR AFG ABOVE FINISHED GRADE RMC RIDGID METAL CONDUIT CEILING MTD LIGHTING FIXTURE AND OUTLET AIC AMPERE INTERRUPTING CAPACITY SN SOLID NEUTRAL WALL MTD EXIT SIGN AND OUTLET, SINGLE FACE. ARROW INDICATES ALT ALTERNATE SNAC SIGNAL NOTIFICATION APPLIANCE CIRCUIT SURGE PROTECTED AMERICAN NATIONAL STANDARDS INSTITUTE CEILING MTD EXIT SIGN AND OUTLET, DUAL FACE. ARROWS INDICATE ARCH ARCHITECTURAL SURGE PROTECTED DEVICE SPDT SINGLE POLE DOUBLE THROW ATS AUTOMATIC TRANSFER SWITCH SPEC SPECIFICATION EMERGENCY LIGHT BATTERY PACK - TWO HEAD UNIT. AMERICAN WIRE GAGE SPST SINGLE POLE SINGLE THROW CEILING MOUNTED EMERGENCY BATTERY LIGHT BELOW FINISHED CEILING SQ SQUARE EMERGENCY LIGHT REMOTE HEAD BELOW FINISHED GRADE SWBD SWITCHBOARD CELSIUS; COIL SWGR SWITCHGEAR GROUND MOUNTED FLOODLIGHT AND OUTLET CB CIRCUIT BREAKER TBB TELEPHONE BACK BOARD AREA LUMINAIR AND STANDARD CCTV CLOSED CIRCUIT TELEVISION SYSTEM TELECO TELECOMMUNICATIONS CD/Cd CANDELA FLUSH MTD DIMMER SWITCH, 20A, 120/277V TEMP TEMPERATURE CLG CEILING FLUSH MTD 3-WAY DIMMER SWITCH, 20A, 120/277V THD TOTAL HARMONIC DISTORTION COAX COAXIAL CABLE TELEVISION CONTR CONTRACTOR CEILING MTD DUAL TECHNOLOGY (IR, U) OCCUPANCY SENSOR SWITCH, TYPICAL CT CURRENT TRANSFORMER 20A, 120/277V CTV CABLE TELEVISION UNDERWRITERS LABORATORIES INC. FLUSH MTD DUPLEX RECEPTACLE, 20A, 125V, 3W UNO UNLESS NOTED OTHERWISE COPPER VOLTAGE; VOLT DWG DRAWING FLUSH MTD QUADRUPLEX RECEPTACLE, 20A, 125V, 3W VAC VOLTS ALTERNATING CURRENT ELECTRICAL CONTRACTOR FLUSH MTD DUPLEX RECEPTACLE, 20A, 125V, 3W, SPLIT WIRED WITH VDC VOLTS DIRECT CURRENT ENCLOSED CIRCUIT BREAKER TOP OUTLET SWITCHED. VARIABLE FREQUENCY DRIVE EXHAUST FAN HX# EQUIPMENT GROUNDING CONDUCTOR FLUSH MTD DUPLEX RECEPTACLE, 20A, 125V, 3W, INSTALLED WIRE VERTICALLY 4" ABOVE BACKSPLASH OR COUNTERTOP IF NO ELEC ELECTRICAL WITH **EMERGENCY** WIREGUARD ELECTRICAL METALLIC TUBING FLUSH MTD QUADRUPLEX RECEPTACLE, 20A, 125V, 3W, INSTALLED WEATHERPROOF VERTICALLY 4" ABOVE BACKSPLASH OR COUNTERTOP IF NO **EMERGENCY POWER OF** TRANSFORMER BACKSPLASH EXISTS. EXISTNG TO REMAIN EXPLOSION PROOF EWC ELECTRIC WATER COOLER WALL MOUNTED POWER DEVICE, REFER TO SCHEDULES FOR MARK IMPEDANCE FACP FIRE ALARM CONTROL PANEL ROUND; DIAMETER; PHASE FATC FIRE ALARM TERMINATION CABINET FLOOR BOX WITH DEVICE(S). REFER TO SCHEDULES FOR MARK FINISHED FLOOR ELEVATION WALL MTD TELECOM OUTLET, REFER TO SCHEDULES FOR MARK FLOOR FLA FULL LOAD AMPS FLC FLEXIBLE LIQUIDTIGHT CONDUIT CEILING MTD DUPLEX RECEPTACLE AND OUTLET, 20A, 125V, 3W FLEX FLEXIBLE CEILING MTD TELECOM OUTLET, REFER TO SCHEDULES FOR MARK FMC FLEXIBLE METAL CONDUIT CEILING MTD DUPLEX RECEPTACLE & TELECOM OUTLET, REFER TO FT FEET; FOOT SCHEDULES FOR MARK **FUSE** GA GAUGE; GAGE CEILING MTD PUBLIC ADDRESS SPEAKER GROUND BUS FLUSH MTD VOLUME CONTROL FOR SPEAKER GENERAL CONTRACTOR WALL MTD TELEVISION ANTENNA/ELECTRICAL OUTLET GROUNDING ELECTRODE CONDUCTOR GROUND FAULT (CIRCUIT) INTERRUPTER **EMERGENCY LIGHTING RELAY CONTROL** GND GROUND PANELBOARD, 250V LEVEL HD HEAVY DUTY PANELBOARD, 600V LEVEL HOA HANDS-OFF-AUTOMATIC HP HORSEPOWER HOMERUN; ARROW HEADS INDICATE NUMBER OF CIRCUITS, LETTERS HVAC HEATING, VENTILATING & AIR CONDITIONING X-#,#,# AND NUMBERS DESIGNATE PANEL AND CIRCUITS. SHORT TICK MARKS INDICATE NUMBER OF CURRENT CARRYING PHASE CONDUCTORS. LONG **ISOLATED GROUND** TICK MARK(S) INDICATE NEUTRAL(S). GROUNDING CONDUCTORS REOUIRED BY SPECIFICATIONS ARE NOT SHOWN. CONDUCTOR SIZES IMC INTERMEDIATE METAL CONDUIT SPECIFIED ON THE PANEL SCHEDULES ARE MANDATORY FOR THE JUNCTION BOX ENTIRE CIRCUIT EXCEPT WHERE SPECIFICATIONS REQUIRE A SIZE FATC KV KILOVOLT INCREASE FOR VOLTAGE DROP. KVA KILOVOLT AMPERE SURFACE METAL RACEWAY WITH DEVICES, LETTER DESIGNATES TYPE KW KILOWATT KWH KILOWATT HOUR PENDANT MTD, PLUG-IN BUS DUCT WITH PLUG-IN CIRCUIT BREAKER OR LED LIGHT EMMITING DIODE FUSIBLE SWITCH AND TAP BOX. DUCT AND SWITCH RATING AS NOTED. LRA LOCKED ROTOR AMPS TOP # - DEVICE MAXIMUM RATING OR FRAME SIZE LS LIFE SAFETY BOTTOM # - FUSE SIZE OR DEVICE SETTING LTG LIGHTING DISCONNECT SWITCH. MOTOR; METERING MC METAL CLAD MCB MAIN CIRCUIT BREAKER COMBINATION DISCONNECT SWITCH AND MAGNETIC MOTOR STARTER. MCC MOTOR CONTROL CENTER MCP MOTOR CONTROL PROTECTOR MCS MOLDED CASE SWITCH FLUSH MTD MANUAL MOTOR STARTER SWITCH WITHOUT OVERLOAD MH MANHOLE MIN MINIMUM MAGNETIC MOTOR STARTER MLO MAIN LUG ONLY 3 POLE CIRCUIT BREAKER IN ENCLOSURE. NO INDICATES CB RATING. N, NEU NEUTRAL NEC NATIONAL ELECTRICAL CODE VARIABLE FREQUENCY DRIVE CONTROLLER, 40" AFF, PROVIDED BY HVAC OR PLUMBING CONTRACTOR AND WIRED BY ELECTRICAL NEMA NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION CONTRACTOR NF NON-FUSED MAGNETIC CONTACTOR, SIZE PER SCHEDULE NFPA NATIONAL FIRE PROTECTION ASSOCIATION JUNCTION, PULL, TAP OR OUTLET BOX (CODE SIZE) NIC NOT IN CONTRACT NL NIGHT LIGHT TIME CLOCK NO NORMALLY OPEN; NUMBER MAGNETIC RELAY, SIZE PER SCHEDULE NOM NOMINAL NTS NOT TO SCALE OC ON CENTER OVERLOAD POLE PULL BOX PHOTOCELI POWER FACTOR PH PHASE PNL PANEL PT POINT; POTENTIAL TRANSFORMER

OL

### FLUSH MOUNTED MUSHROOM HEAD PUSH BUTTON FLUSH MOUNTED PUSH BUTTON SUPPLEMENTAL GROUND BAR GROUND PER NEC ELECTRICAL DEMAND METER SURGE PROTECTION DEVICE WALL MTD FIRE ALARM PULL STATION SMOKE DETECTOR, CEILING MTD SMOKE DETECTOR WITH SOUNDER BASE, CEILING MTD SMOKE DETECTOR, CEILING MTD, MULTI SENSOR CEILING MTD REMOTE ALARM INDICATOR LAMP SMOKE DETECTOR, DUCT MTD (WITH RAIL) HEAT DETECTOR, CEILING MTD SMOKE DETECTOR, WALL MTD SMOKE DETECTOR WITH SOUNDER BASE, WALL MTD WALL MTD HEAT DETECTOR WALL MTD REMOTE ALARM INDICATOR LAMP (RAIL) WALL MTD HORN TYPE AUDIO/VISUAL APPLIANCE WALL MTD SPEAKER TYPE AUDIO/VISUAL APPLIANCE WALL MTD CHIME TYPE AUDIO/VISUAL APPLIANCE WALL MTD VISUAL ALARM APPLIANCE CEILING MTD HORN TYPE AUDIO/VISUAL ALARM APPLIANCE CEILING MTD SPEAKER TYPE AUDIO/VISUAL ALARM APPLIANCE CEILING MTD CHIME TYPE AUDIO/VISUAL ALARM APPLIANCE CEILING MTD FIRE ALARM VISUAL DEVICE DOOR HOLDER FIRE ALARM MONITOR MODULE FLOW SWITCH FIRE ALARM CONNECTION, SWITCH PROVIDED BY OTHERS TAMPER SWITCH FIRE ALARM CONNECTION, SWITCH PROVIDED BY OTHERS POST INDICATOR VALVE FIRE ALARM CONNECTION, VALVE PROVIDED BY FIRE ALARM TEMPERATURE SENSOR FIRE ALARM CONTROL MODULE OR RELAY CEILING MTD FIRE ALARM SPEAKER FIRE ALARM BELL; # INDICATED DIAMETER IN INCHES LINEAR BEAM TRANSMITTER LINEAR BEAM RECEIVER FIRE ALARM WALL MTD SPEAKER FIREMAN'S 2-WAY TELEPHONE FIRE ALARM ISOLATION MODULE FIRE ALARM ASPIRATION SMOKE DETECTOR DIGITAL ALARM COMMUNICATIONS TRANSMITTE FIRE ALARM ANNUNCIATOR PANEL FIRE ALARM CONTROL PANEL FIRE ALARM TERMINAL CABINET SUPPLEMENTAL NOTIFICATION APPLIANCE CABINET DOOR CONTROL ID TAG SECURITY SYSTEM KEYPAD, 60" AFF ACCESS CONTROL CARD READER SECURITY PANIC BUTTON 10 PROVIDE TEMPORARY WIRING AND CONNECTIONS TO MAINTAIN EXISTING SYSTEMS IN SERVICE DURING ALL CCTV SECURITY CAMERA WITH FIXED MOUNT 11 CIRCUIT NUMBERING IN PARENTHESIS ( ) ARE BASED ON PREVIOUS PROJECT DOCUMENTATION ARE PROVIDED CCTV SECURITY CAMERA WITH PTZ FEATURES EMERGENCY TELEPHONE MASTER RESCUE ASSISTANCE STATION RESCUE ASSISTANCE STATION RESCUE ASSISTANCE LIGHT NEW WORK — — EXISTING TO REMAIN /// EXISTING TO BE DEMOLISHED

APPENDIX B 2018 BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS **ELECTRICAL DESIGN** 

ELECTRICAL SUMMARY

**ELECTRICAL SYSTEM AND EQUIPMENT** Method of Compliance: Energy Code: Prescriptive Performance ASHRAE 90.1: Prescriptive Performance Lighting schedule (each fixture type) lamp type required in fixture See fixture Schedule number of lamps in fixture ballast type used in the fixture \rightarrow on Drawing Sheet number of ballasts in fixture total wattage per fixture total interior wattage specified vs. allowed: 1725W vs. 14354W (whole building or space by space) total exterior wattage specified vs. allowed: 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

### **ELECTRICAL GENERAL NOTES**

ALL SYMBOLS AND ABBREVIATIONS MAY NOT BE UTILIZED FOR THIS PROJECT. SYMBOLS NOT SHOWN ON THIS ELECTRICAL SYMBOL LEGEND ARE IDENTIFIED ON THE DRAWINGS WHERE UNLESS OTHERWISE INDICATED IN THE SPECIFICATIONS OR ON THE DRAWINGS, MOUNTING HEIGHT OF DEVICES IS TO BE THE CENTERLINE OF THE DEVICE. UNLESS OTHERWISE INDICATED, SWITCHES AND SIMILAR DEVICES ARE TO BE LOCATED 48" AFF;

RECEPTACLES ARE TO BE VERTICALLY MOUNTED AT 18" AFF WITH THE GROUNDING TERMINAL ON THE TELEPHONE & DATA OUTLETS ARE TO BE MOUNTED AT 18" AFF UNLESS OTHERWISEINDICATED. "W" INDICATES MOUNTING AT 48" AFF; "C" INDICATES MOUNTING ABOVECOUNTERTOP WITH ALIGNMENT AND

HEIGHT AS INDICATED FOR RECEPTACLES SIMILARLY MOUNTED.

AREAS DISCONNECT EXISTING CIRCUITING.

OUTLINED ON ARCHITECTURAL SHEETS.

REUSED) CIRCUITS AS INDICATED.

REQUIREMENTS OF THE PRESENT PROJECT.

FLUORESCENT LAMPS ARE TO BE COOL WHITE.

CONSULT ENGINEER IF SERIOUS DISCREPENSIES EXIST.

**ELECTRICAL CIRCUITING KEY** 

X-#,#,# AREA DEVICE HOMERUN

X-# LOCAL DEVICE CIRCUIT

X-#,#,# AREA LIGHTING HOMERUN

X-# LOCAL LIGHTING CIRCUIT

DESIGNATION

WHERE INDICATED

---DEVICE AS INDICATED

WHERE INDICATED

DESIGNATION, PER SWITCHING GROUP

DESIGNATION INDICATES

DESIGNATION (UNSWITCHED)

CIRCUIT DESIGNATION

TYPE OF LUMINAIRE

-SWITCHLEG BETWEEN

LUMINAIRES

X-#\_ EMERGENCY LIGHT FIXTURE

(UNSWITCHED)

X-# EXIT LIGHT FIXTURE CIRCUIT

SWITCH TYPE AS INDICATED

PHASES OF CONSTRUCTION.

EXISTING FINISHES.

DOCUMENT SET AS REQUIRING ELECTRICAL DEMOLITION.

FIRE ALARM PULL STATIONS ARE TO BE VERTICALLY MOUNTED AT 48" AFF. FIRE ALARM INDICATING APPLIANCES SHALL BE 15 Cd RATING, UNLESS NOTED OTHERWISE ON THE PLANS. FIRE ALARM INDICATING APPLIANCES ARE TO BE MOUNTED WITH THE LOWER EDGE OF THE VISUAL ELEMENT AT 6'-8" AFF OR 6" BFC, WHICHEVER IS LOWER. WHERE DUCTWORK, CONDUIT, OR OTHER OBSTRUCTIONS BLOCK DIRECT VIEW OF APPLIANCE, MOUNT 6" BELOW SUCH OBSTRUCTIONS. CEILING MOUNTED SMOKE DETECTORS ARE SHOWN IN APPROXIMATE LOCATION. COORDINATE EXACT LOCATION WITH CEILING FEATURES. WALL MOUNTED SMOKE DETECTECTORS ARE TO BE MOUNTED 10" BELOW FINISHED CEILING TO THE CENTER OF DEVICE AND A MINIMUM OF 12" FROM ADJACENT WALLS OR

COORDINATE SMOKE DETECTOR AND HEAT DETECTOR LOCATIONS WITH HVAC SUPPLY AND RETURN GRILLES. MAINTAIN 3'-0" CLEARANCE BETWEEN EDGE OF SUPPLY GRILL AND EDGE OF SMOKE DETECTOR. UPPER CASE LETTER (OR LETTER/NUMBER COMBINATION) ADJACENT TO FIXTURE OR SWITCH DESIGNATES TYPE. SEE FIXTURE SCHEDULE FOR DETAILS.

**ELECTRICAL DEMOLITION NOTES** 

(ETR) EXISTING ELECTRICAL ITEM TO REMAIN. REFEED FROM EXISTING CIRCUITING IF DEMOLITION IN ADJACENT

(R) EXISTING ELECTRICAL ITEM TO BE REMOVED INCLUDING ALL WIRING, CONDUIT AND ASSOCIATED ELECTRICAL

REMOVE ALL ELECTRICAL CONDUIT, CABLE, WIRING, DEVICES, JUNCTION BOXES, FITTINGS, AND RELATED

BY ANY DIVISION OF THE CONTRACT DOCUMENT SET OR INDICATED ELSEWHERE IN THE CONTRACT

DEMOLITION AREA MAY REMAIN IF THEY ARE CONCEALED BY THE NEW CONSTRUCTION AND MEET THE

EXTEND OR RELOCATE ALL EXISTING CIRCUITS AND RELATED ITEMS SERVING EXISTING UTILIZATION OR

RENDERED INACCESSIBLE BY NEW CONSTRUCTION FURNISHED UNDER ANY DIVISION OF THIS PROJECT.

WHERE EQUIPMENT OR DEVICES ARE REMOVED AND NOT REPLACED BY A SIMILAR ITEM OR EQUIPMENT

AND/OR OTHER ELECTRICAL ITEMS WITHIN THE PROJECT AREA AS REQUIRED TO MEET THE SUPPORT

PROVIDE NEW, OR REWORK EXISTING, FIRE STOPPING AT ALL THROUGH-PENETRATIONS OF CONDUIT OR

OTHER ELECTRICAL ITEMS THAT WILL REMAIN WITHIN THE PROJECT AREA AT THE CONCLUSION OF THE

WHERE EXISTING FIXTURES ARE TO BE REUSED, USE MILD DETERGENT AND CLEAN ALL INTERIOR AND

PROJECT. FIRE STOPPING PROVIDED FOR EXISTING ITEMS MUST MEET THE REQUIREMENTS OF THE PRESENT

EXTERIOR SURFACES. REPLACE LAMPS AND BALLAST'S AND ANY MISSING OR BROKEN ELECTRICAL PARTS. ALL

IN GOOD FAITH AND ARE BELIEVED TO BE ACCURATE. CONTRACTOR IS TO VERIFY EXISTING CIRCUITING AND

REPAIR WALL SURFACES TO MATCH EXISTING SURROUNDING SURFACE. PAINT AS REQUIRED TO MATCH

REMAINING LOADS ARE CONNECTED. LABEL ANY UNUSED OVERCURRENT DEVICES AS "SPARE",

OTHER EQUIPMENT WHERE SUCH CIRCUITS OR ITEMS ARE DISRUPTED DUE TO DEMOLITION ACTIVITIES OF

ANY DIVISION OF THIS PROJECT, RELOCATE ALL EXISTING JUNCTION BOXES OR SIMILAR ITEMS THAT WILL BE

PROVIDE ANY AND ALL TEMPORARY ELECTRICAL SUPPLY (SUPPLIES) AS NEEDED TO MEET THIS REQUIREMENT

REMOVE ALL ABANDONED CIRCUITS BACK TO THE POINT OF SUPPLY OR BACK TO THE POINT WHERE OTHER

PROVIDE NEW SUPPORT(S) OR RE-SUPPORT AS REQUIRED ALL EXISTING CONDUIT, JUNCTION BOXES, CABLES,

ALL DEMOLITION WORK IS TO BE COORDINATED WITH PHASING OF CONSTRUCTION AND BID ALTERNATES AS

ITEMS FROM ALL WALLS, CEILINGS, FLOORS, AND/OR PORTIONS OF SAME INDICATED AS BEING DEMOLISHED

REMOVE ALL LIGHTING FIXTURES AND RELATED ITEMS FROM THE DEMOLITION AREA OR OTHER AREAS WHERE

NEW LIGHTING FIXTURES ARE TO BE INSTALLED. EXISTING CONDUIT OR CABLE SERVING ITEMS OUTSIDE THE

SPECIFICATIONS REQUIREMENTS OF THE PRESENT PROJECT. NEW FIXTURES ARE TO BE SUPPLIED BY NEW (OR

LOWER CASE LETTER ADJACENT TO FIXTURE OR SWITCH DESIGNATES CONTROL RELATIONSHIP. NUMBER ADJACENT TO FIXTURE, SWITCH, OR RECEPTACLE DESIGNATES CIRCUIT CONNECTION. SINGLE DIAGONAL LINE ACROSS A FIXTURE INDICATES FIXTURE IS UNSWITCHED FOR 24 HOUR

#### **ELECTRICAL DRAWING LIST** STANDARDS, SYMBOLS & ABBREV. LEVEL 1 PLAN - DEMOLITION E021 LEVEL 2 PLAN - DEMOLITION E111 LEVEL 1 PLANS - POWER LEVEL 1 PLANS - LIGHTING E121 LEVEL 2 PLAN - POWER LEVEL 2 PLAN - LIGHTING E122 ELECTRICAL DETAILS PANEL SCHEDULES LIGHTING FIXTURE SCHEDULE & DETAILS E502 FIRE ALARM AND TELECOM DETAILS E601 ELECTRICAL DISTRIBUTION SYSTEM

### **GENERAL SYMBOLS**

PLAN OR DETAIL NUMBER SHEET NUMBER	A	COLUMN NUMBER OR LETTER
ELEVATION LETTER SHOWN ON SHEET NUMBER	<u>^</u>	DRAWING REVISION NUMBER
SECTION NUMBER		KEYED NOTE NUMBER
SHOWN ON SHEET NUMBER	$oldsymbol{\Theta}$	CONNECT TO EXISTING
DIMENSION LINE		REMOVE TO THIS POINT
DETAIL NUMBER WITH SHEET NO.		NORTH

ARROW

Wilmington, NC 28401 Stanford

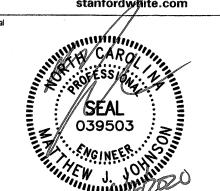
ARCHITECTS

Studio Three

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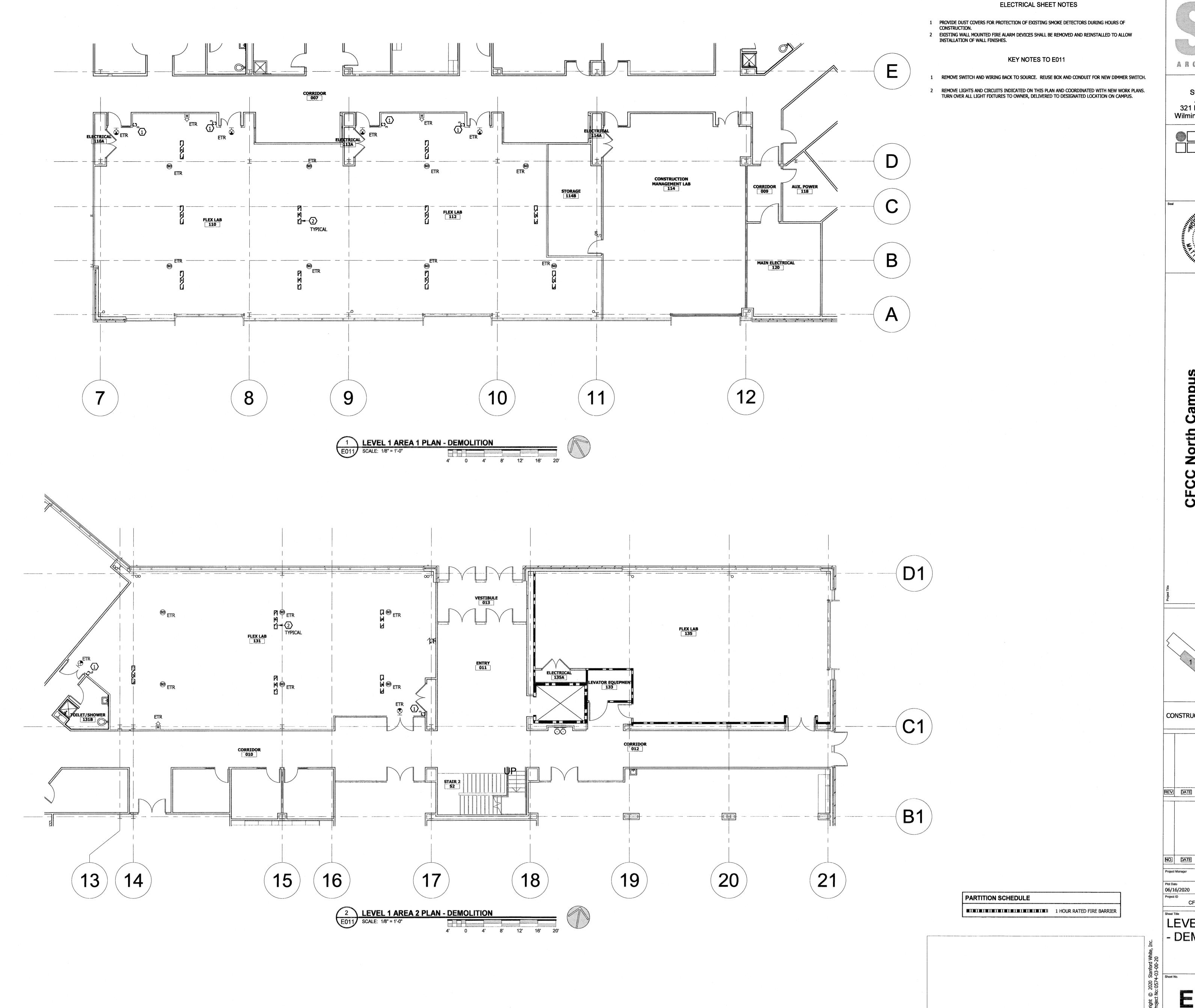
Zo C B B CFC

CONSTRUCTION DOCUMENTS

REV DATE DESCRIPTION

NO. DATE ISSUE NOTE

STANDARDS, SYMBOLS & ABBREV.



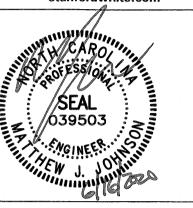
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Bldg Labs Upfit

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CONSTRUCTION DOCUMENTS

REV DATE DESCRIPTION

NO. DATE ISSUE NOTE

Project Manager

Project Manager

Drawn By

SW

Plot Date

06/16/2020

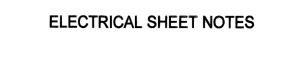
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Project ID

CFCC NE Labs

LEVEL 1 PLAN
- DEMOLITION

E011



- 1 PROVIDE DUST COVERS FOR PROTECTION OF EXISTING SMOKE DETECTORS DURING HOURS OF CONSTRUCTION.
- 2 EXISTING WALL MOUNTED FIRE ALARM DEVICES SHALL BE REMOVED AND REINSTALLED TO ALLOW INSTALLATION OF WALL FINISHES.

### KEY NOTES TO E021

- 1 REMOVE SWITCH AND WIRING BACK TO SOURCE. REUSE BOX AND CONDUIT FOR NEW DIMMER SWITCH.
- 2 REMOVE LIGHTS AND CIRCUITS INDICATED ON THIS PLAN AND COORDINATED WITH NEW WORK PLANS. TURN OVER ALL LIGHT FIXTURES TO OWNER, DELIVERED TO DESIGNATED LOCATION ON CAMPUS.

PARTITION SCHEDULE

1 HOUR RATED FIRE BARRIER



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 Drawn By

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 Plot Date
 Reviewed By

 06/16/2020
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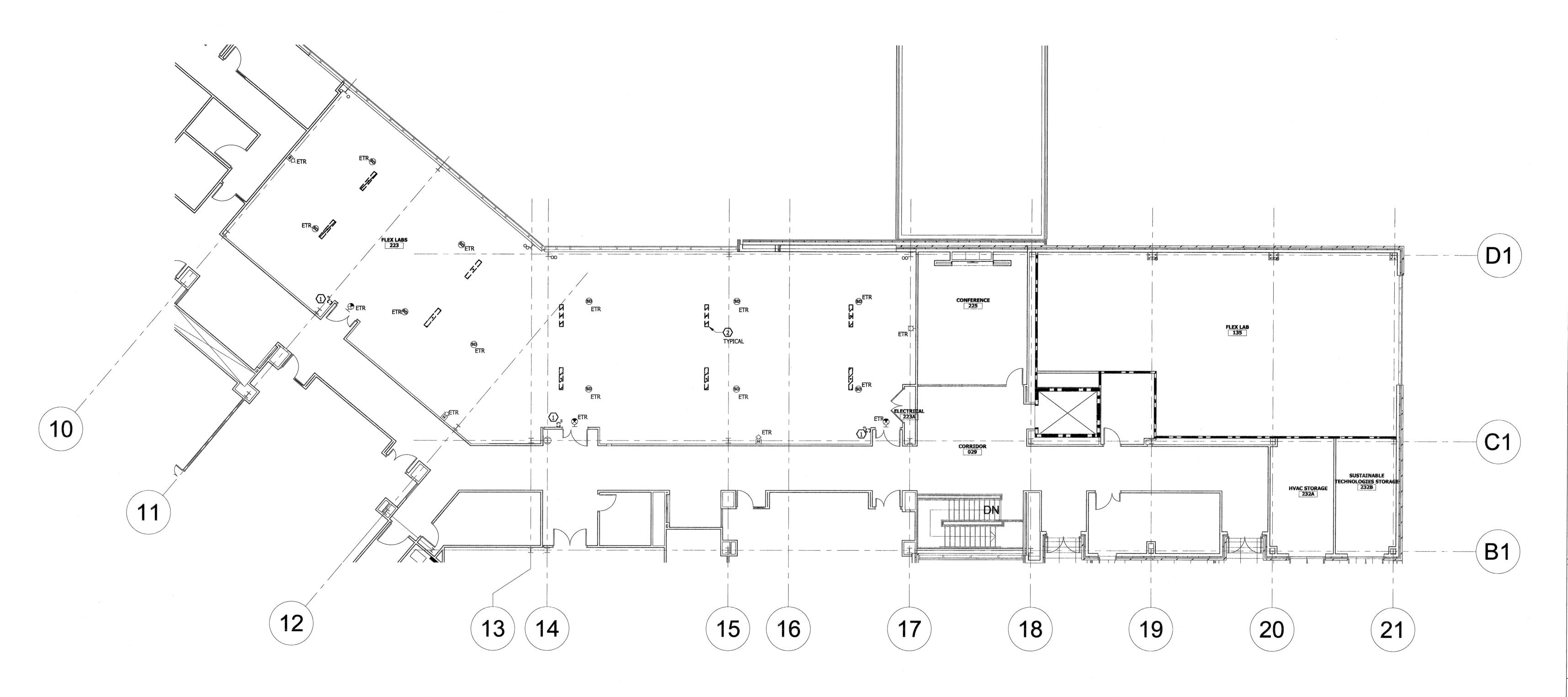
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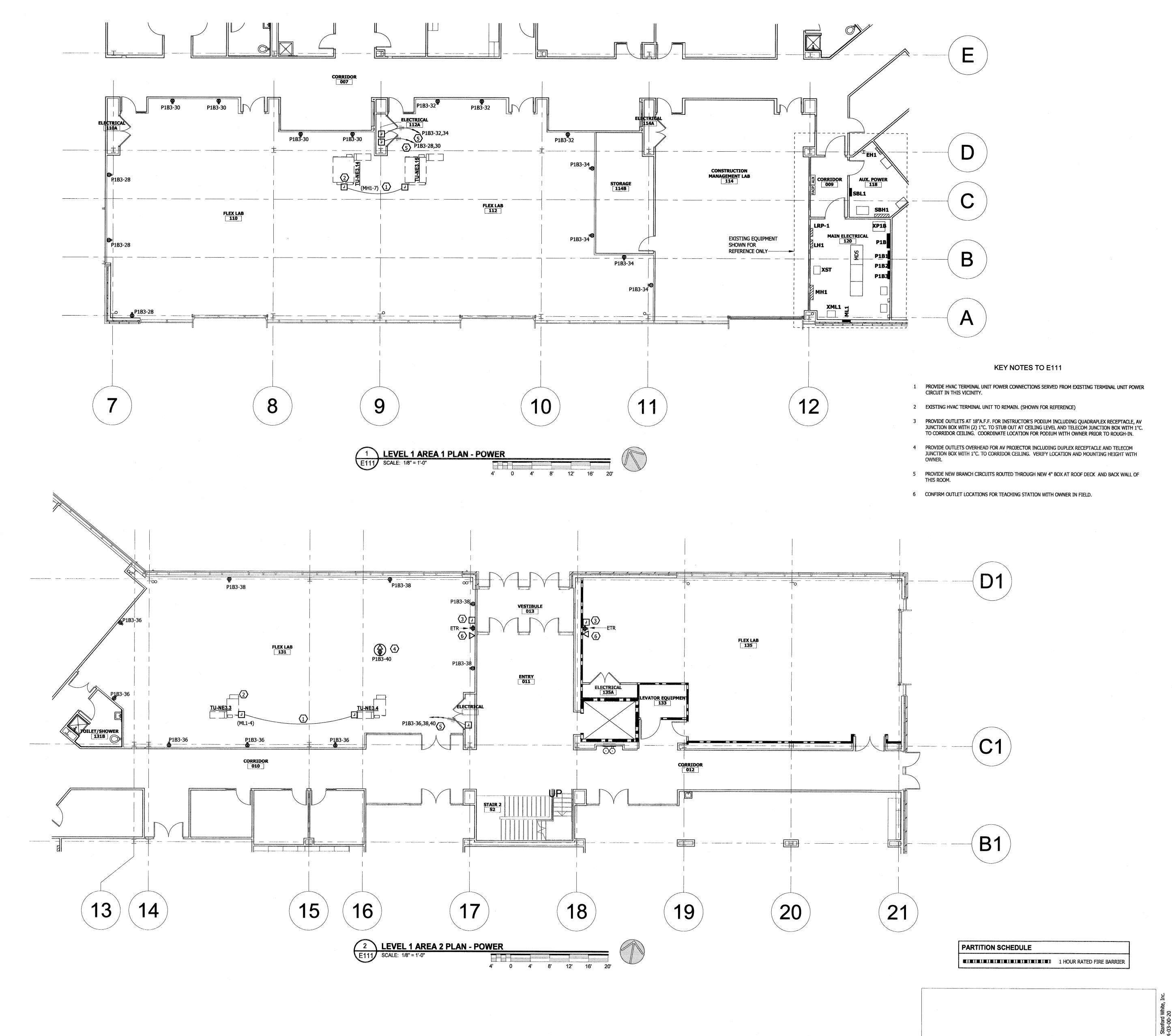
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LEVEL 2 PLA

LEVEL 2 PLAN
- DEMOLITION

E021



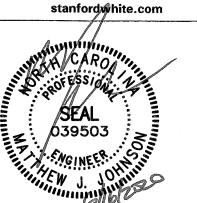


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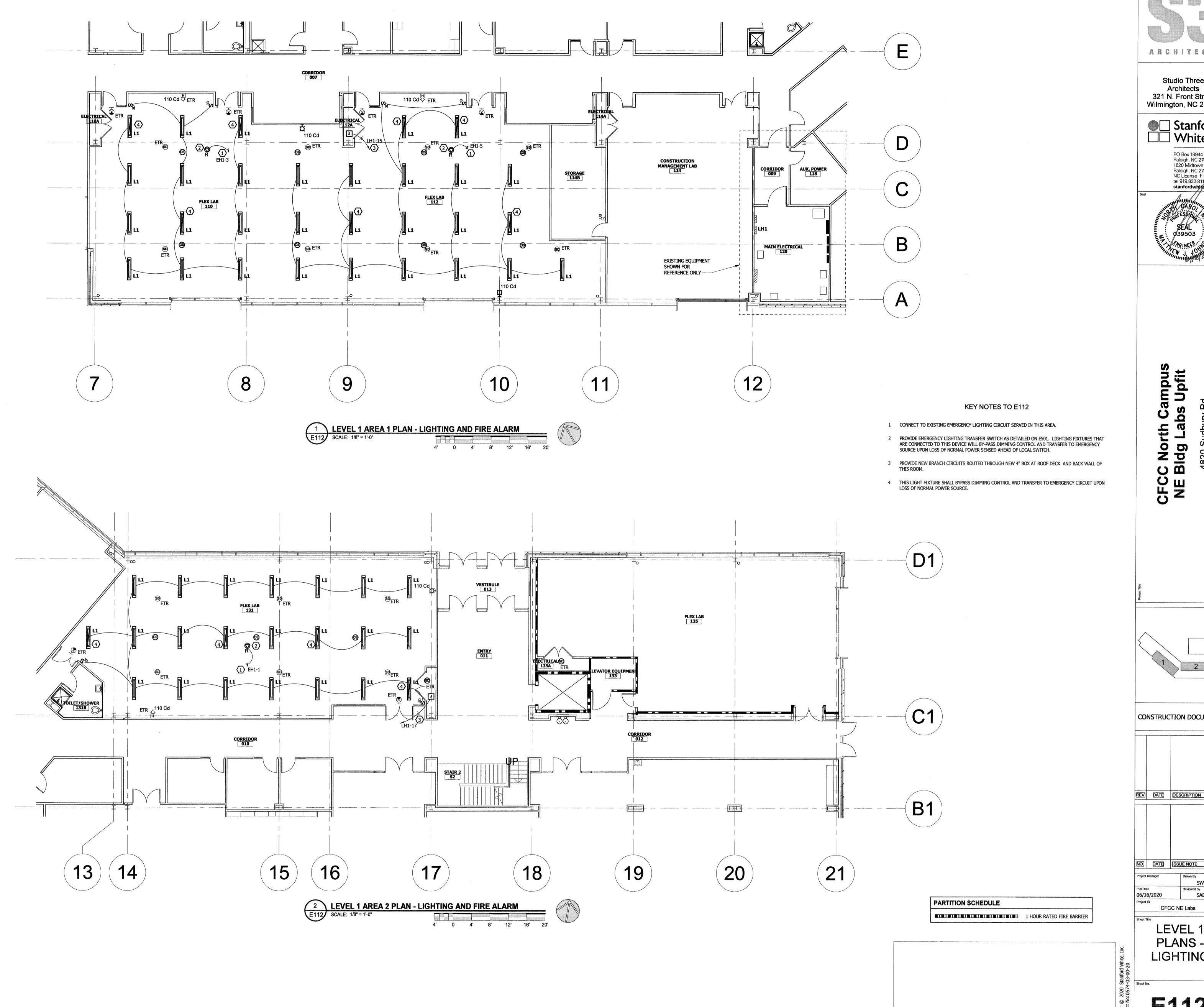
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LEVEL 1
PLANS POWER

06/16/2020

F111



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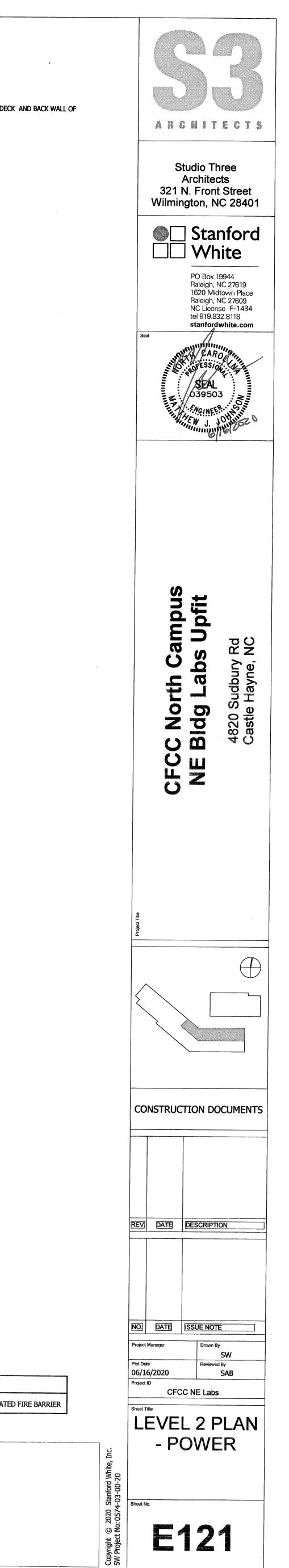
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4820 Sudbury Castle Hayne,

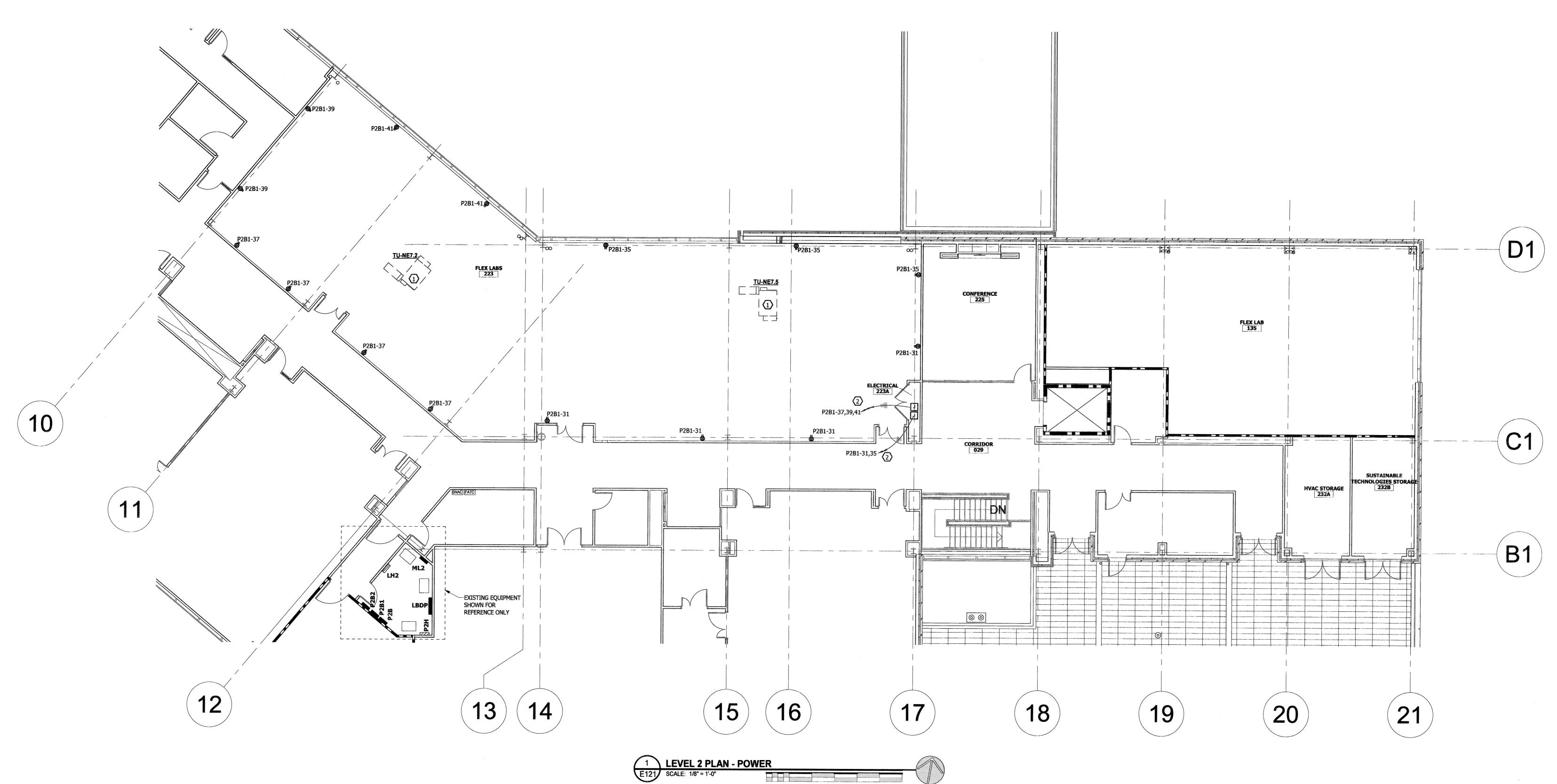
CONSTRUCTION DOCUMENTS

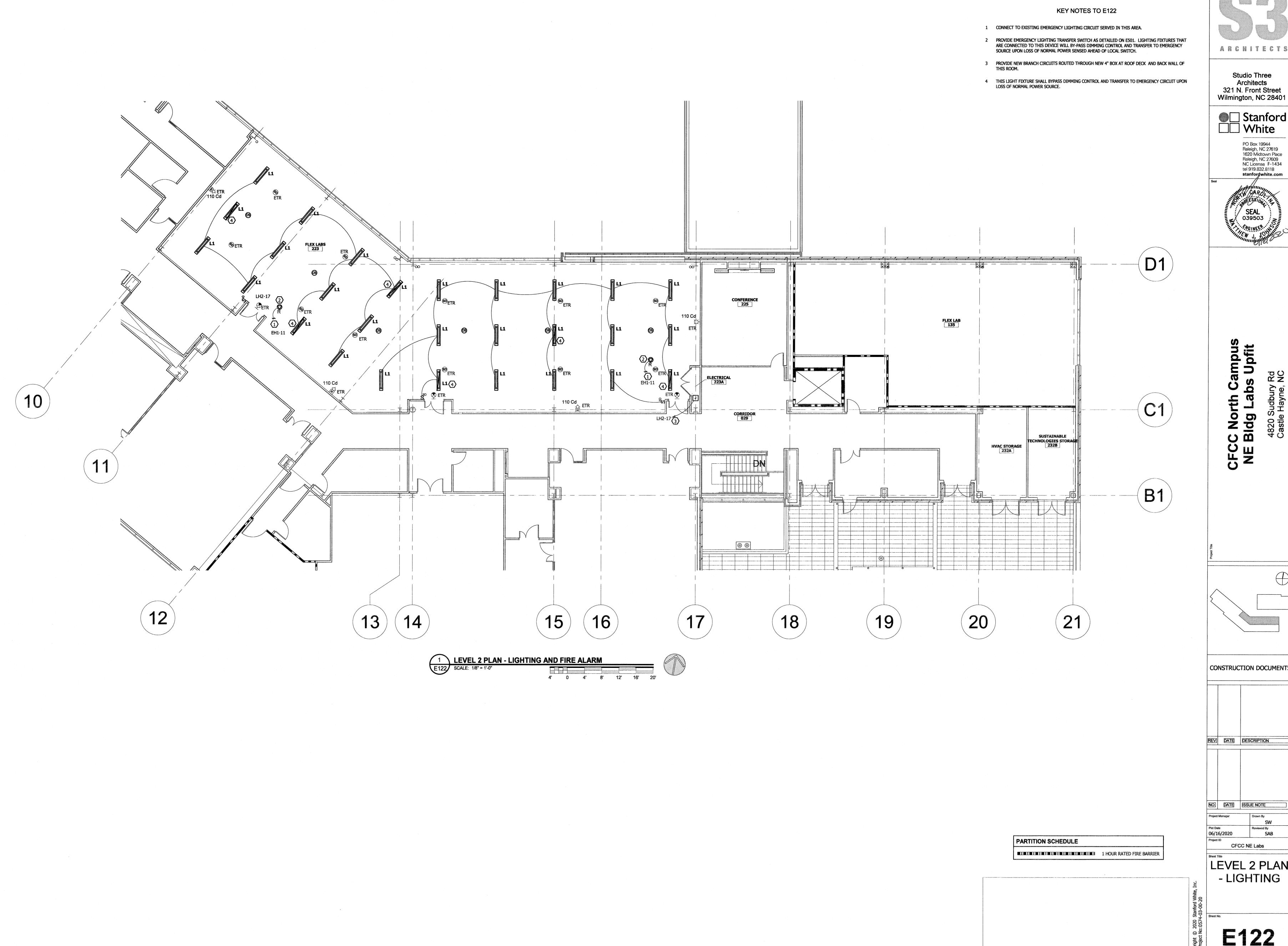
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LEVEL 1 PLANS -LIGHTING



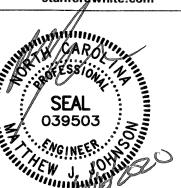
- KEY NOTES TO E121
- 1 EXISTING HVAC TERMINAL UNIT TO REMAIN. (SHOWN FOR REFERENCE)
- PROVIDE NEW BRANCH CIRCUITS ROUTED THROUGH NEW 4" BOX AT ROOF DECK AND BACK WALL OF THIS ROOM.





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CONSTRUCTION DOCUMENTS

LEVEL 2 PLAN - LIGHTING

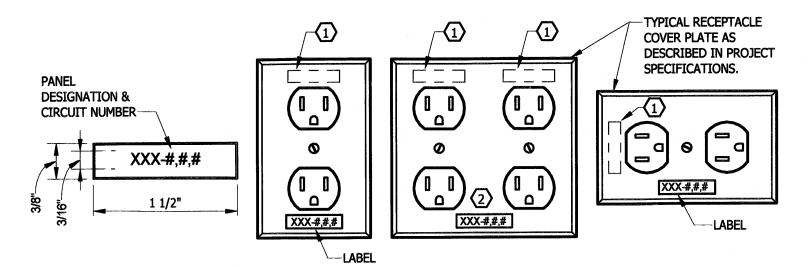


FIG. 1 - LABEL DIMENSIONS

FIG. 2 - LABEL LOCATION ON DEVICE PLATE

### **GENERAL NOTES**:

- 1. LABELS ARE TO BE MACHINE PRODUCED USING A THERMAL TRANSFER PROCESS WITH DIMENSIONS AS SHOWN ABOVE. LABELS ARE TO BE SUITABLE FOR EITHER INDOOR OR OUTDOOR USE.
- 2. LABEL COLOR TO BE CLEAR WITH BLACK LETTERING.
- 3. LABELS ARE TO BE ATTACHED AS INDICATED ABOVE TO ALL PROJECT RECEPTACLE COVER PLATES.

### KEYED NOTES:

- WRITE PANEL DESIGNATION NUMBER ON DEVICE YOKE WITH A FINE TIP, PERMANENT MARKER AS AN AID TO PROPER FACEPLATE LOCATION. ALL MARKING ON DEVICES MUST BE COVERED BY FACEPLATE.
- FOR DUPLEX RECEPTACLES CENTER LABEL IF BOTH DEVICES ARE SUPPLIED BY THE SAME CIRCUIT. IF DEVICES ARE SUPPLIED BY DIFFERENT CIRCUITS PROVIDE A LABEL BELOW EACH RECEPTACLE.

SW DETAIL: LA0002



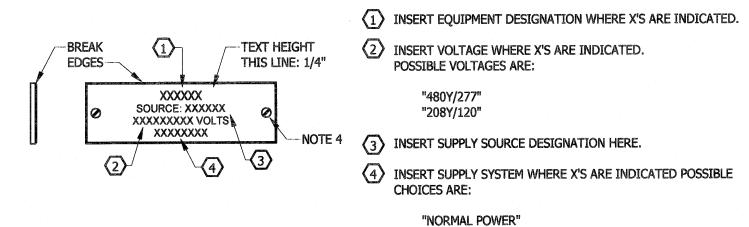
### **GENERAL NOTES**:

- INSTALL NEW LABELS ON ALL PROJECT EQUIPMENT (PANELBOARDS, ENCLOSED BREAKERS, DISCONNECTS, TRANSFORMERS).
- 2. CONSTRUCT LABELS FROM 2 COLOR PLASTIC LAMINATE. DIMENSIONS ARE 5" WIDE X 1 1/2" HIGH. TEXT HEIGHT IS 3/16", EXCEPT AS NOTED OTHERWISE.
- 3. LABEL COLORS ARE TO BE SELECTED FROM THE FOLLOWING CHOICES:
- NORMAL SYSTEM: EMERGENCY:
- BLACK BACKGROUND/WHITE LETTERS GREEN BACKGROUND/WHITE LETTERS
- 4. SECURE TO TOP CENTER OF EQUIPMENT COVER WITH #4-40 STAINLESS STEEL SCREWS WITH MATCHING NUTS AND LOCKWASHERS. USE OF ADHESIVES TO

SECURE LABEL TO EQUIPMENT IS NOT ACCEPTABLE.

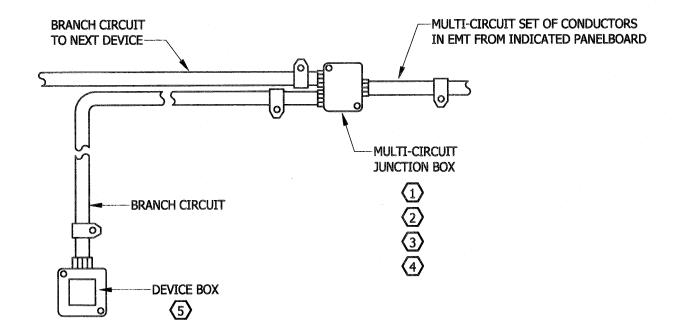
KEYED NOTES:

"EMERGENCY"



SW DETAIL: LA0003 R1





### KEYNOTES:

- PROVIDE DEDICATED NEUTRAL CONDUCTOR WITH EACH PHASE CONDUCTOR.
- 2 LABEL EACH PHASE CONDUCTOR AND MATING NEUTRAL CONDUCTOR AT ALL BOX LOCATIONS FOR IDENTIFICATION.
- BOND GROUND CONDUCTOR TO ALL BOXES.
- MULTI-CIRCUIT JUNCTION BOXES SHALL NOT BE USED FOR DEVICE LOCATIONS.
- DEVICE BOX SHALL NOT BE USED FOR MULTI-CIRCUIT DISTRIBUTION.

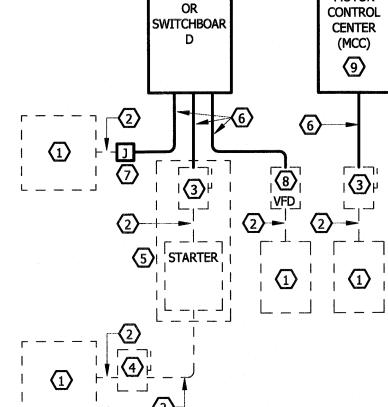
6 MULTI-CIRCUIT HOMERUN WIRING DETAIL
E301 SCALE: NTS

### KEYED NOTES:

- EQUIPMENT PROVIDED AND INSTALLED BY OTHER CONTRACTOR. CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS, START UP AND TEST EQUIPMENT.
- CONDUIT & WIRING BY OTHER CONTRACTOR PROVIDING
- DISCONNECT PROVIDED AND INSTALLED BY CONTRACTOR PROVIDING EQUIPMENT.
- IF AN ADDITIONAL DISCONNECT IS REQUIRED BY NEC, IT SHALL BE PROVIDED AND INSTALLED BY CONTRACTOR PROVIDING EQUIPMENT.
- A COMBINATION STARTER MAY BE USED IN LIEU OF A SEPARATE DISCONNECT SWITCH AND STARTER. A COMBINATION STARTER SHALL BE PROVIDED AND INSTALLED BY THE OTHER CONTRACTOR PROVIDING THE EQUIPMENT.
- FEEDER AND CONDUIT BY ELECTRICAL CONTRACTOR. SEE PANELBOARD SCHEDULES FOR WIRE AND BREAKER SIZES TO OTHER EQUIPMENT. TERMINATE FEEDER AT LINE SIDE OF DISCONNECTING MEANS.
- JUNCTION BOX MAY BE SHOWN ON ELECTRICAL PLANS FOR SOME EQUIPMENT IF NO STARTER IS REQUIRED. INSTALL JUNCTION BOX ADJACENT TO THE EQUIPMENT AND PROVIDE LINE SIDE WIRING TO THE JUNCTION BOX. MOTOR RATED DISCONNECT SHALL BE PROVIDED BY CONTRACTOR PROVIDING EQUIPMENT WHERE REQUIRED BY CODE.
- VARIABLE FREQUENCY DRIVE (VFD) PROVIDED AND INSTALLED BY OTHER CONTRACTOR PROVIDING EQUIPMENT. VFD IS SUPPLIED WITH INTEGRAL DISCONNECTING MEANS.

MCC ARE PROVIDED BY THE ELECTRICAL CONTRACTOR.

FOR PROJECTS UTILIZING A MOTOR CONTROL CENTER (MCC), THE STARTER, CIRCUIT BREAKER OR VFD IN THE



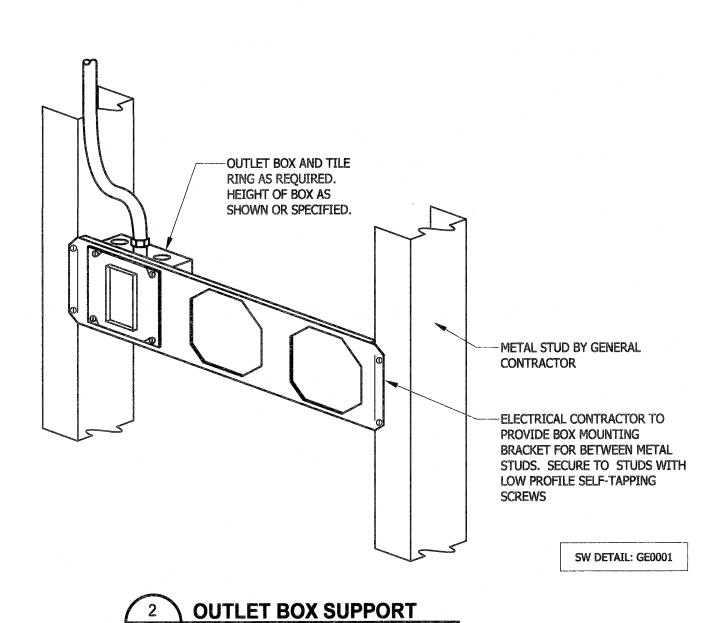
PANELBOARD

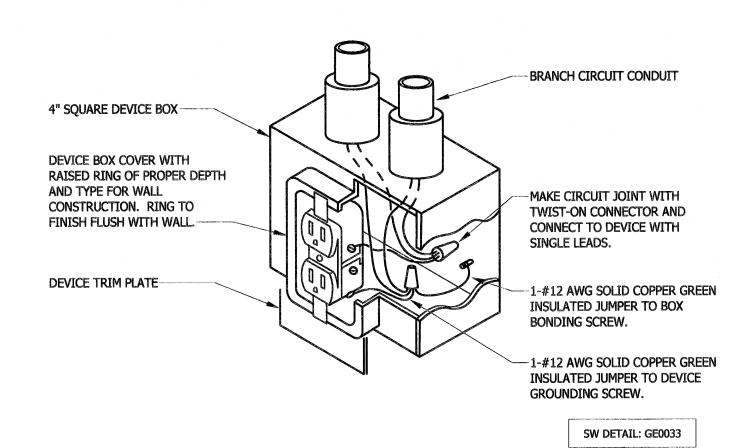
SW DETAIL: CN0002

MOTOR

1 MECHANICAL UNIT WIRING DETAILS
E301 SCALE: NTS

L — — — J





RECEPTACLE GROUNDING DETAIL

SCALE: NTS

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SW

Project ID

CFCC NE Labs

Sheet Title

ELECTRICAL DETAILS

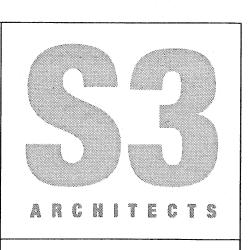
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LOCATION	ELEC	222	PAN	EL	. AIC	: 22,	000													SQ D 'NF
_OAD	N O T E	COND	Phase, Neu, Grd Size	POLE		СКТ		<b>A</b>		3		С	СКТ	BKR	P O L E	Phase, Neu, Grd Size	CON	N O	LOAD	
IGHTING	1			1	20	1	1764	0	+				2		-	00		-	SPACE	
IGHTING	1		AND THE PARTY OF T	1	20	3			2156	0	<b>†</b>	1	4	+=-		60		-	SPACE	
LIGHTING	1	.L 1		1	20	5					2072	2084	6	20	1		<del>                                     </del>	1		
LIGHTING	1			1	20	7	1652	0	<del> </del>				8	20	1	All in Assessment of the Property of the Prope		Ť	SPARE	***
LIGHTING	1		Management and a state of the s	1	20	9			671	0		+	10	20	11	#10		+	SPARE	
LIGHTING	1		avaluus yr	1	20	11					1536	0	12	20	1			+-	SPARE	
LIGHTING	1	de la companya de la	4400	1	20	13	1630	0					14		-	w=		-	SPACE	
LIGHTING	1		A STATE OF THE STA	1	20	15			946	0		1	16	<b> </b>		<b>60</b> 60		-	SPACE	· · · · · · · · · · · · · · · · · · ·
LIGHTING FLEX LABS 223	2	3/4	1-#12, 1-#12, 1-#12	1	20	17					700	0	18	<b>†</b>		619		-	SPACE	
SPARE			6000	1	20	19	0	0					20		1	<b>RD</b>			SPACE	
SPARE			and the same of th	1	20	21			0	0	<b> </b>		22			. 510	-	-	SPACE	
SPARE			-	1	20	23					0	0	24						SPACE	
SPACE	-		VIII			25	0	0					26					T	SPACE	
SPACE		-	the cor			27			0	0			28	-		és to	-	****	SPACE	
SPACE			20			29					0	0	30						SPACE	
SPACE			66			31	0	0					32		[]	a.o		Ī.,	SPACE	
SPACE		154				33			0	0			34						SPACE	
SPACE						35					0	0	36					***	SPACE	
SPACE						37	0	0					38	45.44		80			SPACE	
SPACE						39			0	0			40			=-			SPACE	
SPACE		1				41					0	0	42			- m			SPACE	
								6 VA	3773			92 VA								
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oad Classification		·			Co	nnec	ted Load	İ	Dem	and Fac	tor	Estimate	d Der	nand			Pa	nel	Totals	
_ighting						1521	11 VA		1	25.00%		190	14 VA							
															1	CONNECTE	D LO	۱D	15211 VA	
																DEMAN	D LO	VD	19014 VA	
The state of the s		***************************************													AV	G. CONNECTED C	JRREI	T	18 A	
									1						T	AVG. DEMAND CI	JRRE	דע	23 A	
NOTES: I. EXISTING BRANCH CIRC PROVIDE NEW BREAKEI													ne full bidd lineau ice	SC						

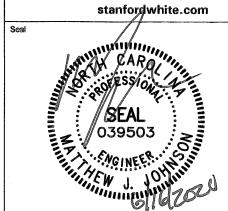
PANEL ID:	P1	33	V	)LT/	AGE:	208	Y/120	S	ERVICE	EQUIF	: No							M	OUNTING: Surface		
SOURCE:	P1B		Ai	IPS:	:	100	)	M	IAIN:		ML	0					TYPE: EXISTING				
LOCATION	ELEC	120	P.A	NEI	_ AIC	: 10,	000											SQ D 'N			
LOAD	N O T E		Phase, Neu, Gro	i O L E	BKR	СКТ	, .	A		3	,	c	скт	BKR	P O L E	Phase, Neu, Grd Size	CONI	N O T E	LOAD		
REC	1	1		1	20	1	720	360					2	20	1				REC		
MICROWAVE	1			1	20	3			1500	1500			4		1		1		LAPTOP CART		
REFRIG	1			1	20	5					864	1500	6	20	1			1	LAPTOP CART		
ICE MACH.	1			1	20	7	864	1500					8	20	1			1	LAPTOP CART		
VEND.	1			1	20	9			1200	1500			10	20	1			1	LAPTOP CART		
VEND.	1			1	20	11					1200	1500	12	20	1			1	LAPTOP CART		
SPARE		86		1	20	13	0	1500					14	20	1			1	LAPTOP CART		
SPACE						15			0	360			16	20	1			1	BLUE LIGHT PHONE		
SPARE			POR MAN	1	20	17					0	0	18	20	1		40.40	Ι	SPARE		
GEN. LTS/REC	1			1	20	19	400	0					20	20	1	see .			SPARE		
SPARE				_   1	20	21			0	0			22	20	1		`		SPARE		
GEN. JKT HTR.	1			2	20	23		ļ <u>.</u>			1500	0	24	20	1			L	SPARE		
		ļļ				25	1500	0	ļ				26	20	1			_	SPARE		
GEN. BATT CHGR	1			1		27			800	540			28			1-#12, 1-#12, 1-#12	3/4		REC FLEX LAB 110		
REC	1			1	20	29			ļ		360	720	30			1-#10, 1-#10, 1-#10	es		REC FLEX LAB 110		
SPARE				1	20	31	0	540					32		-	1-#12, 1-#12, 1-#12	3/4		REC FLEX LAB 112		
SPARE			86	1	20	33			0	720	-		34			1-#12, 1-#12, 1-#12			REC FLEX LAB 112		
SPARE		420		1	20	35					0	900	36		$\rightarrow$	1-#12, 1-#12, 1-#12	3/4		REC FLEX LAB 131		
SPACE						37	0	720		100			38			1-#12, 1-#12, 1-#12			REC FLEX LAB 131		
SPACE						39		ļ	0	180			40			1-#12, 1-#12, 1-#12		2	REC FLEX LAB 131		
SPACE		<u> </u>				41	040	4 2/4	2000		0	0	42	20	1			<u>L</u>	SPARE		
								4 VA	8300			4 VA									
and Olanaidiantian								3 A	69			A									
oad Classification							ed Load	3		and Fact	or E	stimated		and			Pa	nel	Totals		
Power						4560			<u> </u>	00.00%			0 VA					_			
REC						2038	8 VA		7	4.52%		1519	94 VA			CONNECTE					
																		-	19754 VA		
															A₩	/G. CONNECTED CL	IRREN	IT	69 A		
																AVG. DEMAND CU	IRREN	IT.	55 A		
NOTES:  I. EXISTING BRANCH CI  PROVIDE NEW BREAK	RCUIT. (ER AND (	CIRCUIT	CONDUCTORS.																		

PANEL ID:	P2	<b>B1</b>	VOL	TA	GE:	208	3Y/120	S	ERVICE	EQUIF	: No							MC	DUNTING:	Surface
SOURCE:	P2B	P2B				100	)	N	fAIN:		ML	0						TY	PE:	EXISTING
LOCATION	ELEC	222	PAN	EL	. AIC	: 10.	000													SQ D 'NQ'
LOAD	N C T	COND	Dhaca Nou Grd	POLE	BKR	скт		A		В		C	СКТ	BKR	POLE	Phase, Neu, Grd Size	COND	N O T E		
REC	1			1		1	540	800					2	20	1		<del> </del>	ļ	REC	
REC	1			1	20	3			180	1080			4	20	1			1	REC	
REC	1			1	20	5					360	1080	6	20	1				REC	
REC	1		2	1	20	7	600	540					8	20	1			<u> </u>	REC	
REC	1			1	20	9			200	540			10	20	1		1	1	REC	
REC	1			1	20	11					360	900	12	20	1		İ	1	REC	
REC	1			1	20	13	360	540					14	20	1			1	REC	
REC	1			1	20	15			1000	540			16	20	1			1	REC	
REC	1			1	20	17					1000	540	18	20	1			1	REC	
REC	1			1	20	19	1000	0					20	20	1				SPARE	
SPACE			<b>60</b> 74			21			0	900			22	20	1			1	REC	
SPACE				-		23					0	0	24	20	1	<b>a</b>			SPARE	
SPARE				1	20	25	0	0					26						SPACE	
SPARE		56	,	1	1	27			0	0			28						SPACE	
SPARE			40	1	20	29					0	0	30		1240	<b>e</b> >			SPACE	
REC FLEX LABS 223	2	3/4	1-#12, 1-#12, 1-#12	1	20	31	720	0					32			and a			SPACE	
SPARE		40		1	20	33			0	0			34						SPACE	
REC FLEX LABS 223	2	E0	1-#12, 1-#12, 1-#12	1	20	35					540	0	36			-			SPACE	
REC FLEX LABS 223	2		1-#12, 1-#12, 1-#12		20	37	720	0					38			<b>63</b>			SPACE	
REC FLEX LABS 223	2		1-#12, 1-#12, 1-#12	1	20	39			360	0			40			W. 69-			SPACE	
REC FLEX LABS 223	2	#539	1-#12, 1-#12, 1-#12	1	20	41					360	0	42				-		SPACE	
								O VA 9 A		O VA		O VA								
Load Classification					Co	nnec	ted Load	d	Dem	and Fact	or E	Estimated	Den	nand			Pan	el 1	Totals	
REC						1576	60 VA		8	31.73%		1288	O VA							
																CONNECTE	D LOAD	0 1	5760 VA	
																DEMAN	D LOAD	0 1	2880 VA	
															A	/G. CONNECTED CI	JRREN	T 4	4 A	
																AVG. DEMAND C	JRREN	T 3	6 A	
NOTES:																				



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CONSTRUCTION DOCUMENTS

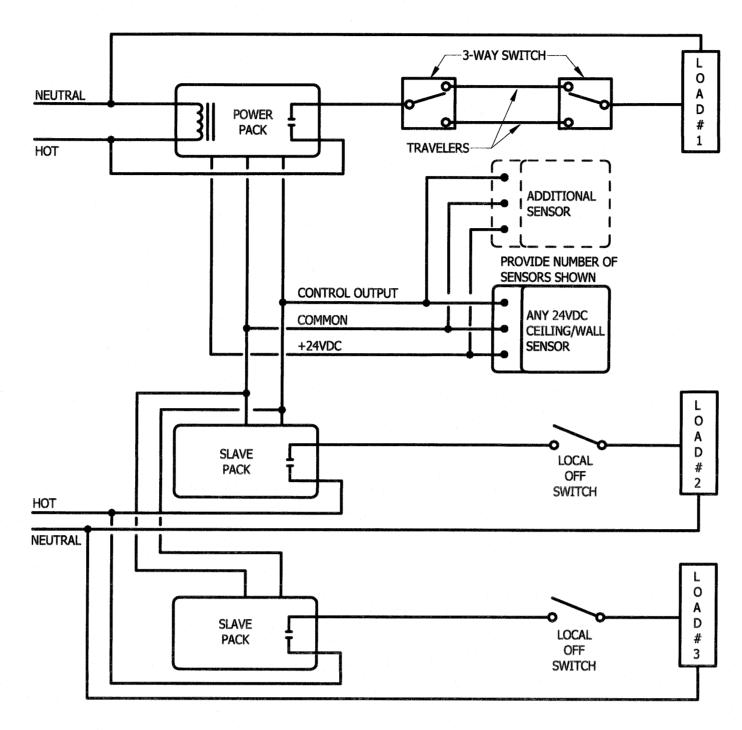
REV DATE DESCRIPTION

NO. DATE ISSUE NOTE

PANEL

SCHEDULES

PANEL KEY LH2 P1B3 P2B1



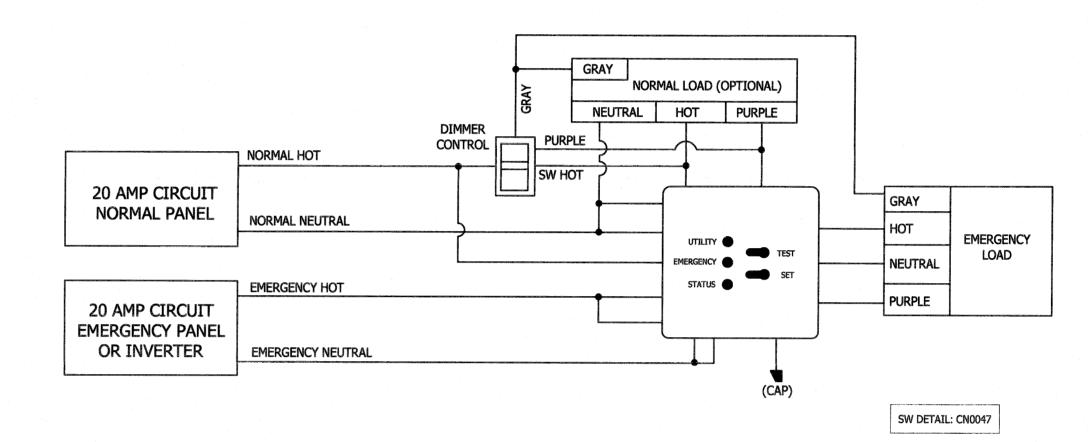
SW DETAIL: CN0041

3 MULTIPLE SENSOR LIGHTING CONTROL

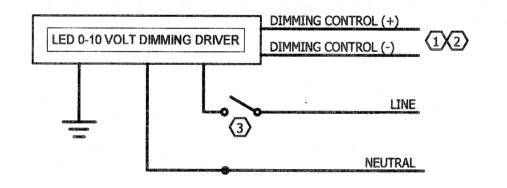
	LIGHTING FIXTURE SCHEDULE														
TYPE MARK	DESCRIPTION	LUMENS	MOUNTING	VOLTAGE	WATTAGE	CONTROL	FIXTURE MEETING SPECIFICATION	ADDITIONAL MANUFACTURERS MEETING THESE REQUIREMENTS	COMMENTS	ICON					
L1	4' LINEAR PENDANT - FV4LSRB	750	CABLE	277V	25 VA	0-10V	Focal Point		COLOR: 4000K MOUNTING HEIGHT: 10'-0"						
L										Same and the same					

FIXTURE SCHEDULE NOTES:
THIS FIXTURE SCHEDULE IDENTIFIES A FIXTURE THAT MEETS THE SPECIFIED PERFORMANCE REQUIREMENTS AND A LEVEL OF QUALITY REQUIRED FOR THE PROJECT. MANUFACTURER'S NAMES AND FIXTURE SERIES/MODELS IN SCHEDULE ARE NOT A BRAND NAME SPECIFICATION. EQUIVALENT FIXTURES BY MANUFACTURERS OTHER THAN THOSE LISTED MAY BE SUBMITTED FOR THIS PROJECT.

- 2. PROVIDE LED DRIVERS SUITABLE FOR FULL RANGE DIMMING, INTEGRAL SURGE PROTECTION, CURRENT TOTAL HARMONIC DISTORTION (THD) OF <20% AND A POWER FACTOR >0.90. IN ADDITION, DRIVERS MUST BE RF SUPPRESSED FOR MINIMUM INJECTION OF FEEDBACK INTO SUPPLY LINES. MAXIMUM CURRENT THD AND MINIMUM POWER FACTOR MUST BE SUBMITTED AS A PART OF THE FIXTURE SUBMITTAL DATA.
- 3. UNLESS OTHERWISE INDICATED, PROVIDE SINGLE DRIVER PER FIXTURE.
- 4. PROVIDE MOUNTING FRAME AND RELATED ACCESSORIES FOR ALL FIXTURES AS REQUIRED TO MATCH CEILING CONSTRUCTION. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT CEILING CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR MODIFICATION OF FIXTURE SCHEDULE MANUFACTURER'S PART NUMBERS FOR PURPOSES OF MATCHING CEILING CONSTRUCTION.
- 5. PROVIDE DIMMING DRIVERS WHERE DIMMING CONTROLS ARE INDICATED ON THE PLANS.
- 6. ALL FIXTURES TO HAVE A COLOR TEMPERATURE OF 4000K UNLESS NOTED OTHERWISE.
- UNLESS NOTED OTHERWISE, ALL FIXTURES SHALL INCLUDE INTEGRAL DRIVER.
- 8. ALL FIXTURES SHALL BE UL OR THIRD PARTY LISTED AS COMPLETE ASSEMBLY.
- 9. FOR LIGHT FIXTURES HAVING LINEAR VISUAL FEATURES (IE: CENTER BASKET, LOUVERS, ETC), COORDINATE AND ALIGN COMPONENTS IN A SIMILAR DIRECTION CONSISTENTLY ACROSS THE BUILDING SPACES.



1 UL1008 0-10V DIM BRANCH CIRCUIT EMERGENCY LIGHTING TRANSFER SWITCH



KEYED NOTES:

- CAP DIMMING CONTROL LEADS WHERE FIXTURES ARE NOT REQUIRED TO BE DIMMED, AND ROVIDE LINE SIDE SWITCHLEG (NOT SHOWN).
- PROVIDE 0-10 VOLT STANDARD CURRENT SINK 0-10 VOLT CONTROL DIMMER (IEC 60929) WHERE INDICATED (COMPATIBLE WITH LIGHT FIXTURES).
  PROVIDE 600 VOLT RATED CONTROL CONDUCTORS ROUTED WITH POWER CIRCUIT TO EACH FIXTURE DRIVER.
- 3 INTEGRAL DRIVER DISCONNECT.

SW DETAIL: CN0046

2 0-10 VOLT DIMMING WIRING DETAIL
E501 SCALE: NTS



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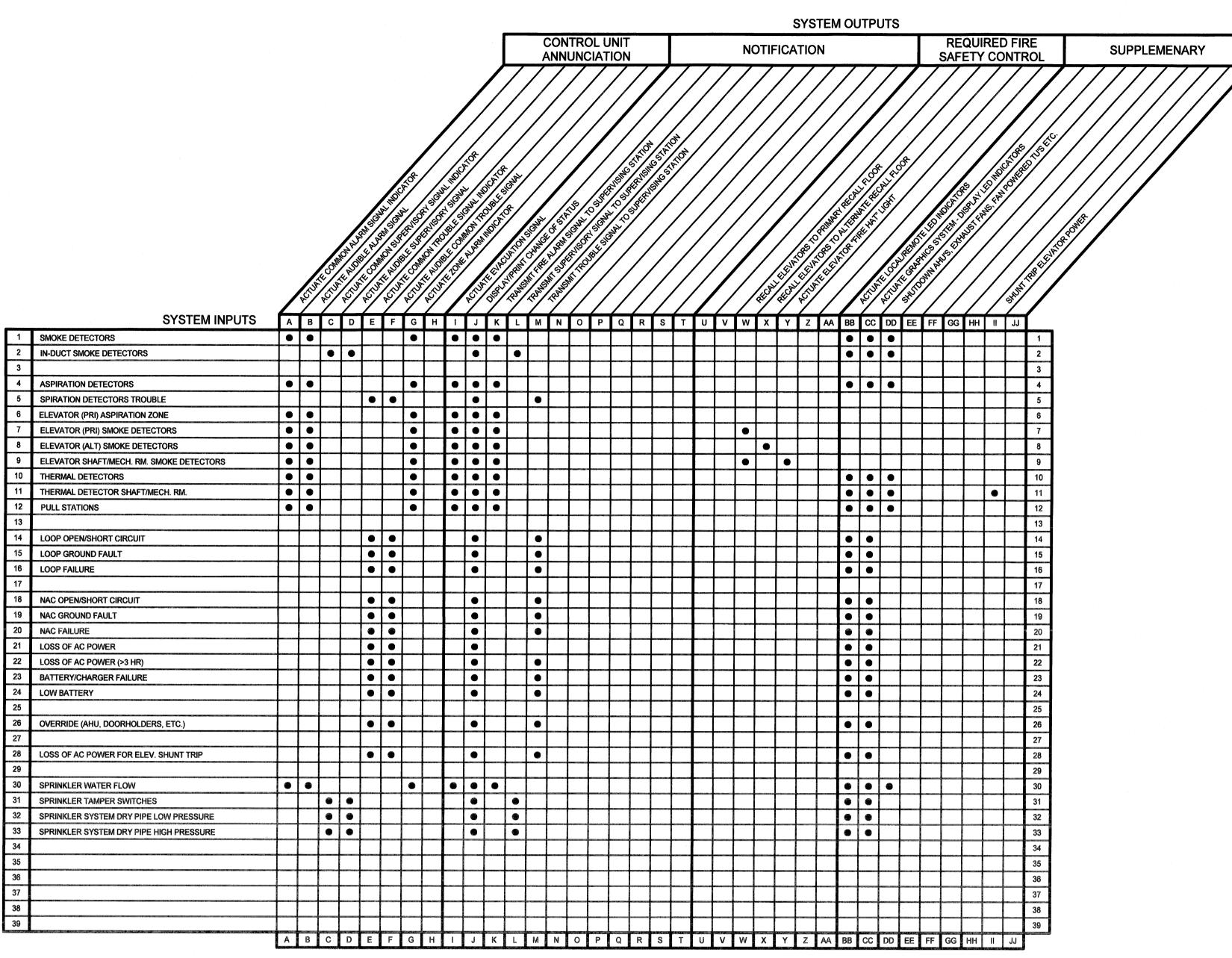
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CONSTRUCTION DOCUMENTS

REV DATE DESCRIPTION

NO. DATE ISSUE NOTE

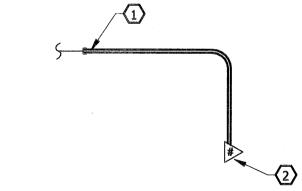
LIGHTING FIXTURE SCHEDULE & **DETAILS** 



### GENERAL NOTES:

- 1. THE TENTATIVE FIRE ALARM CONTROL MATRIX SHOW HOW SYSTEM INPUTS ARE MAPPED TO SYSTEM OUTPUTS. THE MATRIX IS PROVIDED FOR GUIDANCE. THE CONTRACTOR SHALL SUBMIT AN ACTUAL CONTROL MATRIX THAT INDICATES ALL INITIATING DEVICES BY SOFTWARE ZONE AND ALL OUTPUT ACTIONS BY ANNUNCIATION ZONE. MULTIPLE INPUTS AND/OR OUTPUTS FROM SIMILAR BUT INDEPENDENT SOURCES, FOR EXAMPLE MULTIPLE ELEVATORS OR AIR HANDLING UNITS, SHALL BE SHOWN AS SEPARATE LINE ITEMS.
- 2. INDICATES THAT THE NAMED INPUT CAUSES THE NAMED OUTPUT TO OCCUR.
- 3. PROVIDE OVERRIDE FUNCTIONS FOR FIRE ALARM STROBES.

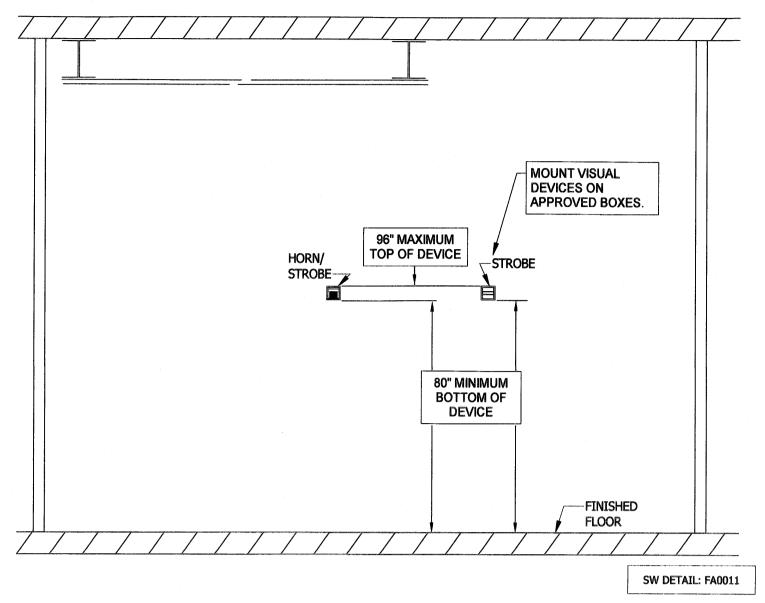




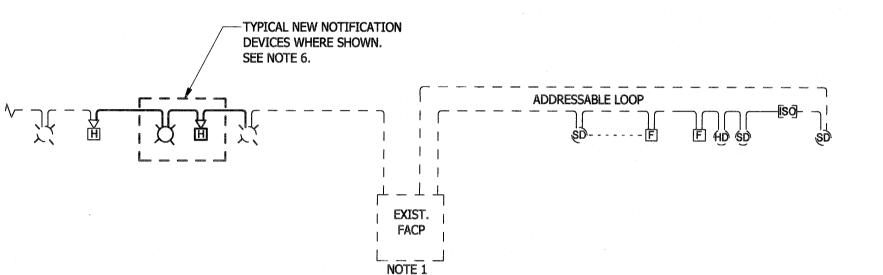
- KEYED NOTES :
- 2-1" CONDUITS WITH PULL STRING TO 90° ELBOW TO ROOF DECK .
  BUSH OPEN ENDS OF CONDUIT. CONDUIT TO BE IDENTIFIED IN
  COLOR TO MATCH EXISTING BUILDING STANDARDS.
- TELECOMMUNICATIONS OUTLET BOX. PROVIDE WALL MOUNTED BOX EXCEPT WHERE NOTED OVERHEAD TO SERVE AV SYSTEM PROJECTOR.



# NFPA 72 AND ADA DEVICE INSTALLATION REQUIREMENTS



1 FIRE ALARM DEVICE MOUNTING DETAIL
E502 SCALE: NTS



**GENERAL NOTES**:

- EXISTING FIRE ALARM CONTROL PANEL IS A FULLY ADDRESSABLE SIMPLEX TYPE 4100ES.
   DEVICES INSTALLED SHALL BE COMPATIBLE WITH EXISTING SYSTEM.
- 2. ALL FIRE ALARM SYSTEM MODIFICATIONS TO BE PERFORMED BY A FACTORY TRAINED AND APPROVED VENDOR AND TECHNICIANS.
- 3. VERIFY PROPER OPERATION OF FIRE ALARM SYSTEM AND COMPONENTS PRIOR TO STARTING WORK AND NOTIFY ENGINEER OF ANY IDENTIFIED PROBLEMS.
- 4. PROVIDE SEPARATE CONDUITS FOR OPPOSITE ENDS OF LOOP CONDUCTORS. DO NOT COMBINE LOOP CONDUCTORS INTO SINGLE CONDUIT RUNS EXCEPT AS PERMITTED BY THE SPECIFICATIONS.
- 5. RISER DIAGRAM SHOWS FUNCTIONAL CONNECTIONS. WORK REQUIRED ON FLOORS TO RELOCATE DEVICES, AS REQUIRED TO PERMIT FIRE PROTECTION WORK, IS NOT SHOWN. EXACT WIRING AND CONNECTIONS FOR ALL DEVICES (NEW AND REWORKED/RELOCATED) ARE TO BE PROVIDED AS A PART OF THE FIRE ALARM SHOW DRAWING SUBMITTAL PACKAGE SUPPLIED BY THE CONTRACTOR.
- 6. CONNECT NEW INITIATING DEVICES TO EXISTING ADDRESSABLE LOOP (IF AVAILABLE). PROVIDE ADDITIONAL ISOLATION MODULES AS NECESSARY FOR NEW EQUIPMENT SUCH THAT 20 DEVICES (MAX) ARE ISOLATED ALONG THE ENTIRE LOOP. PROVIDE ALL PROGRAMMING REQUIRED TO
- ACTUATE NEW DEVICES.

  CONNECT NEW NAC DEVICES TO EXISTING NAC CIRCUIT (IF CAPACITY IS AVAILABLE). PROVIDE CALCULATIONS TO DETERMINE CAPACITY OF EXISTING CIRCUIT. ADDITIONAL POWER SUPPLY MAY BE REQUIRED.
- 8. COMPLETELY TEST SYSTEM INCLUDING 100% OF ALL NEW AND REWORKED DEVICES. IN ADDITION, TEST 10% OF ALL DEVICES ON EACH ADDRESSABLE LOOP IN SYSTEM. PROVIDE A

PRINT OUT SHOWING RESULTS OF TEST AND SENSITIVITIES OF ALL SMOKE DETECTORS.

SW DETAIL: FA0021R1

2 FIRE ALARM RISER MODIFICATIONS DIAGRAM



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SW
Plot Date Reviewed By
06/16/2020 SA

FIRE ALARM
AND
TELECOM
DETAILS

E502



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Project Manager

Drawn By

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Plot Date

06/16/2020

SAB

Sheet Title

ELECTRICAL

DISTRIBUTION

SYSTEM

E601