ABBREVIATIONS

AC	ACOUSTIC
ACT	ACOUSTIC CEILING TILE
AFF	ABOVE FINISH FLOOR
AL	ALUMINUM
AP	ACCESS PANEL
ARGWB	ABUSE RESISTANT GYPSUM WALL BOARD
BD	BOARD
BLDG	BUILDING
BM	BENCH MARK
BRG	BEARING
CAB	CABINET
CB	CHALKBOARD
CH	CEILING HEIGHT
CJ	CONTROL JOINT
CL	CENTER LINE
CLG	CEILING
CLO	CLOSET
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
CORR	CORRIDOR
CPT	CARPET
CR	COLD ROLLED
CT	CERAMIC TILE
DA	DISTURBED AREA
DBL	DOUBLE
DET	DETAIL
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIM	DIMENSION
DISP	DISPENSER
DR	DOOR
DS	DOWNSPOUT
DW	DRYWALL
DWG	DRAWING
EA	EACH
EJ	EXPANSION JOINT
ELEC	ELECTRIC/ELECTRICAL
EP	EPOXY PAINT
EQ	EQUAL
EQUIP	EQUIPMENT
EWC	ELECTRICAL WATER COOLER
EXG	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
FC	FIRE CODE
FCU	FAN COIL UNIT
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FINF	FINISHED FLOOR
FON	FOUNDATION
FOS	FACE OF STUD
FRP	FIREGLASS REINFORCED PLASTIC
FRT	FIRE RETARDANT TREATED
FTG	FOOTING
FURR	FURRED (FURRING)
FV	FIELD VERIFY
FVC	FIRE VALVE CABINET
GA	GAUGE
GB	GRAB BAR
GWB	GYPSUM WALL BOARD
GYP	GYPSUM BOARD
HC	HANDICAPPED
HDW	HARDWARE
HM	HOLLOW METAL
HP	HIGH POINT
HR	HOUR
HT	HEIGHT
ID	INSIDE DIAMETER
INSUL	INSULATION
JAN	JANITOR
JST	JOIST
JT	JOINT
LAM	LAMINATE
LAV	LAVATORY SINK
LP	LOW POINT
M	MEN
MACH	MACHINE
MAINT	MAINTENANCE
MAS	MASONRY
MAT	MATERIALS
MAX	MAXIMUM
MB	MARKER BOARD
MC	MEDICINE CABINET
MECH	MECHANICAL
MET	METAL
MFR	MANUFACTURER
MIN	MINIMUM
MO	MASONRY OPENING
MS	METAL SHELVING
MTD	MOUNTED
NC	NONCOMBUSTIBLE
NIC	NOT IN CONTRACT
NO	NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFF	OFFICE
OH	OPPOSITE HAND
OPG	OPENING
PART	PARTITION
PL	PLATE
PLAM	PLASTIC LAMINATE
PLY	PLYWOOD
PNL	PANEL
PRV	POWER ROOF VENTILATOR
PS	PROJECTOR SCREEN
PT	PAINTED
RD	ROOF DRAIN
REC	RECESSED
RECPT	RECEPTIONIST
REF	REFRIGERATOR
REQD	REQUIRED
RL	RAIN LEADER
RM	ROOM
RO	ROUGH OPENING
RUB	RUBBER (WALL BASE)
SD	SOAP DISPENSER
SECT	SECTION
SGFT	STRUCTURAL GLAZED FACING TILE
SH	SHOWERHEAD
SHT	SHEET
SIM	SIMILAR
SLS	STAINLESS STEEL
SM	SURFACE MOUNTED
SP	STAND PIPE
SS	SERVICE SINK
STL	STEEL
STOR	STORAGE
STRUCT	STRUCTURAL
SUSP	SUSPEND (SUSPENDED)
SYN	SYNTHETIC FLOOR
T&G	TONGUE & GROOVED
TB	TACKBOARD
TEL	TELEPHONE
THLD	THRESHOLD
TOB	TOP OF BEARING
TOM	TOP OF MASONRY PARAPET
TP	TOILET PAPER HOLDER
TS	TACK STRIP/ TEACHING STATION
TW	TEACHING WALL
TYP	TYPICAL
UL	UNDERWRITERS LABORATORIES
UON	UNLESS OTHERWISE NOTED
USG	U.S. GYPSUM COMPANY
VAT	VINYL ABESTOS TILE
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VEST	VESTIBULE
VRG	VINYL REDUCER STRIP
VTR	VENT THROUGH ROOF
W	WOMEN
W/	WITH
WAIN	WAINSCOT
WARD	WARDROBE
WC	WATER CLOSET
WD	WOOD
WDR	WARDROBE
WL	WALL
WM	WALL-MOUNTED
WWM	WELDED WIRE MESH

SYMBOLS OF MATERIALS

- ALL METALS-SMALL SCALE
- ACOUSTIC C.M.U. SMALL SCALE
- ACOUSTIC C.M.U. LARGE SCALE
- BATT INSULATION
- BRICK
- CAST STONE
- CONCRETE
- CONCRETE MASONRY UNITS
- EARTH
- GLASS-LARGE SCALE
- GLAZED C.M.U.
- PARTICLE BOARD
- RIGID INSULATION
- SHINGLES
- SOLID CONCRETE MASONRY UNITS
- STEEL-LARGE SCALE
- STUD PARTITION
- WOOD-FINISH
- WOOD BLOCKING

DRAWING KEYS

- 0 — STRUCTURAL GRID LINES
- 1 / A101 SIM — SECTION
- 1 / A101 SIM — ELEVATION
- 1 / A101 SIM — DETAILS IN PLAN, SECTION
- NEW WALL
- 1i — WALL TYPE, SEE A501
- EXISTING WALL TO REMAIN
- Name / 101 — ROOM NAME AND NUMBER
- EXISTING WALL TO BE REMOVED
- SF-1 — WINDOW TAG
- 101 — DOOR TAG

ADDITION TO

CFCC SURF CITY SA ADDITION

621 NC HWY 210E, SURF CITY, NC

SCO ID#24-28220-01A

SCO CONSTRUCTION DOCUMENTS SUBMITTAL

02/12/2025

DESIGN TEAM

BECKER MORGAN GROUP — **ARCHITECTS & CIVIL ENGINEERS**
WOODS ENGINEERING — **STRUCTURAL ENGINEERS**
CBHF ENGINEERING — **PME ENGINEERS**
W.M. JORDAN COMPANY — **DESIGN/BUILDER**

GENERAL NOTES

1. **SCHEMATIC DESIGN & DESIGN DEVELOPMENT PHASE SUBMITTAL HAS BEEN COMBINED BY PERMISSION OF THE ASSISTANT DIRECTOR DESIGN REVIEW FOR THE STATE CONSTRUCTION OFFICE (PERMISSION RECEIVED ON JULY 8, 2024).**
2. **PROJECT CONSISTS OF AN ADDITION TO THE EXISTING BUILDING SA ON THE SURF CITY CAMPUS OF CAPE FEAR COMMUNITY COLLEGE. PLEASE SEE THE "SUMMARY OF WORK" IN THE ARCHITECTURAL OUTLINE SPECIFICATIONS FOR ADDITIONAL CONTEXT.**

DRAWING LIST

SHEET No.	SHEET TITLE
GENERAL	
G-001	COVER SHEET
G-100	BUILDING CODE SUMMARY
G-101	LIFE SAFETY PLAN
G-102	U.L. DETAILS
CIVIL	
C-001	COVER SHEET & OVERALL LAYOUT
C-101	BOUNDARY & EXISTING CONDITIONS PLAN
C-201	SITE PLAN
C-301	UTILITIES PLAN
C-401	GRADING PLAN
C-901	CONSTRUCTION DETAILS
C-902	CONSTRUCTION DETAILS
C-903	CONSTRUCTION DETAILS
L-101	LANDSCAPE PLAN
C-500	EROSION & SEDIMENT CONTROL COVER SHEET
C-501	PRE-CONSTRUCTION EROSION & SEDIMENT CONTROL PLAN
C-501EC	PRE-CONSTRUCTION EROSION & SEDIMENT CONTROL DRAINAGE PLAN
C-502	POST-CONSTRUCTION EROSION & SEDIMENT CONTROL PLAN
C-502EC	POST-CONSTRUCTION EROSION & SEDIMENT CONTROL DRAINAGE PLAN
C-503	POST CONSTRUCTION STORMWATER MANAGEMENT PLAN - WET POND
C-504	EROSION & SEDIMENT CONTROL DETAILS
SWM-PRE	PRE-DEVELOPED STORMWATER DRAINAGE AREA PLAN
SWM-POST	POST-DEVELOPED STORMWATER DRAINAGE AREA PLAN
STRUCTURAL	
S101	GENERAL NOTES
S102	STRUCTURAL INSPECTIONS
S201	FOUNDATION PLAN
S202	ROOF FRAMING PLAN
S301	FOUNDATION TYPICAL DETAILS & SECTIONS
S311	FOUNDATION TYPICAL DETAILS & SECTIONS
S401	FRAMING TYPICAL DETAILS & SECTIONS
S501	SHEAR WALL DETAILS & SCHEDULES
ARCHITECTURAL	
A-001	CONSTRUCTION TYPES - EXTERIOR WALLS, ROOFS, AND SOFFITS
A-002	CONSTRUCTION TYPES - WALL TYPES AND DETAILS
AS-101	SITE PLAN
A-101	FIRST FLOOR PLAN
A-102	FIRST FLOOR REFLECTED CEILING PLAN
A-103	ROOF PLAN
A-104	FIRST FLOOR FINISH PLAN
A-201	EXTERIOR ELEVATIONS
A-202	EXTERIOR ELEVATIONS
A-301	BUILDING SECTIONS
A-302	WALL SECTIONS
A-303	WALL SECTIONS
A-401	ENLARGED PLANS AND SECTIONS
A-402	ENLARGED PLANS AND ELEVATIONS
A-403	ENLARGED PLANS AND ELEVATIONS
A-501	DETAILS
A-502	DETAILS
A-503	DETAILS
A-504	ROOF DETAILS
A-505	INTERIOR DETAILS
A-601	DOOR AND WINDOW TYPES AND SCHEDULE
A-602	DOOR AND WINDOW DETAILS
A-603	DOOR AND WINDOW DETAILS
A-604	FINISH SCHEDULE AND LEGEND
PLUMBING	
P-001	PLUMBING NOTES, ABBREVIATIONS, LEGEND AND SCHEDULES
PS101	FIRST FLOOR PLAN - WASTE-VENT
PW101	FIRST FLOOR PLAN - DOMESTIC WATER
PG101	FIRST FLOOR PLAN - LP GAS AND COMPRESSED AIR PIPING PLAN
P-401	ENLARGED PLUMBING PLANS
P-501	PLUMBING DETAILS
P-502	WASTE & VENT RISER DIAGRAMS
P-503	DOMESTIC WATER RISER DIAGRAMS
P-504	COMPRESSED AIR AND LP GAS PIPING RISER DIAGRAM
P-505	UL PENETRATION DETAILS
MECHANICAL	
M-001	MECHANICAL, ABBREV.'s, LEGEND, & MECHANICAL SUMMARY
M-002	MECHANICAL GENERAL NOTES AND SEQUENCES OF OPERATION
MH101	MECHANICAL FLOOR PLAN - HVAC
MH102	MECHANICAL RCP & T-STAT LOC. FLOOR PLAN - HVAC
MH103	MECHANICAL ROOF PLAN - HVAC
M-501	MECHANICAL DETAILS
M-502	MECHANICAL DETAILS
M-601	MECHANICAL SCHEDULES
M-602	MECHANICAL SCHEDULES
ELECTRICAL	
E-001	ELECTRICAL SYMBOLS AND ABBREVIATIONS
E-002	GENERAL NOTES
E-100	ELECTRICAL SITE PLAN
EP100	ELECTRICAL OVERALL POWER PLAN
EP101	FLOOR PLANS - POWER
EP102	FLOOR PLANS - HVAC POWER PLAN
EP201	ELECTRICAL ROOF POWER PLAN
EL101	ELECTRICAL LIGHTING PLAN
ES101	ELECTRICAL SYSTEMS PLAN
E-501	ELECTRICAL DETAILS
E-502	ELECTRICAL DETAILS
E-503	ELECTRICAL DETAILS
E-601	ELECTRICAL RISER DIAGRAM AND SCHEDULES
E-602	ELECTRICAL SCHEDULES
FIRE ALARM	
FA100	FIRE ALARM OVERALL PLAN
FA101	FIRE ALARM NEW BUILDING PLAN
FA501	FIRE ALARM DETAILS
FA601	FIRE ALARM RISER, NOTES AND DETAILS

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CONSULTANT INFORMATION

W.M. Jordan COMPANY

CAPE FEAR COMMUNITY COLLEGE

ERNEST W. OLDS — REGISTERED ARCHITECT — 10595 — WILMINGTON, N.C. — 02/18/2025

BECKER MORGAN GROUP, INC. — Registered Architectural Corporation — North Carolina — 51922 — WILMINGTON, NC

PROJECT TITLE

CFCC SURF CITY SA ADDITION

621 NC HWY 210E, SURF CITY, NC

SCO ID#24-28220-01A

SHEET TITLE

COVER SHEET

ISSUE BLOCK

Mark	Date	Description
3	02.12.2025	SCO CD COMMENTS
2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	11.11.2024	GMP PRICING

PROJECT NO: 2024077.00
DATE: 02/12/2025
SCALE: 1" = 1'-0"
DRAWN BY: ALJ/BJP/CRF | PROJ MGR: JPB

G-001

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BUILDING CODE SUMMARY

NAME OF PROJECT: Cape Fear Community College - Building SA Addition

ADDRESS: 621 State Hwy 210 E., Hampstead, NC 28443

OWNER OR AUTHORIZED AGENT: David Kanoy PHONE #: (910) 362-7695 E-Mail: dhkanoy@mail.cfcc.edu

OWNED BY: ☐ City ☐ County ☒ State ☐ Private

CODE ENFORCEMENT JURISDICTION: ☒ City ☐ County ☐ State

CONTACT: Ernest W. Olds, AIA

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #	EMAIL ADDRESS
ARCHITECTURAL	Becker Morgan Group	Ernest W. Olds	10595	910.341.7600	eolds@beckermorgan.com
CIVIL	Becker Morgan Group	J. Michael Riemann	049463	910.341.7600	mriemann@beckermorgan.com
ELECTRICAL	CBHF Engineers, PLLC	Jason Famiglietti	35250	910.791.4000	jfam@cbhfengineers.com
FIRE ALARM	MCBHF Engineers, PLLC	Jason Famiglietti	35250	910.399.1505	jfam@cbhfengineers.com
PLUMBING	CBHF Engineers, PLLC	David M. Hahn	23551	910.791.4000	dhahn@cbhfengineers.com
MECHANICAL	CBHF Engineers, PLLC	David M. Hahn	23551	910.791.4000	dhahn@cbhfengineers.com
SPRINKLER-STANDPIPE					
STRUCTURAL	Woods Engineering, P.A.	Adam Sisk	41563	910.343.8007	asisk@woodseng.com
RETAINING WALL >5' HIGH					
OTHER					

2018 NC BUILDING CODE:

☐ New Building ☒ Addition ☐ 1st Time Interior Completion

☐ Phased Construction - Shell/Core - Contact the local inspection jurisdiction for possible additional precedures and requirements ☐ Shell/Core - Contact the local inspection jurisdiction for possible additional precedures and requirements

2018 NC EXISTING BUILDING CODE:

☐ N/A ☐ Chapter 14 ☐ Alteration Level I ☐ N/A ☐ N/A

☐ Prescriptive ☐ Historic Property ☐ Alteration Level II ☐ Repair ☐ Change of Use

☐ Repair ☐ Change of Use ☐ Alteration Level III ☐ Historic Property

CONSTRUCTED: CURRENT OCCUPANCY(S) (Ch. 3):

RENOVATED: PROPOSED OCCUPANCY(S) (Ch. 3):

RISK CATEGORY (Table 1604.5):

CURRENT ☐ N/A ☐ I ☒ II ☐ III ☐ IV

PROPOSED ☐ N/A ☐ I ☒ II ☐ III ☐ IV

BASIC BUILDING DATA:

CONSTRUCTION TYPE: ☐ I-A ☐ I-B ☐ II-A ☐ II-B ☐ III-A ☐ III-B ☐ IV ☐ V-A ☒ V-B

SPRINKLERS: ◉ NO ○ YES ☐ PARTIAL ☐ NFPA 13 ☐ NFPA 13R ☐ NFPA 13D

STANDPIPES: ◉ NO ○ YES ☐ CLASS I ☐ CLASS II ☐ CLASS III ☐ WET ☐ DRY

PRIMARY FIRE DISTRICT: ☒ NO ☐ YES

FLOOD HAZARD AREA: ◉ NO ○ YES

SPECIAL INSPECTIONS: ☐ NO ☒ YES (Contact the local inspection jurisdiction for additional procedures and requirements)

GROSS BUILDING AREA TABLE:

EXISTING BUILDING
BUILDING HEIGHT: 18'-6 3/4" NUMBER OF STORIES: 1
MEZZANINE: NONE.

ADDITION
BUILDING HEIGHT: 17'-8" NUMBER OF STORIES: 1

GROSS BUILDING AREA TABLE:

Building E-1 (Existing):	First Floor:	Existing Area: 11,249 SF	New Area: 0 SF	TOTAL:	11,249 SF
ADD-1 (New Addition):	First Floor:	Existing Area: 0 SF	New Area: 10,781 SF	TOTAL:	10,781 SF
TOTAL AREA:					22,030 SF

ALLOWABLE AREA:

PRIMARY OCCUPANCY CLASSIFICATION(S): B - Education above the 12th Grade

ACCESSORY OCCUPANCY CLASSIFICATION(S):

INCIDENTAL USES (Table 509):

SPECIAL USES (Chapter 4 - List Code Sections):

SPECIAL Provisions (Chapter 5 - List Code Sections):

MIXED OCCUPANCY: ☒ NO ☐ YES SEPARATION: HR. EXCEPTION:

☐ Non-Separated Use (508.3)

☐ Separated Use (508.4) - See below for area calculations for each story, the area of the occupancy shall be such that the sum of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1

$$\frac{\text{ACTUAL AREA OF OCCUPANCY A}}{\text{ALLOWABLE AREA OF OCCUPANCY A}} + \frac{\text{ACTUAL AREA OF OCCUPANCY B}}{\text{ALLOWABLE AREA OF OCCUPANCY B}} \leq 1$$

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.2[4] AREA UNSPRINKLERED	(B) TABLE 506.2[4] AREA SPRINKLERED	(C) AREA FOR FRONTAGE INCREASE[1,5]	(D) ALLOWABLE AREA PER STORY OR UNLIMITED
E-1	Higher Education	11,249	9000		6,300	15,300
ADD-1	Higher Education	10,781	9000		4,860	13,950

1. FRONTAGE AREA INCREASES FROM SECTION 506.2 ARE COMPUTED THUS:
   A. PERIMETER WHICH FRONTS A PUBLIC WAY OR OPEN SPACE HAVING 20 FT MINIMUM WIDTH 340 (F)
   B. TOTAL BUILDING PERIMETER = 429 (P)
   C. RATIO (F/P) = .79 (F/P)
   D. W = MINIMUM WIDTH OF PUBLIC WAY = 30 (W) (do not exceed 30)
   E. PERCENT OF FRONTAGE INCREASE I_f = 100 [F/P - 0.25] x W/30 = 54 (%)
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) (506.2)
4. THE MAXIMUM AREA OF OPEN PARKING GARAGES MUST COMPLY WITH 406.5.4. THE MAXIMUM AREA OF AIR TRAFFIC CONTROL TOWERS MUST COMPLY WITH 412.3.1
5. FRONTAGE INCREASE IS BASED ON THE UNSPRINKLERED AREA VALUE IN TABLE 506.2

ALLOWABLE HEIGHT:

	ALLOWABLE (TABLES 504.3 & 504.4)	SHOWN ON PLANS	CODE REFERENCE
BUILDING HEIGHT IN FEET	40	17'-8"	
BUILDING HEIGHT IN STORIES	2	1	

Provide code reference if the "Shown on Plans" quantity is not based on Table 504.3 or 504.4.

FIRE PROTECTION REQUIREMENTS:

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D	RATING PROVIDED* (W/ REDUCTION)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	DESIGN # FOR RATED PENETRATION	DESIGN # FOR RATED JOINTS
Structural Frame including columns, girders, trusses	0	0	0				
Bearing Walls							
Exterior							
North	>30	0	0				
East	>30	0	0				
West	0; 20'-4"	2 HR	2 HR	7B/A001 7F/A001	NCSBC, TABLE 721.1(2).15.1.16		
South	>30	0	0				
Interior							
Nonbearing Walls and Partitions							
Exterior							
North							
East							
West							
South							
Interior walls and partitions	0	0	0				
Floor Construction, including supporting beams and joists		-					
Floor Ceiling Assembly		-					
Columns Supporting Floors		-					
Roof Construction, including supporting beams and joists		0					
Roof Ceiling Assembly		0					
Columns Supporting Roof		0					
Shaft Enclosures - Exit		-					
Shaft Enclosures - Other		-					
Corridor Separation		1 HR	1 HR	2D/A002	U305		
Occupancy / Fire Barrier Separation		1 HR	1 HR	7C/A001 7E/A001	NCSBC, TABLE 721.1(2).15.1.16		
Party / Fire Wall Separation		2 HR	2 HR (706.4, Exc a)	7B/A001 7F/A001	NCSBC, TABLE 721.1(2).15.1.16		
Smoke Barrier Separation		-					
Tenant / Dwelling Unit / Sleeping Separation		-					
Incidental Use Separation		-					

* Indicate section number permitting reduction

PERCENTAGE OF WALL OPENING CALCULATIONS:

FIRE SEPARATION DISTANCE (FEET) FROM PROPERTY LINES	DEGREE OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)
0 TO <3	*** FIRE WALL	156 SF (706.8)	21 SF
20 TO <30	UNPROT., NONSPRINKLED	45%	20%
>30	NOT REQUIRED	NO LIMIT	
PLEASE SEE SHEET G101	FOR PERCENTAGE	OF WALL OPENING	

*** FIREWALL 90-min 706.8 footnote c/716.5

LIFE SAFETY SYSTEM REQUIREMENTS:

EMERGENCY LIGHTING: ○ NO ◉ YES

EXIT SIGNS: ○ NO ◉ YES

FIRE ALARM: ○ NO ◉ YES

SMOKE DETECTION SYSTEMS: ○ NO ◉ YES ☐ PARTIAL

CARBON MONOXIDE DETECTION: ◉ NO ○ YES

LIFE SAFETY PLAN REQUIREMENTS:

LIFE SAFETY PLAN SHEET # G101

- ■ FIRE AND/OR SMOKE RATED WALL LOCATIONS (Chapter 7)
- ■ ASSUMED AND REAL PROPERTY LINE LOCATIONS (if not on the site plan)
- ■ EXTERIOR WALL OPENING AREA WITH RESPECT TO DISTANCE TO ASSUMED PROPERTY LINES (705.8)
- ■ OCCUPANCY TYPES FOR EACH AREA AS IT RELATES TO OCCUPANT LOAD CALCULATION (TABLE 1004.1.2)
- ■ OCCUPANT LOADS FOR EACH AREA
- ■ EXIT ACCESS TRAVEL DISTANCES (1017)
- N/A COMMON PATH OF TRAVEL DISTANCES (1006.2.1 & 1006.3.2(1))
- N/A DEAD END LENGTHS (1020.4)
- ■ CLEAR EXIT WIDTHS FOR EACH EXIT DOOR
- ■ MAXIMUM CALCULATED OCCUPANT LOAD CAPACITY EACH EXIT DOOR CAN ACCOMMODATE BASED ON EGRESS WIDTH (1005.3)
- ■ ACTUAL OCCUPANT LOAD FOR EACH EXIT DOOR
- N/A A SEPARATE SCHEMATIC PLAN INDICATING WHERE FIRE RATED FLOOR / CEILING AND/OR ROOF STRUCTURE IS PROVIDED FOR PURPOSES OF OCCUPANCY SEPARATION
- ■ LOCATION OF DOORS WITH PANIC HARDWARE (1008.1.10.)
- N/A LOCATION OF DOORS WITH DELAYED EGRESS LOCKS AND THE AMOUNT OF DELAY (1010.1.9.7)
- N/A LOCATION OF DOORS WITH ELECTROMAGNETIC EGRESS LOCKS (1010.1.9.9)
- N/A LOCATION OF DOORS EQUIPPED WITH HOLD-OPEN DEVICES
- ■ LOCATION OF EMERGENCY ESCAPE WINDOWS (1030)
- N/A THE SQUARE FOOTAGE OF EACH FIRE AREA (202)
- N/A THE SQUARE FOOTAGE OF EACH SMOKE COMPARTMENT FOR OCCUPANCY CLASSIFICATION I-2 (407.5)
- NOTE ANY CODE EXCEPTIONS OR TABLE NOTES THAT MAY HAVE BEEN UTILIZED REGARDING THE ITEMS ABOVE

ACCESSIBLE PARKING (SECTION 1106)

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES		# OF ACCESSIBLE SPACES PROVIDED			TOTAL # ACCESSIBLE PROVIDED
	REQUIRED	PROVIDED	REGULAR WITH 5' ACCESS AISLE	VAN SPACES WITH 132" ACCESS AISLE	VAN SPACES WITH 8' ACCESS AISLE	
	72	152	5		1	6
TOTAL	72	152	5		1	6

PLUMBING FIXTURE REQUIREMENTS (TABLE 2902.1)

	USE	WATERCLOSETS MALE	WATERCLOSETS FEMALE	WATERCLOSETS UNISEX	URINALS	LAVATORIES MALE	LAVATORIES FEMALE	LAVATORIES UNISEX	SHOWERS / TUBS	DRINKING FOUNTAINS REGULAR	DRINKING FOUNTAINS ACCESSIBLE
OCCUPANT LOAD SPACE	EXIST'G	2	5		3	4	4			2	2
	NEW	1	2	2	1	2	2	2		1	1
	REQ'D	1	2	2	1	2	2	2		1	1

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

Fixtures have been calculated at 3 male, 3 female required WC/Urinals and 3 lavs per gender.

Unisex restrooms were used to account for 1 set of fixtures for each gender.

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 PERFORMANCE METHOD, STATE THE ANNUAL ENERGY COST FOR THE STANDARD REFERENCE DESIGN VS ANNUAL ENERGY COST FOR THE PROPOSED DESIGN.

EXISTING BUILDING ENVELOPE COMPLIES WITH CODE: ☐ YES (the remiander of this section is not applicable) ☐ NO

EXEMPT BUILDING: ☐ YES Provide code or statutory reference: ☒ NO

CLIMATE ZONE: 3A

METHOD OF COMPLIANCE:

- ☒ PRESCRIPTIVE (ENERGY CODE)
- ☐ PERFORMANCE (ENERGY CODE)
- ☐ PRESCRIPTIVE (ASHRAE 90.1)
- ☐ PERFORMANCE (ASHRAE 90.1)
- ☐ PERFORMANCE (OTHER)

If 'Other' specify source here:

THERMAL ENVELOPE (Prescriptive method only)

ROOF/CEILING ASSEMBLY (each assembly)
- DESCRIPTION OF ASSEMBLY: Rigid roof insulation with cover board on metal deck
- U-VALUE OF TOTAL ASSEMBLY: N/A (R-Value Method Used)
- R-VALUE OF INSULATION: R-25 minimum
- SKYLIGHTS IN EACH ASSEMBLY: N/A
- U-VALUE OF SKYLIGHT: -
- TOTAL SQUARE FOOTAGE OF SKYLIGHTS IN EACH ASSEMBLY: -

EXTERIOR WALLS (each assembly)
- DESCRIPTION OF ASSEMBLY: Wood framed walls with coated wood sheathing, batt insulation
- U-VALUE OF TOTAL ASSEMBLY: N/A (R-Value Method Used)
- R-VALUE OF INSULATION: R-20 Cavity
- **OPENINGS** (windows or doors with glazing)
  - U-VALUE OF ASSEMBLY: 0.45 Storefront; 0.77 Entrance Door
  - SOLAR HEAT GAIN COEFFICIENT: 0.25
  - PROJECTION FACTOR: <.25
  - DOOR R-VALUES: 0.70 Swinging=R-1.28 / 0.50 Nonswinging=R-2

WALLS BELOW GRADE (each assembly)
- DESCRIPTION OF ASSEMBLY: N/A
- U-VALUE OF TOTAL ASSEMBLY: -
- R-VALUE OF INSULATION: -

FLOORS OVER UNCONDITIONED SPACE (each assembly)
- DESCRIPTION OF ASSEMBLY: N/A
- U-VALUE OF TOTAL ASSEMBLY: -
- R-VALUE OF INSULATION: -

FLOORS SLAB ON GRADE (each assembly)
- DESCRIPTION OF ASSEMBLY: No Requirement per Table 402.1.3
- U-VALUE OF TOTAL ASSEMBLY: -
- R-VALUE OF INSULATION: -
- HORIZONTAL / VERTICAL REQUIREMENT: -
- SLAB HEATED: No

STRUCTURAL DESIGN, SEE STRUCTURAL DRAWINGS

DESIGN LOADS:

IMPORTANCE FACTORS: WIND (Iw) 1.0; SNOW (Is) 1.0; SEISMIC (Ie) 1.0

LIVE LOADS: ROOF 20 PSF; MEZZANINE 0 PSF; FLOOR 100 PSF

GROUND SNOW LOAD: 10 PSF

WIND LOAD: BASIC WIND SPEED 144 MPH (ASCE); EXPOSURE CATEGORY B

SEISMIC DESIGN CATEGORY: B

PROVIDE THE FOLLOWING SEISMIC DESIGN PARAMETERS:

OCCUPANCY CATEGORY (TABLE 1604.5) II

SPECTRAL RESPONSE ACCELERATION S_S 0.129 %g S_1 0.06 %g

SITE CLASSIFICATION (ASCE 7) D

DATA SOURCE: GOTECHNICAL REPORT BY S&ME DATED 08-24-2024

BASIC STRUCTURAL SYSTEM WOOD WALLS SHEATHED WITH WOOD STRUCTURAL

ANALYSIS PROCEDURE: ☐ N/A ☐ SIMPLIFIED ☒ EQUIVALENT LATERAL FORCE ☐ DYNAMIC

ARCHITECTURAL, MECHANICAL, COMPONENTS ANCHORED? ○ YES ◉ NO

LATERAL DESIGN CONTROL: ☒ N/A ☐ EARTHQUAKE ☐ WIND

SOIL BEARING CAPACITIES:

☐ N/A

☒ FIELD TEST (PROVIDE COPY OF TEST REPORT) 2000 PSF

☐ PRESUMPTIVE BEARING CAPACITY PSF

PILE SIZE, TYPE AND CAPACITY PSF

MECHANICAL SUMMARY, SEE MECHANICAL DRAWINGS

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

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

SIZE CATEGORY OF UNIT

BOILER

SIZE CATEGORY, IF OVERSIZED, STATE REASON

CHILLER

SIZE CATEGORY, IF OVERSIZED, STATE REASON

LIST EQUIPMENT EFFICIENCIES:

ELECTRICAL SUMMARY, SEE ELECTRICAL DRAWINGS

ELECTRICAL SYSTEM AND EQUIPMENT

METHOD OF COMPLIANCE:

ENERGY CODE: ☐ PRESCRIPTIVE ☐ PERFORMANCE

ASHRAE 90.1: ☐ PRESCRIPTIVE ☐ PERFORMANCE

LIGHTING SCHEDULE

- LAMP TYPE REQUIRED IN FIXTURE
- NUMBER OF LAMPS IN FIXTURE
- BALLAST TYPE USED IN THE FIXTURE
- TOTAL WATTAGE PER FIXTURE
- TOTAL INTERIOR WATTAGE SPECIFIED VS ALLOWED (whole building or space by space)
- TOTAL EXTERIOR WATTAGE SPECIFIED VS ALLOWED

ADDITIONAL PRESCRIPTIVE COMPLIANCE

- C406.2 MORE EFFICIENT HVAC EQUIPMENT PERFORMANCE
- C406.3 REDUCED LIGHTING POWER DENSITY
- C406.4 ENHANCED DIGITAL LIGHTING CONTROLS
- C406.5 ON-SITE RENEWABLE ENERGY
- C406.6 DEDICATED OUTDOOR AIR SYSTEM
- C406.7 REDUCED ENERGY USE IN SERVICE WATER HEATING

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Dover, DE 19904
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CONSULTANT INFORMATION

W.M. Jordan COMPANY

CAPE FEAR COMMUNITY COLLEGE

ERNEST W. OLDS REGISTERED ARCHITECT 10595 NORTH CAROLINA WILMINGTON, N.C. 02/18/2025

BECKER MORGAN GROUP, INC. Registered Architectural Corporation North Carolina 51922 WILMINGTON, N.C.

PROJECT TITLE

CFCC SURF CITY SA ADDITION

621 NC HWY 210E, SURF CITY, NC

SCO ID#24-28220-01A

SHEET TITLE

BUILDING CODE SUMMARY

ISSUE BLOCK

Mark	Date	Description
3	02.12.2024	SCO CD COMMENTS
2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	11.11.2024	GMP PRICING

PROJECT NO: 2024077.00

DATE: 02/12/2025

SCALE:

DRAWN BY: ALJ/BJP/CRF PROJ MGR: JPB

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PLAN-ORIENTATION

TRUE-NORTH

PLAN-NORTH

LIFE SAFETY PLAN LEGEND

- TRAVEL PATH # / 50' - 0" — EXIT ACCESS TRAVEL DISTANCE
- PATH OF EXIT ACCESS TRAVEL
- OFFICE — ROOM NAME
- 101 — ROOM NUMBER
- 123 SF — NET SQ. FT AREA
- 10 OCC — OCCUPANCY LOAD
- *AC* = ACCESSORY SPACE
- MIN. EGRESS WIDTH REQ'D (INCHES) / MAX. OCC. ALLOWED / ACTUAL OCCUPANTS / ACTUAL EGRESS WIDTH PROVIDED (INCHES) — EXIT CAPACITY
- # OCC — OCCUPANCY LOAD
- PROPERTY LINE
- 1-HR FIRE PARTITION
- 1-HR FIRE BARRIER
- 2-HR FIRE WALL
- FEC — FIRE EXTINGUISHER LOCATION
- EXIT SIGN, SEE ELEC.
- EXIT/EMERGENCY LIGHTING - SEE ELECT
- EXIT/EMERGENCY LIGHTING - SEE ELECT
- P — PANIC HARDWARE
- 45 MIN FIRE RATING — DOOR

LIFE SAFETY PLAN NOTES

1. PROVIDE NEW FIRE EXTINGUISHERS IN CABINETS (FEC) AND FIRE EXTINGUISHERS ON BRACKETS (FE) AS SHOWN ON FLOOR PLANS. PROVIDE NEW FIRE EXTINGUISHERS IN KITCHEN (TYPE K), MECHANICAL, ELECTRICAL (TYPE B-C), AND ELEVATOR MACHINE ROOMS, AND AS INDICATED.
2. FIRE EXTINGUISHER SHALL BE MINIMUM 3A-40BC RATING.
3. MARK ALL RATED PARTITIONS AND WALLS IN ACCORDANCE WITH NCBC (2018) 703.7, AND AS DETAILED.

TRAVEL DISTANCES PER 1017.2

200' MAX ALLOWABLE TRAVEL DISTANCE WITHOUT SPRINKLER SYSTEM

75' MAX ALLOWABLE COMMON PATH OF TRAVEL WITHOUT SPRINKLER SYSTEM

SIDE WITH OPENINGS PER 903.2.11.1

EXISTING BUILDING SA

ADDITION

STORAGE EX: 104

DATA EX: 105

AH LAB EX: 106

105 OCC (EXISTING)

UP SLOPING WALK

CLASSROOM EX: 118

CLASSROOM EX: 121

CLASSROOM EX: 124

CORRIDOR EX: 117

4' - 0" 1-HR FIRE BARRIER

WINDOW WITH SILL <44 INCHES TO AVOID "WINDOWLESS STORY" PER 903.2.11.1, NOTE 2

<50'-0"

2-HR FIRE WALL

75'-0" TO REC

EWD CLASS/COMBO REC LAB 127 2847 SF 57 OCC.

87'-8" > 1/2 DIAGONAL DIST. PER 1007.1.1

EWD LAB 128 1667 SF 36 OCC.

>30 FEET TO PROPERTY LINE

33" PRV 165 OCC ALLOW 155 OCC ACTUAL 31" REQ

28 OCC

36 OCC

FEC

NOT AN EXIT

CORRIDOR 126 1316 SF

7 OCC

PREP ROOM 129 414 SF

31 OCC

2 OCC

1 OCC

151'-2"

OPENING = 21 SF FOR WALL OPENING % CALCULATION

FEMALE TOILET 142 142 SF

MALE TOILET 141 134 SF

TOILET 140 53 SF

TOILET 139 54 SF

LAPTOP STORAGE 132 44 SF

STORAGE 133 95 SF

VETERANS 134 212 SF 4 OCC.

CLASSROOM 131 963 SF 49 OCC.

49 OCC

34 OCC

SCIENCE LAB 130 1695 SF 34 OCC.

SUPPLY STORAGE 138 126 SF

PT SHARED OFFICE 137 286 SF 5 OCC.

MECH 143 111 SF

STORAGE 136 80 SF

W.H. 144

PT PRIVATE OFFICE 135 144 SF 2 OCC.

10 OCC

EXIT ACCESS MAX TRAVEL DISTANCE = 120'-10"

<50'-0"

1-HR FIRE BARRIER 4' - 0"

2" REQ 165 OCC ALLOW 10 OCC ACTUAL 30" PRV

20' - 1"

ASSUMED PROPERTY LINE

>30 FEET TO PROPERTY LINE

EXISTING BUILDING WALL OPENING CALCULATION: 2,268 SF EXTERIOR WALL; 452 SF OPENINGS = 20% OPENINGS PER TABLE 705.8

1 FIRST FLOOR, SA ADDITION

SCALE: 1/8" = 1'-0"

0' 4' 8' 16'

SCALE: 1/8" = 1'-0"

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ERNEST W. CLOS REGISTERED ARCHITECT 10595 N.C. WILMINGTON, N.C. 02/18/2025

BECKER MORGAN GROUP, INC. Registered Professional Engineers 51922 North Carolina WILMINGTON, NC

PROJECT TITLE

CFCC SURF CITY SA ADDITION

621 NC HWY 210E, SURF CITY, NC

SCO ID#24-28220-01A

SHEET TITLE

LIFE SAFETY PLAN

ISSUE BLOCK

Mark	Date	Description
3	02.12.2024	SCO CD COMMENTS
2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	11.11.2024	GMP PRICING

PROJECT NO: 2024077.00

DATE: 02/12/2025

SCALE: As indicated

DRAWN BY: CRFe/CRFi PROJ MGR: JPB

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UL Product iQ®

UL Solutions

Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United States

BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

See General Information for Fire-resistance Ratings - ANSI/UL 263 Certified for United States
Design Criteria and Allowable Variances

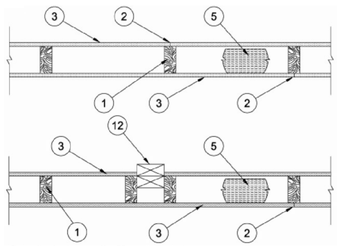
See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada
Design Criteria and Allowable Variances

Design No. U305

June 14, 2024

Bearing Wall Rating — 1 Hr
Finish Rating — See Items 3, 3A, 3D, 3E, 3F, 3G, 3H, 3J and 3L.
STC Rating - 56 (See Item 9)
This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**



1. **Wood Studs —** Nom 2 by 4 in. spaced 16 in. OC max, effectively firestopped.

2. **Joints and Nail-Heads —** Joints covered with joint compound and paper tape. Joint compound and paper tape may be omitted when square edge boards are used. As an alternate, nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard with the joints reinforced with paper tape. Nailheads exposed or covered with joint compound.

3. **Gypsum Board*** — 5/8 in. thick paper or vinyl surfaced, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. When used in widths other than 48 in., gypsum panels are to be installed horizontally. For an alternate method of attachment of gypsum panels, refer to Items 6 through 6F, **Steel Framing Members***.
When Items 6, 6B, 6C, 6D, 6E, or 6F, **Steel Framing Members***, are used, gypsum panels attached to furring channels with 1 in. long Type S bugle-head steel screws spaced 12 in. OC.

When Item 6A, **Steel Framing Members***, is used, two layers of gypsum panels attached to furring channels. Base layer attached to furring channels with 1 in. long Type S bugle-head steel screws spaced 12 in. OC. Face layer attached to furring channels with 1-5/8 in. long Type S bugle-head steel screws spaced 12 in. OC. All joints in face layers staggered with joints in base layers. One layer of gypsum board attached to opposite side of wood stud without furring channels as described in Item 3.

When Item 7, resilient channels are used, 5/8 in. thick, 4 ft wide gypsum panels applied vertically. Screw attached furring channels with 1 in. long, self-drilling, self-tapping Type S or S-12 steel screws spaced 8 in. OC, vertical joints located midway between studs.

AMERICAN GYPSUM CO — Types AGX-1(finish rating 23 min.), M-Glass (finish rating 23 min.), Type AGX-11 (finish rating 26 min), Type AGX-12 (finish rating 22 min), Type LightRoc (finish rating 23 min.) or Type AG-C

BEIJING NEW BUILDING MATERIALS PUBLIC LTD CO — Type DBX-1 (finish rating 24 min)

CABOT MANUFACTURING ULC — Type X (finish rating 22 min). 5/8 Type X. Moisture Resistant Type X, Gypsum Sheathing Type X, Mold & Mildew Resistant Type X and Mold & Mildew Resistant AR Type X, Type Blueglass Exterior Sheathing

CERTAINTEED GYPSUM INC — Type C, Type X-1 (finish rating 26 min); Type EGRG or GlasRoc (finish rating 23 min), GlasRoc-2, Type Habito (finish rating 24 min), Type UXTX (finish rating 18 min), Type LGFCA, Type LGFC-C/A, Type LGFC-WD, Type UGLLX (finish rating 21 min), Type CLLX (finish rating 24 min)

CGC INC — Type AR (finish rating 24 min), Type C (finish rating 24 min), Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SCX (finish rating 24 min), Type SHX (finish rating 24 min), Type ULX (finish rating 22 min), Type WRC (finish rating 24 min), Type WRX (finish rating 24 min), Type ULIX (finish rating 20 min)

GEORGIA-PACIFIC GYPSUM L L C — Type S (finish rating 26 min), Type 6 (finish rating 23 min), Type 9 (finish rating 26 min). Type C (finish rating 26 min), Type DGG (finish rating 20 min), Type GPFS1 (finish rating 20 min), Type GPFS2 (finish rating 20 min), Type GPFS6 (finish rating 26 min), Type DS, Type DAP, Type DD (finish rating 20 min), Type DA, Type DAPC, Type LS (finish rating 23 min), Type X, Veneer Plaster Base - Type X, Water Rated - Type X, Sheathing - Type X, Soffit - Type X, Type LWX (finish rating 22 min), Veneer Plaster Base-Type LWX (finish rating 22 min), Water Rated-Type LWX (finish rating 22 min), Sheathing Type-LWX (finish rating 22 min), Soffit-Type LWX (finish rating 22 min), Type DGLW (finish rating 22 min), Water Rated-Type DGLW (finish rating 22 min), Sheathing Type- DGLW (finish rating 22 min), Soffit-Type DGLW (finish rating 22 min), Type LWX (finish rating 22 min), Type LWZX (finish rating 22 min), Veneer Plaster Base - Type LWZX (finish rating 22 min), Water Rated - Type LWZX (finish rating 22 min), Sheathing - Type LWZX (finish rating 22 min), Soffit - Type LWZX (finish rating 22 min), Type DGLZW (finish rating 22 min), Water Rated - Type DGLZW (finish rating 22 min), Sheathing - Type DGLZW (finish rating 22 min)

NATIONAL GYPSUM CO — Type FSX (finish rating 20 min), Type FSK-G (finish rating 20 min), Type FSW (finish rating 20 min), Type FSW-2 (finish rating 24 min), Type FSW-3 (finish rating 20 min), Type FSW-5 (finish rating 22 min), Type FSW-G (finish rating 20 min), Type FSK-C (finish rating 20 min), Type FSW-C (finish rating 20 min), Type FSMR-C, Type FSW-6 (finish rating 20 min), Type FSL (finish rating 24 min), Type FSW-8, Type FSLX (finish rating 21 min), Type RSX (finish rating 26 min).

NATIONAL GYPSUM CO — Riyadh, Saudi Arabia — Type FR, or WR.

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Types C, PG-2 (finish rating 20 min), PG-3 (finish rating 20 min), Types PG-3W, PG-5W (finish rating 20 min), Type PG-6 (finish rating 20 min), Type PG-6 (finish rating 23 min), Types PG-3WS, PG-5WS, PGS-WRS (finish rating 20 min), Types PG-5, PG-9 (finish rating 26 min), PG-11 PG-13 (Nails increased to 2 in.), Type PG-C or PGI (finish rating 26 min)

PANEL REY S A — Type ARX, GREX, GRIX, PRX, PRC, PRC2; Types RHX, Guard Rey, MDX, ETX (finish rating 22 min), PRX2 (finish rating 21 min)

SIAM GYPSUM INDUSTRY (SARABURI) CO LTD — Type EX-1 (finish rating 26 min)

THAI GYPSUM PRODUCTS PCL — Type C, Type X (finish rating 26 min)

UNITED STATES GYPSUM CO — Type AR (finish rating 24 min), Type C (finish rating 24 min), Type FRX-G (finish rating 29 min), Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SHX (finish rating 24 min), Type SGX (finish rating 24 min), Type ULX (finish rating 22 min), Type WRX (finish rating 24 min), Type WRC (finish rating 24 min), Type ULIX (finish rating 20 min), Type SCX (finish rating 24 min)

USG BORAL DRYWALL SFZ LLC — Type SGX (finish rating 24 min).

USG MEXICO S A DE C V — Type AR (finish rating 24 min), Type C (finish rating 24 min), Type WRX (finish rating 24 min), Type WRC (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SHX (finish rating 24 min), SCX (finish rating 24 min), Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min), Type ULX (finish rating 22 min)

3A. **Gypsum Board*** — (As an alternate to Item 3) — 5/8 in. thick gypsum panels, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board. When used in widths of other than 48 in., gypsum boards are to be installed horizontally.

3B. **Gypsum Board*** — (As an alternate to Item 3) — Nom 3/4 in. thick, installed with 1-7/8 in. long cement coated nails as described in Item 3 or 1-3/8 in. long Type W coarse thread gypsum panel steel screws as described in Item 3A.
CGC INC — Types AR, IP-AR

UNITED STATES GYPSUM CO — Types AR, IP-AR

USG MEXICO S A DE C V — Types AR, IP-AR

3C. **Gypsum Board*** — (As an alternate to Items 3, 3A and 3B) — 5/8 in. thick, 2 ft wide, tongue and groove edge, applied horizontally to one side of the assembly. Installed with 1-7/8 in. long cement coated nails as described in Item 3 or 1-1/4 in. long Type W coarse thread gypsum panel steel screws as described in Item 3A. Joint covering (Item 2) not required.
CGC INC — Type SHX

UNITED STATES GYPSUM CO — Type SHX

USG MEXICO S A DE C V — Type SHX

3D. **Gypsum Board*** — (As an alternate to Items 3, 3A, 3B, or 3C — Not Shown) — For Direct Application to Studs Only- Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-5/8 in. long Type W coarse thread gypsum panel steel screws spaced 8 in. OC at perimeter and in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 1-1/2 in. wide, max 10 ft long with a max thickness of 0.125 in. placed on the face of studs and attached to the stud with two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs or tabs may be used in lieu of or in addition to the lead batten strips or optional at other locations. Max 3/4 in. diam by max 0.125 in. thick lead discs compression fitted or adhered over steel screw heads or max 1/2 in. by 1-1/4 in. by max 0.125 in. thick lead tabs placed on gypsum boards underneath screw locations prior to the installation of the screws. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".
RAY-BAR ENGINEERING CORP — Type RB-LBG (finish rating 24 min)

3E. **Gypsum Board*** — (As an alternate to Items 3, 3A, 3B, 3C, and 3D) — 5/8 in. thick gypsum panels, with square edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last 2 screws 1 and 4 in. from edge of board or nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. When used in widths of other than 48 in., gypsum boards are to be installed horizontally.
GEORGIA-PACIFIC GYPSUM L L C — Type DGG (finish rating 20 min), GreenGlass Type X (finish rating 23 min)

3F. **Gypsum Board*** — (As an alternate to Items 3, 3A, 3B, 3C, 3D, and 3E) — 5/8 in. glass-mat faced with square edges, applied either horizontally or vertically. Gypsum panels nailed 7 in. OC around the perimeter and in the field with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. Nails shall be placed 1 inch and 3 inch from horizontal joints and 7 inch OC thereafter.
CGC INC — Type USGX (finish rating 22 min)

UNITED STATES GYPSUM CO — Type USGX (finish rating 22 min.)

USG BORAL DRYWALL SFZ LLC — Type USGX (finish rating 22 min.)

USG MEXICO S A DE C V — Type USGX (finish rating 22 min.)

3G. **Gypsum Board*** — (As an alternate to Items 3 through 3F) — 5/8 in. thick paper surfaced applied vertically. Gypsum panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads.
GEORGIA-PACIFIC GYPSUM L L C — Type X ComfortGuard Sound Deadening Gypsum Board (finish rating 27 min)

3H. **Gypsum Board*** — (As an alternate to Items 3) — Not to be used with items 6 or 7. 5/8 in. thick paper surfaced applied vertically only. Gypsum panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads.
NATIONAL GYPSUM CO — Type SBWB

3I. **Gypsum Board*** — (As an alternate to Items 3 through 3H, Not Shown) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically. Panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. Panel joints covered with paper tape and two layers of joint compound. Nailheads covered with two layers of joint compound.
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock ES (finish rating 20 min)

3J. **Gypsum Board*** — (As an alternate to Item 3) — 5/8 in. thick paper surfaced applied vertically or horizontally. Gypsum panels secured with 1-1/4 in. Type W coarse thread gypsum panel steel screws spaced a maximum of 12 in. OC.
CERTAINTEED GYPSUM INC — Type SilentFX

3K. **Gypsum Board*** — (As an alternate to Item 3) — 5/8 in. thick gypsum panels, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a maximum 8 in. OC with the last screw 1 in. from the edge of the board. When used in widths other than 48 in., gypsum panels are to be installed horizontally.
NATIONAL GYPSUM CO — Type FSK (finish rating 20 min), Type FSK-G (finish rating 20 min), Type FSW (finish rating 20 min), Type FSW-2 (finish rating 24 min), Type FSW-3 (finish rating 20 min), Type FSW-5 (finish rating 22 min), Type FSW-G (finish rating 20 min), Type FSK-C (finish rating 20 min), Type FSW-C (finish rating 20 min), Type FSMR-C, Type FSW-6 (finish rating 20 min), Type FSL (finish rating 24 min), Type FSW-8, Type FSLX (finish rating 21 min), Type RSX (finish rating 26 min).

3L. **Gypsum Board*** — (As an alternate to Item 3) — For Direct Application to Studs Only — Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-5/8 in. long Type W coarse thread gypsum panel steel screws spaced 8 in. OC at perimeter and in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 10 ft long with a max thickness of 0.140 in. placed on the face of studs and attached to the stud with two 1 in. long Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, max 5/16 in. diam by max 0.140 in. thick, compression fitted or adhered over the screw heads. Lead batten strips to have a purity of 99.5% meeting the Federal specification QQ-L-201f, Grades "B, C or D".
MAYCO INDUSTRIES INC — "X-Ray Shielded Gypsum"

3M. **Gypsum Board*** — (As an alternate to Items 3) — For Direct Application to Studs Only — For use as the base layer or as the face layer. Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-5/8 in. long Type W coarse thread gypsum panel steel screws spaced 8 in. OC at perimeter and in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 8 ft long with a max thickness of 0.14 in. placed on the face of studs and attached to the stud with construction adhesive and two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, nominal 3/8 in. diam by nom 0.085 in. thick. Compression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Fasteners for face layer gypsum panels (Items 4, 4A or 4B) when installed over lead backed board to be min 2-1/2 in. Type S-12 bugle head steel screws spaced as described in Item 4.
RADIATION PROTECTION PRODUCTS INC — Type RPP - Lead Lined Drywall

3N. **Gypsum Board*** — (As an alternate to Item 3) — 5/8 in. thick, 4 ft wide, applied horizontally or vertically with vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Secured as described in Item 3 or 3A.
CERTAINTEED GYPSUM INC — Easi-Lite Type X (finish rating 24 min), Easi-Lite Type X-2 (finish rating 24 min)

3O. **Wall and Partition Facings and Accessories*** — (As an alternate to Item 3, Not Shown) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically. Panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. Panel joints covered with paper tape and two layers of joint compound. Nailheads covered with two layers of joint compound.
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock 527 (finish rating 24 min).

3P. **Gypsum Board*** — (As an alternate to Item 3, Not Shown) — Two layers nom. 5/16 in. thick gypsum panels applied vertically or horizontally. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered or backed by wood studs. Horizontal joints on the same side between face and base layers need not be staggered. Base layer gypsum panels fastened to studs with 1-1/4 in. long drywall nails spaced 8 in. OC. Face layer gypsum panels fastened to studs with 1-7/8 in. long drywall nails spaced 8 in. OC starting with a 4" stagger.
NATIONAL GYPSUM CO — Type FSW (finish rating 25 min)

3Q. **Gypsum Board*** — (As an alternate to Item 3) — 5/8 in. thick gypsum panels, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a maximum 10 in. OC with the last two screws 4 and 1 in. from the edges of the board. When used in widths other than 48 in., gypsum panels are to be installed horizontally.
CERTAINTEED GYPSUM INC — Type LGFCbA (finish rating 21 min), Type LGFC2A, Type LGFC-C/A, Type LGFC-WD, Type LGLLX

4. **Steel Corner Fasteners —** (Optional) — For use at wall corners. Channel shaped, 2 in. long by 1 in. high on the back side with two 1/8 in. wide cleats protruding into the 5/8 in. wide channel, fabricated from 24 gauge galv steel. Fasteners applied only to the end or cut edge (not along tapered edges) of the gypsum board, no greater than 2 in. from corner of gypsum board, max spacing 16 in. OC. Nailed to adjacent stud through tab using one No. 6d cement coated nail per fastener. Corners of wall board shall be nailed to top and bottom plate using No. 6d cement coated nails.

5. **Batts and Blankets* —** (Optional — Required when Item 6A is used (RC-1)) — Glass fiber or mineral wool insulation. Placed to completely or partially fill the stud cavities. When Item 6A is used, glass fiber or mineral wool insulation shall be friction-fitted to completely fill the stud cavities.
CERTAINTEED CORP

JOHNS MANVILLE

KNAUF INSULATION LLC

MANSON INSULATION INC

ROCKWOOL — Types Acoustical Fire Batts and Type AFB, min. density 1.69 pcf / 27.0 kg/m^3

ROCKWOOL MALAYSIA SDN BHD — Type Acoustical Fire Batts

ROCK WOOL MANUFACTURING CO — Delta Board

THERMAFIBER/OWENS CORNING — Type SAFB, SAFB FF

5A. **Fiber, Sprayed* —** (Not Shown — Not for use with Item 6) — As an alternate to Batts and Blankets (Item 5) — Spray applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product with a nominal dry density of 2.7 lb/ft^3. Alternate Application Method: The fiber is applied without water or adhesive at a nominal dry density of 3.5 lb/ft^3, in accordance with the application instructions supplied with the product. When Item 6B is used, Fiber, Sprayed shall be SANCTUARY.

Applegate Greenfiber Acquisition LLC — Insulmax and SANCTUARY for use with wet or dry application.

5B. **Fiber, Sprayed* —** (Not Shown - Not for use with Item 6) — As an alternate to Batts and Blankets (Item 5) - Spray applied cellulose insulation material. The fiber is applied with water to interior surfaces in accordance with the application instructions supplied with the product. Applied to completely fill the enclosed cavity. Minimum dry density of 4.3 pounds per cubic ft.
NU-WOOL CO INC — Cellulose Insulation

5C. **Batts and Blankets* —** Required for use with resilient channels, Item 7, 3 in. thick mineral wool batts, friction-fitted to fill interior of wall.
THERMAFIBER/OWENS CORNING — Type SAFB, SAFB FF

5D. **Glass Fiber Insulation —** (As an alternate to Item 5C) — 3 in. thick glass fiber batts bearing the UL Classification Marking as to Surface Burning and/or Fire Resistance, friction-fitted to fill the interior of the wall. See **Batts and Blankets** (BKNV or BZJZ) Categories for names of Classified companies.

5E. **Batts and Blankets* —** (Required for use with Wall and Partition Facings and Accessories, Item 3D) — Glass fiber insulation, nom 3-1/2 in. thick, min. density of 0.80 pcf, with a flame spread of 25 or less and a smoke developed of 50 or less, friction-fitted to completely fill the stud cavities. See Batts and Blankets Category (BKNV) for names of manufacturers.

5F. **Fiber, Sprayed* —** (Optional, Not Shown — Not for use with Items 6, 6A, 6B, 6C, or 6D) — As an alternate to Batts and Blankets (Item 5) and Item 5A - Spray applied granulated mineral fiber material. The fiber is applied with adhesive, at a minimum density of 4.0 pcf, to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. See **Fiber, Sprayed** (CCAZ).
AMERICAN ROCKWOOL MANUFACTURING, LLC — Type Rockwool Premium Plus

5G. **Fiber, Sprayed* —** (Optional, Not Shown — Not for use with Items 6, 6A, 6B, 6C, or 6D). — As an alternate to Batts and Blankets (Item 5) and Item 5A - Brown Colored Spray applied cellulose fiber. The fiber is applied with water to completely fill the enclosed stud cavity in accordance with the application instructions supplied with the product. The minimum dry density shall be 4.30 lbs/ft^3.
INTERNATIONAL CELLULOSE CORP — Cellsar-RL

5H. **Foamed Plastic* —** (Optional -For use with Item 3R) — Spray applied, foamed plastic insulation, at any thickness from partial fill to completely filling stud cavity.
Holcim Solutions and Products US, LLC — Nexseal™ 2.0 or Nexseal™ 2.0 LE Spray Foam and Sucrosal Spray Foam.

5I. **Fiber, Sprayed* —** (Not Shown — Not for use with Item 6) — As an alternate to Batts and Blankets (Item 5) - Spray-applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. To facilitate the installation of the material, any thin, woven or non-woven netting may be attached by any means possible to the outer face the studs. The material shall reach equilibrium moisture content before the installation of materials on either face of the studs. The minimum dry density shall be 5.79 lbs/ft^3.
Applegate Greenfiber Acquisition LLC— Applegate Advanced Stabilized Cellulose Insulation

5J. **Foamed Plastic* —** (Optional, Not Shown - For use with Item 3U) — Spray applied, foamed plastic insulation, at any thickness from partial fill to completely filling stud cavity.
HOLCIM SOLUTIONS AND PRODUCTS US, LLC — Types GacoEZSpray F4500, GacoProFill FR6500R, Gaco IS52N, GacoOnePass F1850, GacoOnePass Low GWP F1880, and Gaco WallFoam 183M

5K. **Foamed Plastic* —** (Optional, Not Shown - For use with Item 3V) — Spray applied, foamed plastic insulation, at any thickness from partial fill to completely filling stud cavity.
CARLISLE SPRAY FOAM INSULATION — Types SealTite ONE, SealTite Pro Closed Cell (CC), SealTite Pro Open Cell (OC), SealTite Pro OCX, SealTite Pro No Trim 21, SealTite Pro One Zero, Foamulate Closed Cell, Foamulate OCX, Foamulate 70, and Foamulate HFO.

5L. **Foamed Plastic* -** (Optional, Not Shown – For use with Item 3W) - Spray applied, foamed plastic insulation, at any thickness from partial fill to completely filling stud cavity.
BASF CORP – Types Enertite® NM, Enertite® G, FI178®, Spraytite® 178, Spraytite ® 81206, Walltite® 200, Walltite® US, Walltite® US-N, Walltite® HP+, Spraytite® Comfort XL, Walltite® XL , Walltite® MAX, Walltite® LWP, Walltite® Plus and Enertite® Max

6. **Steel Framing Members* —** (Optional, Not Shown) — Furring channels and Steel Framing Members as described below
a. **Furring Channels —** Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Gypsum board attached to furring channels as described in Item 3.

b. **Steel Framing Members* —** Used to attach furring channels (Item 6a) to studs. Clips spaced 48 in. OC. RSIC 1 and RSIC-1 (2.75) clips secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. RSIC-V and RSIC-V (2.75) clips secured to studs with No. 8 x 1-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips. RSIC-1 and RSIC-V clips for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) and RSIC-V (2.75) clips for use with 2-23/32 in. wide furring channels.
PAC INTERNATIONAL L L C — Types RSIC-1, RSIC-V, RSIC-1 (2.75), RSIC-V (2.75)

6A. **Steel Framing Members* —** (Optional, Not Shown) — Furring channels and Steel Framing Members on one side of studs as described below
a. **Furring Channels —** Formed of No. 25 MSG galv steel, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. Batts and Blankets placed in stud cavity as described in Item 5. Two layers of gypsum board attached to furring channels as described in Item 3.

b. **Steel Framing Members* —** Used to attach furring channels (Item 6Aa) to one side of studs only. Clips spaced 48 in. OC., and secured to studs with two No. 8 x 2-1/2 in. coarse drywall screws, one through the hole at each end of the clip. Furring channels are friction fitted into clips.
KINETICS NOISE CONTROL INC — Type Isomax

6B. **Steel Framing Members* —** (Optional, Not Shown) — Furring channels and Steel Framing Members as described below:
a. **Furring Channels —** Formed of No. 25 MSG galv steel. 2-3/8 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Gypsum board attached to furring channels as described in Item 3.

b. **Steel Framing Members* —** Used to attach furring channels (Item 6Ba) to studs. Clips spaced 48 in. OC. Genie clips secured to studs with No. 8 x 1-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.
PLITEQ INC — Type Genie Clip

6C. **Steel Framing Members* —** (Optional, Not Shown) — Furring channels and Steel Framing Members as described below:
a. **Furring Channels —** Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Gypsum board attached to furring channels as described in Item 3.

b. **Steel Framing Members* —** Used to attach furring channels (Item 6Ca) to studs. Clips spaced 48 in. OC., and secured to studs with No. 2 in. coarse drywall screw with 1 in. diam washer through the center hole. Furring channels are friction fitted into clips.
STUDCO BUILDING SYSTEMS — RESILMOUNT Sound Isolation Clips - Type A237 or A237R

6D. **Steel Framing Members* —** (Optional, Not Shown) — Furring channels and Steel Framing Members as described below:
a. **Furring Channels —** Formed of No. 25 MSG galv steel, spaced 24 in. OC, and perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and secured in place with a double strand of No. 18 AWG twisted steel wire. Gypsum board attached to furring channels as described in Item 3.

b. **Steel Framing Members* —** Used to attach furring channels (Item 6Da) to studs. Clips spaced 48 in. OC, and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.
REGUPOL AMERICA — Type SonusClip

6E. **Steel Framing Members* —** (Optional, Not Shown) — Resilient channels and Steel Framing Members as described below:
a. **Resilient Channels —** Formed of No. 25 MSG galv steel, spaced 24 in. OC, and perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and secured in place with two No. 8 15 x 1/2 in. Phillips Modified Truss screws spaced 2-1/2 in. from the center of the overlap. Gypsum board attached to resilient channels as described in Item 3.

b. **Steel Framing Members* —** Used to attach resilient channels (Item 6Ea) to studs. Clips spaced 48 in. OC, and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Resilient channels are secured to clips with one No. 10 x 1/2 in. pan-head self-drilling screw.
KEENE BUILDING PRODUCTS CO INC - Type RC+ Assurance Clip

6F. **Steel Framing Members* —** (Optional, Not Shown) — Furring channels and Steel Framing Members as described below:
a. **Furring Channels —** Formed of No. 25 MSG galv steel. 2-23/32 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Gypsum board attached to furring channels as described in Item 3.

b. **Steel Framing Members* —** Used to attach furring channels (Item 6Fa) to studs. Clips spaced 48 in. OC. Clips secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. Furring channels are friction fitted into clips.
CLARKDIETRICH BUILDING SYSTEMS — Type ClarkDietrich Sound Clip

6G. **Steel Framing Members* —** (Optional, Not Shown) — Used as an alternate method to attach resilient channels to wall studs. A resilient sound isolation accessory shall be used at each attachment point of the resilient channels and spaced max 16 in. O.C. Channel ends butted and centered under the structural members and attached with one accessory at each end. Additional accessories used to hold resilient channels that support the gypsum board end joints. The accessory envelops the mounting edge of the resilient channel. The accessory and resilient channel are fastened to the structural members with the screws supplied with the accessory and per the accessory manufacturer's installation instructions.
PAC INTERNATIONAL L L C — Type RC-1 Boost

7. **Furring Channel —** Optional — Not Shown — For use on one side of the wall - Resilient channels, 25 MSG galv steel, spaced vertically 24 in. OC, flange portion screw attached to one side of studs with 1-1/4 in. long diamond shaped point, double lead Phillips head steel screws. When resilient channels are used, insulation, Items 5C or 5D is required.

8. **Caulking and Sealants —** (Not Shown, Optional) — A bead of acoustical sealant applied around the partition perimeter for sound control.

9. **STC Rating —** The STC Rating of the wall assembly is 56 when it is constructed as described by Items 1 through 6, except:

A. Item 2, above — Nailheads Shall be covered with joint compound.

B. Item 2, above — Joints As described, shall be covered with fiber tape and joint compound.

C. Item 5, above — Batts and Blankets* The cavities formed by the studs shall be friction fit with R-19 unfaced fiberglass insulation batts measuring 6-1/4 in. thick and 15-1/4 in. wide.

D. Item 6, above — Steel Framing Members* Type RSIC-1 clips shall be used to attach gypsum board to studs on either side of the wall assembly.

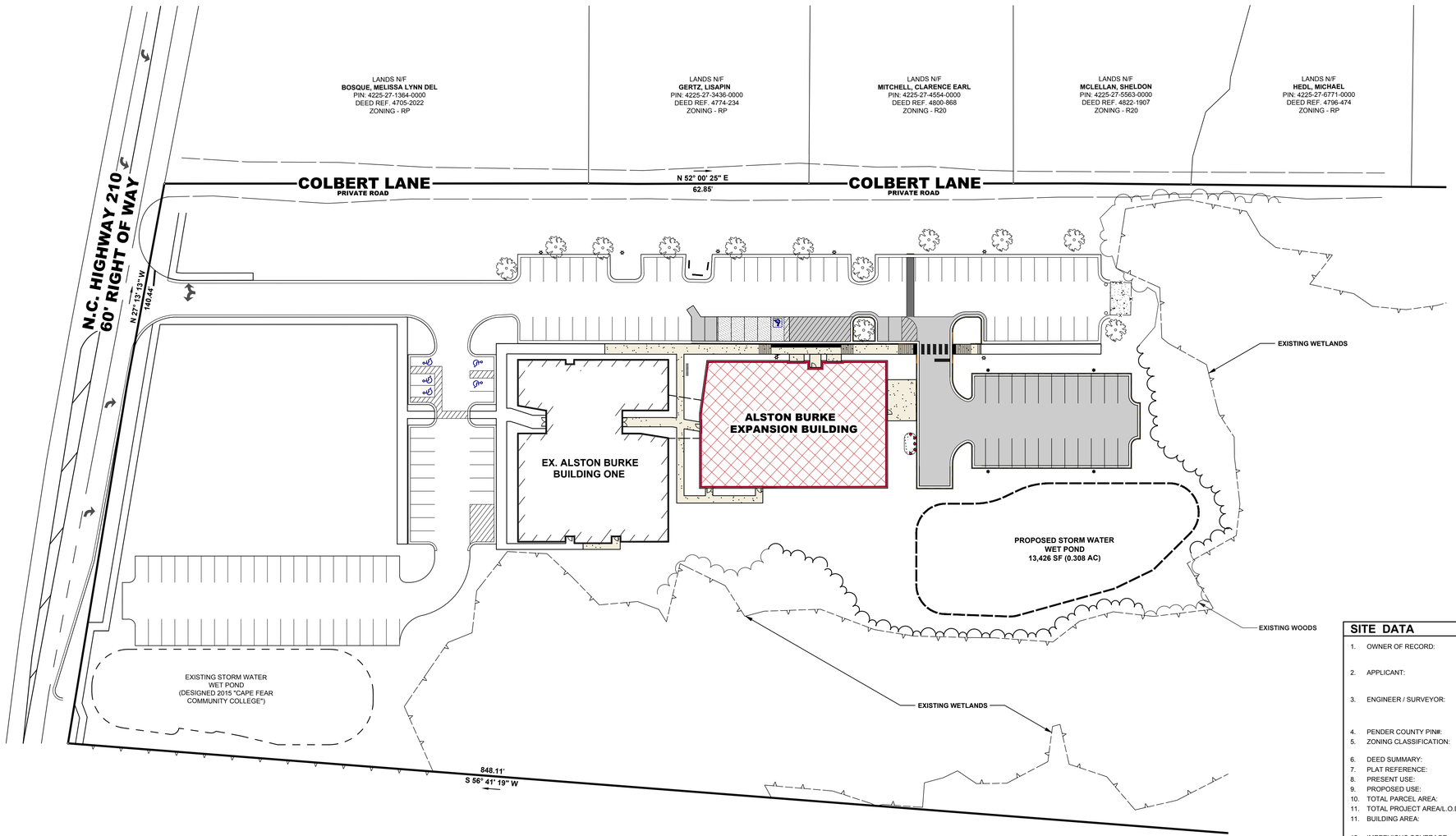
E. Item 8, above — Caulking and Sealants (Not Shown) A bead of acoustical sealant shall be applied around the partition perimeter for sound control.

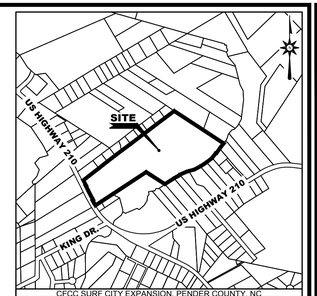
F. Steel Corner Fasteners (Item 4), Fiber, Sprayed (Items 5A and 5B) and Steel Framing Members (Item 6A), not evaluated as alternatives for obtaining STC rating.

10. **Wall and Partition Facings and Accessories* —** (Optional, Not Shown) — Nominal 1/2 in. thick, 4 ft wide panels, for optional use as an additional layer on one or both sides of the assembly. Panels attached in accordance with manufacturer's recommendations. When the QR-500 or QR-510 panel is installed between the wood framing and the UL Classified gypsum board, the required UL Classified gypsum board layer(s) is/are to be installed as indicated as to fastener type and spacing, except that the required fastener length shall be increased by a minimum of 1/2 in. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board.
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock QR-500 and QR-510

11. **Cementitious Backer Units* —** (Optional Item Not Shown — For Use On Face Of 1 Hr Systems With All Standard Items Required) - 7/16 in., 1/2 in., 5/8 in., 3/4 in. or 1 in. thick, min. 32 in. wide. Applied vertically or horizontally with vertical joints centered over studs. Fastened to studs and runners with cement board screws of adequate length to penetrate stud by a minimum of 3/8 in. for steel framing members, and a minimum of 3/4 in. for wood framing members spaced a max of 8 in. OC. When 4 ft. wide boards are used, horizontal joints need not be backed by framing.
NATIONAL GYPSUM CO — Type DuraBacker, PermaBase, DuraBacker Plus, or PermaBase Plus

12. **Non-Bearing Wall Partition Intersection —** (Optional) —Two nominal 2 by 4 in. studs or nominal 2 by 6 in. studs nailed together with two 3 in. long 10d nails spaced a max. 16 in. OC, vertically and fastened to one side of the minimum 2 by 4 in. stud with 3 in. long 10d nails spaced a max. 16 in. OC. vertically. Intersection between partition wood studs to be flush with the 2 by 4 in. studs. The wall partition wood studs are to be framed by with a second 2 by 4 in. wood stud fastened with 3 in. long 10d nails spaced a max.





CFCC SURF CITY EXPANSION, PENDER COUNTY, NC

VICINITY MAP SCALE: 1" = 1000'

SITE DATA

1.	OWNER OF RECORD:	CAPE FEAR COMMUNITY COLLEGE TRUSTEES 411 NORTH FRONT STREET WILMINGTON NC 28401
2.	APPLICANT:	CAPE FEAR COMMUNITY COLLEGE 411 NORTH FRONT STREET WILMINGTON NC 28401
3.	ENGINEER / SURVEYOR:	BECKER MORGAN GROUP INC. 3333 JAECKLE DR #120 WILMINGTON, NC 28403 (910) 341-7600
4.	PENDER COUNTY PIN#:	4225-37-1501-0000
5.	ZONING CLASSIFICATION:	EXISTING: O&I - OFFICE & INSTITUTIONAL (SURF CITY) PROPOSED: O&I - OFFICE & INSTITUTIONAL (SURF CITY)
6.	DEED SUMMARY:	BOOK 3497 PAGE 0245
7.	PLAT REFERENCE:	00550006
8.	PRESENT USE:	CIVIC/INSTITUTIONAL
9.	PROPOSED USE:	CIVIC/INSTITUTIONAL
10.	TOTAL PARCEL AREA:	25.02 ACRES
11.	TOTAL PROJECT AREA/L.O.D.:	2.21 ACRES
11.	BUILDING AREA:	PROPOSED BUILDING: 11,000 S.F. EXISTING BUILDING: 12,000 S.F.
12.	IMPERVIOUS COVERAGE:	EXISTING: 71,472 S.F. (1.641 ACRES) PROPOSED: 94,905 S.F. (2.179 ACRES)
13.	PARKING CALCULATIONS:	EDUCATIONAL FACILITIES: 1 SPACE PER 5 STUDENTS REQUIRED: (359 STUDENTS / 5 SPACES) = 72 SPACES EXISTING: 132 PARKING SPACES PROVIDED: 153 PARKING SPACES EXISTING HANDICAP: 5 PARKING SPACES PROVIDED HANDICAP: 6 PARKING SPACES
14.	SETBACKS:	O&I - OFFICE & INSTITUTIONAL FRONT: 25 FT. SIDE: 10 FT. REAR: 25 FT.
15.	BUILDING HEIGHT:	PERMITTED: 48 FT. PROPOSED: 18 FT.
16.	SOURCE OF WATER:	SURF CITY UTILITIES
17.	SOURCE OF SEWER:	SURF CITY UTILITIES
18.	SOURCE OF GAS:	PIEDMONT NATURAL GAS
19.	SOURCE OF ELECTRIC:	DUKE ENERGY

OWNERS CERTIFICATION

WE, CAPE FEAR COMMUNITY COLLEGE, HEREBY CERTIFY THAT WE ARE THE OWNER OF THE PROPERTY DESCRIBED AND SHOWN ON THIS PLAN, THAT THE PLAN WAS MADE AT OUR DIRECTION, AND THAT WE ACKNOWLEDGE THE SAME TO BE OUR ACT AND DESIRE THE PLAN TO BE DEVELOPED AS SHOWN IN ACCORDANCE WITH ALL APPLICABLE LAWS AND REGULATIONS.

SIGNATURE — 02/20/2025 DATE

ENGINEERS CERTIFICATION

I, J. MICHAEL RIEMANN, HEREBY CERTIFY THAT I AM A REGISTERED ENGINEER IN THE STATE OF NORTH CAROLINA, THAT THE INFORMATION SHOWN HEREON HAS BEEN PREPARED UNDER MY SUPERVISION AND TO MY BEST KNOWLEDGE AND BELIEF REPRESENTS GOOD ENGINEERING PRACTICES AS REQUIRED BY THE APPLICABLE LAWS OF THE STATE OF NORTH CAROLINA.

NORTH CAROLINA PROFESSIONAL SEAL 049463 ENGINEER J. MICHAEL RIEMANN

J. MICHAEL RIEMANN — P.E. NO. 13772 — 02/20/2025 DATE

GENERAL NOTES:

1. TOPOGRAPHIC SURVEY DATA SHOWN HEREON WAS PREPARED BY CAPE FEAR SURVEYING IN AUGUST 2024. VERTICAL DATUM IS NAVD88.
2. THE EXISTING UTILITIES SHOWN WERE TAKEN FROM THE BEST AVAILABLE RECORDS. THE CONTRACTOR SHALL CONTACT NORTH CAROLINA 811 (1-800-632-4949) TO VERIFY THEIR EXACT LOCATION PRIOR TO THE START OF ANY CONSTRUCTION. ANY DAMAGE INCURRED TO ANY UTILITIES SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTORS EXPENSE. IF THE CONTRACTOR RELIES ON THE UTILITY LOCATIONS SHOWN HEREON, HE DOES SO AT HIS OWN RISK AND WILL NOT BE ENTITLED TO ADDITIONAL COMPENSATION DUE TO TIME DELAYS FROM SAID RELIANCE.
3. THIS AREA OF DEVELOPMENT IS NOT IMPACTED BY THE 100 YEAR FLOOD PLAN AS SHOWN ON FIRM #3720422500J, EFFECTIVE 02/26/2007.
4. A JURISDICTIONAL DETERMINATION OF THE WETLANDS, FILE NO. SAW-2008-02350 DATED 08/14/13 WAS PERFORMED BY THE US ARMY CORPS OF ENGINEERS AND DETERMINED THAT THE WETLANDS LOCATED ON SITE ARE WITHIN THEIR JURISDICTION.
5. ALL ROADS, PARKING AND OTHER PAVED AREAS WILL BE PRIVATELY OWNED AND MAINTAINED AND ARE NOT INTENDED FOR DEDICATION.
6. NORTH CAROLINA REGULATIONS PROHIBIT THE BURIAL OF CONSTRUCTION DEMOLITION DEBRIS, INCLUDING TREES AND STUMPS ON CONSTRUCTION SITES. ANY SOLID WASTE FOUND DURING EXCAVATION MUST BE REMOVED AND PROPERLY DISCARDED.
7. ALL HANDICAPPED PARKING DEMARCATION, STALLS, AND BUILDING ACCESSIBLE ROUTES SHALL COMPLY WITH THE "AMERICAN WITH DISABILITIES ACT" OF 1990.
8. THIS DRAWING DOES NOT INCLUDE NECESSARY COMPONENT FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE "OCCUPATIONAL SAFETY AND HEALTH ACT" OF 1970 AND ALL RULES AND REGULATIONS THERETO APPURTENANT.
9. BEFORE THE CONTRACTOR CAN BEGIN CONSTRUCTION THEY MUST OBTAIN THE PROPER PERMITS AND/OR APPROVALS FROM THE TOWN OF SURF CITY, NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY (NCDEQ) AND APPROPRIATE STATE AGENCIES.
10. ALL CONSTRUCTION METHODS AND MATERIALS SHALL BE ACCORDING TO THE TOWN OF SURF CITY, STATE OF NORTH CAROLINA AND ANY OTHER APPLICABLE STATE AND LOCAL CODES.
11. CONTRACOTR TO TAKE CARE DURING FINAL GRADING TO ENSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS AND TO RECEIVING STRUCTURES.
12. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF ANY RELOCATIONS, REALIGNMENTS, DISCONNECTIONS, OR CONNECTION OF EXISTING UTILITIES WITH APPLICABLE AUTHORITIES.
13. CLEARING AND GRUBBING OF SITE TO INCLUDE REMOVAL OF EXISTING CURB, ASPHALT, INLETS, AND ANY OTHER STRUCTURES INCLUDING PRESS, STUMPS AND DEBRIS EXISTING ON SITE. TRESS NOT REQUIRED TO BE CLEARED FOR CONSTRUCTION SHALL REMAIN UNLESS OTHERWISE DIRECTED.
14. CONTRACTOR AND BUILDER ARE RESPONSIBLE FOR COORDINATING FINISHED FLOOR ELEVATIONS OF ALL BUILDINGS WITH THE OWNER.

SHEET INDEX

CONSTRUCTION PLANS

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C-001 COVER SHEET & OVERALL LAYOUT
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C-101 BOUNDARY & EXISTING CONDITIONS PLAN
SITE PLANS
C-201 SITE PLAN
UTILITY PLANS
C-301 UTILITIES PLAN
GRADING PLANS
C-401 GRADING PLAN
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C-901 CONSTRUCTION DETAILS
C-902 CONSTRUCTION DETAILS
C-903 CONSTRUCTION DETAILS
LANDSCAPE PLANS
L-101 LANDSCAPE PLAN

EROSION, SEDIMENT CONTROL & STORMWATER PLANS

EROSION & SEDIMENT CONTROL PLANS
C-500 EROSION & SEDIMENT CONTROL COVER SHEET
C-501 PRE-CONSTRUCTION EROSION & SEDIMENT CONTROL PLAN
C-501EC PRE-CONSTRUCTION EROSION & SEDIMENT CONTROL DRAINAGE PLAN
C-502 POST-CONSTRUCTION EROSION & SEDIMENT CONTROL PLAN
C-502EC POST-CONSTRUCTION EROSION & SEDIMENT CONTROL DRAINAGE PLAN
C-503 POST CONSTRUCTION STROWMATER MANGAEMENT PLAN - WET POND
C-504 EROSION & SEDIMENT CONTROL DETAILS
STORMWATER MANAGEMENT PLANS
SWM-PRE PRE-DEVELOPED STORMWATER DRAINAGE AREA PLAN
SWM-POST POST-DEVELOPED STORMWATER DRAINAGE AREA PLAN

LEGEND

ITEM	EXISTING	PROPOSED	ITEM	EXISTING	PROPOSED
CONCRETE CURB & GUTTER			SANITARY GRAVITY SEWER LINE (**S**) SIZE & FLOW DIRECTION	EX. 10"S	10" S
CONCRETE SIDEWALK, SLAB / PAVING			SANITARY SEWER FORCE MAIN (**F.M.**) SIZE & FLOW DIRECTION	EX. 10" F.M.	12" F.M.
IMPERVIOUS SURFACED ROAD, DRIVE OR PARKING LOT			SANITARY SEWER MANHOLE (**S.S.M.H.**)		
INDIVIDUAL TREE OR BUSH	EVERGREEN DECIDUOUS	N/A	SANITARY SEWER CLEANOUT (**C.O.**)		
WIRE FENCE			WATER MAIN & SIZE	EX. 10" W	12" W
CHAINLINK FENCE			FIRE HYDRANT (**F.H.**)	F.H.	F.H.
STOCKADE FENCE			WATER VALVE (**W.V.**) OR METER (**W.M.**)	W.M. W.V.	W.M. W.V.
STRUCTURE (CONCRETE, WOOD, METAL, ETC.)			STORM DRAIN MANHOLE (**S.D.M.H.**)		
DRAINAGE DITCH OR SWALE			STORM DRAIN LINE (**CMP**, **RCP**, **HDPE**)		
WETLAND BOUNDARY LINE		N/A	CATCH BASIN (**C.B.**)		
CONTOUR	49	55	UTILITY POLE W/ OVERHEAD SERVICE (TELEPHONE (**O.T.**), ELECTRIC (**O.E.**)		
ELEVATION SPOT SHOT	43.55	25.50 T.C. 25.00 B.C.	UNDERGROUND ELECTRIC (**U.E.**)	U.E.	U.E.
BENCH MARK		25.15 N/A	UNDERGROUND TELEPHONE (**U.T.**)	U.T.	U.T.
PROPERTY OR RIGHT-OF-WAY LINE			UNDERGROUND GAS MAIN (**G**)	EX. 2" G	2" G
CENTERLINE					
LIGHT POLE					

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NC License #: C-4743

2-20-2025

PROJECT TITLE

CFCC SURF CITY ALSTON BURKE ADDITION

621 STATE HWY 210 E
HAMPSTEAD
PENDER COUNTY, NC

SHEET TITLE

COVER SHEET

0 20 40 80

SCALE: 1" = 40'

ISSUE BLOCK		
2	2/20/25	AGENCY SUBMISSION
1	12/13/24	AGENCY SUBMISSION
MARK	DATE	DESCRIPTION

LAYER/STATE: C-001

PROJECT NO.:	2024077.00
DATE:	08/07/2024
SCALE:	1" = 40'
DRAWN BY: J.P.G.	PROJ. MGR.: T.H.M.S.

SHEET

C-001

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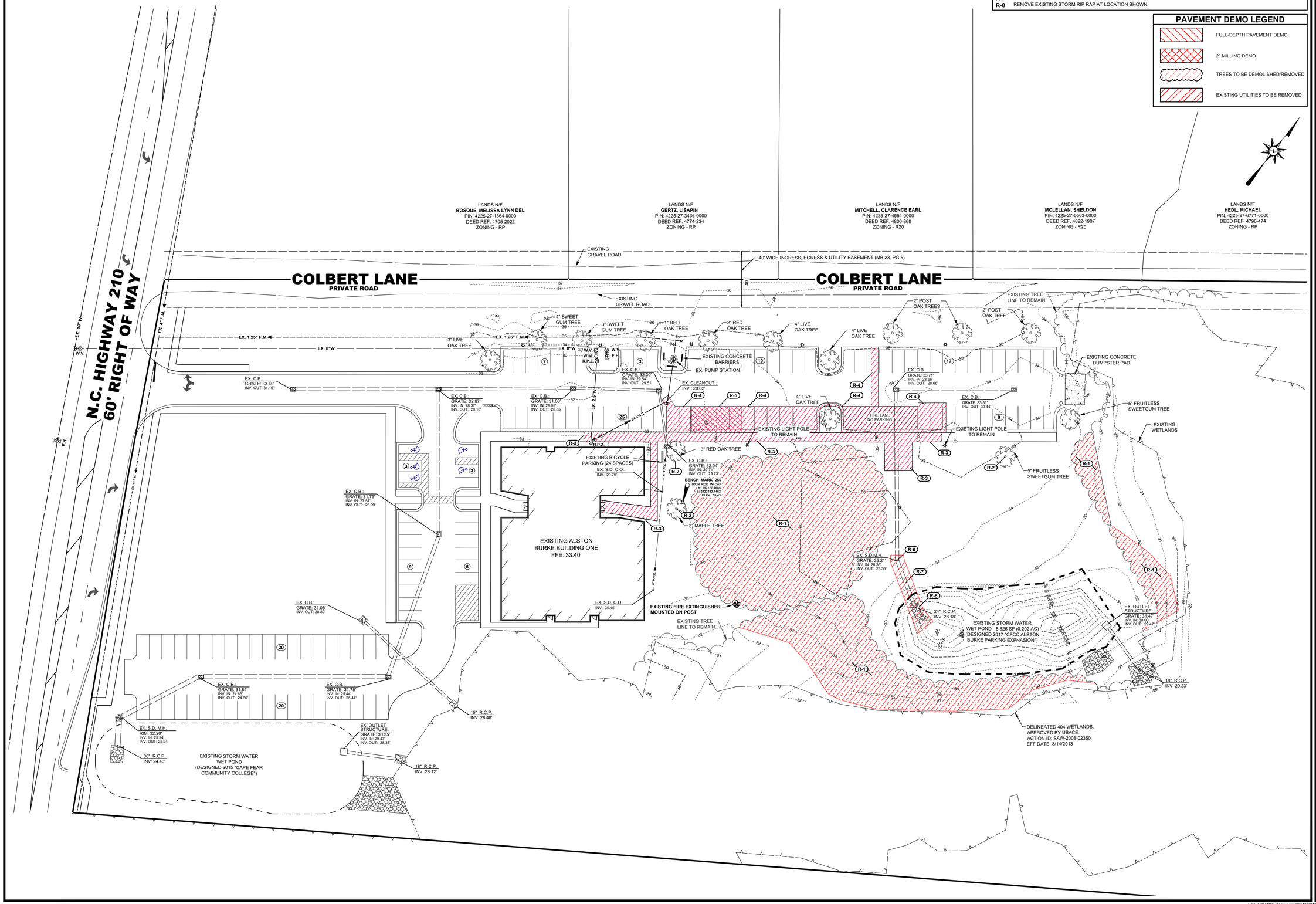
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DEMOLITION CONSTRUCTION NOTES

R-1	CLEAR EXISTING TREE LINE TO LIMITS SHOWN. LIMITS NECESSARY ONLY FOR CONSTRUCTION. SEE SHEET C-201 FOR LIMITS.
R-2	REMOVE EXISTING TREES AT LOCATIONS SHOWN.
R-3	REMOVE EXISTING SIDEWALK AT LOCATIONS SHOWN. SEE SHEET C-201 FOR NEW SIDEWALK LOCATIONS.
R-4	PROPOSED FULL DEPTH PAVEMENT DEMOLITION/REMOVAL.
R-5	PROPOSED PAVEMENT MILLING FOR OVERLAY PREP.
R-6	REMOVE EXISTING STORMDRAIN MANHOLE AT LOCATION SHOWN.
R-7	REMOVE EXISTING STORMDRAIN RCP PIPE AT LOCATION SHOWN.
R-8	REMOVE EXISTING STORM RIP RAP AT LOCATION SHOWN.

PAVEMENT DEMO LEGEND

- FULL-DEPTH PAVEMENT DEMO
- 2" MILLING DEMO
- TREES TO BE DEMOLISHED/REMOVED
- EXISTING UTILITIES TO BE REMOVED



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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049463 MICHAEL RIEMANN

2-20-2025

PROJECT TITLE

CFCC SURF CITY ALSTON BURKE ADDITION

621 STATE HWY 210 E
HAMPSTEAD
PENDER COUNTY, NC

SHEET TITLE

EXISTING CONDITIONS / DEMOLITION PLAN

SCALE: 1" = 30'

ISSUE BLOCK		
2	2/20/25	AGENCY SUBMISSION
1	12/13/24	AGENCY SUBMISSION
MARK	DATE	DESCRIPTION

LAYER STATE: C-101

PROJECT NO.:	2024077.00
DATE:	08/07/2024
SCALE:	1" = 30'
DRAWN BY: J.P.G.	PROJ. MGR.: T.H.M.S.

SHEET

C-101

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LANDS N/F
BOSQUE, MELISSA LYNN DEL
PIN: 4225-27-1364-0000
DEED REF. 4705-2022
ZONING - RP

LANDS N/F
GERTZ, LISAPIN
PIN: 4225-27-3436-0000
DEED REF. 4774-234
ZONING - RP

LANDS N/F
MITCHELL, CLARENCE EARL
PIN: 4225-27-4554-0000
DEED REF. 4800-868
ZONING - R20

LANDS N/F
MCLELLAN, SHELDON
PIN: 4225-27-5563-0000
DEED REF. 4822-1907
ZONING - R20

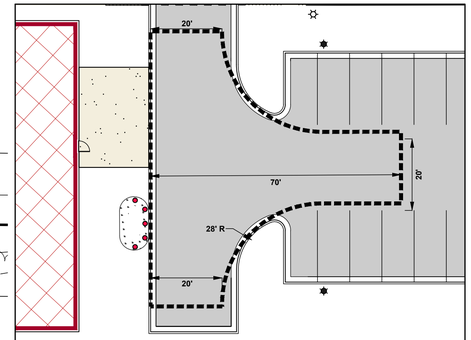
EXISTING GRAVEL ROAD

40' WIDE INGRESS, EGRESS & UTILITY EASEMENT (MB 23, PG 5)

COLBERT LANE
PRIVATE ROAD

EXISTING GRAVEL ROAD

EXISTING TREE LINE



FIRE APPARATUS ACCESS ROAD DETAIL SCALE: 1" = 20'

3" LIVE OAK TREE
4" SWEET GUM TREE
3" SWEET GUM TREE
1" RED OAK TREE
2" RED OAK TREE
4" LIVE OAK TREE
4" LIVE OAK TREE
2" POST OAK TREES
2" POST OAK TREE
4" LIVE OAK TREE
5" FRUITLESS SWEETGUM TREE

EXISTING BICYCLE PARKING TO REMAIN (24 SPACES)

BENCH MARK 250
IRON ROD W/ CAP
N: 257277.9685'
E: 2422483.7462'
ELEV.: 33.43'

ALSTON BURKE EXPANSION BUILDING
11,000 S.F.
FFE 34.00'

EXISTING ALSTON BURKE BUILDING ONE
FFE: 33.40'

DELINEATED 404 WETLANDS. APPROVED BY USACE. ACTION ID: SAW-2008-02350 EFF DATE: 8/14/2013

PROPOSED TREE LINE

PROPOSED STORM WATER WET POND
13,426 SF (0.308 AC)
SEE SHEET C-503 FOR WET POND DETAILS

EXISTING TREE LINE

EXISTING WETLANDS

PROPOSED TREE LINE

GENERAL CONSTRUCTION NOTES

G-1	INSTALL 6" CURB & REVERSE PAN GUTTER. SEE DETAIL ON SHEET C-902.
G-2	INSTALL 4" THICK CONCRETE SIDEWALK, MATCH EXISTING WIDTH. SEE CONCRETE SIDEWALK DETAIL ON SHEET C-901.
G-3	INSTALL FULL DEPTH BITUMINOUS PAVEMENT. SEE SHEET C-901 FOR PAVEMENT DETAIL.
G-4	PROPOSED DEPRESSED CURB. SEE CURB TAPER DETAIL ON SHEET C-901.
G-5	PROPOSED ACCESSIBLE RAMP. PROPOSED ACCESSIBLE RAMP DETAIL ON SHEET C-901.
G-6	PROPOSED BUILDING, SEE ARCHITECTURE PLANS.
G-7	TIE INTO EXISTING CURB. CONTRACTOR TO TRANSISTION FROM PROPOSED TO EXISTING CURB AND GUTTER AT EXISTING GRADE. SEE SHEET C-401 FOR GRADING.
G-8	CONCRETE CURB TRANSITION, FROM TOP OF STAIR TO BOTTOM OF LANDING AT MAX 4:1 SLOPE OF CONCRETE & TOPSOIL.
G-9	PROPOSED CONCRETE PAD, SEE SHEET C-901 FOR CONCRETE PAD DETAIL.
G-10	PROPOSED OVERHEAD DOOR, SEE ARCHITECTURE PLANS.
G-11	PROPOSED TREELINE LIMITS.
G-12	PROPOSED OVERLAY PAVEMENT, PLACE TO PROPOSED GRADE AND ENSURE POSITIVE DRAINAGE TOWARDS STORM CATCH BASINS. SEE SHEET C-401 FOR GRADING PLAN AND C-901 FOR PAVEMENT DETAIL.
G-13	PROPOSED SIDEWALK STEPS, SEE SHEET C-401 FOR GRADING PLAN.
G-14	PROPOSED SIDEWALK CANOPY, SEE ARCHITECTURE PLANS FOR DETAIL.
G-15	PROPOSED LANDSCAPE ZONE FOR PROPANE TANK.
G-16	PROPOSED 6" UPRIGHT CURB. SEE DETAIL ON SHEET C-902.
G-17	INSTALL 6" CURB AND GUTTER. SEE DETAIL ON SHEET C-902.
G-18	CONTRACTOR TO TRANSITION REGULAR GUTTER TO REVERSE PAN GUTTER.
G-19	INSTALL TRENCH REPAIR PAVEMENT. SEE DETAIL ON SHEET C-903.
G-20	CONTRACTOR TO REPLACE SIDEWALK AND ENSURE GRADES MEET ADA COMPLIANCE AND HAVE POSITIVE DRAINAGE AWAY FROM EXISTING BUILDING.
G-21	CONTRACTOR TO REPLACE EXISTING CURB AND GUTTER ENSURE POSITIVE DRAINAGE TOWARDS STORM CATCH BASINS.

STRIPING & SIGNAGE CONSTRUCTION NOTES

T-1	PROPOSED PAINTED PARKING SPACE STRIPING - 4" WIDE SOLID WHITE LINE (typ.).
T-2	PROPOSED THERMO HANDICAP ACCESSIBLE SYMBOL - 4" WIDE SOLID HANDICAPPED BLUE LINE (TYP.). SEE ACCESSIBLE THERMO SYMBOL DETAIL ON SHEET C-901.
T-3	PROPOSED PAINTED STRAIGHT LINE AND 45° CROSS-HATCH STRIPING - 4" WIDE SOLID BLUE LINE (TYP.)
T-4	PROPOSED ACCESSIBLE PARKING SIGN (TYP.). SEE ACCESSIBLE PARKING SIGN DETAIL ON SHEET C-901.
T-5	PROPOSED THERMO PEDESTRIAN CROSSWALK. SEE PEDESTRIAN CROSSWALK DETAIL ON SHEET C-901.
T-6	PROPOSED WHITE THERMO STOP BAR - 24" WIDE, PER NCDOT STANDARD.

PAVEMENT SECTIONS LEGEND

PROPOSED FULL DEPTH TRENCH REPAIR PAVEMENT (SEE SHEET C-901 FOR PAVEMENT SECTION)

PROPOSED FULL DEPTH REPLACEMENT PAVEMENT (SEE SHEET C-901 FOR PAVEMENT SECTION)

PROPOSED OVERLAY REPLACE PAVEMENT (SEE SHEET C-901 FOR PAVEMENT SECTION)

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049463 J. MICHAEL RIEMANN
2-20-2025

PROJECT TITLE

CFCC SURF CITY ALSTON BURKE ADDITION

621 STATE HWY 210 E
HAMPSTEAD
PENDER COUNTY, NC

SHEET TITLE

SITE PLAN (BASE BID)

0 10 20 40
SCALE: 1" = 20'

ISSUE BLOCK

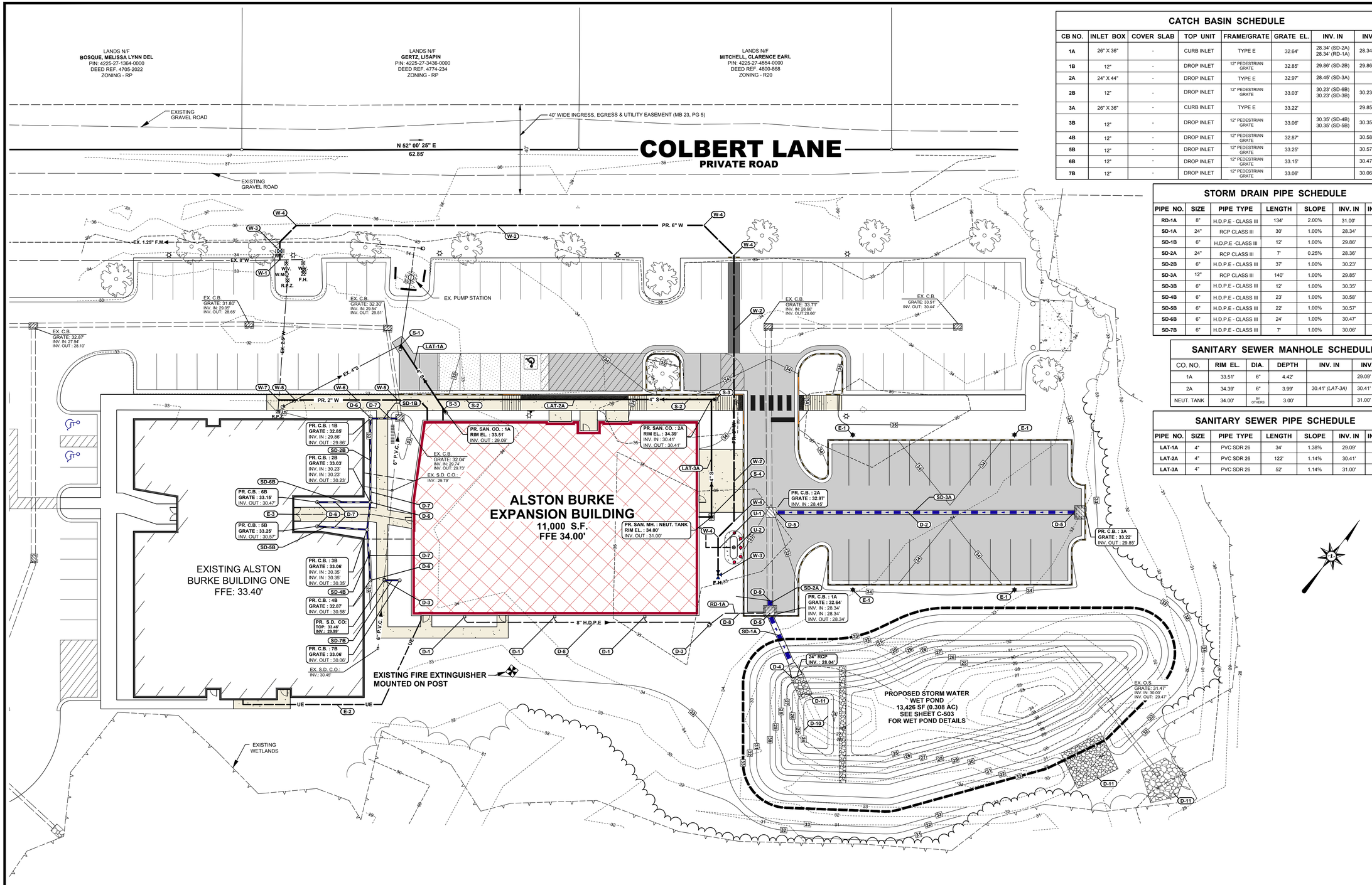
MARK	DATE	DESCRIPTION
2	2/20/25	AGENCY SUBMISSION
1	12/13/24	AGENCY SUBMISSION

LAYER STATE: C-201

PROJECT NO.:	**2024077.00**
DATE:	**08/07/2024**
SCALE:	**1" = 20'**
DRAWN BY:	**J.P.G.** PROJ. MGR.: **T.H.M.S.**

SHEET
C-201

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CATCH BASIN SCHEDULE

CB NO.	INLET BOX	COVER SLAB	TOP UNIT	FRAME/GRATE	GRATE EL.	INV. IN	INV. OUT
1A	26" X 36"	-	CURB INLET	TYPE E	32.64'	28.34' (SD-2A) 28.34' (RD-1A)	28.34' *(SD-1A)*
1B	12"	-	DROP INLET	12" PEDESTRIAN GRATE	32.85'	29.86' (SD-2B)	29.86' *(SD-1B)*
2A	24" X 44"	-	DROP INLET	TYPE E	32.97'	28.45' (SD-3A)	
2B	12"	-	DROP INLET	12" PEDESTRIAN GRATE	33.03'	30.23' (SD-6B) 30.23' (SD-3B)	30.23' *(SD-2B)*
3A	26" X 36"	-	CURB INLET	TYPE E	33.22'		29.85' *(SD-3A)*
3B	12"	-	DROP INLET	12" PEDESTRIAN GRATE	33.06'	30.35' (SD-4B) 30.35' (SD-5B)	30.35' *(SD-3B)*
4B	12"	-	DROP INLET	12" PEDESTRIAN GRATE	32.87'		30.58' *(SD-4B)*
5B	12"	-	DROP INLET	12" PEDESTRIAN GRATE	33.25'		30.57' *(SD-5B)*
6B	12"	-	DROP INLET	12" PEDESTRIAN GRATE	33.15'		30.47' *(SD-6B)*
7B	12"	-	DROP INLET	12" PEDESTRIAN GRATE	33.06'		30.06' *(SD-7B)*

STORM DRAIN PIPE SCHEDULE

PIPE NO.	SIZE	PIPE TYPE	LENGTH	SLOPE	INV. IN	INV. OUT
RD-1A	8"	H.D.P.E - CLASS III	134'	2.00%	31.00'	28.34'
SD-1A	24"	RCP CLASS III	30'	1.00%	28.34'	28.04'
SD-1B	6"	H.D.P.E -CLASS III	12'	1.00%	29.86'	29.74'
SD-2A	24"	RCP CLASS III	7'	0.25%	28.36'	28.34'
SD-2B	6"	H.D.P.E - CLASS III	37'	1.00%	30.23'	29.86'
SD-3A	12"	RCP CLASS III	140'	1.00%	29.85'	28.45'
SD-3B	6"	H.D.P.E - CLASS III	12'	1.00%	30.35'	30.23'
SD-4B	6"	H.D.P.E - CLASS III	23'	1.00%	30.58'	30.35'
SD-5B	6"	H.D.P.E - CLASS III	22'	1.00%	30.57'	30.35'
SD-6B	6"	H.D.P.E - CLASS III	24'	1.00%	30.47'	30.23'
SD-7B	6"	H.D.P.E - CLASS III	7'	1.00%	30.06'	29.99'

SANITARY SEWER MANHOLE SCHEDULE

CO. NO.	RIM EL.	DIA.	DEPTH	INV. IN	INV. OUT
1A	33.51'	6"	4.42'		29.09' *(LAT-1A)*
2A	34.39'	6"	3.99'	30.41' *(LAT-3A)*	30.41' *(LAT-2A)*
NEUT. TANK	34.00'	BY OTHERS	3.00'		31.00' *(LAT-3A)*

SANITARY SEWER PIPE SCHEDULE

PIPE NO.	SIZE	PIPE TYPE	LENGTH	SLOPE	INV. IN	INV. OUT
LAT-1A	4"	PVC SDR 26	34'	1.38%	29.09'	28.62'
LAT-2A	4"	PVC SDR 26	122'	1.14%	30.41'	29.02'
LAT-3A	4"	PVC SDR 26	52'	1.14%	31.00'	30.41'

STORM DRAIN CONSTRUCTION NOTES

- **D-1** PROPOSED EXTERNAL DOWNSPOUT BY MEP. SEE MEP DRAWINGS FOR DETAILS AND FINAL LOCATIONS.
- **D-2** INSTALL RCP STORM DRAIN PIPE AT LOCATIONS SHOWN. PIPE IS TO BE CLASS III, WALL B WITH BELL & SPIGOT ENDS AND GASKETED JOINTS, WITH RUBBER GASKETS, PER ASTM C443. SEE UTILITY SCHEDULE FOR DETAIL.
- **D-3** INSTALL PVC STORM DRAIN CLEANOUT. CLEANOUT SHOULD BE INSTALLED AT ALL MAJOR BENDS AND AT A MINIMUM OF EVERY 100 FT. SEE ARCHITECTURE PLANS FOR DETAILS (TYP.)
- **D-4** INSTALL FLARED END SECTION AT PIPE TERMINATION. SIZE TO MATCH PIPE. SEE UTILITY SCHEDULE FOR SIZE AND MATERIAL.
- **D-5** INSTALL PRECAST CONCRETE STORM CATCH BASIN PER ASTM C476 AT LOCATIONS AND INVERTS SHOWN, SEE THIS SHEET FOR UTILITY SCHEDULE DETAILS.
- **D-6** PROPOSED 12" YARD INLET, SEE DETAIL ON SHEET C-901. SEE UTILITIY SCHEDULE ON THIS PAGE FOR INVERTS, SIZE, AND MATERIAL.
- **D-7** INSTALL 6" PVC STORM DRAIN PIPE, PER ASTM 5679, T-1 WALL THICKNESS, WITH BELL & SPIGOT ENDS AND WITH INTEGRAL ELASTOMERIC SEALS FOR GASKETED JOINTS, PER ASTM F477.
- **D-8** INSTALL 8" HDPE ROOF LEADER PIPE AT LOCATIONS SHOWN.
- **D-9** PROPOSED STORM DRAIN PIPE EXTENSION, CONTRACTOR TO CONNECT PROPOSED STORM DRAIN PIPE AT EXISTING 24" RCP PIPE INVERT AND MATCH EXISTING PIPE SLOPE TO PROPOSED CATCH BASIN (CB-1A). CONTRACTOR TO USE APPRORITATE JOINT/SEALANT CONNECTION BETWEEN EXISTING AND PROPOSED STORM DRAIN PIPE. SEE UTILITY SCHEDULE FOR DETAIL ON THIS SHEET.
- **D-10** CONSTRUCT WET POND PER DETAILS AND SEQUENCE SHOWN ON SHEET C-503.
- **D-11** INSTALL RIP-RAP OUTLET PROTECTION SEE PAGE C-505 FOR DETAILS.

GENERAL NOTES:

1. EXISTING OUTFALL STRUCTURE. PIPES, AND RIP-RAP OUTLET PROTECTION TO REMAIN FOR PROPOSED POND MODIFICATIONS.
2. CONTRACTOR TO PROVIDE APPROPRIATE VERTICAL AND HORIZONTAL UTILITY SEPARATIONS PER CITY SPECIFICATIONS.

SANITARY SEWER CONSTRUCTION NOTES

- **S-1** TIE PROPOSED 4" PVC SDR 26 SANITRAY SEWER LATERAL AT THE INVERT SHOWN AND PROVIDE CLEANOUT. CONTRACTOR TO PROVIDE WATERTIGHT SEAL.
- **S-2** INSTALL 4" PVC SDR 26 GRAVITY SANITARY SEWER LATERAL, PER ASTM F679, T-1 WALL THICKNESS WITH BELL AND SPIGOT ENDS AND WITH INTEGRAL ELASTOMERIC SEALS FOR GASKETED JOINTS, PER ASTM F477. SEE SCU DETAIL SEWER 1 ON SHEET C-902. SEE UTILITY SCHEDULE ON THIS SHEET FOR DETAIL.
- **S-3** INSTALL PVC SANITARY SEWER CLEANOUT. CONTRACTOR TO INSTALL CLEANOUTS AT ALL BENDS. SEE SCU DETAIL SEWER 13 ON SHEET C-902.
- **S-4** PROPOSED POLYETHYLENE NEUTRALIZATION TANK. SEE SHEET C-902 FOR DETAIL PROVIDED BY MEP AND SEE MEP PLANS FOR FULL DESIGN.

WATER CONSTRUCTION NOTES

- **W-1** CONTRACTOR TO CONNECT PROPOSED 6" PVC AWWA C900, CLASS 150 DOMESTIC WATER SERVICE LINE TO EXISTING 8" SERVICE LINE USING 8" X 6" TAPPING SLEEVE AND VALVE PER SURF CITY UTILITIES (SCU) WATER STANDARDS & SPECIFICATION. SEE SCU TAPPING SLEEVE DETAIL WATER-3 ON C-902.
- **W-2** INSTALL 6" PVC FIRE WATER PIPE, COMMERCIAL STANDARD C5 256, ASTM D1784, ASTM D2241, C900 DR 18 PIPE PER SCU STANDARDS.
- **W-3** INSTALL FIRE HYDRANT, 6" GATE VALVE WITH VALVE BOX AT THE LOCATIONS SHOWN HEREON (TYP.) SEE SCU STANDARD FIRE HYDRANT DETAIL WATER-5 ON SHEET C-902. LOCATION PER LOCAL FIRE MARSHALL JURISDICTION.
- **W-4** CONTRACTOR TO INSTALL 11.25°, 22.5°, OR 45° FITTINGS AT WATER MAIN BENDS PER SCU STANDARDS.
- **W-5** DEPRESS PROPOSED WATER MAIN USING FUSED HDPE 45° VERTICAL BENDS IN ORDER TO MAINTAIN 18" VERTICAL SEPARATION BETWEEN SANITARY SEWER, STORM DRAIN AND OTHER UTILITIES AT ALL CROSSINGS, IN ACCORDANCE WITH SURF CITY UTILITIES STANDARDS.
- **W-6** INSTALL 2" POLYETHYLENE, SDR 9 DOMESTIC WATER SERVICE CONNECTION PER SCU STANDARDS AND SPECIFICATIONS.
- **W-7** CONTRACTOR TO CONNECT PROPOSED 2" POLYETHYLENE, SDR 9 DOMESTIC WATER SERVICE TO EXISTING 2.5" SERVICE LINE USING 2" X 2.5" TAPPING SLEEVE AND CORPORATION STOP PER SCU STANDARD AND SPECIFICATIONS.

GAS CONSTRUCTION NOTES

- **U-1** PROPOSED NATURAL GAS SERVICE. ALIGNMENT SHOWN FOR REFERENCE ONLY. PIEDMONT NATURAL GAS SHALL BE RESPONSIBLE FOR INSTALLATION UP TO AND INCLUDING THE METER. SITE CONTRACTOR SHALL COORDINATE WITH PIEDMONT NATURAL GAS FOR EXACT SERVICE ALIGNMENT.
- **U-2** PROPOSED 500 GALLON PROPANE TANK. (SHOWN FOR REFERNCE ONLY, FINAL DESIGN TO BE COMPLETED BY APPROPRIATE PIEDMONT NATURAL GAS COMPANY.)

ELECTRIC CONSTRUCTION NOTES

- **E-1** PROPOSED LIGHT POLE. SEE ELECTRICAL PLANS FOR DETAIL. (TYP.)
- **E-2** PRIMARY ELECTRIC SERVICE PROVIDED BY DUKE ELECTRIC. ALIGNMENT SHOWN FOR REFERENCE PURPOSES ONLY. SEE ELECTRICAL PLANS FOR ADDITIONAL NOTES, DETAIL AND SPECIFICATIONS.
- **E-3** PROPOSED TELEPHONE CONDUIT. SEE ELECTRICAL PLANS FOR DETAIL.

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NC License #: C-4743

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049463 MICHAEL RIEMANN

2-20-2025

PROJECT TITLE

CFCC SURF CITY ALSTON BURKE ADDITION

621 STATE HWY 210 E
HAMPSTEAD
PENDER COUNTY, NC

SHEET TITLE

UTILITY PLAN

0 10 20 40

SCALE: 1" = 20'

ISSUE BLOCK

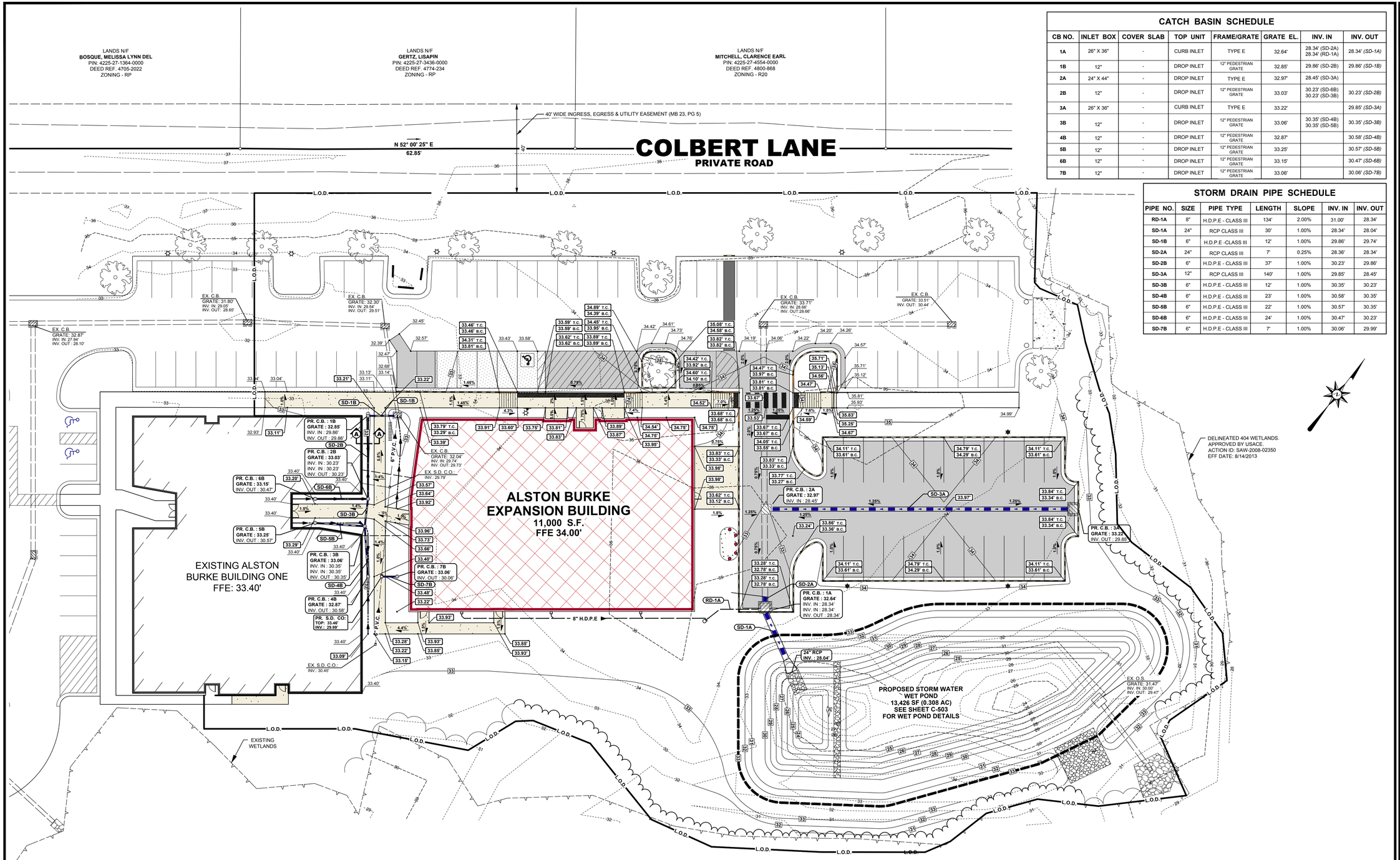
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2	2/20/25	AGENCY SUBMISSION
1	12/13/24	AGENCY SUBMISSION

LAYER STATE: C-301

PROJECT NO.: 2024077.00
DATE: 08/07/2024
SCALE: 1" = 20'
DRAWN BY: J.P.G. PROJ. MGR.: T.H.M.S.

SHEET
C-301

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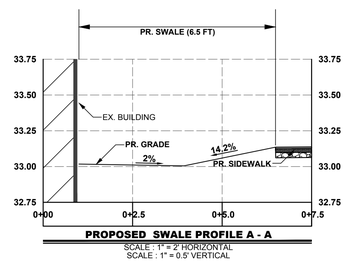


CATCH BASIN SCHEDULE

CB NO.	INLET BOX	COVER SLAB	TOP UNIT	FRAME/GRATE	GRATE EL.	INV. IN	INV. OUT
1A	26" X 36"	-	CURB INLET	TYPE E	32.64'	28.34' (SD-2A) 28.34' (RD-1A)	28.34' *(SD-1A)*
1B	12"	-	DROP INLET	12" PEDESTRIAN GRATE	32.85'	29.86' (SD-2B)	29.86' *(SD-1B)*
2A	24" X 44"	-	DROP INLET	TYPE E	32.97'	28.45' (SD-3A)	
2B	12"	-	DROP INLET	12" PEDESTRIAN GRATE	33.03'	30.23' (SD-6B) 30.23' (SD-3B)	30.23' *(SD-2B)*
3A	26" X 36"	-	CURB INLET	TYPE E	33.22'		29.85' *(SD-3A)*
3B	12"	-	DROP INLET	12" PEDESTRIAN GRATE	33.06'	30.35' (SD-4B) 30.35' (SD-5B)	30.35' *(SD-3B)*
4B	12"	-	DROP INLET	12" PEDESTRIAN GRATE	32.87'		30.58' *(SD-4B)*
5B	12"	-	DROP INLET	12" PEDESTRIAN GRATE	33.25'		30.57' *(SD-5B)*
6B	12"	-	DROP INLET	12" PEDESTRIAN GRATE	33.15'		30.47' *(SD-6B)*
7B	12"	-	DROP INLET	12" PEDESTRIAN GRATE	33.06'		30.06' *(SD-7B)*

STORM DRAIN PIPE SCHEDULE

PIPE NO.	SIZE	PIPE TYPE	LENGTH	SLOPE	INV. IN	INV. OUT
RD-1A	8"	H.D.P.E - CLASS III	134'	2.00%	31.00'	28.34'
SD-1A	24"	RCP CLASS III	30'	1.00%	28.34'	28.04'
SD-1B	6"	H.D.P.E -CLASS III	12'	1.00%	29.86'	29.74'
SD-2A	24"	RCP CLASS III	7'	0.25%	28.36'	28.34'
SD-2B	6"	H.D.P.E - CLASS III	37'	1.00%	30.23'	29.86'
SD-3A	12"	RCP CLASS III	140'	1.00%	29.85'	28.45'
SD-3B	6"	H.D.P.E - CLASS III	12'	1.00%	30.35'	30.23'
SD-4B	6"	H.D.P.E - CLASS III	23'	1.00%	30.58'	30.35'
SD-5B	6"	H.D.P.E - CLASS III	22'	1.00%	30.57'	30.35'
SD-6B	6"	H.D.P.E - CLASS III	24'	1.00%	30.47'	30.23'
SD-7B	6"	H.D.P.E - CLASS III	7'	1.00%	30.06'	29.99'



PROPOSED SWALE PROFILE A - A
SCALE : 1" = 2' HORIZONTAL
SCALE : 1" = 0.5' VERTICAL

GRADING NOTES:

1. CONTRACTOR TO ENSURE POSITIVE DRAINAGE AWAY FROM ALL BUILDING STRUCTURES AND ENSURE PROPOSED PAVEMENT DRAINS TO APPROPRIATE STORM DRAINAGE MEASURE.
2. CONTRACTOR TO VERIFY ALL EXISTING SPOT ELEVATIONS PROVIDE ON THIS PLAN PRIOR TO CONSTRUCTION. SHOULD DISCREPANCIES ARISE, CONTRACTOR TO IMMEDIATELY CONTACT ENGINEER.

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SHEET TITLE

GRADING PLAN

0 10 20 40

SCALE: 1" = 20'

ISSUE BLOCK		
2	2/20/25	AGENCY SUBMISSION
1	12/13/24	AGENCY SUBMISSION
MARK	DATE	DESCRIPTION

LAYER STATE: CMD

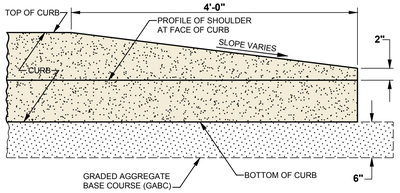
PROJECT NO.:	2024077.00
DATE:	08/07/2024
SCALE:	1" = 20'
DRAWN BY: J.P.G.	PROJ. MGR.: T.H.M.S.

SHEET

C-401

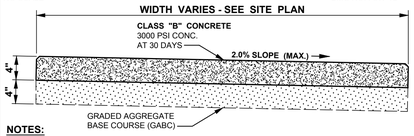
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F:\AutoCADCivil\Projects\2024\2024077.00\DWG\2024077-SITE-C3D21-NC.dwg, Feb 19, 2025 - 10:43am



CURB TAPER DETAIL

NO SCALE BMG NO. : SW-1L

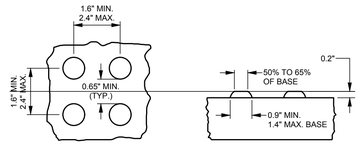


NOTES:

1. MARK IN 4' SQUARES, USE PREMOLDED EXPANSION JOINTS AT INTERVALS NOT GREATER THAN 16'
2. CONCRETE SIDEWALKS SHALL BE CONSTRUCTED AS PER SPECIFICATIONS.

CONCRETE SIDEWALK DETAIL

NO SCALE BMG NO.: SW-03C



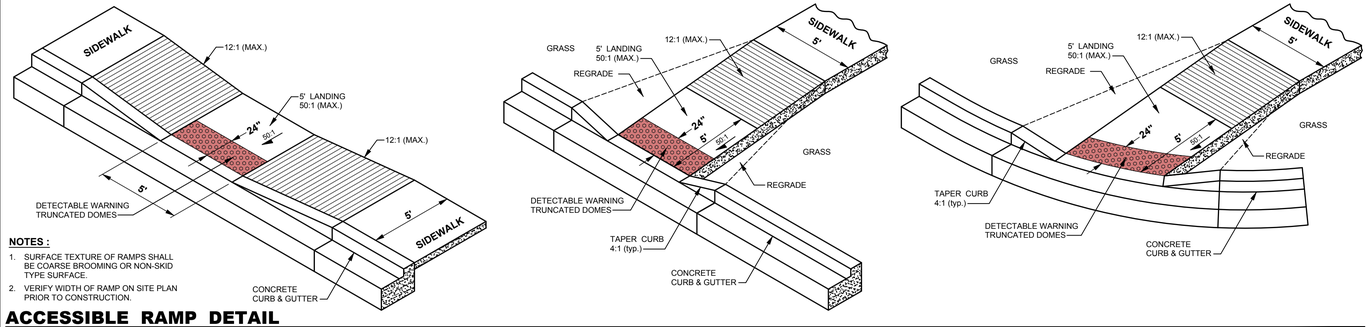
DETECTABLE WARNINGS - TRUNCATED DOME

NOTES :

PER CURRENT ADAAG:

1. PRIOR TO INSTALLATION VERIFY MATERIALS AND COLORS WITH LOCAL AGENCIES.
2. THE AREA OF DETECTABLE WARNING TRUNCATED DOMES SHALL BE 2'-0" LONG AND THE FULL WIDTH OF THE RAMP OR DEPRESSED CURB.
3. DETECTABLE WARNINGS MUST HAVE A LIGHT-TO-DARK CONTRAST WITH THE SIDEWALK MATERIAL.
4. LIGHT REFLECTANCE VALUE CONTRAST MUST BE AT LEAST 70%.
5. THE COLOR OF DETECTABLE WARNINGS TO BE USED FOR SIDEWALK MATERIAL IS AS FOLLOWS:

SIDEWALK / CURB RAMP MATERIAL	DETECTABLE WARNING SYSTEM COLOR
CONCRETE	BROWN CONCRETE, DARK GRAY, BRIGHT RED, ORANGE (BRICK) RED OR BLACK

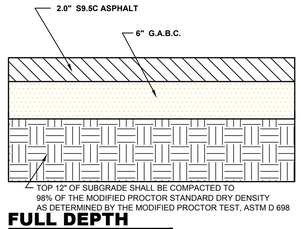


NOTES :

1. SURFACE TEXTURE OF RAMPS SHALL BE COARSE BROOMING OR NON-SKID TYPE SURFACE.
2. VERIFY WIDTH OF RAMP ON SITE PLAN PRIOR TO CONSTRUCTION.

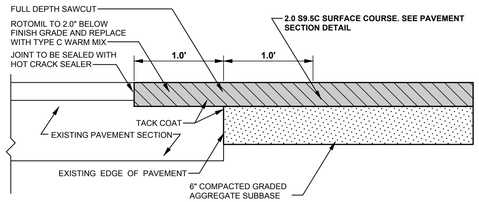
ACCESSIBLE RAMP DETAIL

NO SCALE BMG NO.: SW-04A1



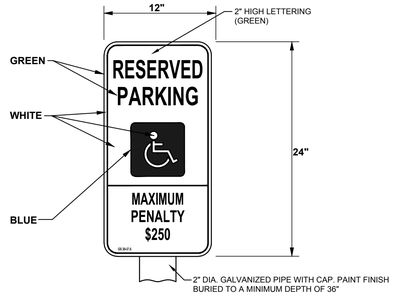
FULL DEPTH PAVEMENT SECTION DETAIL

NO SCALE BMG NO. : SW-2A



PAVEMENT TIE-IN SECTION

NO SCALE BMG NO.: SW-2DA

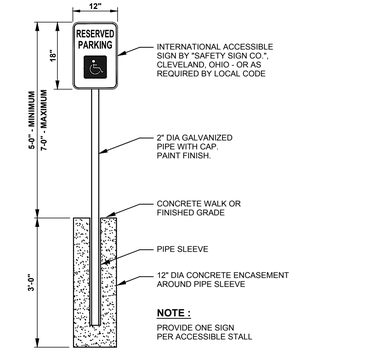


NOTES:

1. THE BOTTOM EDGE OF SIGN SHALL BE A MINIMUM OF 5.0' AND A MAXIMUM OF 7.0' ABOVE FINISHED GRADE. CONTRACTOR SHALL INSTALL ONE SIGN PER ACCESSIBLE PARKING SPACE. SIGNS ARE TO BE CENTERED ON STALL WIDTH, FACING PARKING.
2. THE SIGN BE INACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS AS DEFINED BY THE CURRENT AMERICANS WITH DISABILITIES ACT (ADA) REGULATIONS.

ACCESSIBLE PARKING SIGN DETAIL

NO SCALE BMG NO. : SW-4C-2

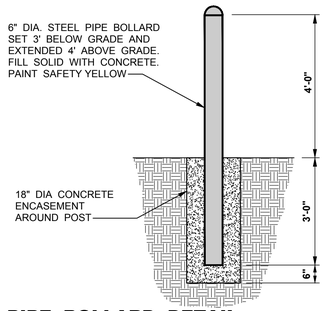


NOTE :

PROVIDE ONE SIGN PER ACCESSIBLE STALL

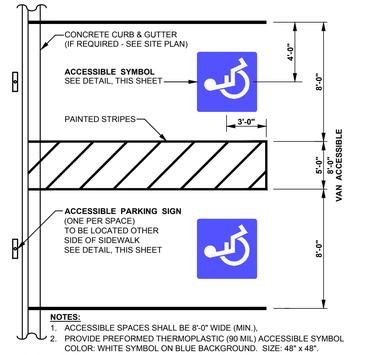
ACCESSIBLE PARKING SIGN & POLE

NO SCALE BMG NO. : SW-4D



PIPE BOLLARD DETAIL

NO SCALE BMG NO. : SW-9A



NOTES:

1. ACCESSIBLE SPACES SHALL BE 8'-0" WIDE (MIN.).
2. PROVIDE PREFORMED THERMOPLASTIC (90 MIL) ACCESSIBLE SYMBOL COLOR: WHITE SYMBOL ON BLUE BACKGROUND. SIZE: 48" x 48".

ACCESSIBLE PARKING SPACE PLAN

NO SCALE BMG NO.: SW-4B1

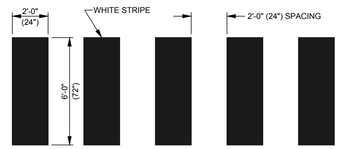


NOTE:

1. PROVIDE PREFORMED THERMOPLASTIC (90 MIL) ACCESSIBLE SYMBOL COLOR: WHITE SYMBOL ON BLUE BACKGROUND. SIZE: 48" X 48".

ACCESSIBLE THERMO SYMBOL

NO SCALE BMG NO.: SW-4E-2

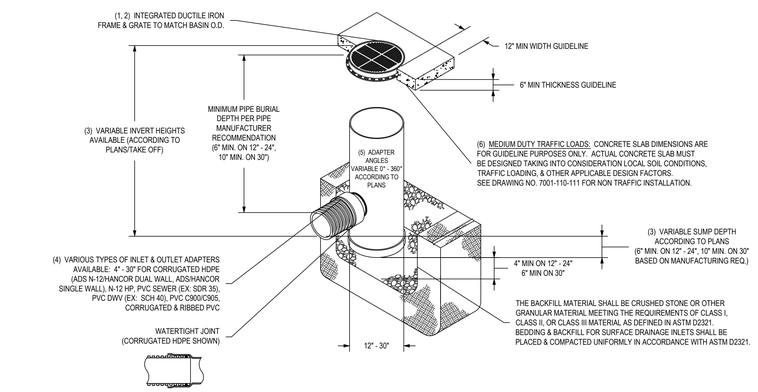


STRIPING OF CROSSWALK SHALL BE THERMO

PEDESTRIAN CROSSWALK DETAIL

NO SCALE BMG NO. : TS-03

DRAIN BASIN WITH PEDESTRIAN GRATE



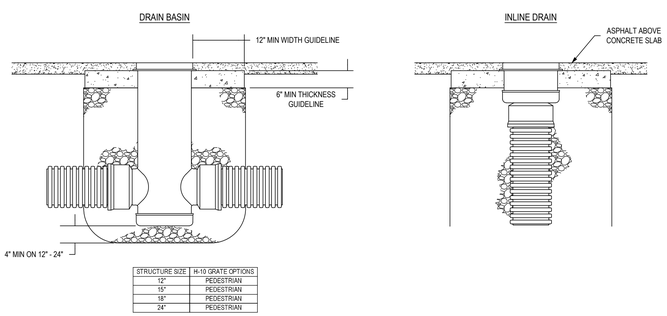
1 - 12" - 30" PEDESTRIAN GRATES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
2 - 12" - 30" FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
3 - DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001-110-065.
4 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP, & PVC SEWER (4" - 24").
5 - ADAPTERS CAN BE MOUNTED 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.
6 - 12" - 24" PEDESTRIAN GRATES SHALL MEET H-10 LOAD RATING, 30" PEDESTRIAN GRATE SHALL MEET H-20 LOAD RATING (SEE DRAWING NO. 7001-110-144 FOR H-20 TRAFFIC LOAD GUIDELINES).

DRAWN BY EBC	MATERIAL	TITLE	
DATE 4-20-07	PVC	DRAIN BASIN WITH PEDESTRIAN GRATE QUICK SPEC INSTALLATION DETAIL	
REVISED BY NMH	PROJECT NO./NAME		
DATE 03-11-16			
DWG SIZE A	SCALE 1:40 SHEET 1 OF 1	DWG NO. 7001-110-283	REV D

DRAIN BASIN WITH PEDESTRIAN GRATE

NO SCALE C-PR-NYLOPLAST-BASIN & PED-GRATE

ASPHALT INSTALLATION



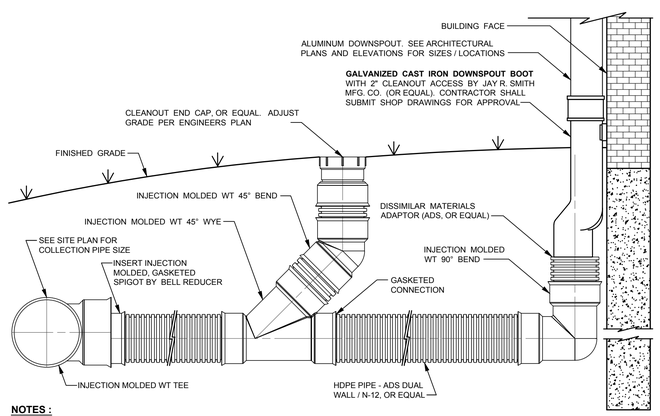
STRUCTURE SIZE	H-10 GRATE OPTIONS
12"	PEDESTRIAN
15"	PEDESTRIAN
18"	PEDESTRIAN
24"	PEDESTRIAN

1 - THE BACKFILL MATERIAL SHALL BE CRUSHED STONE OR OTHER GRANULAR MATERIAL MEETING THE REQUIREMENTS OF CLASS I, CLASS II, OR CLASS III MATERIAL AS DEFINED IN ASTM D2321. BEDDING & BACKFILL FOR SURFACE DRAINAGE INLETS SHALL BE PLACED & COMPACTED UNIFORMLY IN ACCORDANCE WITH ASTM D2321.
2 - MEDIUM DUTY TRAFFIC LOADS: CONCRETE SLAB DIMENSIONS ARE FOR GUIDELINE PURPOSES ONLY. ACTUAL CONCRETE SLAB MUST BE DESIGNED TAKING INTO CONSIDERATION LOCAL SOIL CONDITIONS, TRAFFIC LOADING, & OTHER APPLICABLE DESIGN FACTORS.

DRAWN BY EBC	MATERIAL	TITLE	
DATE 03-14-10		DRAIN BASIN & INLINE DRAIN (H-10 TRAFFIC LOAD) ASPHALT INSTALLATION DETAIL	
REVISED BY NMH	PROJECT NO./NAME		
DATE 03-14-16			
DWG SIZE A	SCALE 1:25 SHEET 1 OF 1	DWG NO. 7001-110-392	REV D

DRAIN BASIN H-10 (PEDESTRIAN) INSTALLATION DETAIL

NO SCALE C-PR-NYLOPLAST-DRIAN-BASIN-INSTALL



NOTES :

1. **INJECTION MOLDED FITTINGS ARE AVAILABLE IN TEES, WYES, REDUCERS, 45° BENDS AND BELL/BELL COUPLERS.**
2. **ALL JOINTS SHAL BE WATERTIGHT (WT)**
3. **ALL CLEANOUTS SHALL BE 6" MINIMUM**

ROOF DRAIN / DOWNSPOUT WITH 45° WYE CLEANOUT DETAIL

NO SCALE

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SHEET TITLE

CONSTRUCTION DETAILS

0 10 20 40

SCALE: 1" = 20'

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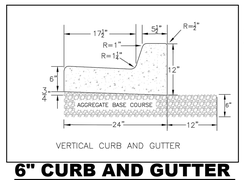
LAYER STATE: C-901

PROJECT NO.:	2024077.00
DATE:	08/07/2024
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DRAWN BY: J.P.G.	PROJ. MGR.: T.H.M.S.

SHEET

C-901

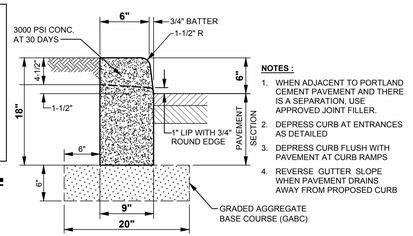
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VERTICAL CURB AND GUTTER

6" CURB AND GUTTER

NO SCALE

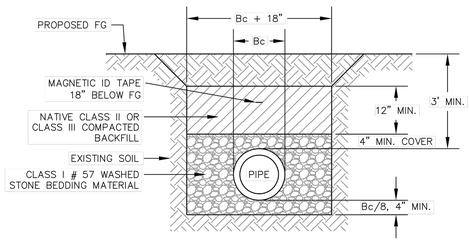


NOTES :

1. WHEN ADJACENT TO PORTLAND CEMENT PAVEMENT AND THERE IS A SEPARATION, USE APPROVED JOINT FILLER.
2. DEPRESS CURB AT ENTRANCES AS DETAILED
3. DEPRESS CURB FLUSH WITH PAVEMENT AT CURB RAMPS
4. REVERSE GUTTER SLOPE WHEN PAVEMENT DRAINS AWAY FROM PROPOSED CURB

6" VERTICAL CURB

NO SCALE BMG NO.: SW-011-A



NOTES:

1. USE FOR ALL GRAVITY SEWER PVC PIPE.
2. USE SUITABLE TAMP RODS TO ENSURE BEDDING IS THOROUGHLY TAMPED UNDER THE PIPE HAUNCHES.
3. Bc = DIAMETER OF PIPE BARREL.

CLASS B BEDDING FOR GRAVITY SEWER DETAIL

SCALE: *NOT TO SCALE* 1 SEWER

DEFINITIONS

CLASS I: CRUSHED STONE CONFORMING TO N.C.D.O.T. #57.

CLASS II: COARSE SANDS AND GRAVELS WITH MAXIMUM PARTICLE SIZE OF 40 MM (1-1/2 IN.), INCLUDING VARIOUSLY GRADED SANDS AND GRAVELS CONTAINING SMALL PERCENTAGES OF FINES, GENERALLY GRANULAR AND NON-COHESIVE, EITHER WET OR DRY. CLASS II MATERIALS ARE DEFINED AS SOIL TYPES GW, GP, SW, AND SP.

CLASS III: FINE SAND AND CLAYEY GRAVELS, INCLUDING FINE SANDS, SAND-CLAY MIXTURES AND GRAVEL-CLAY MIXTURES. CLASS III MATERIALS ARE DEFINED AS SOIL TYPES GM, GC, SM, AND SC.

BACKFILLING AT SIDES OF PIPE: BACKFILL BY HAND OR ACCEPTABLE MECHANICAL MEANS FROM THE TOP OF THE BEDDING TO THE CROWN OF THE PIPE USING NATIVE CLASS II OR CLASS III MATERIALS. LAYERS OF BACKFILL MATERIAL SHALL BE PLACED IN EVEN LIFTS ON BOTH SIDES OF THE PIPE. DO NOT MOVE, INJURE, OR DISTURB THE PIPE. INSURE THAT UNIFORM SIDE SUPPORT IS PROVIDED THROUGHOUT THE LENGTH OF PIPE. USE ONLY HAND TAMPING FOR COMPACTION.

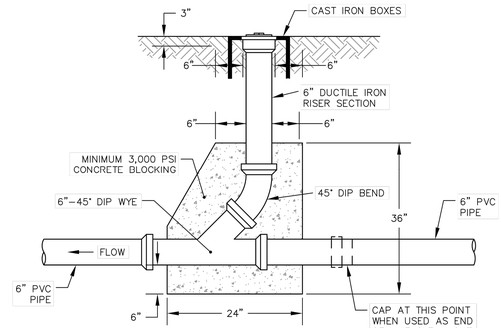
BACKFILLING OVER THE PIPE: BACKFILL WITH CLASS II AND CLASS III MATERIAL FROM TOP OF PIPE OR TOP OF BEDDING TO A MINIMUM DEPTH OF 12" ABOVE THE CROWN OF THE PIPE PROVIDING SUFFICIENT CARE TO PREVENT INJURING OR MOVING THE PIPE. PLACE BACKFILL IN EVEN LAYERS AND COMPACT TO SPECIFIED DENSITY BY HAND OR APPROVED MECHANICAL MEANS.

BACKFILLING TO GRADE: BACKFILL AND COMPACT FROM 12" ABOVE THE CROWN OF THE PIPE TO FINISHED GRADE WITH NATIVE SOIL MATERIAL, COMPACTING SAME TO THE DENSITY REQUIRED FOR THE AREA CLASSIFICATION. THE FINISHED GRADE SHALL CONFORM TO ELEVATIONS, SLOPES, AND CONTOURS AS INDICATED ON THE DRAWINGS. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR SETTLEMENT OVER ALL TRENCHES AND HE SHALL BE REQUIRED TO ADD MATERIAL AND COMPACT AS DIRECTED IF SUCH SETTLEMENTS OCCUR.

PIPES AND RELATED APPURTENANCES: BACKFILL AND COMPACT TRENCHES IN UNIFORM LAYERS TO 1' ABOVE THE CROWN OF THE PIPE OR BEDDING TO 90% MAXIMUM DRY DENSITY. BACKFILL FROM 1' ABOVE THE CROWN OF THE PIPE TO FINISH GRADE AS REQUIRED FOR THE AREA CLASSIFICATION OR TO 95% MAXIMUM DRY DENSITY.

BEDDING DEFINITIONS DETAIL

SCALE: *NOT TO SCALE* 4 SEWER

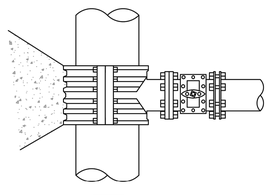


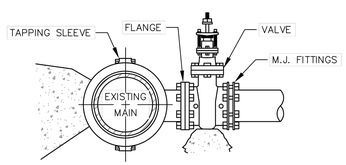
NOTES:

1. CONCRETE COLLAR NOT NEEDED WHEN CLEANOUT OCCURS IN CONCRETE PAVEMENT.
2. DUCTILE IRON PIPE AND FITTINGS TO BE USED IN CONCRETE BLOCKING.

6" SANITARY SEWER CLEANOUT DETAIL

SCALE: *NOT TO SCALE* 13 SEWER



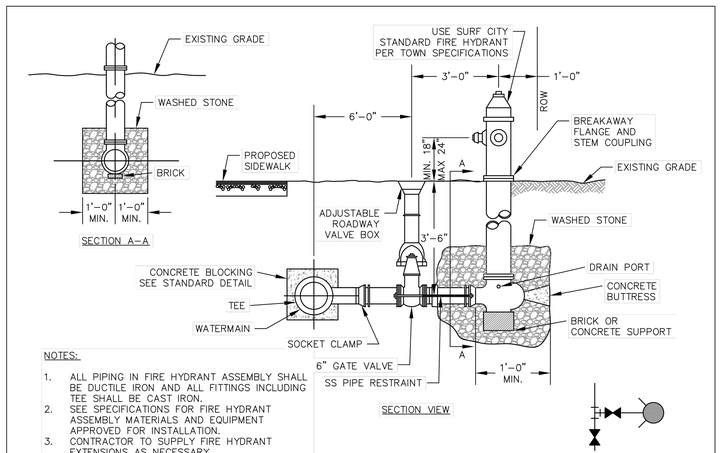


NOTES:

1. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OR MECHANICAL JOINT FITTINGS.
2. SEE STANDARD REACTION BLOCK TABLES FOR AREA OF CONCRETE REQUIRED.
3. SOLID CONCRETE OR BRICK BLOCKING SHALL BE USED AS FOOTING FOR DUCTILE IRON PIPE.
4. PVC PIPE SHALL REQUIRE A 2,500 P.S.I. CONCRETE FOOTING.

4"-12" STANDARD TAPPING SLEEVE AND VALVE ASSEMBLY DETAIL

SCALE: *NOT TO SCALE* 3 WATER



NOTES:

1. ALL PIPING IN FIRE HYDRANT ASSEMBLY SHALL BE DUCTILE IRON AND ALL FITTINGS INCLUDING TEE SHALL BE CAST IRON.
2. SEE SPECIFICATIONS FOR FIRE HYDRANT ASSEMBLY MATERIALS AND EQUIPMENT APPROVED FOR INSTALLATION.
3. CONTRACTOR TO SUPPLY FIRE HYDRANT EXTENSIONS AS NECESSARY.

STANDARD FIRE HYDRANT ASSEMBLY DETAIL

SCALE: *NOT TO SCALE* 5 WATER

SPECIFICATIONS

1. 4" Plain End inlet/outlet, 2" Plain End vents, C24-M cover standard.
2. Liquid holding capacity: 57 Gallons.
3. Unit weight: 93 lbs.
4. Maximum operating temperature 140˚F continuous.

NOTES

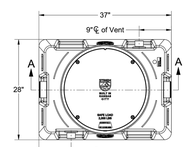
1. For gravity drainage applications only.
2. Do not use for pressure applications.
3. Cover placement allows full access to tank for proper maintenance.
4. Diptube is removable to inspect/clean piping.

ENGINEER SPECIFICATION GUIDE

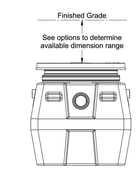
Striem neutralization tank model LB-50 shall be lifetime guaranteed and made in the USA. Tank shall be constructed of polyethylene. Tank shall be manufactured for above- or below-grade installation. Field-adjustable riser system is available as an option to bring manhole cover to grade. Tank liquid holding capacity shall be 57 gallons. Cover shall provide water/gas-tight seal and have a maximum 2,000 lbs. load capacity.

THIRD PARTY STRUCTURAL ANALYSIS

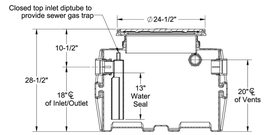
The LB-50 has been structurally analyzed in accordance with the requirements of IBC 2012 and ASCE/SEI 7 for direct burial. The maximum burial depth and backfill material are specified in our installation instructions. The structural design has been reviewed and sealed by a professional engineer registered in the state of California. A sealed structural analysis report is available upon request.



TOP VIEW



END VIEW



SECTION A-A

OPTIONS
Connection Options (Plain End Only)
Inlet / Outlet
☐ 2"
☐ 3"
☐ 4"
Riser Options
From Factory: 0" - 5"
☐ Up to 24": **SR24**
☐ Up to 39": **LR24**
Additional Options
☐ **HDK-2:** High Water Table Hold Down Kit
☐ **C24-H:** Highway Rated Bolted Composite Cover
☐ **CC-1:** Command Center pH Monitoring Package
☐ **SPK:** Sensor Placement Kit*
☐ **Limestone:** 90%+ Calcium Carbonate (650 lbs.)
*Required with CC-1



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MODEL NUMBER:	LB-50	**SPECIFICATION SHEET**	
DESCRIPTION:	LAB BASIN™ POLYETHYLENE NEUTRALIZATION TANK	**Striem** Kansas City, KS Tel: 913-222-1500 orders@striemco.com www.striemco.com Made in the U.S.A	STRIEM
DWG BY: ENG	**DATE:** 5/24/2024	**REV:** 1	

BECKER MORGAN GROUP

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ENGINEERING

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3333 Jaeckle Drive, Suite 120
Wilmington, NC 28403
910.341.7600

www.beckermorgan.com

NC License #: C-4743

NORTH CAROLINA PROFESSIONAL SEAL 049463 ENGINEER MICHAEL RIEMANN

2-20-2025

PROJECT TITLE

CFCC SURF CITY ALSTON BURKE ADDITION

621 STATE HWY 210 E
HAMPSTEAD
PENDER COUNTY, NC

SHEET TITLE

CONSTRUCTION DETAILS

0 10 20 40

SCALE: 1" = 20'

ISSUE BLOCK		
2	2/20/25	AGENCY SUBMISSION
1	12/13/24	AGENCY SUBMISSION
MARK	DATE	DESCRIPTION

LAYER STATE: C-902

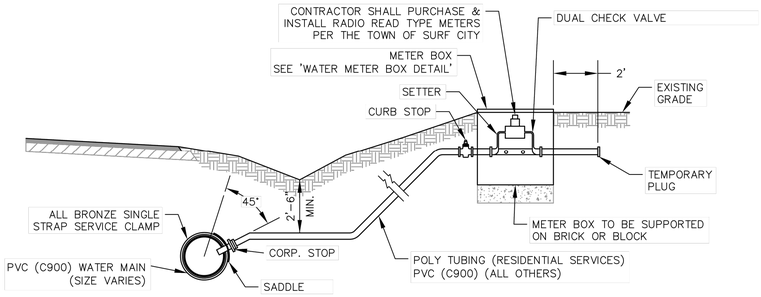
PROJECT NO.:	**2024077.00**
DATE:	**08/07/2024**
SCALE:	**1" = 20'**
DRAWN BY: **J.P.G.**	PROJ. MGR.: **T.H.M.S.**

SHEET

C-902

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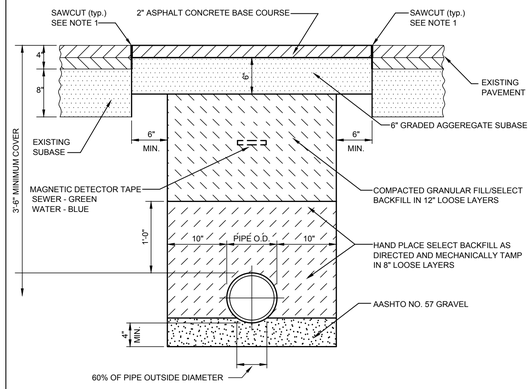
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STANDARD WATER CONNECTION DETAIL AND WATER METER DETAIL

SCALE: *NOT TO SCALE*

2 WATER



NOTE :

1. ALL SURFACE CUTTING SHALL BE IN NEAT STRAIGHT LINES.

BITUMINOUS PAVEMENT - TRENCH REPAIR DETAIL

NO SCALE BMG NO. : SW-5C

BECKER MORGAN GROUP

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ENGINEERING

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www.beckermorgan.com

NC License #: C-4743

NORTH CAROLINA PROFESSIONAL SEAL 049463 ENGINEER J. MICHAEL RIEMANN II

2-20-2025

PROJECT TITLE

CFCC SURF CITY ALSTON BURKE ADDITION

621 STATE HWY 210 E
HAMPSTEAD
PENDER COUNTY, NC

SHEET TITLE

CONSTRUCTION DETAILS

0 10 20 40

SCALE: 1" = 20'

ISSUE BLOCK

MARK	DATE	DESCRIPTION
2	2/20/25	AGENCY SUBMISSION
1	12/13/24	AGENCY SUBMISSION

LAYER STATE: C-903

PROJECT NO.:	**2024077.00**
DATE:	**08/07/2024**
SCALE:	**1" = 20'**
DRAWN BY: **J.P.G.**	PROJ. MGR.: **T.H.M.S.**

SHEET

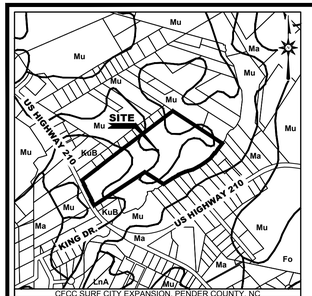
C-903

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CFCC SURF CITY

EROSION & SEDIMENT CONTROL PLANS
WHITE OAK RIVER BASIN
TAX PARCEL:1515-16-0072.000
PENDER COUNTY, NORTH CAROLINA

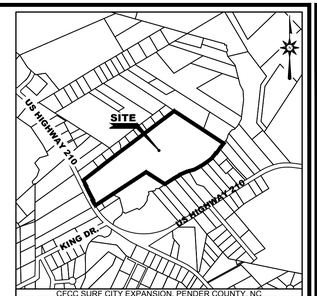


CFCC SURF CITY EXPANSION, PENDER COUNTY, NC

SOIL SURVEY MAP SCALE: 1" = 1000'

SOIL MAP TAKEN FROM "SOIL SURVEY" PENDER COUNTY, NC (NC085)

Mu: MURVILLE MUCK
KuB: KUREB FINE SAND, 2 TO 6 PERCENT SLOPES
Ma: MANDARIAN FINE SAND
LnA: LEON FINE SAND, 0 TO 2 PERCENT SLOPES
Fo: FORESTON LOAMY FINE SAND



CFCC SURF CITY EXPANSION, PENDER COUNTY, NC

VICINITY MAP SCALE: 1" = 1000'

SHEET INDEX: SEDIMENT AND STORMWATER MANAGEMENT PLAN	
SHEET NO.:	**TITLE:**
C-500	COVER SHEET
C-501	PRE-CONSTRUCTION SITE STORMWATER MANAGEMENT PLAN
C-501EC	PRE-CONSTRUCTION SITE EROSION CONTROL DRAINAGE AREA PLAN
C-502	POST CONSTRUCTION SITE STORMWATER MANAGEMENT PLAN
C-502EC	POST CONSTRUCTION SITE EROSION CONTROL DRAINAGE AREA PLAN
C-503	POST CONSTRUCTION SITE STORMWATER MANAGEMENT PLAN - WET POND
C-504	EROSION AND SEDIMENT CONTROL DETAILS
C-505	EROSION AND SEDIMENT CONTROL DETAILS
SWM-PRE	PRE-DEVELOPED DRAINAGE AREA MAP
SWM-POST	POST-DEVELOPED DRAINAGE AREA MAP

EROSION & SEDIMENT CONTROL LEGEND

STABILIZED CONSTRUCTION ENTRANCE — SCE
CONCRETE WASHOUT & MIXING OPERATION — CW — CMO
SILT FENCE — S.F. — S.F.
LIMIT OF DISTURBANCE — L.O.D. — L.O.D.
DIVERSION SWALE CENTERLINE
SILT BAG INLET PROTECTION — SIP
SILT FENCE OUTFALL — SFO
SILT SOCK/ STONE CHECK DAM — SS
WIRE AND ROCK INLET PROTECTION — W&R
ROCK OUTLET INLET PROTECTION — ROP

AREA OF DISTURBANCE

TOTAL: 2.21 ACRES

STABILIZATION AND SEEDING NOTES :

1. PERMANENT SEEDING :
   - A. SHALL BE CONDUCTED YEAR AROUND.
   - B. SEED BED PREPARATION : SHALL BE IN ACCORDANCE WITH NORTH CAROLINA PERMANENT STABILIZATION STANDARDS SEE SHEET C-504 FOR DETAIL.
   - C. SOIL AMENDMENTS : FERTILIZER AND LIME APPLICATION SHALL BE IN ACCORDANCE WITH NORTH CAROLINA STANDARDS, SEE SHEET C-504.
   - D. SEEDING : APPLY PERMANENT SEEDING AS SPECIFIED ON THE LANDSCAPE PLAN. APPLY SEED UNIFORMLY WITH A BROADCAST SEEDER, DRILL, CULTIPACKER SEEDER OR HYDROSEEDER. ALL SEED WILL BE APPLIED AT THE RECOMMENDED RATE AND PLANTING DEPTH, IN ACCORDANCE WITH NORTH CAROLINA STANDARDS C-504
   - E. MULCH : IMMEDIATELY AFTER SEEDING, UNIFORMLY MULCH ENTIRE AREA WITH STRAW AT A RATE OF 2 TONS PER ACRE MINIMUM. ALL MULCHING SHALL BE DONE IN ACCORDANCE WITH NORTH CAROLINA STANDARDS SEE SHEET C-504
   - F. TOPSOIL : ALL AREAS TO BE PERMANENTLY SEEDED SHALL HAVE A MINIMUM OF 6" OF TOPSOIL.
2. TEMPORARY STABILIZATION :
   - A. PROVIDE SEED BED SAME AS 1-B ABOVE.
   - B. APPLY MIX NO. 5 (ANNUAL RYEGRASS) IN ACCORDANCE WITH DETAIL SEE SHEET C-504.
   - C. MULCH SAME AS 1-E ABOVE.
3. IF TEMPORARY STABILIZATION IS REQUIRED, PERMANENT SEEDING SHALL BE PERFORMED AS SOON AS POSSIBLE.
4. ALL FILL SLOPE AREAS SHOWN ON PLAN ARE TO BE STABILIZED AS PER STATEMENT 1 OR 2 ABOVE IMMEDIATELY AFTER COMPLETION OF GRADING OPERATIONS FOR THESE SLOPES.
5. EROSION CONTROL MATTING IS REQUIRED ON ALL SLOPES OF 3:1 OR GREATER.

GENERAL NOTES:

1. TOPOGRAPHIC SURVEY DATA SHOWN HEREON WAS PREPARED BY CAPE FEAR SURVEYING IN AUGUST 2024. VERTICAL DATUM IS NAVD88.
2. THE EXISTING UTILITIES SHOWN WERE TAKEN FROM THE BEST AVAILABLE RECORDS. THE CONTRACTOR SHALL CONTACT NORTH CAROLINA 811 (1-800-632-4949) TO VERIFY THEIR EXACT LOCATION PRIOR TO THE START OF ANY CONSTRUCTION. ANY DAMAGE INCURRED TO ANY UTILITIES SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTORS EXPENSE. IF THE CONTRACTOR RELIES ON THE UTILITY LOCATIONS SHOWN HEREON, HE DOES SO AT HIS OWN RISK AND WILL NOT BE ENTITLED TO ADDITIONAL COMPENSATION DUE TO TIME DELAYS FROM SAID RELIANCE.
3. THIS AREA OF DEVELOPMENT IS NOT IMPACTED BY THE 100 YEAR FLOOD PLAN AS SHOWN ON FIRM #3720422500J.
4. BECKER MORGAN GROUP CERTIFIES THAT THERE ARE NO FRESH WATER WETLANDS LOCATED WITHIN THE IMPROVED AREA.
5. ALL ROADS, PARKING AND OTHER PAVED AREAS WILL BE PRIVATELY OWNED AND MAINTAINED AND ARE NOT INTENDED FOR DEDICATION.
6. NORTH CAROLINA REGULATIONS PROHIBIT THE BURIAL OF CONSTRUCTION DEMOLITION DEBRIS, INCLUDING TREES AND STUMPS ON CONSTRUCTION SITES. ANY SOLID WASTE FOUND DURING EXCAVATION MUST BE REMOVED AND PROPERLY DISCARDED.
7. ALL HANDICAPPED PARKING DEMARCATION, STALLS, AND BUILDING ACCESSIBLE ROUTES SHALL COMPLY WITH THE "AMERICAN WITH DISABILITIES ACT".
8. THIS DRAWING DOES NOT INCLUDE NECESSARY COMPONENT FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND ALL RULES AND REGULATIONS THERETO APPURTENANT.
9. BEFORE THE CONTRACTOR CAN BEGIN CONSTRUCTION THEY MUST OBTAIN THE PROPER PERMITS AND/OR APPROVALS FROM THE TOWN OF SURF CITY, NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY (NCDEQ) AND APPROPRIATE STATE AGENCIES.
10. ALL CONSTRUCTION METHODS AND MATERIALS SHALL BE ACCORDING TO THE TOWN OF SURF CITY, STATE OF NORTH CAROLINA AND ANY OTHER APPLICABLE STATE AND LOCAL CODES.
11. CARE SHALL BE TAKEN DURING FINAL GRADING TO ENSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS AND TO RECEIVING STRUCTURES.
12. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF ANY RELOCATIONS, REALIGNMENTS, DISCONNECTIONS, OR CONNECTION OF EXISTING UTILITIES WITH APPLICABLE AUTHORITIES.
13. CLEARING AND GRUBBING OF SITE TO INCLUDE REMOVAL OF EXISTING CURB, ASPHALT, INLETS, AND ANY OTHER STRUCUTRES INCLUDING RRESS, STUMPS AND DEBRIS EXISTING ON SITE. TRESS NOT REQUIRED TO BE CLEARED FOR CONSTRUCTION SHALL REMAIN UNLESS OTHERWISE DIRECTED.
14. CONTRACTOR TO ENSURE THAT PAVEMENT IS PLACED SO AS TO DRIAN PSOTIVELY TO THE STORM CATCH BASINS.
15. CONTRATOR AND BUILDER ARE RESPOSNBILE FOR COORDIANTING FINISHED FLOOR ELEVATIONS OF ALL BUILDINGS WITH THE OWNER.

SEDIMENT AND STORMWATER: SEQUENCE OF CONSTRUCTION

1. OBTAIN LAND DISTURBING PERMIT FROM NCDEQ DEPARTMENT OF ENVIRONMENTAL QUALITY. OBTAIN ALL CITY, COUNTY, AND STATE PERMITS PRIOR TO THE START OF CONSTRUCTION.
2. PRIOR TO ANY CLEARING, INSTALLATION OF SEDIMENT CONTROL MEASURES OR GRADING, A PRE-CONSTRUCTION MEETING MUST BE SCHEDULED AND CONDUCTED WITH THE AGENCY CONSTRUCTION SITE REVIEWER, THE LANDOWNER/DEVELOPER, CONTRACTOR, ENGINEER, AND SURF CITY REPRESENTATIVE ARE REQUIRED TO BE IN ATTENDANCE AT THE PRE-CONSTRUCTION MEETING. FAILURE TO DO SO CONSTITUTES A VIOLATION OF THE APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLAN.
3. DELINEATE THE LIMITS OF DISTURBANCE AND INSTALL PERIMETER SILT FENCE AND OUTLETS. CLEAR AND GRUB ONLY AREAS NECESSARY FOR INSTALLATION OF PERIMETER CONTROLS AND SKIMMER BASIN.
4. PRIOR TO REQUESTING THE COMPLIANCE CHECK INSTALL PERIMETER CONTROLS AT THE LOCATIONS SHOWN ON THE SITE CONSTRUCTION STORMWATER MANAGEMENT PLAN, SHEET C-501. CONTACT NCDEQ FOR COMPLIANCE CHECK AND OBTAIN CERTIFICATE OF COMPLIANCE. PRIOR TO PROCEEDING TO NEXT STEP.
5. INSTALL TEMPORARY SKIMMER SEDIMENT BASIN PER NCDEQ STANDARDS AS SEEN ON SHEET C-506. CONTRACTOR TO UTILIZE EXISTING WET POND AND EXCAVATE AS SHOWN ON SHEET C-501 TO ESTABLISH SEDIMENT SKIMMER BASIN. EXISTING OUTFALL STRUCTURE AND EMERGENCY SPILLWAY TO BE UTILIZED FOR SEDIMENT BASIN. LOW FLOW DEVICE ON EXISTING OUTLET STRUCTURE TO BE TEMPORARILY REMOVED TO INSTALL SKIMMER DEVICE SETUP.
6. CLEAR AND GRUB VEGETATED AREAS NECESSARY FOR CONSTRUCTION. STRIP TOPSOIL AND STOCKPILE IN DESIGNATED STOCKPILE LOCATION ENCLOSED BY SILT FENCE. DEMOLISH AND CLEAR AREAS NECESSARY FOR CONSTRUCTION. SEE SHEET C-101 FOR LOCATIONS. BULK GRADING TO BE LIMITED TO THE BUILDING PADS UNTIL FOUNDATIONS HAVE BEEN INSTALLED.
7. ONCE BULK GRADING IS COMPLETED, REQUEST BULK GRADING INSPECTION IN THE BUILDING PAD AREAS. BULK GRADING INSPECTION IS TO BE APPROVED PRIOR TO BUILDING PERMIT ISSUANCE.
8. THE CONTRACTOR SHALL AT ALL TIMES PROTECT AGAINST SEDIMENT OR DEBRIS LADEN RUNOFF OR WIND FROM LEAVING THE SITE. PERIMETER CONTROLS SHOULD BE CHECKED DAILY AND ADJUSTED AND/OR REPAIRED TO FULLY CONTAIN AND CONTROL SEDIMENTATION ON THE SITE. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED HALF OF THE EFFECTIVE CAPACITY OF THE CONTROL. IN ADDITION, THE CONTRACTOR MAY NEED TO ADJUST OR REPAIR MEASURES IN TIMES OF ADVERSE WEATHER CONDITIONS, OR AS DIRECTED BY THE AGENCY CONSTRUCTION SITE REVIEWER.
9. INSTALL ALL UTILITIES, INCLUDING STORM SEWERS, CATCH BASINS, WATER LINES, AND SANITARY SEWERS PER APPROVED PLANS INSTALL INLET PROTECTION(S) IMMEDIATELY.
10. INSTALL CURB AND STONE BASE WITHIN ALL PAVED AREAS. INSTALL INLET PROTECTION IN ACCORDANCE WITH THE APPROVED PLAN(S). CONVERT YARD INLET PROTECTION TO CURB INLET PROTECTION MEASURE AS NECESSARY. WET POND MAY BE MODIFIED ONCE STORM DRAIN SYSTEM IS COMPLETE, CONNECTED TO EXISTING INFRASTRUCTURE, AND PROPER INLET PROTECTIONS INSTALLED.
11. ONCE THE UPSTREAM CONTRIBUTING AREAS ARE STABILIZED, EXCAVATE STORMWATER MANAGEMENT POND THE POND SHOULD BE UTILIZED AS SKIMMER SEDIMENT TRAPS DURING CONSTRUCTION:
    - 11.1. EXCAVATE STORMWATER MANAGEMENT POND AS PER APPROVED PLANS. STORE EXCAVATED MATERIAL AT APPROVED TEMPORARY SOIL STOCKPILE LOCATIONS. IF GROUNDWATER IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL USE A GEOTEXTILE DEWATERING BAG (ACF DIRTBAG OR APPROVED EQUIVALENT). CONTRACTOR SHALL USE STABILIZATION MEASURES AS NECESSARY TO ENSURE SLOPE STABILITY.
    - 11.2. INSTALL TEMPORARY DEWATERING DEVICES ASSOCIATED WITH THE POND. INSTALL SEDIMENT AND EROSION CONTROL MEASURES AS SHOWN, (I.E. INLET PROTECTION AND SILT FENCE) THE CONTRACTOR SHALL IMMEDIATELY BACKFILL, COMPACT, SEED, MULCH, AND OTHERWISE STABILIZE AT THE END OF EACH DAY.
    - 11.3. FINAL GRADE POND AND INSTALL EROSION CONTROL MATTING ON SIDE SLOPES AS REQUIRED.
    - 11.4. PROVIDE SEEDING AND STABILIZATION AS PER SEEDING AND STABILIZATION SCHEDULE.
    - 11.5. AN AS-BUILT OF THE STORMWATER MANAGEMENT PONDS MUST BE SUBMITTED.
12. CONSTRUCT BUILDING AND ASSOCIATED IMPROVEMENTS.
13. ROUGH GRADE ALL NON-PAVED AREAS ON THE PROJECT SITE. INSTALL SIDEWALKS, HANDICAPPED CURB RAMPS AND OTHER SITE FEATURES.
14. FINE GRADE G.A.B.C. IN PROPOSED PAVED AREAS.
15. MILL MARKED AREAS FOR PROPOSED PAVEMENT.
16. INSTALL BITUMINOUS PAVING PER PAVEMENT SECTION.
17. FINAL GRADE ALL NON-PAVED AREAS. INSTALL LANDSCAPING. PERFORM INSPECTION OF STORMWATER MANAGEMENT FACILITIES. CORRECT ANY DEFICIENCIES, AS NECESSARY (EROSION, SCOUR, FOREBAYS, ETC.).
18. TOPSOIL SEED AND STABILIZE ALL DISTURBED AREAS, AS PER SEEDING NOTES.
19. EROSION AND SEDIMENT CONTROL DEVICES SHOULD BE REMOVED ONLY AFTER WORK IN AN AREA HAS BEEN COMPLETED AND STABILIZED, WITH WRITTEN APPROVAL FROM THE NCDEQ EROSION CONTROL INSPECTOR.
20. NOTIFY NCDEQ FOR ON-SITE INSPECTION AND OBTAIN CERTIFICATE OF COMPLETION.
21. THE TERMINATION OF THE CONSTRUCTION GENERAL PERMIT WILL REQUIRE CERTIFICATE OF COMPLETION.

SEDIMENT AND STORMWATER CONSTRUCTION NOTES:

1. THE EROSION CONTROL PLAN SHALL INCLUDE PROVISIONS FOR GROUNDCOVER ON ALL EXPOSED PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1 WITHIN 7 CALENDAR DAYS FROM THE LAST LAND DISTURBING ACTIVITY. GROUND COVER SHALL BE PROVIDED ON ALL OTHER DISTURBED AREAS WITHIN 14 CALENDAR DAYS FROM THE LAST LAND DISTURBING ACTIVITY.
2. UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL HANDBOOK. (NO SEPARATE PAYMENT).
3. THE CONTRACTOR SHALL NOTIFY PLAN APPROVING AUTHORITY ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO FINAL INSPECTION.
4. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO CLEARING AND/OR LAND DISTURBANCE.
5. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN AND PERMIT SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
6. PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO OFF-SITE BORROW OR WASTE AREAS STAGING OR STORAGE AREAS). THE CONTRACTOR SHALL PREPARE AND SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND TO NCDEQ FOR APPROVAL. CONTRACTOR SHALL PAY ALL FEES REQUIRED AND SHALL INSTALL NECESSARY MEASURES AT NO SEPARATE PAYMENT. THE CONTRACTOR SHALL PROVIDE THE OWNER AND THE ENGINEER A COPY OF THE AMENDED PERMIT.
7. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY EITHER THE REVIEWING AGENCY OR THE ENGINEER. (NO SEPARATE PAYMENT).
8. ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.
9. ALL AREAS DISTURBED BY CONSTRUCTION UNLESS OTHERWISE IMPROVED SHALL BE SODDED OR SEEDED AS INDICATED AND STABILIZED.
10. DURING DEWATERING OPERATIONS WATER SHALL BE PUMPED INTO AN APPROVED FILTERING DEVICE PRIOR TO DISCHARGE TO RECEIVING OUTLET.
11. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF-PRODUCING EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.
12. ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED BY CONTRACTOR ONCE STABILIZATION OR A SUFFICIENT GROUND COVER HAS BEEN ESTABLISHED OR AS DIRECTED BY THE ENGINEER. (NO SEPARATE PAYMENT). NCDENR'S FINAL APPROVAL IS REQUIRED.
13. TEMPORARY GRAVEL CONSTRUCTION ENTRANCE SHALL BE REQUIRED AT ALL CONSTRUCTION STAGING AREA ENTRANCES AND ALL CONSTRUCTION ACCESS LOCATIONS INTO NON-PAVED AREA. (NO SEPARATE PAYMENT).
14. WHEN CROSSING CREEK OR DRAINAGE-WAY, THE DIVISION OF WATER QUALITY SHALL BE CONTACTED PRIOR TO DISTURBING A CREEK. THE CONTRACTOR SHALL INSTALL RIP-RAP WITH FABRIC ALONG DISTURBED BANKS AND CHANNEL AND RESTORE SLOPES TO ORIGINAL CONTOURS. BUT NOT STEEPER THAN 2:1 MAXIMUM. DISTURBED CREEK AREA SHALL BE STABILIZED IMMEDIATELY.

EROSION CONTROL MAINTENANCE PLAN:

1. ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY 1.5-INCH OR GREATER RAINFALL BUT IN NO CASE LESS THAT ONCE EVERY WEEK. ANY NEEDED REPAIRS WILL BE MADE IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNED.
2. ALL CONSTRUCTION ENTRANCES WILL BE PERIODICALLY TOP DRESSED WITH AN ADDITIONAL 2 INCHES OF #4 STONE TO MAINTAIN PROPER DEPTH. AND SEDIMENT THAT IS TRACKED INTO THE STREET WILL BE DAILY.
3. SILT FENCE / SILT FENCE OUTLETS - SEDIMENT WILL BE REMOVED BEHIND THE SEDIMENT FENCE WHEN IT BECOMES HALF-FILLED. THE SEDIMENT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER. STAKES MUST BE STEEL, AND SPACES 6 FEET WITH EXTRA STRENGTH FABRIC AND NO WIRE BACKING. STAKE SPACING SHALL BE 8 FEET MAX WHEN STANDARD STRENGTH FABRIC AND WIRE BACKING ARE USING. IF ROCK FILTERS (OR EXCELSIOR WATTLES) ARE DESIGNED AT LOW POINTS IN THE SEDIMENT FENCE THE ROCK OR WATTLE WILL BE REPAIRED OR REPLACED IF IT BECOMES HALF FULL OF SEDIMENT, NO LONGER DRAINS, OR IS DAMAGED.
4. ALL SEEDED AREAS WILL BE FERTILIZED, RESEEDED AS NECESSARY, AND MULCHED ACCORDING TO SPECIFICATIONS ON THESE PLANS AND CONTRACT SPECIFICATIONS TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER.
5. INLET PROTECTION - SEDIMENT SHALL BE REMOVED FROM ALL INLET PROTECTIONS WHEN ACCUMULATED BEYOND HALF OF THE DEVICE CAPACITY.

LEGEND

ITEM	EXISTING	PROPOSED
SANITARY GRAVITY SEWER LINE, SIZE & FLOW DIRECTION	EX. 10"S	10" S
SANITARY SEWER FORCE MAIN, SIZE & FLOW DIRECTION	EX. 10" F.M.	12" F.M.
SANITARY SEWER MANHOLE (S.M.H.)		
SANITARY SEWER CLEANOUT		
WATER MAIN & SIZE	EX. 10" W	12" W
FIRE HYDRANT	F.H.	F.H.
WATER VALVE (W.V.) OR METER (W.M.)	W.M. W.V.	W.M. W.V.
STORM DRAIN MANHOLE (S.D.M.H.)		
STORM DRAIN LINE (CMP OR RCP)		
CATCH BASIN		
UTILITY POLE W/ OVERHEAD SERVICE (TELEPHONE OR ELECTRIC OR BOTH)		
UNDERGROUND ELECTRIC	U.E.	U.E.
UNDERGROUND TELEPHONE	U.T.	U.T.
UNDERGROUND GAS MAIN	EX. 2" G	2" G
CONCRETE CURB & GUTTER		
CONCRETE SIDEWALK, SLAB / PAVING		
IMPERVIOUS SURFACED ROAD, DRIVE OR LOT		
INDIVIDUAL TREE OR BUSH	EVERGREEN DECIDUOUS	N/A
WIRE FENCE		
CHAINLINK FENCE		
STOCKADE FENCE		
STRUCTURE (CONCRETE, WOOD, METAL, ETC.)		
DRAINAGE DITCH OR SWALE		
CONTOUR	49	55
ELEVATION SPOT SHOT	43.55	25.15 / 25.50 T.C. 25.00 B.C.
BENCH MARK		N/A
PROPERTY OR RIGHT-OF-WAY LINE		
CENTERLINE		
LIGHT POLE		
DRAINAGE AREA BOUNDARY LINE		
SOIL BOUNDARY LINE		N/A
TIME OF CONCENTRATION FLOW PATH		

ENGINEERS CERTIFICATION

I, J. MICHAEL RIEMANN, HEREBY CERTIFY THAT I AM A REGISTERED ENGINEER IN THE STATE OF NORTH CAROLINA AND THAT THE INFORMATION SHOWN HEREON HAS BEEN PREPARED UNDER MY SUPERVISION AND TO MY BEST KNOWLEDGE AND BELIEF REPRESENTS GOOD ENGINEERING PRACTICES AS REQUIRED BY THE APPLICABLE LAWS OF THE STATE OF NORTH CAROLINA.

NORTH CAROLINA PROFESSIONAL SEAL 049463 ENGINEER J. MICHAEL RIEMANN

J. MICHAEL RIEMANN — P.E. NO. 13772 — 02/20/2025 DATE

SEDIMENT AND STORMWATER APPROVAL STAMP

BECKER MORGAN GROUP

ARCHITECTURE
ENGINEERING

Delaware
309 South Governors Avenue
Dover, DE 19904
302.734.7950
The Tower at STAR Campus
100 Discovery Boulevard, Suite 102
Newark, DE 19713
302.369.3700

Maryland
312 West Main Street, Suite 300
Salisbury, MD 21801
410.546.9100

North Carolina
3333 Jaeckle Drive, Suite 120
Wilmington, NC 28403
910.341.7600

www.beckermorgan.com

NC License #: C-4743

PROJECT TITLE

CFCC SURF CITY ALSTON BURKE ADDITION

621 STATE HWY 210 E
HAMPSTEAD
PENDER COUNTY, NC

SHEET TITLE

EROSION & SEDIMENT CONTROL COVER SHEET

ISSUE BLOCK		
2	02/20/25	AGENCY SUBMISSION
1	12/13/24	AGENCY SUBMISSION
MARK	DATE	DESCRIPTION

LAYER STATE: C-500

PROJECT NO.: 2024077.00
DATE: 08/07/2024
SCALE: NONE
DRAWN BY: **J.P.G.** PROJ. MGR.: **T.H.M.S.**

SHEET
C-500

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LANDS N/F
BOSQUE, MELISSA LYNN DEL
PIN: 4225-27-1364-0000
DEED REF. 4705-2022
ZONING - RP

LANDS N/F
GERTZ, LISAPIN
PIN: 4225-27-3436-0000
DEED REF. 4774-234
ZONING - RP

LANDS N/F
MITCHELL, CLARENCE EARL
PIN: 4225-27-4554-0000
DEED REF. 4800-868
ZONING - R20

LANDS N/F
MCLELLAN, SHELDON
PIN: 4225-27-5563-0000
DEED REF. 4822-1907
ZONING - R20

LANDS N/F
HEDL, MICHAEL
PIN: 4225-27-6771-0000
DEED REF. 4796-474
ZONING - RP

40' WIDE INGRESS, EGRESS & UTILITY EASEMENT (MB 23, PG 5)

COLBERT LANE
PRIVATE ROAD

LIMITS OF DISTURBANCE
TOTAL LOD: 2.21 ± ACRES

CONCRETE WASHOUT (LOCATION TO BE FINALIZED BY CONTRACTOR AT PRE-CON)

CONCRETE MIXING OPERATION

TEMPORARY LAYDOWN AREA FOR CONSTRUCTION EQUIPMENT & MATERIALS 15' X 200'

CWS

CMO

SEE DETAIL, SHEET C-504
INSTALL SILT FENCE

EX. C.B.
GRATE: 31.80'
INV. IN: 29.05'
INV. OUT: 28.65'

EX. C.B.
GRATE: 32.30'
INV. IN: 29.54'
INV. OUT: 29.51'

EX. C.B.
GRATE: 33.71'
INV. IN: 28.66'
INV. OUT:28.66'

EX. C.B.
GRATE: 33.51'
INV. OUT: 30.44'

EX. C.B.
GRATE: 32.87'
INV. IN: 27.94'
INV. OUT: 28.10'

FIRE LANE
NO PARKING

EX. C.B.
GRATE: 32.04'
INV. IN: 29.74'
INV. OUT: 29.73'

EX. S.D. C.O.
INV.: 29.79'

EXISTING ALSTON
BURKE BUILDING ONE
FFE: 33.40'

EX. S.D. C.O.
INV.: 30.45'

TEMPORARY SOIL STOCKPLIE AREA 80' X 15'

CONTRACTOR TO HAUL
EXCESS MATERIAL
OFF-SITE AS NECESSARY

LIMIT OF DISTURBANCE
CONCURRENT WITH SILT FENCE.
(SEE E&S DETAIL SHEETS)

CONTRACTOR TO TEMPORARILY REMOVE OUTLET STRUCTURE TEE TO UTILIZE ORIFICE FOR SKIMMER DEVICE SETUP

TEMPORARY POROUS BAFFLE AREA DETERMINED FROM NCDEQ PAGE 6.65.2 BAFFLE AREAS EACH SECTION OF BAFFLE TO MAKE UP 25% OF SURFACE AREA

TEMPORARY SKIMMER DEVICE
SKIMMER SIZE: 6"
ORIFICE SIZE: 1"
DEWATERING TIME: 2.67 DAYS

TEMPORARY SKIMMER SEDIMENT BASIN
TOTAL DA.: +/- 1.73 AC (POST DA)
TOTAL VOL. REQ. = 3,114 C.F.
TOTAL VOL. PROV. = 20,700 C.F. (ELEV. 30.00' - 32.00')
SURFACE AREA REQ. = 2,840 S.F.
SURFACE AREA PROV. ELEV. 30.00' = 8,096 S.F.
SURFACE AREA PROV. ELEV. 32.00' = 12,008 S.F.

EX. S.D.M.H.
GRATE: 35.21'
INV. IN: 28.36'
INV. OUT: 28.36'

TEMPORARY POROUS BAFFLES

TEMPORARY SKIMMER SEDIMENT BASIN

24" R.C.P.
INV: 28.18'

EX. C.B.
GRATE: 31.47'
INV. IN: 30.00'
INV. OUT: 29.47'

LIMITS OF DISTURBANCE
TOTAL LOD: 2.21 ± ACRES

SEE DETAIL, SHEET C-504
INSTALL SILT FENCE

LIMITS OF DISTURBANCE
TOTAL LOD: 2.21 ± ACRES

CONTRACTOR TO TEMPORARILY BLOCK TOP OF EXISTING OUTLET STRUCTURE TO ENSURE PROPER SEDIMENT SETTLEMENT. EXISTING EMERGENCY SPILLWAY TO BE USED FOR MANAGEMENT OF HIGHER STORM EVENTS

EMERGENCY SPILLWAY
SPILLWAY INV.: 32.00'
LENGTH: 20 FT.
BREADTH: 17 FT.

CONTRACTOR SHALL
LOCATE SILT FENCE OUTLET AT ALL LOW POINTS ALONG SILT FENCE (TYP.)

LIMIT OF DISTURBANCE
CONCURRENT WITH SILT FENCE.
(SEE E&S DETAIL SHEETS)

TEMPORARY OUTFALL STRUCT.
SKIMMER INV.: 30.00'
TOP GRATE INV.: 31.47' (TO BE BLOCKED)
EMERGENCY SPILLWAY INV.: 32.00'

DELINEATED 404 WETLANDS.
APPROVED BY USACE.
ACTION ID: SAW-2008-02350
EFF DATE: 8/14/2013

EROSION & SEDIMENT CONTROL LEGEND

- STABILIZED CONSTRUCTION ENTRANCE — SCE
- CONCRETE WASHOUT & MIXING OPERATION — CW / CMO
- SILT FENCE — S.F.
- LIMIT OF DISTURBANCE — L.O.D.
- DIVERSION SWALE CENTERLINE
- SILT BAG INLET PROTECTION — SIP
- SILT FENCE OUTFALL — SFO
- SILT SOCK/ STONE CHECK DAM — SS
- WIRE AND ROCK INLET PROTECTION — W&R
- ROCK OUTLET INLET PROTECTION — ROP

BECKER MORGAN GROUP

ARCHITECTURE
ENGINEERING

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Newark, DE 19713
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North Carolina
3333 Jaeckle Drive, Suite 120
Wilmington, NC 28403
910.341.7600

www.beckermorgan.com

NC License #: C-4743

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049463 MICHAEL RIEMANN

2-20-2025

PROJECT TITLE

CFCC SURF CITY ALSTON BURKE ADDITION

621 STATE HWY 210 E
HAMPSTEAD
PENDER COUNTY, NC

SHEET TITLE

PRE - CONSTRUCTION EROSION & SEDIMENTATION CONTROL PLAN

0 10 20 40

SCALE: 1" = 20'

ISSUE	BLOCK	
2	02/20/25	AGENCY SUBMISSION
1	12/13/24	AGENCY SUBMISSION
MARK	DATE	DESCRIPTION

LAYER STATE: C-501

PROJECT NO.:	2024077.00
DATE:	08/07/2024
SCALE:	1" = 20'
DRAWN BY: J.P.G.	PROJ. MGR.: T.H.M.S.

SHEET
C-501

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LANDS N/F
BOSQUE, MELISSA LYNN DEL
PIN: 4225-27-1364-0000
DEED REF. 4705-2022
ZONING - RP

LANDS N/F
GERTZ, LISAPIN
PIN: 4225-27-3436-0000
DEED REF. 4774-234
ZONING - RP

LANDS N/F
MITCHELL, CLARENCE EARL
PIN: 4225-27-4554-0000
DEED REF. 4800-868
ZONING - R20

LANDS N/F
MCLELLAN, SHELDON
PIN: 4225-27-5563-0000
DEED REF. 4822-1907
ZONING - R20

LANDS N/F
HEDL, MICHAEL
PIN: 4225-27-6771-0000
DEED REF. 4796-474
ZONING - RP

40' WIDE INGRESS, EGRESS & UTILITY EASEMENT (MB 23, PG 5)

COLBERT LANE
PRIVATE ROAD

L.O.D.

S.F.

SILT INLET PROTECTION
17,352 SF. (0.40 AC.)

SILT INLET PROTECTION
8,410 SF. (0.19 AC.)

SILT INLET PROTECTION
8,096 SF. (0.19 AC.)

EX. C.B.
GRATE: 31.80'
INV. IN: 29.05'
INV. OUT: 28.65'

EX. C.B.
GRATE: 32.87'
INV. IN: 27.94'
INV. OUT: 28.10'

EX. C.B.
GRATE: 32.30'
INV. IN: 29.54'
INV. OUT: 29.51'

EX. C.B.
GRATE: 33.71'
INV. IN: 28.66'
INV. OUT:28.66'

EX. C.B.
GRATE: 33.51'
INV. OUT: 30.44'

SIP

FIRE LANE
NO PARKING

W&R

6" P.V.C.

EX. C.B.
GRATE: 32.04'
INV. IN: 29.74'
INV. OUT: 29.73'

EX. S.D. C.O.
INV.: 29.79'

SILT INLET PROTECTION
8,428 SF. (0.19 AC.)

EXISTING ALSTON
BURKE BUILDING ONE
FFE: 33.40'

EX. S.D. C.O.
INV.: 30.45'

TEMPORARY
SOIL STOCKPLIE AREA
80' X 15'

SILT FENCE OUTFALL
3,414 SF. (0.08 AC.)

CONTRACTOR TO HAUL
EXCESS MATERIAL
OFF-SITE AS NECESSARY

TEMPORARY SEDIMENT
BASIN DIVERSION SWALE
29,615 SF. (0.68 AC.)

CONTRACTOR TO TEMPORARILY REMOVE OUTLET STRUCTURE TEE TO UTILIZE ORIFICE FOR SKIMMER DEVICE SETUP

TEMPORARY POROUS BAFFLE
AREA DETERMINED FROM NCDEQ PAGE 6.65.2 BAFFLE AREAS
EACH SECTION OF BAFFLE TO MAKE UP 25% OF SURFACE AREA

TEMPORARY SKIMMER DEVICE
SKIMMER SIZE: 6"
ORIFICE SIZE: 1"
DEWATERING TIME: 2.67 DAYS

TEMPORARY SKIMMER
SEDIMENT BASIN
TOTAL DA : +/- 1.73 AC (POST DA)
TOTAL VOL. REQ. = 3,114 C.F.
TOTAL VOL. PROV. = 20,700 C.F. (ELEV. 30.00' - 32.00')
SURFACE AREA REQ. = 2,840 S.F.
SURFACE AREA PROV. ELEV. 30.00' = 8,096 S.F.
SURFACE AREA PROV. ELEV. 32.00' = 12,008 S.F.

EX. S.D.M.H.
GRATE: 35.21'
INV. IN: 28.36'
INV. OUT: 28.36'

SILT FENCE OUTFALL
9,036 SF. (0.21 AC.)

TEMPORARY POROUS BAFFLES

24" R.C.P.
INV. 28.18'

TEMPORARY SKIMMER
SEDIMENT BASIN

EX. O.S.
GRATE: 31.47'
INV. IN: 29.47'
INV. OUT: 29.47'

SILT FENCE OUTFALL
1,298 SF. (0.03 AC.)

SILT FENCE OUTFALL
1,101 SF. (0.02 AC.)

CONTRACTOR TO TEMPORARILY BLOCK TOP OF EXISTING OUTLET STRUCTURE TO ENSURE PROPER SEDIMENT SETTLEMENT. EXISTING EMERGENCY SPILLWAY TO BE USED FOR MANAGEMENT OF HIGHER STORM EVENTS

SILT FENCE OUTFALL
356 SF. (0.008 AC.)

SILT FENCE OUTFALL
3,223 SF. (0.07 AC.)

SILT FENCE OUTFALL
1,591 SF. (0.04 AC.)

SILT FENCE OUTFALL
569 SF. (0.01 AC.)

EMERGENCY SPILLWAY
SPILLWAY INV.: 32.00'
LENGTH: 20 FT.
BREADTH: 17 FT.

TEMPORARY OUTFALL STRUCT.
SKIMMER INV.: 30.00'
TOP GRATE INV.: 31.47' (TO BE BLOCKED)
EMERGENCY SPILLWAY INV.: 32.00'

DELINEATED 404 WETLANDS.
APPROVED BY USACE.
ACTION ID: SAW-2008-02350
EFF DATE: 8/14/2013

EROSION & SEDIMENT CONTROL LEGEND

- STABILIZED CONSTRUCTION ENTRANCE — SCE
- CONCRETE WASHOUT & MIXING OPERATION — CW — CMO
- SILT FENCE — S.F. — S.F.
- LIMIT OF DISTURBANCE — L.O.D. — L.O.D.
- DIVERSION SWALE CENTERLINE
- SILT BAG INLET PROTECTION — SIP
- SILT FENCE OUTFALL — SFO
- SILT SOCK/ STONE CHECK DAM — SS
- WIRE AND ROCK INLET PROTECTION — W&R
- ROCK OUTLET INLET PROTECTION — ROP

BECKER MORGAN GROUP

ARCHITECTURE
ENGINEERING

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410.546.9100

North Carolina
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Wilmington, NC 28403
910.341.7600

www.beckermorgan.com

NC License #: C-4743

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049463 MICHAEL RIEMANN
2-20-2025

PROJECT TITLE

CFCC SURF CITY ALSTON BURKE ADDITION

621 STATE HWY 210 E
HAMPSTEAD
PENDER COUNTY, NC

SHEET TITLE

PRE - CONSTRUCTION EROSION & SEDIMENTATION CONTROL DRAINAGE PLAN

0 10 20 40
SCALE: 1" = 20'

ISSUE BLOCK		
2	02/20/25	AGENCY SUBMISSION
1	12/13/24	AGENCY SUBMISSION
MARK	DATE	DESCRIPTION

LAYER STATE: C-501 EC

PROJECT NO.:	2024077.00
DATE:	08/07/2024
SCALE:	1" = 20'
DRAWN BY: J.P.G.	PROJ. MGR.: T.H.M.S.

SHEET
C-501 EC

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LANDS N/F
BOSQUE, MELISSA LYNN DEL
PIN: 4225-27-1364-0000
DEED REF. 4705-2022
ZONING - RP

LANDS N/F
GERTZ, LISAPIN
PIN: 4225-27-3436-0000
DEED REF. 4774-234
ZONING - RP

LANDS N/F
MITCHELL, CLARENCE EARL
PIN: 4225-27-4554-0000
DEED REF. 4800-868
ZONING - R20

LANDS N/F
MCLELLAN, SHELDON
PIN: 4225-27-5563-0000
DEED REF. 4822-1907
ZONING - R20

LANDS N/F
HEDL, MICHAEL
PIN: 4225-27-6771-0000
DEED REF. 4796-474
ZONING - RP

40' WIDE INGRESS, EGRESS & UTILITY EASEMENT (MB 23, PG 5)

N 52° 00' 25" E

COLBERT LANE
PRIVATE ROAD

LIMITS OF DISTURBANCE
TOTAL LOD: 2.21 ± ACRES

CONCRETE WASHOUT
(LOCATION TO BE FINALIZED BY CONTRACTOR AT PRE-CON)

CONCRETE MIXING OPERATION

TEMPORARY LAYDOWN AREA FOR CONSTRUCTION EQUIPMENT & MATERIALS 15' X 200'

CWS

CMO

SEE DETAIL, SHEET C-504
INSTALL SILT FENCE

EX. C.B.
GRATE: 31.80'
INV. IN: 29.05'
INV. OUT: 28.65'

EX. C.B.
GRATE: 32.87'
INV. IN: 27.94'
INV. OUT: 28.10'

EX. C.B.
GRATE: 32.30'
INV. IN: 29.54'
INV. OUT: 29.51'

EX. C.B.
GRATE: 33.71'
INV. IN: 28.66'
INV. OUT:28.66'

EX. C.B.
GRATE: 33.51'
INV. OUT: 30.44'

SIP

L.O.D.

S.F.

W&R

EX. C.B.
GRATE: 32.04'
INV. IN: 29.74'
INV. OUT: 29.73'

EX. S.D. C.O.
INV.: 29.79'

6" P.V.C.

SS

ALSTON BURKE
EXPANSION BUILDING
11,000 S.F.
FFE 34.00'

EXISTING ALSTON
BURKE BUILDING ONE
FFE: 33.40'

EX. S.D. C.O.
INV.: 30.45'

SCE

PR. C.B. : 2A
GRATE : 32.97'
INV. IN : 28.45'

SD-3A

PR. C.B. : 3A
GRATE : 33.22'
INV. OUT : 29.85'

PR. C.B. : 1A
GRATE : 32.64'
INV. IN : 28.34'
INV. IN : 28.34'
INV. OUT : 28.34'

SD-2A

RD-1A

SD-1A

8" H.D.P.E

TEMPORARY
SOIL STOCKPILE AREA
80' X 15'

O.F.

SEE DETAIL, SHEET C-504
INSTALL SILT FENCE

ROP-1
La: 10'
W1: 6'
W2: 6'
R No.: R-4
T: 18"

LIMITS OF DISTURBANCE
TOTAL LOD: 2.21 ± ACRES

PROPOSED STORM WATER
WET POND
13,426 SF (0.308 AC)
SEE SHEET C-503
FOR WET POND DETAILS

EX. O.S.
GRATE: 31.47'
INV. IN: 30.05'
INV. OUT: 29.47'

18" R.C.P.
INV: 29.23'

ROP-1
L: 20'
Br: 17'
R No.: R-4
T: 18"

LIMIT OF DISTURBANCE
CONCURRENT WITH SILT FENCE.
(SEE E&S DETAIL SHEETS)

LIMITS OF DISTURBANCE
TOTAL LOD: 2.21 ± ACRES

CONTRACTOR SHALL
LOCATE SILT FENCE
OUTLET AT ALL LOW POINTS
ALONG SILT FENCE (TYP.)

LIMIT OF DISTURBANCE
CONCURRENT WITH SILT FENCE.
(SEE E&S DETAIL SHEETS)

DELINEATED 404 WETLANDS.
APPROVED BY USACE.
ACTION ID: SAW-2008-02350
EFF DATE: 8/14/2013

EROSION & SEDIMENT CONTROL LEGEND

- STABILIZED CONSTRUCTION ENTRANCE — SCE
- CONCRETE WASHOUT & MIXING OPERATION — CW / CMO
- SILT FENCE — S.F.
- LIMIT OF DISTURBANCE — L.O.D.
- DIVERSION SWALE CENTERLINE
- SILT BAG INLET PROTECTION — SIP
- SILT FENCE OUTFALL — SFO
- SILT SOCK/ STONE CHECK DAM — SS
- WIRE AND ROCK INLET PROTECTION — W&R
- ROCK OUTLET INLET PROTECTION — ROP

BECKER MORGAN GROUP

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302.369.3700

Maryland
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410.546.9100

North Carolina
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910.341.7600

www.beckermorgan.com

NC License #: C-4743

NORTH CAROLINA PROFESSIONAL SEAL 049463 ENGINEER MICHAEL RIEMANN

2-20-2025

PROJECT TITLE

CFCC SURF CITY ALSTON BURKE ADDITION

621 STATE HWY 210 E
HAMPSTEAD
PENDER COUNTY, NC

SHEET TITLE

POST - CONSTRUCTION EROSION & SEDIMENTATION CONTROL PLAN

0 10 20 40

SCALE: 1" = 20'

ISSUE BLOCK

MARK	DATE	DESCRIPTION
2	02/20/25	AGENCY SUBMISSION
1	12/13/24	AGENCY SUBMISSION

LAYER STATE: C-502

PROJECT NO.:	2024077.00
DATE:	08/07/2024
SCALE:	1" = 20'
DRAWN BY: J.P.G.	PROJ. MGR.: T.H.M.S.

SHEET
C-502

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F:\AutoCADCivil\Projects\2024\2024077.00\DWG\2024077-SWM-C3D21-NC.dwg, Feb 21, 2025 - 9:35am

LANDS N/F
BOSQUE, MELISSA LYNN DEL
PIN: 4225-27-1364-0000
DEED REF. 4705-2022
ZONING - RP

LANDS N/F
GERTZ, LISAPIN
PIN: 4225-27-3436-0000
DEED REF. 4774-234
ZONING - RP

LANDS N/F
MITCHELL, CLARENCE EARL
PIN: 4225-27-4554-0000
DEED REF. 4800-868
ZONING - R20

LANDS N/F
MCLELLAN, SHELDON
PIN: 4225-27-5563-0000
DEED REF. 4822-1907
ZONING - R20

LANDS N/F
HEDL, MICHAEL
PIN: 4225-27-6771-0000
DEED REF. 4796-474
ZONING - RP

40' WIDE INGRESS, EGRESS & UTILITY EASEMENT (MB 23, PG 5)

N 52° 00' 25" E
62.85'

COLBERT LANE
PRIVATE ROAD

TEMPORARY LAYDOWN AREA
FOR CONSTRUCTION
EQUIPMENT & MATERIALS
15' X 200'

SILT INLET PROTECTION
17,865 SF. (0.41 AC.)

SILT INLET PROTECTION
6,168 SF. (0.14 AC.)

SILT INLET PROTECTION
7,905 SF. (0.18 AC.)

SILT FENCE OUTLET
1,652 SF. (0.04 AC.)

WIRE & CLOTH PROTECTION
638 SF. (0.01 AC.)

WIRE & CLOTH PROTECTION
400 SF. (0.009 AC.)

WIRE & CLOTH PROTECTION
396 SF. (0.009 AC.)

WIRE & CLOTH PROTECTION
242 SF. (0.005 AC.)

WIRE & CLOTH PROTECTION
105 SF. (0.002 AC.)

WIRE & CLOTH PROTECTION
103 SF. (0.002 AC.)

WIRE & CLOTH PROTECTION
384 SF. (0.009 AC.)

EXISTING ALSTON
BURKE BUILDING ONE
FFE: 33.40'

ALSTON BURKE
EXPANSION BUILDING
11,000 S.F.
FFE 34.00'

WIRE & CLOTH PROTECTION
573 SF. (0.013 AC.)

TEMPORARY SEDIMENT
BASIN
30,097 SF. (0.69 AC.)

SILT INLET PROTECTION
9,262 SF. (0.21 AC.)

SILT INLET PROTECTION
4,548 SF. (0.10 AC.)

SILT INLET PROTECTION
2,088 SF. (0.05 AC.)

SILT FENCE OUTLET
1,621 SF. (0.04 AC.)

8" H.D.P.E

TEMPORARY
SOIL STOCKPLIE AREA
80' X 15'

TEMPORARY POROUS BAFFLES

PROPOSED STORM WATER
WET POND:
13,426 SF (0.308 AC)
SEE SHEET C-503
FOR WET POND DETAILS

SILT FENCE OUTLET
702 SF. (0.01 AC.)

SILT FENCE OUTLET
5,143 SF. (0.12 AC.)

SILT FENCE OUTLET
3,372 SF. (0.08 AC.)

SILT FENCE OUTLET
1,413 SF. (0.03 AC.)

SILT FENCE OUTLET
1,343 SF. (0.03 AC.)

DELINEATED 404 WETLANDS.
APPROVED BY USACE.
ACTION ID: SAW-2008-02350
EFF DATE: 8/14/2013

EROSION & SEDIMENT CONTROL LEGEND

- STABILIZED CONSTRUCTION ENTRANCE — SCE
- CONCRETE WASHOUT & MIXING OPERATION — CW / CMO
- SILT FENCE — S.F.
- LIMIT OF DISTURBANCE — L.O.D.
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NORTH CAROLINA PROFESSIONAL SEAL 049463 ENGINEER J. MICHAEL RIEMANN
2-20-2025

PROJECT TITLE

CFCC SURF CITY ALSTON BURKE ADDITION

621 STATE HWY 210 E
HAMPSTEAD
PENDER COUNTY, NC

SHEET TITLE

POST - CONSTRUCTION EROSION & SEDIMENTATION CONTROL DRAINAGE PLAN

0 10 20 40
SCALE: 1" = 20'

ISSUE BLOCK

MARK	DATE	DESCRIPTION
2	02/20/25	AGENCY SUBMISSION
1	12/13/24	AGENCY SUBMISSION

LAYER/STATE: C-502 EC

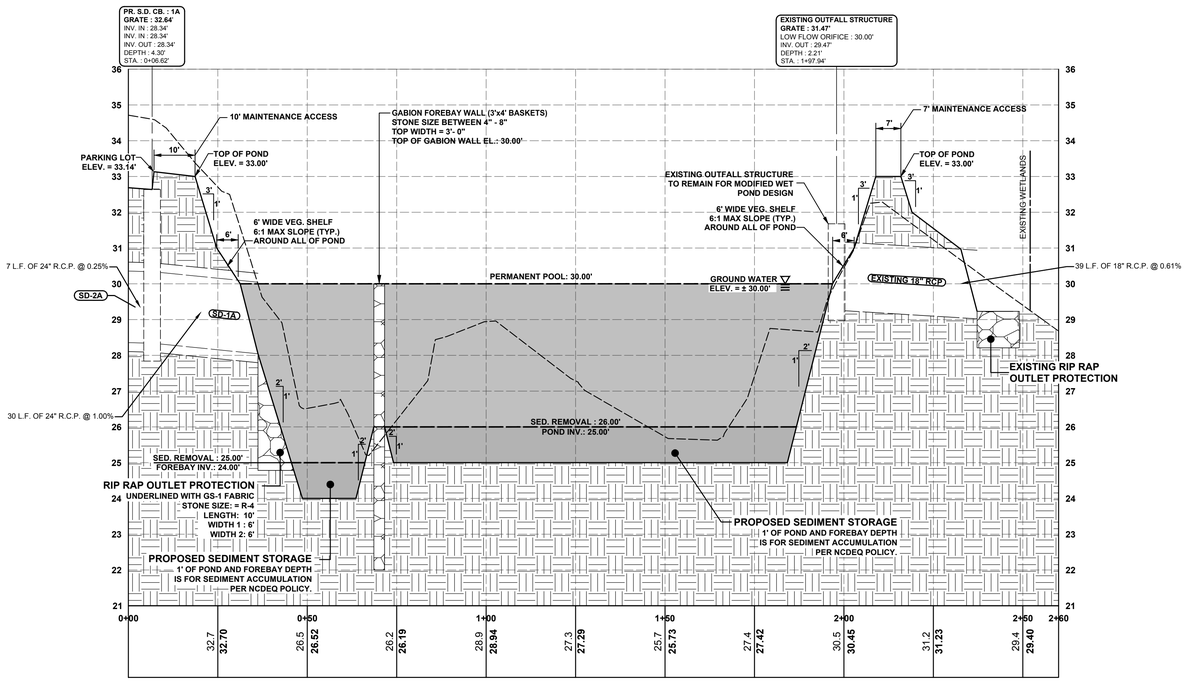
PROJECT NO.:	2024077.00
DATE:	08/07/2024
SCALE:	1" = 20'
DRAWN BY: J.P.G.	PROJ. MGR.: T.H.M.S.

SHEET

C-502 EC

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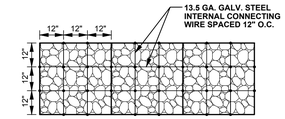


STORMWATER MANAGEMENT : POND SECTION A-A

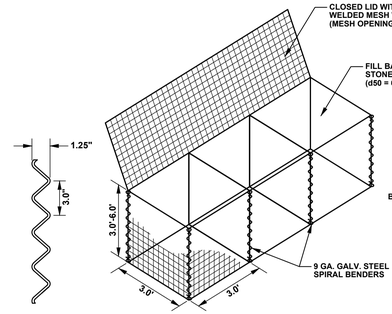
SCALE : 1" = 20'

NOTES :

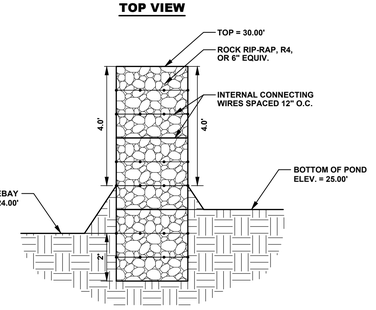
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. INTERNAL CONNECTING WIRES (13.5-GA.) TO BE INSTALLED ACROSS WIDTH OF INTERIOR GABIONS AND ACROSS WIDTH AND LENGTH OF END GABIONS.
3. INTERNAL CONNECTING WIRE AND GABION MESH SHALL BE GALVANIZED.
4. INTERNAL CONNECTING WIRES REQUIRED ON ALL GABIONS 3'-0" HIGH.
5. PLACE ROCK IN END GABION CELL FIRST, AND CONTINUE BY FILLING INTERIOR GABION CELLS.



TOP VIEW



SPIRAL BENDER ISOMETRIC



CROSS-SECTION

ROCK GABION BASKET FOREBAY WALL (TYP.)

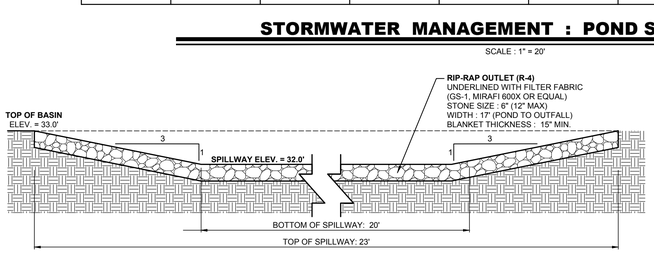
NO SCALE

MAIN POND DATA		
POND ELEVATION	AREA (S.F.)	CUM. STORAGE (C.F.)
BOTTOM EL. : 26.00'	3,597 S.F.	0 C.F.
EL. : 27.00'	4,258 S.F.	3,928 C.F.
EL. : 28.00'	4,928 S.F.	8,531 C.F.
EL. : 29.00'	5,302 S.F.	13,832 C.F.
PERM. POOL EL. : 30.00'	6,018 S.F.	19,850 C.F.

SEDIMENT STORAGE DATA		
MAIN POOL ELEVATION	AREA (S.F.)	CUM. STORAGE (C.F.)
BOTTOM POND EL. : 25.00'	2,897 S.F.	0 C.F.
EL. : 26.00'	3,597 S.F.	3,247 C.F.
FOREBAY ELEVATION	AREA (S.F.)	CUM. STORAGE (C.F.)
BOTTOM POND EL. : 24.00'	229 S.F.	0 C.F.
EL. : 25.00'	414 S.F.	322 C.F.

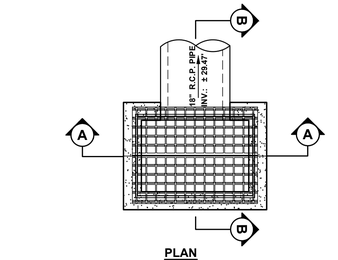
TEMPORARY POOL DATA		
POND ELEVATION	AREA (S.F.)	CUM. STORAGE (C.F.)
PERM. POOL : 30.00'	8,096 S.F.	0 C.F.
EL. : 31.00'	10,648 S.F.	9,372 C.F.
EL. : 32.00'	12,008 S.F.	20,700 C.F.
TOP POND. : 33.00'	13,426 S.F.	33,417 C.F.

FOREBAY DATA		
POND ELEVATION	AREA (S.F.)	CUM. STORAGE (C.F.)
BOTTOM EL. : 25.00'	414 S.F.	0 C.F.
EL. : 26.00'	750 S.F.	582 C.F.
EL. : 27.00'	960 S.F.	1,437 C.F.
EL. : 28.00'	1,195 S.F.	2,515 C.F.
EL. : 29.00'	1,445 S.F.	3,835 C.F.
TOP EL. : 30.00'	1,715 S.F.	5,415 C.F.

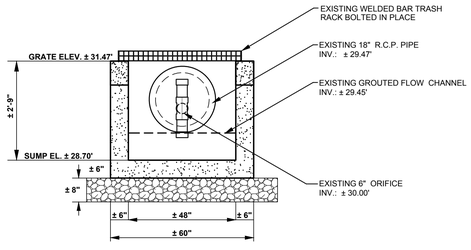


EMERGENCY SPILLWAY DETAIL

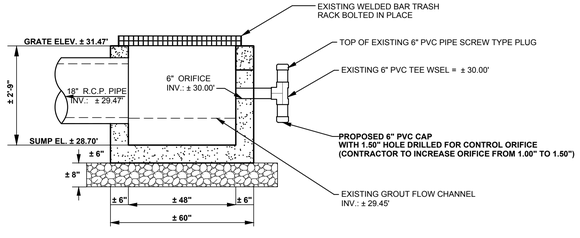
NO SCALE



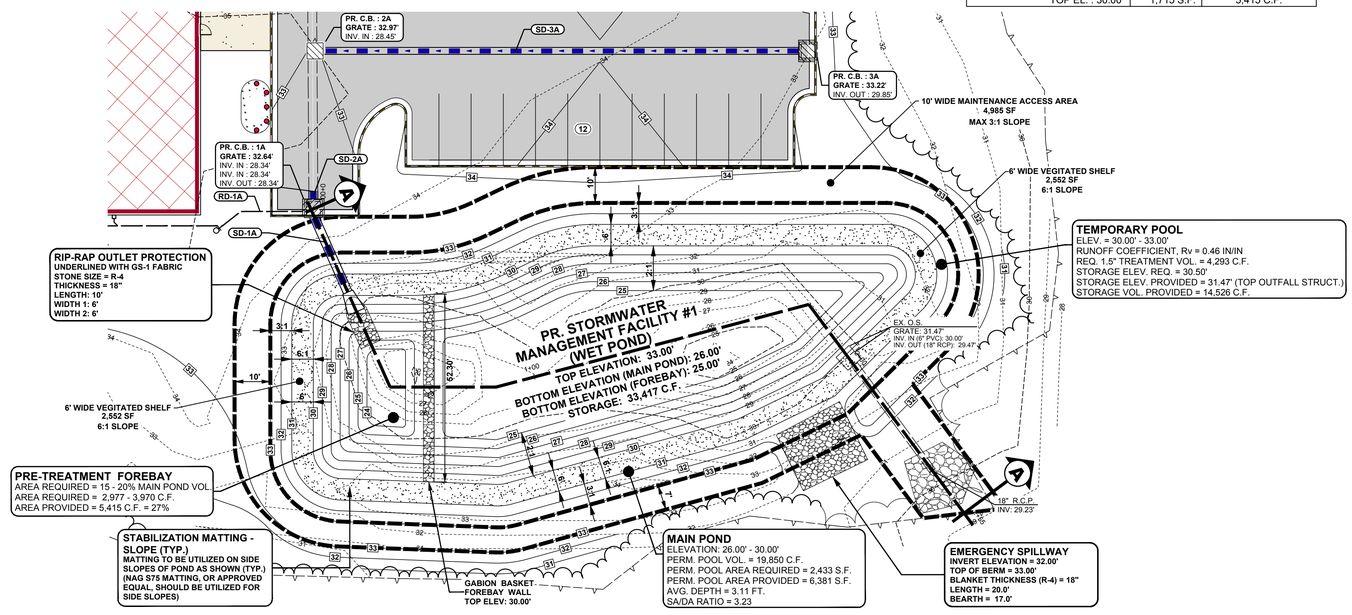
PLAN



SECTION A-A



SECTION B-B



STORMWATER MANAGEMENT : WET POND

SCALE : 1" = 20'

DETAIL NOTE:

1. EXISTING OUTFALL STRUCTURE INFORMATION TAKEN FROM PREVIOUSLY APPROVED 2017 CFCC ALSTON BURKE PARKING EXPANSION PROJECT AND AS-BUILT ELEVATION INFORMATION PROVIDED BY CAPE FEAR ENGINEERING SURVEY FROM JULY 2024. PLEASE REFER TO THOSE PLANS FOR EXACT DESIGN DETAILS.

EXISTING WETPOND OUTLET STRUCTURE DETAIL

SCALE: 1" = 2'

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NC License #: C-4743

NORTH CAROLINA PROFESSIONAL SEAL 049463 ENGINEER J. MICHAEL RIEMANN

2-20-2025

PROJECT TITLE

CFCC SURF CITY ALSTON BURKE ADDITION

621 STATE HWY 210 E
HAMPSTEAD
PENDER COUNTY, NC

SHEET TITLE

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN - WET POND

0 10 20 40

SCALE: 1" = 20'

ISSUE BLOCK		
2	02/20/25	AGENCY SUBMISSION
1	12/13/24	AGENCY SUBMISSION
MARK	DATE	DESCRIPTION

LAYER STATE: C-503

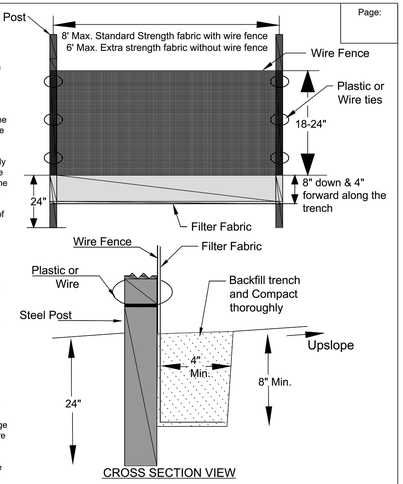
PROJECT NO.: 2024077.00
DATE: 02/05/2025
SCALE: 1" = 10'
DRAWN BY: JPG | PROJ. MGR.: THMS

SHEET
C-503

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Date: Page:



CROSS SECTION VIEW

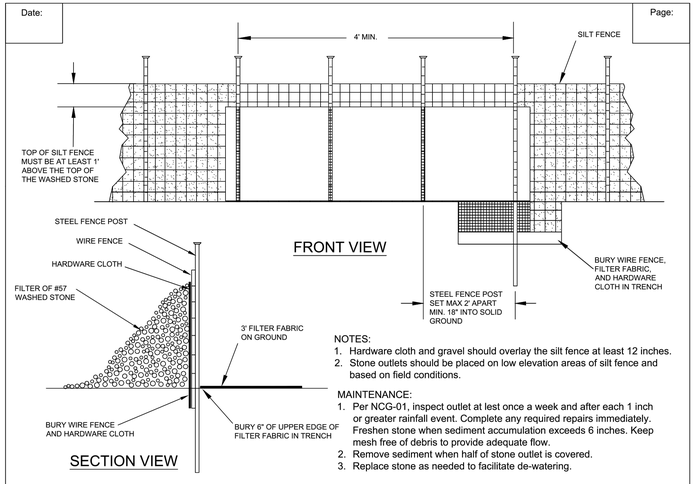
Construction:
1. Construct the sediment barrier of standard strength or extra strength synthetic filter fabrics.
2. Ensure that the height of the sediment fence does not exceed 24 inches above the ground. (Higher fences may impound volumes of water sufficient to cause failure of the structure.)
3. Construct the filter fabric from a continuous roll cut to the length of the barrier to avoid joints. When joints are necessary, securely fasten the filter cloth only at a support post with 4 feet minimum overlap to the next post.
4. Support standard strength filter fabric by wire mesh fastened securely to the upslope side of the posts. Extend the wire mesh support to the bottom of the trench. Fasten the wire reinforcement, then fabric on the upslope side of the fence post. Wire or plastic zip ties should have a minimum 50 pound tensile strength.
5. When a wire mesh support fence is used, space posts a maximum of 8 feet apart. Supports should be driven securely into the ground a minimum of 24 inches.
6. Extra strength filter fabric with 6 feet post spacing does not require wire mesh support fence. Securely fasten the filter fabric directly to posts. Wire or plastic zip ties should have a minimum of 50 pound tensile strength.
7. Excavate the trench approximately 4 inches wide and 8 inches deep along the proposed line of the posts and upslope from the barrier.
8. Place 12 inches of fabric along the bottom and side of the trench.
9. Backfill the trench with soil placed over the filter fabric and compact. Thorough compaction of the backfill is critical to silt fence performance.
10. Do not attach filter fabric to existing trees.

Maintenance:
1. Inspect sediment fences at least once a week and after each 1 inch rainfall. Make any required repairs immediately.
2. Should the fabric of a sediment fence collapse, tear, decompose, or become ineffective, replace it promptly.
3. Remove sediment deposits as necessary to provide adequate storage volume for the next rain and reduce pressure on the fence. Take care to avoid undermining the fence during cleanout.
4. Remove all fencing materials and unstable sediment deposits and bring the area to grade and stabilize it after the contributing drainage area has been properly stabilized.

NORTH CAROLINA Environmental Quality
EFFECTIVE DATE: 11/12/2020

SILT FENCE

Date: Page:



NOTES:
1. Hardware cloth and gravel should overlay the silt fence at least 12 inches.
2. Stone outlets should be placed on low elevation areas of silt fence and based on field conditions.

MAINTENANCE:
1. Per NCG-01, inspect outlet at lest once a week and after each 1 inch or greater rainfall event. Complete any required repairs immediately. Freshen stone when sediment accumulation exceeds 6 inches. Keep mesh free of debris to provide adequate flow.
2. Remove sediment when half of stone outlet is covered.
3. Replace stone as needed to facilitate de-watering.

NORTH CAROLINA Environmental Quality
EFFECTIVE DATE: 11/12/2020

SILT FENCE OUTLET

Date: Page:

PART II, SECTION G, ITEM (4)
DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

(a) The E&SC plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&SC plan authority has approved these items.

(b) The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit.

(c) Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems.

(d) Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above.

(e) Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and

(f) Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING
SECTION A: SELF-INSPECTION

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record. See Self Inspection Timeframes table to the right for guidelines on frequency of inspections and required aspects of records.

Self Inspection Timeframes

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend on holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those unattended days (this will determine if a site inspection is needed). days on which no rainfall occurred shall be recorded as "Zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the measures inspected 2. Date and Time of the inspection 3. Name of the person performing the inspection 4. Indication of whether the measures were operating properly 5. Description of maintenance needs for the measure 6. Description, Evidence, and date of corrective actions taken
(3) Stormwater discharge outfalls(SDOs)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected 2. Date and Time of the inspection 3. Name of the person performing the inspection 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration 5. Indication of visible sediment leaving the site 6. Description, Evidence, and date corrective actions taken
(4) Perimeter of Site	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If visible Sedimentation is found outside site limits, then record of the following shall be made: 1) Actions taken to clean up or stabilize sediment that has left the site limits 2) Description, Evidence and date of corrective actions taken 3) An explanation as to the actions taken to control future releases
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or has visible increased turbidity from the construction activity, then a record of the following shall be made: 1) Description, Evidence and date of corrective actions taken 2)Records of required reports to the appropriate Division Regional Office per Part III, Section C, Item(2)(a) of this permit
(6) Ground Stabilization Measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover) 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or assurance that they will be provided as soon as possible

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

NORTH CAROLINA Environmental Quality
EFFECTIVE DATE:11/12/2020

NCG-01 SELF INSPECTION

Date: Page:

NON-INVASIVE PERMANENT SEEDING RECOMMENDATIONS FOR SUMMER

SEEDING MIXTURE

Species	Rate
Indian Woodoats	1.5-2.5 lbs/acre*
Virginia Wild Rye	4-6 lbs/acre*

*Depending upon mix with other species. See table 6.11.d from Chapter 6 of the NC Erosion and Sediment Control Planning and Design Manual.

Seeding Dates
Mountains - July 15- Aug 15
Piedmont - Aug 15 - Oct 15

Maintenance:
Indian Woodoats and Virginia Wild Rye are both sun and shade tolerant.

NON-INVASIVE PERMANENT SEEDING RECOMMENDATIONS FOR FALL

SEEDING MIXTURE

Species	Rate
Hard Fescue	15 lbs/acre
Switchgrass	2.5-3.5 lbs/acre*
Indian Grass	5-7 lbs/acre*
Big Bluestem	5-7 lbs/acre*
Indian Woodoats	1.5-2.5 lbs/acre*
Virginia Wild Rye	4-6 lbs/acre*

*Depending upon mix with other species. See table 6.11.d from Chapter 6 of the NC Erosion and Sediment Control Planning and Design Manual.

Seeding Dates
Mountains - Hard Fescue- Aug 1 - June 1
Mountains- Switchgrass, Indian Grass, Big Bluestem- Dec 1 - April 15
Piedmont and Coastal- Switchgrass, Indian Grass, Big Bluestem- Dec 1 - April 1
Coastal- Indian Woodoats and Virginia Wild Rye- Sept 1 - Nov 1

Maintenance:
Hard Fescue is not recommended for slopes > 5%. Prefers shade.

NON-INVASIVE PERMANENT SEEDING RECOMMENDATIONS FOR LATE WINTER AND EARLY SPRING

SEEDING MIXTURE

Species	Rate
Centipede	5 lbs/acre
Indian Woodoats	1.5-2.5 lbs/acre*
Virginia Wild Rye	4-6 lbs/acre*

*Depending upon mix with other species. See table 6.11.d from Chapter 6 of the NC Erosion and Sediment Control Planning and Design Manual.

Seeding Dates
Coastal or Eastern Piedmont for Centipede- Sept. 1 - May 1
Coastal and Piedmont for Indian Woodoats and Virginia Wild Rye- Feb 15 - April 1
Mountains for Indian Woodoats and Virginia Wild Rye- March 1 - May 15

Maintenance:
Significant maintenance may be required to obtain desired cover once centipede is planted. Acceptable for sodding.

SEED BED PREPARATION:

LIMING- Apply lime according to soil test recommendations. If the pH (acidity) of the soil is not known, an application of ground agricultural limestone at the rate of 1 to 1 ½ tons/acre on coarse-textured soils and 2-3 tons/acre on fine-textured soils is usually sufficient. Apply limestone uniformly and incorporate into the top 4-6 inches of soil. Soils with a pH of 6 or higher need not be limed.

FERTILIZER- Base application rates on soil tests. When these are not possible, apply a 10-10-10 grade fertilizer at 700-1,000 lb/acre. Both fertilizer and lime should be incorporated into the top 4-6 inches of soil. If a hydraulic seeder is used, do not mix seed and fertilizer more than 30 minutes before application.

SURFACE ROUGHENING- If recent tillage operations have resulted in a loose surface additional roughening may not be required, except to break up large clods. If rainfall causes the surface to become sealed or crusted, loosen it just prior to seeding by raking, harrowing, or other suitable methods for fine grading. The finished grade shall be a smooth even soil surface with a loosen uniformly fine texture. All ridges and depressions shall be removed and filled to provide the approved surface drainage. Planting is to be done immediately after finished grades are obtained and seedbed preparation is completed.

NOTES:
1. Permanent seeding, sodding or other means of stabilization are required when all construction work is completed according to the NPDES timeframe's table.
2. A North Carolina Department of Agriculture soils test (or equal) is highly recommended to be obtained for all areas to be seeded, sprigged, sodded or planted.
3. Use a seeding mix that will produce fast growing nurse crops and includes non-invasive species that will eventually provide a permanent groundcover. Soil blankets may be used in lieu of nurse crops. Mat, tack or crimp mulch, as needed to stabilize seeded areas until root establishment. Mulch must be applied uniformly over the soil with a cover density of at least 80%.
4. Ground cover shall be maintained until permanent vegetation is established and stable against accelerated erosion.

NORTH CAROLINA Environmental Quality
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PERMANENT SEEDING RECOMMENDATIONS

Date: Page:

TEMPORARY SEEDING RECOMMENDATIONS FOR LATE WINTER AND EARLY SPRING

Seeding Mixture

Species	Rate (lb/acre)
Rye (grain)	120
Annual lespedeza (Kobe in Piedmont and Coastal Plain, Korean in Mountains)	50

Omit annual lespedeza when duration of temporary cover is not to extend beyond June.

Seeding Dates
Mountains—Above 2500 feet: Feb. 15 - May 15
Below 2500 feet: Feb. 1- May 1

Piedmont—Jan. 1 - May 1
Coastal Plain—Dec. 1 - Apr. 15

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

TEMPORARY SEEDING RECOMMENDATIONS FOR SUMMER

Seeding Mixture

Species	Rate (lb/acre)
German millet	40

In the Piedmont and Mountains, a small-stemmed Sudangrass may be substituted at a rate of 50 lb/acre.

Seeding Dates
Mountains—May 15 - Aug. 15
Piedmont—May 1 - Aug. 15
Coastal Plain—Apr. 15 - Aug. 15

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

TEMPORARY SEEDING RECOMMENDATIONS FOR FALL

Seeding Mixture

Species	Rate (lb/acre)
Rye (grain)	120

Seeding Dates
Mountains—Aug. 15 - Dec. 15
Coastal Plain and Piedmont—Aug. 15 - Dec. 31

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Repair and refertilize damaged areas immediately. Topdress with 50 lb/acre of nitrogen in March. If it is necessary to extend temporary cover beyond June 15, overseed with 50 lb/acre Kobe (Piedmont and Coastal Plain) or Korean (Mountains) lespedeza in late February or early March.

SEED BED PREPARATION:

LIMING- Apply lime according to soil test recommendations. If the pH (acidity) of the soil is not known, an application of ground agricultural limestone at the rate of 1 to 1 ½ tons/acre on coarse-textured soils and 2-3 tons/acre on fine-textured soils is usually sufficient. Apply limestone uniformly and incorporate into the top 4-6 inches of soil. Soils with a pH of 6 or higher need not be limed.

FERTILIZER- Base application rates on soil tests. When these are not possible, apply a 10-10-10 grade fertilizer at 700-1,000 lb/acre. Both fertilizer and lime should be incorporated into the top 4-6 inches of soil. If a hydraulic seeder is used, do not mix seed and fertilizer more than 30 minutes before application.

SURFACE ROUGHENING- If recent tillage operations have resulted in a loose surface additional roughening may not be required, except to break up large clods. If rainfall causes the surface to become sealed or crusted, loosen it just prior to seeding by raking, harrowing, or other suitable methods for fine grading. The finished grade shall be a smooth even soil surface with a loosen uniformly fine texture. All ridges and depressions shall be removed and filled to provide the approved surface drainage. Planting is to be done immediately after finished grades are obtained and seedbed preparation is completed.

NORTH CAROLINA Environmental Quality
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TEMPORARY SEEDING RECOMMENDATIONS

Date: Page:

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING
SECTION B: RECORDKEEPING

Item to Document	Document Requirements
(a) Each E&SC measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC plan	Initial and date each E&SC measure on a copy of the approved E&SC plan or complete, date and sign an inspection report that lists each E&SC measure shown on the approved E&SC plan. This documentation is required upon the initial installation of the E&SC measures are modified after initial installation.
(b) A phase of grading has been completed	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&SC plan.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) the maintenance and repair requirements for all E&SC measures have been performed.	Complete, date and sign an inspection report
(e) Corrective actions have been taken to E&SC measures.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate the completion of the corrective action

1. E&SC Plan Documentation
The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be kept on site and available for inspection at all times during normal business hours.

2. Additional Documentation to be Kept on Site
In addition to the E&SC plan documents above, the following items shall be kept on the site and available for inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:
(a) This General Permit as well as the Certificate of Coverage, after it is received.
(b) Records of inspections made during the previous twelve months. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

3. Documentation to be Retained for Three Years
All data used to complete the e-NOI and all inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING
SECTION C: REPORTING

1. Occurrences that Must be Reported
Permittees shall report the following occurrences:
(a) Visible sediment deposition in a stream or wetland.
(b) Oil spills if:
- They are 25 gallons or more,
- They are less than 25 gallons but cannot be cleaned up within 24 hours,
- They cause sheen on surface waters (regardless of volume), or
- They are within 100 feet of surface waters (regardless of volume).

(c) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.
(d) Anticipated bypasses and unanticipated bypasses.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements
After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Department's Environmental Emergency Center personnel at (800) 858-0368.

Occurrence	Reporting Timeframe (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	• Within 24 hours, an oral or electronic notification. • Within 7 Calendar Days, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. • If the stream is named on the NC 303(d) list as impaired for sediment-related caused, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of hazardous substances per item 1(b)-(c) above	• Within 24 Hours, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	• A report at least ten days before the date of the bypass, if possible. The report shall include an evaluation of the anticipated quality and effect of the bypass.
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	• Within 24 Hours, an oral or electronic notification • Within 7 calendar days, a report that includes an evaluation of the quality and effect of the bypass.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment [40 CFR 122.41(l)(7)]	• Within 24 Hours, an oral or electronic notification • Within 7 Calendar Days, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6). • Division staff may waive the requirement for a written report on a case-by-case basis.

NORTH CAROLINA Environmental Quality
EFFECTIVE DATE: 11/12/2020

NCG-01 RECORDKEEPING AND REPORTING

Date: Page:

SECTION E: GROUND STABILIZATION

Required Ground Stabilization Timeframes			
	Site Area Description	Stabilize within this many calendar days after ceasing land disturbance	Timeframe variations
(a)	Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b)	High Quality Water (HQW) Zones	7	None
(c)	Slopes steeper than 3:1	7	If slopes are 10 feet or less in length and are not steeper than 2:1, 14 days are allowed
(d)	Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e)	Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION
Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
- Temporary grass seed covered with straw or other mulches and tackifiers, - Hydroseeding, - Rolled erosion control products with or without temporary grass seed - Appropriately applied straw or other mulch - Plastic sheeting	- Permanent grass seed covered with straw or other mulches and tackifiers - Geotextile fabrics such as permanent soil reinforcement matting - Hydroseeding - Shrubs or other permanent plantings covered with mulch - Uniform and evenly distributed ground cover sufficient to restrain erosion - Structural methods such as concrete, asphalt or retaining walls - Rolled erosion control products with grass seed

GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT
Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

EARTHEN STOCKPILE MANAGEMENT
1. Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
2. Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
3. Provide stable stone access point when feasible.
4. Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.

HERBICIDES, PESTICIDES AND RODENTICIDES
1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
2. Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
3. Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
4. Do not stockpile these materials onsite.

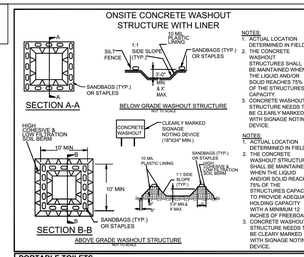
POLYACRYLAMIDES (PAMS) AND FLOCCULANTS
1. Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants.*
2. Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
3. Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
4. Provide ponding area for containment of treated Stormwater before discharging offsite.
5. Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

EQUIPMENT AND VEHICLE MAINTENANCE
1. Maintain vehicles and equipment to prevent discharge of fluids.
2. Provide drip pans under any stored equipment.
3. Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
4. Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
5. Remove leaking vehicles and construction equipment from service until the problem has been corrected.
6. Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

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NCG-01 GROUND COVER

Date: Page:



PORTABLE TOILETS
1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
2. Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
3. Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

PAINT AND OTHER LIQUID WASTE
1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, sized and placed appropriately for the needs of site.
5. Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

HAZARDOUS AND TOXIC WASTE
1. Create designated hazardous waste collection areas on-site.
2. Place hazardous waste containers under cover or in secondary containment.
3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.

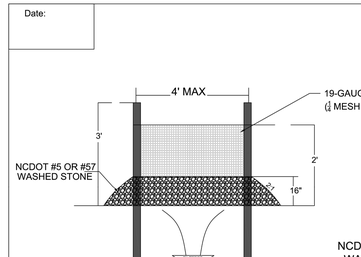
CONCRETE WASHOUTS
1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
3. Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
4. Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
5. Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
6. Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
7. Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
8. Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
9. Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
10. At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE
1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
4. Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
5. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
6. Anchor all lightweight items in waste containers during times of high winds.
7. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
8. Dispose waste off-site at an approved disposal facility.
9. On business days, clean up and dispose of waste in designated waste containers.

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NCG-01 MATERIALS HANDLING

Date: Page:



Construction:
1. Uniformly grade a shallow depression approaching the inlet.
2. Drive 5-foot steel posts 2 feet into the ground surrounding the inlet. Space posts evenly around the perimeter of the inlet, a maximum of 4 feet apart.
3. Surround the posts with wire mesh hardware cloth. Secure the wire mesh to the steel posts at the top, middle, and bottom. Placing a 2-foot flap of the wire mesh under the gravel for anchoring is recommended.
4. Place clean gravel (NC DOT #5 or #57 stone) on a 2:1 slope with a height of 16 inches around the wire, and smooth to an even grade.
5. Once the contributing drainage area has been stabilized, remove accumulated sediment, and establish final grading elevations.
6. Compact the area properly and stabilize with groundcover.

Maintenance:
1. Inspect sediment fences at least once a week and after each 1 inch or greater rainfall. Make any required repairs immediately.
2. Clear the mesh wire of any debris or other objects to provide adequate flow for subsequent rains. Take care not to damage or undercut the mesh during sediment removal.
3. Replace stone as needed.

NORTH CAROLINA Environmental Quality
EFFECTIVE DATE: 11/12/2020

INLET PROTECTION

BECKER MORGAN GROUP

ARCHITECTURE
ENGINEERING

Delaware
309 South Governors Avenue
Dover, DE 19904
302.734.7950
The Tower at STAR Campus
100 Discovery Boulevard, Suite 102
Newark, DE 19713
302.369.3700

Maryland
312 West Main Street, Suite 300
Salisbury, MD 21801
410.546.9100

North Carolina
3333 Jaeckle Drive, Suite 120
Wilmington, NC 28403
910.341.7600

www.beckermorgan.com

NC License #: C-4743

NORTH CAROLINA PROFESSIONAL SEAL 049463 ENGINEER J. MICHAEL RIEMANN
2-20-2025

PROJECT TITLE

CFCC SURF CITY ALSTON BURKE ADDITION

621 STATE HWY 210 E
HAMPSTEAD
PENDER COUNTY, NC

SHEET TITLE

EROSION & SEDIMENTATION CONTROL DETAILS

ISSUE BLOCK

MARK	DATE	DESCRIPTION
2	02/20/25	AGENCY SUBMISSION
1	12/13/24	AGENCY SUBMISSION

LAYER STATE: C504

PROJECT NO.:	2024077.00
DATE:	08/07/2024
SCALE:	AS NOTED
DRAWN BY: J.P.G.	PROJ. MGR.: T.H.M.S.

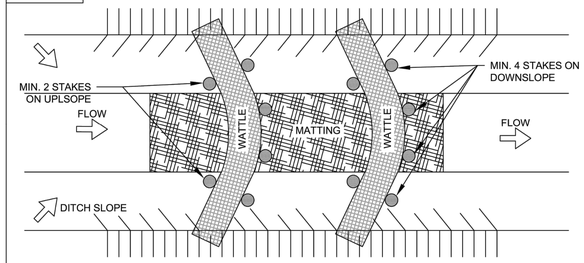
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C-504

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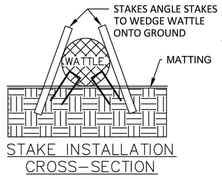
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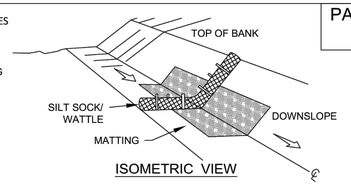
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PLAN VIEW



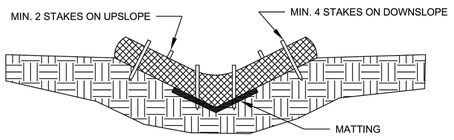
STAKE INSTALLATION CROSS–SECTION



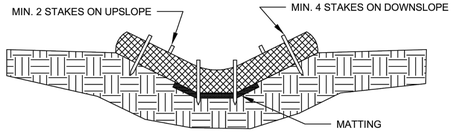
ISOMETRIC VIEW

Spacing Between Socks / Wattles (Feet)

Channel Slope (%)	8-inch Diameter Sock	12-inch Diameter Sock
1	67	100
2	33	50
3	22	33
4	17	25
5	13	20



V- DITCH SECTION VIEW



TRAPEZOIDAL DITCH SECTION VIEW

NOTES:

1. Other materials providing equivalent protection against erosive velocities may be substituted for compost use in silt socks or wattles.
2. Fill silt sock/wattle netting uniformly to the desired length such that logs do not deform.
3. Use 24 inch long wooden stakes with a 2 inch x 2 inch nominal cross section.
4. Install silt sock/wattle(s) to a height on slope so flow will not wash around silt sock/wattle and scour slopes, or as directed.
5. Install a minimum of two up-slope stakes and four down-slope stakes at an angle to wedge silt sock/wattle to ground at bottom ditch. Use staples to secure silt sock/wattle to the ground to prevent undermining.
6. The use of flocculants such as Polyacrylamide (PAM) is recommended. Apply flocculants on top of sock/wattle and to matting on either side of sock/wattle according to manufacturer recommended rates. Reapply after each 1.0 inch rainfall.

MAINTENANCE:

1. Inspect all measures weekly and after each rainfall of 1.0 inch or greater. Remove accumulated sediment and any debris.
2. Silt sock/Wattle(s) must be replaced if clogged or torn.
3. If ponding becomes excessive, the silt sock/wattle may need to be replaced with a larger diameter or a different measure.
4. Reinstall if damaged or dislodged.
5. Silt socks/Wattles shall be inspected until land disturbance is compete and the area above the measure is permanently stabilized.

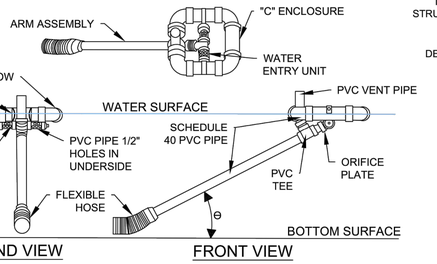
SILT SOCK / WATTLE FOR CHECK DAM

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

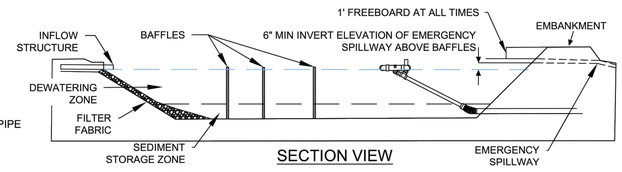
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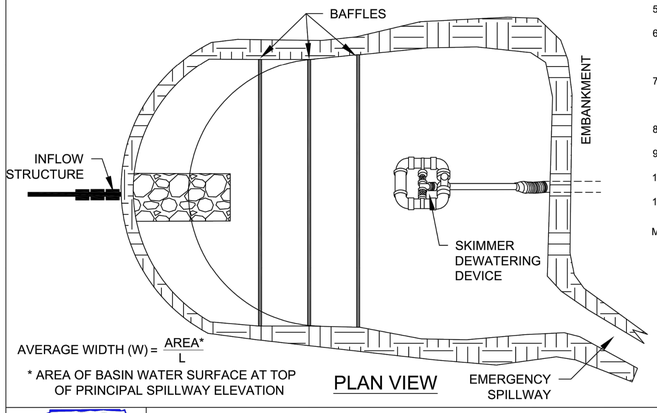
PERSPECTIVE VIEW



END VIEW FRONT VIEW



SECTION VIEW



PLAN VIEW

NOTES:

1. Clear, grub and strip the area under the embankment of all vegetation and root mat. Remove all surface soil containing high amounts of organic matter and stockpile or dispose of it properly. Haul all objectionable material to the designated disposal area. Place temporary sediment control measures below basin as needed.
2. Place the fill in lifts not to exceed 9 inches, and machine compact it. Over fill the embankment 6 inches to allow for settlement.
3. Place the barrel on a firm, smooth foundation of impervious soil. Do not use pervious material such as sand, gravel, or crushed stone as backfill around the pipe. Place the fill around the pipe spillway in 4-inch layers and compact it under and around the pipe to at least the same density as the adjacent embankment.
4. Place a minimum depth of 2 feet compacted backfill over the pipe spillway before crossing with construction equipment.
5. Ensure that the flow length to basin width ratio is at least 2:1 to improve trapping efficiency. Length is measured at the elevation of the principal spillway.
6. Assemble the skimmer following manufacturers instructions or as designed and lay on the bottom of the basin with the flexible joint at the inlet of the barrel pipe. Attach the flexible joint to the barrel pipe and position the skimmer over the excavated pit or support. Be sure to attach a rope and anchor it to the side of the basin.This will be used to pull the skimmer to the side for maintenance.
7. Install the spillway in undisturbed soil to the greatest extent possible. The spillway should be lined with laminated plastic or impermeable geotextile fabric. The fabric must be wide and long enough to cover the bottom and sides and extend onto the top of the dam for anchoring in a trench. The edges may be secured with 8-inch staples or pins.
8. Filter fabric must be long enough to extend down the slope and exit onto stable ground. The width of the fabric must be one piece, not joined or spliced; otherwise water can get under the fabric.
9. The upper section(s) should overlap the lower section(s) so that water cannot flow under the fabric. Secure the upper edge and sides of the fabric in a trench with staples or pins.
10. Discharge water into the basin in a manner to prevent erosion. Use temporary slope drains or diversions with outlet protection to divert sediment-laden water to the upper end of the pool area to improve basin trap efficiency.
11. Stabilize the emergency spillway embankment and all other disturbed areas above the crest of the principal spillway immediately after construction.

MAINTENANCE:

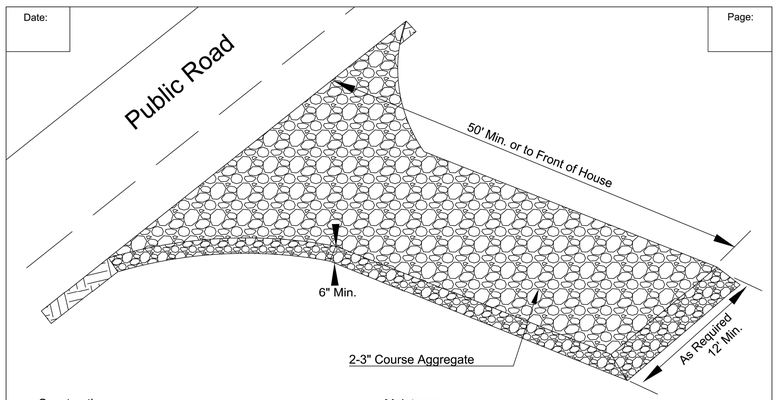
1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater. Make necessary repairs immediately.
2. Remove sediment and restore the basin to its original dimensions when sediment accumulates to one-half the height of the first baffle. Pull the skimmer to one side so that the sediment underneath can be excavated. Excavate the sediment from the entire basin, not just around the skimmer or within the first cell.
3. Make sure any vegetation growing in the bottom of the basin does not hold down the skimmer.
4. Repair baffles if they are damaged. Re-anchor the baffles if water is flowing underneath or around them.
5. Ensure the skimmer is not clogged with trash or debris.
6. If the skimmer arm or barrel pipe is clogged, remove orifice and clear debris with a plumber's snake or by flushing with clean water. Be sure to replace the orifice before repositioning the skimmer.
7. Check fabric lined spillway for damage and make any required repairs with fabric that spans the full width of the spillway. Check the embankment, spillways, and outlet for erosion damage, and inspect the embankment for piping and settlement.

SKIMMER SEDIMENT BASIN

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

Date:

Page:



Construction:

1. Clear the entrance and exit area of all vegetation, roots, and other objectionable material and properly grade it.
2. Place the gravel to the specific grade and dimensions shown on the plans, and smooth it.
3. Provide drainage to carry water to a sediment trap or other suitable outlet.
4. Use geotextile fabrics in order to improve stability of the foundation in locations subject to seepage or high water table.

Maintenance:

1. Per NCG-01 inspect at least once a week and after each 1 inch or greater rainfall; make any required repairs immediately.
2. Maintain the gravel pad in a condition to prevent mud or sediment from leaving the construction site. This may require periodic topdressing with 2 inch stone.
3. Immediately remove all objectionable materials spilled, washed or tracked onto public roadways.

NORTH CAROLINA Environmental Quality

EFFECTIVE DATE:11/12/2020

CONSTRUCTION ENTRANCE / EXIT

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NORTH CAROLINA PROFESSIONAL SEAL 049463 ENGINEER J. MICHAEL RIEMANN

2-20-2025

PROJECT TITLE

CFCC SURF CITY ALSTON BURKE ADDITION

621 STATE HWY 210 E
HAMPSTEAD
PENDER COUNTY, NC

SHEET TITLE

EROSION & SEDIMENTATION CONTROL DETAILS

ISSUE BLOCK

MARK	DATE	DESCRIPTION
2	02/20/25	AGENCY SUBMISSION
1	12/13/24	AGENCY SUBMISSION

LAYER/STATE: C-505

PROJECT NO.: 2024077.00
DATE: 08/07/2024
SCALE: AS NOTED
DRAWN BY: **J.P.G.** | PROJ. MGR.: **T.H.M.S.**

SHEET

C-505

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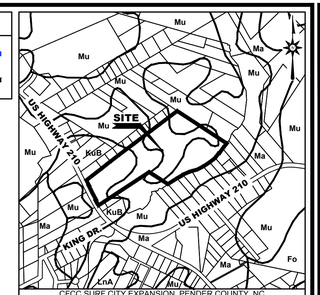
SWM-PRE GENERAL NOTE:

1. PLEASE NOTE THAT EXISTING COVER VALUES VARY FROM THE AMOUNTS LISTED IN EXISTING POST CONSTRUCTION STORMWATER MANAGEMENT PERMIT NO. SW8130705. THE VALUES CALCULATED FOR THIS PROJECT'S DRAINAGE AREAS AND COVER CONDITIONS ARE BASED ON THE MOST CURRENT SURVEY INFORMATION AND REFLECT HOW RUNOFF CURRENTLY FLOWS ON SITE.

LEGEND

DRAINAGE AREA BOUNDARY

SOIL BOUNDARY (SOIL GROUP B) (SOIL GROUP C)



CFCC SURF CITY EXPANSION, PENDER COUNTY, NC

SOIL SURVEY MAP SCALE: 1" = 1000'

SOIL MAP TAKEN FROM "SOIL SURVEY" PENDER COUNTY, NC (NC085)

Mu: MURVILLE MUCK
KuB: KUREB FINE SAND, 2 TO 6 PERCENT SLOPES
Ma: MANDARIAN FINE SAND
LnA: LEON FINE SAND, 0 TO 2 PERCENT SLOPES
Fo: FORESTON LOAMY FINE SAND

LANDS N/F
BOSQUE, MELISSA LYNN DEL
PIN: 4225-27-1364-0000
DEED REF. 4705-2022
ZONING - RP

LANDS N/F
GERTZ, LISAPIN
PIN: 4225-27-3436-0000
DEED REF. 4774-234
ZONING - RP

LANDS N/F
MITCHELL, CLARENCE EARL
PIN: 4225-27-4554-0000
DEED REF. 4800-868
ZONING - R20

LANDS N/F
MCLELLAN, SHELDON
PIN: 4225-27-5563-0000
DEED REF. 4822-1907
ZONING - R20

N.C. HIGHWAY 210
60' RIGHT OF WAY

EXISTING GRAVEL ROAD

COLBERT LANE
PRIVATE ROAD

EXISTING GRAVEL ROAD

COLBERT LANE
PRIVATE ROAD

EX. C.B.: GRATE: 33.40' INV. OUT: 31.15'

EX. C.B.: GRATE: 32.87' INV. IN: 28.37' INV. OUT: 28.10'

EX. C.B.: GRATE: 31.80' INV. IN: 29.05' INV. OUT: 28.65'

EX. C.B.: GRATE: 32.30' INV. IN: 29.54' INV. OUT: 29.51'

EX. C.B.: GRATE: 32.04' INV. IN: 29.74' INV. OUT: 29.73'

EX. S.D. C.O.: INV.: 29.79'

EX. C.B.: GRATE: 31.75' INV. IN: 27.31' INV. OUT: 26.99'

EXISTING ALSTON BURKE BUILDING ONE FFE: 33.40'

EX. S.D. C.O.: INV.: 30.45'

FIRE LANE NO PARKING

EX. C.B. GRATE: 33.71' INV. IN: 28.66' INV. OUT: 28.66'

EX. C.B. GRATE: 33.51' INV. OUT: 30.44'

EX. S.D.M.H. GRATE: 35.21' INV. IN: 28.39' INV. OUT: 28.39'

EX. OUTLET STRUCTURE: GRATE: 31.47' INV. IN: 30.09' INV. OUT: 28.35'

24" R.C.P. INV: 28.18'

EXISTING STORM WATER WET POND - 8,826 SF (0.202 AC.) (DESIGNED 2017 "CFCC ALSTON - BURKE PARKING EXPNASION")

18" R.C.P. INV: 29.23'

EX. C.B.: GRATE: 31.06' INV. OUT: 28.80'

EX. C.B.: GRATE: 31.84' INV. IN: 24.86' INV. OUT: 24.86'

EX. C.B.: GRATE: 31.75' INV. IN: 25.44' INV. OUT: 25.44'

EX. S.D. M.H. RIM: 32.20' INV. IN: 25.24' INV. OUT: 25.24'

36" R.C.P. INV: 24.43'

EXISTING STORM WATER WET POND (DESIGNED 2015 "CAPE FEAR COMMUNITY COLLEGE")

EX. OUTLET STRUCTURE: GRATE: 30.35' INV. IN: 29.45' INV. OUT: 28.35'

15" R.C.P. INV: 28.48'

18" R.C.P. INV: 28.12'

KuB (SOIL GROUP A)
Mu (SOIL GROUP D)

KuB (SOIL GROUP A)
Mu (SOIL GROUP D)

PRE D.A. 1
IMPERVIOUS (A): 1.48 AC
IMPERVIOUS (D): 0.01 AC
GRASS (A): 1.71 AC
GRASS (D): 0.10 AC
WOODS (A): 0.00 AC
WOODS (D): 0.00 AC
TOTAL: 3.30 AC

PRE D.A. 2
IMPERVIOUS (A): 0.31 AC
IMPERVIOUS (D): 0.00 AC
GRASS (A): 0.87 AC
GRASS (D): 0.04 AC
WOODS (A): 0.35 AC
WOODS (D): 0.05 AC
TOTAL: 1.61 AC
Tc PATH = 6.0 MIN
CURVE NUMBER = 50

PRE - DEVELOPED ANALYSIS POINT - 1

PRE - DEVELOPED ANALYSIS POINT - 2	
1.5" STORM Q:	0.01 C.F.S.
Cv (10 - YR) STORM Q:	0.74 C.F.S.
Cv (25 - YR) STORM Q:	2.87 C.F.S.
Cv (100 - YR) STORM Q:	8.78 C.F.S.

DELINEATED 404 WETLANDS. APPROVED BY USACE ACTION ID: SAW-2008-02350 EFF DATE: 8/14/2013

0 15 30 60

SCALE: 1" = 30'

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910.341.7600

www.beckermorgan.com

NC License #: C-4743

NORTH CAROLINA PROFESSIONAL SEAL 049463 ENGINEER MICHAEL RIEMANN

2-20-2025

PROJECT TITLE

CFCC SURF CITY ALSTON BURKE ADDITION

621 STATE HWY 210 E
HAMPSTEAD
PENDER COUNTY, NC

SHEET TITLE

PRE-DEVELOPED STORMWATER DRAINAGE AREA PLAN

ISSUE BLOCK

MARK	DATE	DESCRIPTION
2	02/20/25	AGENCY SUBMISSION
1	12/13/24	AGENCY SUBMISSION

LAYER STATE: SWM-PRE

PROJECT NO.:	2024077.00
DATE:	08/07/2024
SCALE:	1" = 30'
DRAWN BY: J.P.G.	PROJ. MGR.: T.H.M.S.

SHEET

SWM-PRE

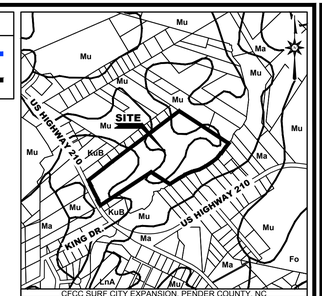
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LEGEND

DRAINAGE AREA BOUNDARY

SOIL BOUNDARY (SOIL GROUP B) (SOIL GROUP C)



CFCC SURF CITY EXPANSION, PENDER COUNTY, NC

SOIL SURVEY MAP SCALE: 1" = 1000'

SOIL MAP TAKEN FROM "SOIL SURVEY" PENDER COUNTY, NC (NC085)

Mu: MURVILLE MUCK
KuB: KUREB FINE SAND, 2 TO 6 PERCENT SLOPES
Ma: MANDARIAN FINE SAND
LnA: LEON FINE SAND, 0 TO 2 PERCENT SLOPES
Fo: FORESTON LOAMY FINE SAND

LANDS N/F
BOSQUE, MELISSA LYNN DEL
PIN: 4225-27-1364-0000
DEED REF. 4705-2022
ZONING - RP

LANDS N/F
GERTZ, LISAPIN
PIN: 4225-27-3436-0000
DEED REF. 4774-234
ZONING - RP

LANDS N/F
MITCHELL, CLARENCE EARL
PIN: 4225-27-4554-0000
DEED REF. 4800-868
ZONING - R20

LANDS N/F
MCLELLAN, SHELDON
PIN: 4225-27-5563-0000
DEED REF. 4822-1907
ZONING - R20

N.C. HIGHWAY 210
60' RIGHT OF WAY
N 27° 13' 13" W
MM

COLBERT LANE
PRIVATE ROAD

N 52° 00' 25" E
62.85

COLBERT LANE
PRIVATE ROAD

POST D.A. 1
IMPERVIOUS (A): 1.49 AC
IMPERVIOUS (D): 0.01 AC
GRASS (A): 1.58 AC
GRASS (D): 0.09 AC
WOODS (A): 0.00 AC
WOODS (D): 0.00 AC
TOTAL: 3.17 AC

EX. C.B.:
GRATE: 33.40'
INV. OUT: 31.15'

EX. C.B.:
GRATE: 32.87'
INV. IN: 28.37'
INV. OUT: 28.10'

EX. C.B.:
GRATE: 33.80'
INV. IN: 29.05'
INV. OUT: 28.65'

EX. C.B.:
GRATE: 32.30'
INV. IN: 29.54'
INV. OUT: 29.51'

EX. C.B.
GRATE: 33.71'
INV. IN: 28.66'
INV. OUT: 28.66'

EX. C.B.
GRATE: 33.51'
INV. OUT: 30.44'

SD-1B

PR. C.B. : 1B
GRATE : 32.85'
INV. IN : 29.86'
INV. OUT : 29.73'

SD-2B

PR. C.B. : 2B
GRATE : 33.03'
INV. IN : 30.23'
INV. OUT : 30.23'

SD-6B

PR. C.B. : 6B
GRATE : 33.15'
INV. OUT : 30.47'

PR. C.B. : 5B
GRATE : 33.25'
INV. OUT : 30.57'

SD-5B

PR. C.B. : 3B
GRATE : 33.06'
INV. IN : 30.35'
INV. IN : 30.35'
INV. OUT : 30.35'

PR. C.B. : 4B
GRATE : 32.87'
INV. OUT : 30.58'

PR. S.D. C.O.
INV. IN:

SD-7B

PR. C.B. : 7B
GRATE : 33.06'
INV. OUT : 30.06'

EX. S.D. C.O.
INV: 30.45'

EX. C.B.
GRATE: 32.04'
INV. IN: 29.74'
INV. OUT: 29.73'

EX. S.D. C.O.
INV: 29.79'

ALSTON BURKE EXPANSION BUILDING
11,000 S.F.
FFE 34.00'

EXISTING ALSTON BURKE BUILDING ON FFE: 33.40'

8" H.D.P.E

RD-1A

SD-1A

PR. C.B. : 2A
GRATE : 32.97'
INV. IN : 28.45'

SD-3A

PR. C.B. : 3A
GRATE : 33.22'
INV. OUT : 29.85'

PR. C.B. : 1A
GRATE : 32.64'
INV. IN : 28.34'
INV. IN : 28.34'
INV. OUT : 28.34'

24" RCP
INV. : 28.04'

24" R.C.P
INV: 28.18'

PROPOSED STORM WATER WET POND
13,426 SF (0.308 AC)
SEE SHEET C-503
FOR WET POND DETAILS

EX. OUTLET STRUCTURE:
GRATE: 31.47'
INV. IN: 30.00'
INV. OUT: 28.38'

18" R.C.P
INV: 29.23'

POST D.A. 2
IMPERVIOUS (A): 0.78 AC
IMPERVIOUS (D): 0.00 AC
GRASS (A): 0.77 AC
GRASS (D): 0.06 AC
WOODS (A): 0.09 AC
WOODS (D): 0.03 AC
TOTAL: 1.73 AC
Tc PATH = 6.0 MIN
CURVE NUMBER = 67

KuB (SOIL GROUP A)
Mu (SOIL GROUP D)

EX. C.B.:
GRATE: 31.75'
INV. IN: 27.51'
INV. OUT: 26.99'

EX. C.B.:
GRATE: 31.06'
INV. OUT: 28.80'

EX. C.B.:
GRATE: 31.84'
INV. IN: 24.86'
INV. OUT: 24.86'

EX. C.B.:
GRATE: 31.75'
INV. IN: 25.44'
INV. OUT: 25.44'

EX. S.D. M.H.
RIM: 32.20'
INV. IN: 25.24'
INV. OUT: 25.24'

36" R.C.P.
INV: 24.43'

EXISTING STORM WATER WET POND
(DESIGNED 2015 "CAPE FEAR COMMUNITY COLLEGE")

EX. OUTLET STRUCTURE:
GRATE: 30.35'
INV. IN: 29.47'
INV. OUT: 28.35'

18" R.C.P
INV: 28.12'

15" R.C.P.
INV: 28.48'

KuB (SOIL GROUP A)
Mu (SOIL GROUP D)

POST - DEVELOPED ANALYSIS POINT - 1

DELINEATED 404 WETLANDS.
APPROVED BY USACE.
ACTION ID: SAW-2008-02350
EFF DATE: 8/14/2013

848.11'
S 56° 41' 19" W

POST - DEVELOPED ANALYSIS POINT - 2	
1.5" STORM Q:	0.003 C.F.S.
Cv (10 - YR) STORM Q:	0.29 C.F.S.
Cv (25 - YR) STORM Q:	1.21 C.F.S.
Cv (100 - YR) STORM Q:	7.54 C.F.S.

0 15 30 60

SCALE: 1" = 30'

BECKER MORGAN GROUP

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NORTH CAROLINA PROFESSIONAL SEAL 049463 ENGINEER MICHAEL RIEMANN

2-20-2025

PROJECT TITLE

CFCC SURF CITY ALSTON BURKE ADDITION

621 STATE HWY 210 E
HAMPSTEAD
PENDER COUNTY, NC

SHEET TITLE

PRE-DEVELOPED STORMWATER DRAINAGE AREA PLAN

ISSUE BLOCK

MARK	DATE	DESCRIPTION
2	02/20/25	AGENCY SUBMISSION
1	12/13/24	AGENCY SUBMISSION

LAYER STATE: SWM-POST

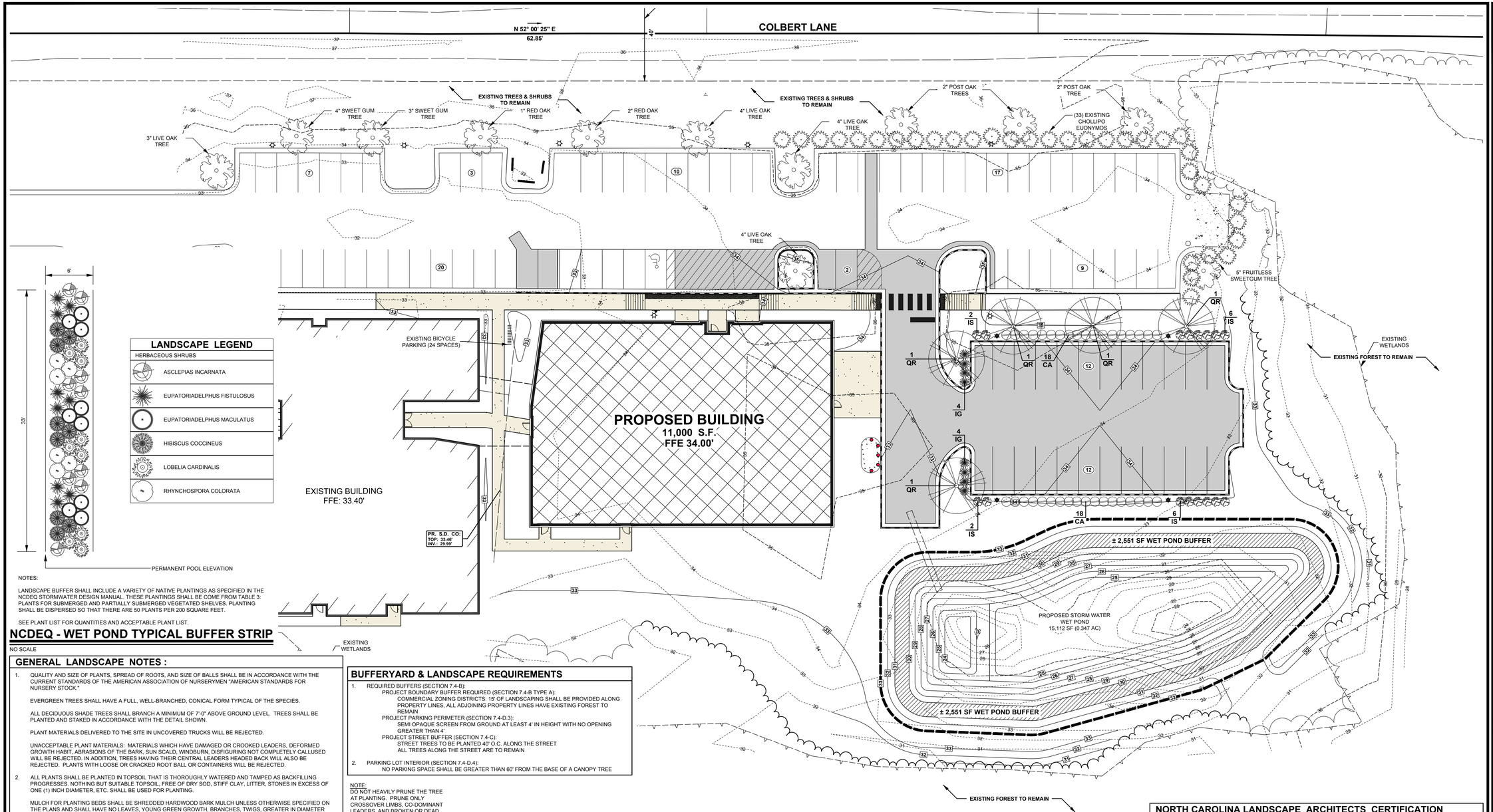
PROJECT NO.: 2024077.00
DATE: 08/07/2024
SCALE: 1" = 30'
DRAWN BY: J.P.G. PROJ. MGR.: T.H.M.S.

SHEET

SWM-POST

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LANDSCAPE LEGEND

HERBACEOUS SHRUBS
ASCLEPIAS INCARNATA
EUPATORIADELPHUS FISTULOSUS
EUPATORIADELPHUS MACULATUS
HIBISCUS COCCINEUS
LOBELIA CARDINALIS
RHYNCHOSPORA COLORATA

NOTES:

LANDSCAPE BUFFER SHALL INCLUDE A VARIETY OF NATIVE PLANTINGS AS SPECIFIED IN THE NCDEQ STORMWATER DESIGN MANUAL. THESE PLANTINGS SHALL BE COME FROM TABLE 3: PLANTS FOR SUBMERGED AND PARTIALLY SUBMERGED VEGETATED SHELVES. PLANTING SHALL BE DISPERSED SO THAT THERE ARE 50 PLANTS PER 200 SQUARE FEET.

SEE PLANT LIST FOR QUANTITIES AND ACCEPTABLE PLANT LIST.

NCDEQ - WET POND TYPICAL BUFFER STRIP

NO SCALE

GENERAL LANDSCAPE NOTES :

1. QUALITY AND SIZE OF PLANTS, SPREAD OF ROOTS, AND SIZE OF BALLS SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS OF THE AMERICAN ASSOCIATION OF NURSERYMEN "AMERICAN STANDARDS FOR NURSERY STOCK."

   EVERGREEN TREES SHALL HAVE A FULL, WELL-BRANCHED, CONICAL FORM TYPICAL OF THE SPECIES.

   ALL DECIDUOUS SHADE TREES SHALL BRANCH A MINIMUM OF 7'-0" ABOVE GROUND LEVEL. TREES SHALL BE PLANTED AND STAKED IN ACCORDANCE WITH THE DETAIL SHOWN.

   PLANT MATERIALS DELIVERED TO THE SITE IN UNCOVERED TRUCKS WILL BE REJECTED.

   UNACCEPTABLE PLANT MATERIALS: MATERIALS WHICH HAVE DAMAGED OR CROOKED LEADERS, DEFORMED GROWTH HABIT, ABRASIONS OF THE BARK, SUN SCALD, WINDBURN, DISFIGURING NOT COMPLETELY CALLUSED WILL BE REJECTED. IN ADDITION, TREES HAVING THEIR CENTRAL LEADERS HEADED BACK WILL ALSO BE REJECTED. PLANTS WITH LOOSE OR CRACKED ROOT BALL OR CONTAINERS WILL BE REJECTED.

2. ALL PLANTS SHALL BE PLANTED IN TOPSOIL THAT IS THOROUGHLY WATERED AND TAMPED AS BACKFILLING PROGRESSES. NOTHING BUT SUITABLE TOPSOIL, FREE OF DRY SOD, STIFF CLAY, LITTER, STONES IN EXCESS OF ONE (1) INCH DIAMETER, ETC. SHALL BE USED FOR PLANTING.

   MULCH FOR PLANTING BEDS SHALL BE SHREDDED HARDWOOD BARK MULCH UNLESS OTHERWISE SPECIFIED ON THE PLANS AND SHALL HAVE NO LEAVES, YOUNG GREEN GROWTH, BRANCHES, TWIGS, GREATER IN DIAMETER OF ½", WEEDS, SHAVINGS OR FOREIGN MATERIAL SUCH AS STONES, ETC. SHALL BE MIXED WITH THE MULCH. ALL SHRUB MASSES SHALL BE PLANTED IN CONTINUOUS MULCHED BEDS WITH A LIGHTLY COMPACTED DEPTH OF THREE (3) INCHES. ALL CONTAINER PLANTS ARE TO HAVE ROOTS CUT ON FOUR SIDES AND/ OR SPREAD OUT IN NEW SOIL MIXTURE.

3. ALL AREAS NOT STABILIZED IN PAVING OR PLANT MATERIALS SHOULD BE SEEDED AND MULCHED. (SEE EROSION & SEDIMENT CONTROL PLAN AND NOTES.)

4. LANDSCAPE BEDS NOT DEFINED BY CURBS, SIDEWALKS, WALLS OR OTHER STRUCTURES SHALL BE ENCLOSED BY ALUMINUM EDGING UNLESS OTHERWISE INDICATED.

5. AREAS DISTURBED BY LANDSCAPE OPERATIONS SHALL BE GRADED TO MATCH EXISTING TOPSOIL AND SEED OR SOD AS REQUIRED.

6. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO UTILITIES AND MAY MAKE MINOR ADJUSTMENTS IN SPACING AND/OR LOCATION OF PLANT MATERIALS. CONTRACTOR TO VERIFY "AS BUILT" LOCATION OF ALL UTILITIES.

7. NO PLANT, EXCEPT GROUNDCOVERS, SHALL BE WITHIN THREE (3) FEET FROM SIDEWALKS.

8. NO TREE SHALL BE PLANTED CLOSER THAN TEN (10) FEET FROM ANY STRUCTURE OR BUILDING.

9. NO TREE SHALL BE PLANTED WITHIN TEN (10) FEET OF UNDERGROUND UTILITIES OR FIRE HYDRANTS.

10. ONLY TREES THAT REACH A HEIGHT AND SIZE AT MATURITY OF SMALL TO MEDIUM SHALL BE PLANTED UNDER POWER LINES.

11. THE CONTRACTOR SHALL WATER ALL PLANTS THOROUGHLY TWICE DURING THE FIRST 24-HOUR PERIOD AFTER PLANTING, AND THEN WEEKLY OR MORE OFTEN, IF NECESSARY, DURING THE FIRST GROWING SEASON, UNLESS THE OWNER AGREES TO MAINTAIN AND WATER THEM.

12. TREES TO REMAIN ON-SITE SHALL BE PROTECTED WITH SNOW FENCE DURING CONSTRUCTION (SEE DETAIL). SNOW FENCING TO BE MAINTAINED DURING CONSTRUCTION BY CONTRACTOR.

13. THE PLANTING PLAN SHALL TAKE PRECEDENCE OVER THE PLANT SCHEDULE SHOULD ANY PLANT QUANTITY DISCREPANCIES OCCUR.

14. NO SUBSTITUTIONS SHALL BE MADE WITHOUT APPROVAL OF THE OWNER AND/ OR THE LANDSCAPE ARCHITECT.

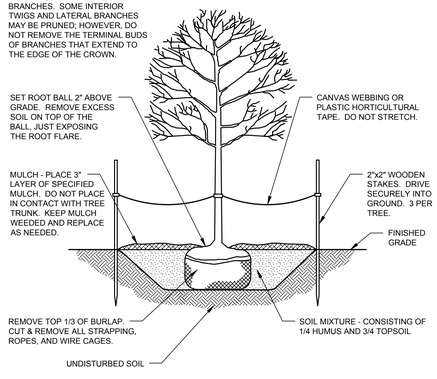
15. ALL NEW TREES SHALL BE GUARANTEED TO SURVIVE FOR ONE FULL YEAR AFTER INSTALLATION (FULL COST). ALL STAKES AND GUYS SHALL BE REMOVED FROM TREES AND SITE AS EARLY AS THREE (3) MONTHS, BUT NO LONGER THAN ONE (1) YEAR AFTER PLANTING.

BUFFERYARD & LANDSCAPE REQUIREMENTS

1. REQUIRED BUFFERS (SECTION 7.4-B):
   - PROJECT BOUNDARY BUFFER REQUIRED (SECTION 7.4-B TYPE A):
     COMMERCIAL ZONING DISTRICTS: 15' OF LANDSCAPING SHALL BE PROVIDED ALONG PROPERTY LINES, ALL ADJOINING PROPERTY LINES HAVE EXISTING FOREST TO REMAIN
   - PROJECT PARKING PERIMETER (SECTION 7.4-D.3):
     SEMI OPAQUE SCREEN FROM GROUND AT LEAST 4' IN HEIGHT WITH NO OPENING GREATER THAN 4'
   - PROJECT STREET BUFFER (SECTION 7.4-C):
     STREET TREES TO BE PLANTED 40' O.C. ALONG THE STREET
     ALL TREES ALONG THE STREET ARE TO REMAIN

2. PARKING LOT INTERIOR (SECTION 7.4-D.4):
   NO PARKING SPACE SHALL BE GREATER THAN 60' FROM THE BASE OF A CANOPY TREE

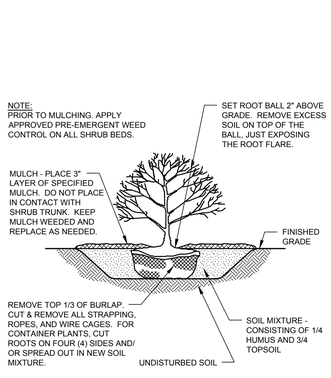
NOTE:
DO NOT HEAVILY PRUNE THE TREE AT PLANTING. PRUNE ONLY CROSSOVER LIMBS, CO-DOMINANT LEADERS, AND BROKEN OR DEAD BRANCHES. SOME INTERIOR TWIGS AND LATERAL BRANCHES MAY BE PRUNED; HOWEVER, DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN.



DECIDUOUS TREE PLANTING DETAIL

NO SCALE BMG NO. : L-01

NOTE:
PRIOR TO MULCHING. APPLY APPROVED PRE-EMERGENT WEED CONTROL ON ALL SHRUB BEDS.



SHRUB PLANTING DETAIL

NO SCALE BMG NO. : L-03

NORTH CAROLINA LANDSCAPE ARCHITECTS CERTIFICATION

I, CHAD D. CARTER, RLA, ASLA, HEREBY CERTIFY THAT I AM A LANDSCAPE ARCHITECT IN THE STATE OF NORTH CAROLINA, THAT THE LANDSCAPING INFORMATION SHOWN HEREON HAS BEEN PREPARED UNDER MY SUPERVISION AND TO MY BEST KNOWLEDGE AND BELIEF, REPRESENTS GOOD LANDSCAPING PRACTICES.

CHAD D. CARTER, RLA, ASLA 2185 02/16/2025
DATE

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 2185 CHAD D. CARTER

PLANT LIST

KEY	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	REMARKS
CANOPY TREES						
QR	5	QUERCUS RUBRA	NORTHERN RED OAK	2 1/2" CAL	B&B	FHV
SHRUBS						
CA	36	CLETHRA ALNIFOLIA	SWEET PEPPERBUSH	24-36"	CONT.	
IG	8	ILEX GLABRA 'SHAMROCK'	SHAMROCK HOLLY	24-36"	CONT.	
IS	16	ILEX VERTICILLATA 'SPARKLEBERRY'	SPARKLEBERRY WINTERBERRY	24-36"	CONT.	
WET POND VEGETATED SHELF						
AI	106	ASCLEPIAS INCARNATA	SWAMP MILKWEED	4"	PLUG	
EF	106	EUPATORIADELPHUS FISTULOSUS	JOE PYE WEED	4"	PLUG	
LC	106	EUPATORIADELPHUS MACULATUS	SPOTTED TRUMPETWEED	4"	PLUG	
HC	107	HIBISCUS COCCINEUS	SCARLET ROSE MALLOW	4"	PLUG	
LC	106	LOBELIA CARDINALIS	CARDINAL FLOWER	4"	PLUG	
RC	107	RHYNCHOSPORA COLORATA	STARRUSH WHITETOP	4"	PLUG	

TOTAL: 5 TREES, 60 SHRUBS, 638 HERBACEOUS SHRUBS

BECKER MORGAN GROUP

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ENGINEERING

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302.369.3700

Maryland
312 West Main Street, Suite 300
Salisbury, MD 21801
410.546.9100

North Carolina
3333 Jaeckle Drive, Suite 120
Wilmington, NC 28403
910.341.7600

www.beckermorgan.com

PROJECT TITLE

CFCC SURF CITY EXPANSION

621 STATE HWY 210 E
HAMPSTEAD
PENDER COUNTY, NC

SHEET TITLE

LANDSCAPE PLAN

0 10 20 40
SCALE: 1" = 20'

ISSUE BLOCK		
1.	12/13/24	AGENCY SUBMISSION
MARK	DATE	DESCRIPTION

LAYER STATE: L-001

PROJECT NO.: 2024077.00
DATE: 10/03/2024
SCALE: 1" = 20'
DRAWN BY: A.J.D. PROJ. MGR.: T.H.M.S.

SHEET
L-101

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1.0 CODES AND STANDARDS:

1.1 ''2018 North Carolina State Building Code'' and ''International Building Code'', 2015.

1.2 ''Minimum Design Loads for Buildings and other Structures'' SEI/ASCE 7-16.

1.3 ''Building Code Requirements for Structural Concrete (ACI 318-14)'' American Concrete Institute 2014.

1.4 "Manual of Standard Practice'', Concrete Reinforcing Steel Institute, latest edition.

1.5 "National Design Specification for Wood Construction,"AF&PA NDS-2018.

2.0 DESIGN LOADS:
Project Located in: Town of Surf City, State of North Carolina.

2.1 Gravity Loads: (Reduced where allowed)

GRAVITY LOADS		
Location	Uniform (psf)	Concentrated (lbs) (Over 2.5'x2.5')
Roof Loads:		
Dead Load	20	
Live Load	20	300
Floor Live Loads:		
Ground Floor	100	

2.2 Drifting Snow Loads per Referenced Code.

Pg = 10 psf
I = 1.0
Ce = 0.9
Ct = 1.0

2.3 Risk Category = II

2.4 Wind Loads per Referenced Code.

Basic Design Wind Speed:
3-second Gust PER ASCE
V = 144 mph
Exposure "B"

Main Wind Force Resisting System:
Building is enclosed & Internal Pressure coefficient (GCpi) = +0.18 & -0.18
Topographic Factor Kzt = 1.0
Wind Directionality Factor, Kd = 0.85

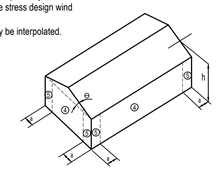
CALCULATED WIND BASE SHEAR (VULT FOR MWFRS)		
Unit Name	Vx (k)	Vy (k)
Main Building	35k	51k

Components & Cladding

Components and Cladding Wind Pressure (psf)

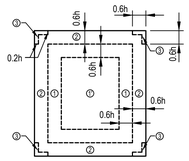
Walls	Area < 10ft2		Area < 20ft2		Area < 50ft2		Area < 100ft2		Area < 500ft2	
Zone 4	29.7	-32.2	28.5	-31.0	26.6	-29.1	25.2	-27.8	22.2	-24.7
Zone 5	29.7	-39.8	28.5	-37.3	26.6	-33.5	25.2	-31.0	22.2	-24.7
Roof	**Area < 10ft2**		**Area < 20ft2**		**Area < 50ft2**		**Area < 100ft2**		**Area < 500ft2**	
Zone 1'	16.0	-52.6	16.0	-51.2	16.0	-50.4	16.0	-49.8	16.0	-33.0
Zone 1	16.0	-52.6	16.0	-51.2	16.0	-50.6	16.0	-49.8	16.0	-33.0
Zone 2	16.0	-69.4	16.0	-63.8	16.0	-55.4	16.0	-49.8	16.0	-35.8
Zone 3	16.0	-94.6	16.0	-83.4	16.0	-69.4	16.0	-61.0	16.0	-35.8

Notes:
1. Areas noted are effective wind areas as per ASCE 7, 26.2 definitions.
2. See figures this sheet for Zone locations.
3. Plus and minus signs signify pressures acting toward and away from surfaces, respectively.
4. Design pressures shown in table are strength design wind pressures. Allowable stress design wind pressures may be calculated by factoring the pressures by 0.6.
5. Design pressures for effective wind areas between those noted in schedule may be interpolated.
6. Tributary area = greater of LxW or LxL/3.
7. Deflections may be calculated based on 42% of these loads.



ELEVATION

COMPONENT & CLADDING WALL ZONES
a = 9ft



COMPONENT & CLADDING FLAT ROOF ZONES
h = 17ft "mean roof height"

2.5 Seismic Loads per Referenced Code.

Risk Category = II
Site class = "D" (Per Geotechnical Report)
Spectral Response Coefficients:
Ss = 0.129g
S1 = 0.06g
SDS = 0.138g
SD1 = 0.096g
Cs = 0.021

Seismic Design Category = "B"
Seismic Importance Factor = 1.0
Basic Seismic - Force - Resisting System
Building Frame System- Wood Walls Sheathed With Wood Structural Panels Rated For Shear Resistance

RX=RY=6.5, ΩX=ΩY=3.0, CDX=CDY=4.0
Design Base Shear Vx = Vy = 8k
Building Height Limit = NL
Analysis Procedure - per Referenced Code.
Equivalent Lateral Force Procedure

2.6 Guardrail designed per Referenced Code, Chapter 16 IBC

Guardrail:
Uniform load = 50 plf, any direction
Concentrated load = 200 lbs, any direction
Intermediate Rail: (all those except handrail)

2.7 Flood Loads:
Project is not located in a flood zone.

3.0 FOUNDATIONS:

3.1 Foundation design is based on geotechnical report # 24060108 by S&ME Wilmington, NC dated August 23, 2024. This report is available in the project manual. The recommendations contained in this report are for the Contractor's information only.

3.2 Footings shall bear on strata capable of sustaining a minimum bearing pressure of 2000 psf.

3.3 Top of footing (T/FTG) elevations are shown on the drawings or are to be determined by the Contractor in the field in accordance with the guidelines set forth in the drawings.

3.4 Bottom of exterior footings, grade beams and walls shall bear at a minimum depth of 1'-0'' below final grade for frost protection.

3.5 Testing and Inspection:
a. All areas to have slabs on grade shall be proof rolled in accordance with and under observation of the Geotechnical Engineer and approved prior to preparation for concrete placement.
b. All foundation bearing strata shall be inspected and approved by the Geotechnical Engineer prior to any concrete placement.
c. Geotechnical Engineer shall be the sole judge as to suitability of all foundation and/or slab bearing strata.
d. Footing bearing elevations shall be adjusted in the field as required to meet the design bearing pressures by additional excavation or compaction and/or backfilling or by other means acceptable to the Geotechnical Engineer.

3.6 Undercutting to remove existing fill beneath footings and slab shall be performed at the direction of the Geotechnical Engineer.

3.7 Engineered Fill: All fill material shall be selected in accordance with the Geotechnical Report Material shall be a clean, low plastic soil with a plasticity index less than 30 (less than 15 is preferred), liquid limit less than 50, and unit weight of 120 pcf (+ 5 pcf)

3.8 Compaction: All fill shall be placed in loose lifts not exceeding 8 inches in thickness and compacted to a minimum of 96 percent Standard Proctor (ASTM D-698) except that the top 12 inches shall be compacted to a minimum of 98 percent Standard Proctor. Moisture shall be controlled to within 3 percent above or below optimum content.

3.9 Remove all topsoil and organic materials. The stripping should extend at least 10' beyond the proposed construction limits.

3.10 Contractor shall review all construction considerations as outlined in the Geotechnical report and bid accordingly.

4.0 CONCRETE:

4.1 Concrete Strength:
All concrete shall be in accordance with the American Concrete Institute (ACI) 301 and 318.

4.2 See S3 Sheets for 28 day concrete compressive strength and density requirements

4.3 Concrete Mix Designs:
a. Submittals: Submit mix designs of each proposed concrete mix not less than 15 days prior to the start of work.
b. Mix designs, including water, cement ratios and slumps, shall be prepared in accordance with ACI 301-05, Section 4, Cement shall conform to ASTM C 150 Type 1 or at contractor's option, ASTM C 595 Type IP where fly ash is permitted. Normal weight aggregate shall conform to ASTM C 33 and light weight aggregate shall conform to ASTM C 330. No admixtures containing calcium chloride shall be permitted in any concrete.
c. Aggregate size shall be #67 stone for supported slabs or other formed concrete elements; #57 stone for slabs on grade and footings or other concrete elements formed from and poured against earth; #89 stone for masonry grout.
d. Water reducing admixture shall be used in all concrete.
e. Air entraining admixture in accordance with ACI 301 shall be used in all concrete exposed freezing and thawing during construction or service conditions.
f. Concrete subjected to freezing/thawing shall have a maximum water/cement ratio of 0.45 and shall contain the amount of air entraining agent specified in ACI 301-05 Section 4.
g. All columns and walls shall have superplasticizer admixture

4.4 Curing:
See specifications for curing method options and apply within two (2) hours after completion of finishing to all concrete flatwork and walls, U.N.O., other than footings and grade beams.

4.5 Use a non-corrosive, non-chloride accelerating admixture in concrete exposed to temperatures below 40°. Uniformly heat the water and aggregates to a temperature of not less than 50° Place and cure concrete in accordance with ACI 306.

4.6 When hot weather conditions exist, place and cure concrete in accordance with ACI 301. Cool ingredients before mixing to maintain concrete temp. at time of placement below 90°.

4.7 Reinforcing in all abutting concrete, including footings shall be continuous through or around all corners or intersections. Dowels or splices shall be equal in size and spacing to the reinforcing in the abutting members.

4.8 Refer to architectural drawings for door and window openings, drips, reglets, washes, masonry anchors, brick ledge elevations, slab depressions and miscellaneous embedded plates, bolts, anchors, angles, etc.

4.9 Refer to plumbing, mechanical and electrical drawings for underfloor, perimeter and other drains and for sleeves, outlet boxes, conduit, anchors, etc. The various trades are responsible for their items.

4.10 Base plates, anchor rods, support angles and other steel exposed to earth or granular fill shall be covered with a minimum of 3'' of concrete.

4.11 Fill slabs, not shown on the structural drawings and all exterior slabs to be broom finished, shall be reinforced with a minimum of 6 x 6 x W2.0 x W2.0 WWM unless noted otherwise on other drawings.

4.12 Finish surfaces to the following tolerances, according to ASTM E 1155, for a randomly trafficked floor surface:
a. Specified overall values of flatness, F(F) 25; and of levelness, F(L) 20; with minimum local values equal to ½ of the overall flatness and levelness values.
b. The composite F(F) and F(L) numbers shall be measured and reported within 72 hours after completion of slab concrete finishing operations and before removal of any supporting shores.

4.13 Non-shrink grout shall be pre-mixed, non-corrosive, non-metallic, non-staining containing silica sands, Portland cement, shrinkage compensating and water reducing agents. Product shall only require the addition of water. Minimum compressive strength shall be 2500 psi after one day and 7000 psi after 28 days. Grout shall be free of gas producing or air releasing and oxidizing agents and contain no corrosive iron, aluminum or gypsum.

4.14 Provide concrete grout - not mortar - for reinforced masonry lintel and bond beams where indicated on drawing or as scheduled.

4.15 Tolerance for anchor rods and other embedded items shall be per the AISC Code of Standard Practice Section 7.5.

4.16 Unless otherwise shown in the architectural drawings, provide ¾" chamfers at all column, wall, slab or beam edges that are exposed to view in the finished structure.

4.17 Concrete cover for cast-in-place concrete reinforcement:
Concrete cast against & permanently exposed to earth:.....3"
Concrete exposed to earth or weather:
No. 6 through No. 18 Bars:.....2"
No. 5 Bar and smaller:.....1½"
Concrete not exposed to weather or in contact with ground:
Slabs, Walls, Joists:
No. 11 Bar and smaller:.....¾"
Beams, Columns:
Primary Reinforcement, Ties, Stirrups:.....1½"

5.0 REINFORCING STEEL:

5.1 Reinforcing shall be domestic new billet steel conforming to ASTM A615, Grade 60 or 60S including stirrups and ties, except that reinforcing which is required to be welded shall conform to ASTM A706.

5.2 Field bending of concrete reinforcing steel is not permitted.

5.3 Welded wire mat and fabric shall conform to ASTM A184 and A185 respectively and shall be provided in flat sheets. Welded wire mat/fabric shall be lapped 0'-6'' at all splices.

5.4 Bar Splices:

	f'c = 3,000psi		f'c = 4,000psi		f'c = 5,000psi	
Bar Size	Ld (in)	Class "B" Lap Splice (in)	Ld (in)	Class "B" Lap Splice (in)	Ld (in)	Class "B" Lap Splice (in)
#3	17	22	15	19	13	17
#4	22	29	19	25	17	23
#5	28	36	24	31	22	28
#6	33	43	29	37	26	34
#7	48	63	42	54	38	49
#8	55	72	48	62	43	56
#9	62	81	54	70	48	63
#10	69	90	60	78	54	69
#11	76	98	66	85	59	76

NOTES:
1. Values are based on normal weight concrete.
2. Ld = minimum embed of rebar
3. Class "B" lap splice refers to minimum distance bars must be lapped for a full tension splice.
4. For Epoxy Coated bars multiply table values by 1.2
5. For Beam Top Bars multiply table values by 1.3
6. For Top Bars in Slabs 13in and thicker multiply table values by 1.3

6.0 GENERAL WOOD FRAMING NOTES:

6.1 All load bearing walls shall be SPF#2 U.N.O. or approved equal:
See plans and load bearing wall schedule for locations, spacing, and load bearing studs species.
All interior non-load bearing wall, shall be SPF #2, or approved equal.
All top plates shall be SYP #2 or better. All sill plates shall be SYP #3 or better. Pressure treat all sill plates in contact with concrete or masonry.
All pressure treated 2x material shall be SYP #2 or better and shall be treated in accordance with AWPA Standard U1 to the requirements of Use Category 3B (UC3B) or Use Category 4A (UC4A).
All pressure treated Parallam shall be Truss Joist MacMillan, Wolmanized Parallam PSL, or approved equal.
All pressure treated Glulam (GL) members shall be Rosboro Treated X-Beam 2400F_b-1.9E or approved equal.
All Glulams shall be Rosboro 24F-V4 or better.
All Blocking, Headers, beams and miscellaneous framing shall be SYP#2 U.N.O.

6.2 All Laminated Veneer Lumber (LVL) shall be Louisiana Pacific, Gang-Lam 3100F_b-2.0E or approved equal.
All roof and floor trusses shall be Builders First Source or approved equal. Truss supplier shall construct trusses to provide full bearing on all walls and girders. The truss supplier shall also submit drawings for review prior to fabrication. The shop drawings shall show the following:
- Layout plan
- Bearing locations
- Truss elevations
- Mechanical openings
- Structural calculations
- Professional engineer seal to certify design. Engineer must be licensed in the state where the project is located.

Hurricane clips and tie downs

6.3 Wall Sheathing
- Exterior wall sheathing shall be 7/16" exposure 1 grade plywood or OSB.
- Interior Shear Wall sheathing shall be 7/16" OSB or plywood.
- Block all edges @ exterior walls and Shear Walls.
- First row of sheathing at slab on grade is recommended to be pressure treated.
- See S5 sheets for shear wall nailing requirements block all edges.
- All other non-shear Wall sheathing shall be nailed to supports w/ 8d @ 3"o.c. edges and 12"o.c. field.

6.4 Roof Deck/Diaphragm
- Roof sheathing shall be ½" Exposure 1 plywood
- Place long direction perpendicular to framing
- Stagger end joints
- Provide roof sheathing clips, Simpson PSCL/PSCA or approved equal at all unsupported edges.
- Nail to supporting members with 10d ring shank @ 6"o.c. edges and 12"o.c. field.

6.5 See plan for location of Wood Shear Walls and detail sheets for framing requirements.

6.6 [X] number in box notes the required number of bundled studs in that location. Bundled studs shall rest on framing member below or provide solid blocking from sub-floor to plate or girder below. Good framing practices shall be used in all cases.

6.7 All strap and tie connections shall have z-max (g185) triple zinc coating (or hot-dipped galvanized). All nails in contact with pressure treated lumber shall be hot-dipped galvanized and approved for use in pressure treated lumber.

6.8 Do not bend coil straps.

6.9 Unless noted otherwise, connect all building components per table 2304.10.1 - fastening schedule, per IBC 2015.

6.9 All MEP systems, cladding, window systems, and finishes shall be installed to prevent damage from wood shrinkage shown in table this sheet. Roof drainage system shall account wood shrinkage shown in table to avoid ponding. See detail on S4 sheets for recommended stud penetration detail for plumbing pipes.

7.0 CONSTRUCTION AND SAFETY:

7.1 Woods Engineering P.A.'s responsibility is limited to the details and information shown on these drawings. It is the responsibility of the Contractor to provide adequate safety measures required by local codes as well as OSHA Standards for the Construction Industry. This should include, but not be limited to the following:
Shoring to protect new as well as existing structures.
Necessary Scaffolding.
Material Handling Equipment.
Trench Boxing.

8.0 SHOP DRAWING SUBMITTAL:

8.1 See Project Manual

8.2 Contractor shall submit Electronic copies (PDF format) of each shop drawing for review. Shop drawings shall be reviewed by the Contractor prior to submission to the Engineer. The Contractor shall allow 10 working days for shop drawing approval.

8.3 The following items require delegated design by a licensed engineer:
- Wood Roof Trusses
- Prefabricated Canopies

9.0 STRUCTURAL INSPECTIONS:

9.1 Refer to sheet S102 for all Structural Inspections requirements.

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ABBREVIATIONS

@	AT
&	AND
AB	ANCHOR BOLTS
ACI	AMERICAN CONCRETE INSTITUTE
ADDL	ADDITIONAL
AFF	ABOVE FINISHED FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AISI	AMERICAN IRON AND STEEL INSTITUTE
ALT	ALTERNATE
ARCH	ARCHITECTS - ARCHITECTURAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWS	AMERICAN WELDING SOCIETY
B, BOTT	BOTTOM
BCX	BOTTOM CHORD EXTENSION
BFF	BELOW FINISHED FLOOR
BLDG	BUILDING
BM	BEAM
BOS	BOTTOM OF STEEL
BRG	BEARING
BTWN	BETWEEN
CFS	COLD FORMED STEEL
CJ	CONTRACTION JOINT
CL	CENTERLINE
CLR	CLEAR
CMU	CONCRETE MASONRY UNITS
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST JT	CONSTRUCTION JOINT
CONT	CONTINUOUS
CONTR	CONTRACTOR
CSJ	COMPOSITE STEEL JOIST
CTRD	CENTERED
DBA	DEFORMED BAR ANCHOR
DD	DELEGATED DESIGN
DEFL	DEFLECTION
DEPR	DEPRESSION - DEPRESSED
DET	DETAIL
DIAG	DIAGONAL
Ø	DIAMETER
DIM	DIMENSION
DIST	DISTANCE
DWG(S)	DRAWING(S)
DWL(S)	DOWEL(S)
EA	EACH
ELEV	ELEVATION
EMBED	EMBEDDED - EMBEDMENT
ENG	ENGINEER
EOR	ENGINEER OF RECORD
EQ	EQUAL
EQUIP	EQUIPMENT
EF	EACH FACE
EJ	EXPANSION JOINT
EOD	EDGE OF DECK
EOM	EDGE OF MASONRY
EOS	EDGE OF SLAB
EOW	EDGE OF WALL
EW	EACH WAY
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
FDN	FOUNDATION
FFE	FINISHED FLOOR ELEVATION
FS	FAR SIDE
FTG	FOOTING
GA	GAUGE
GALV	GALVANIZED
GT	GIRDER TRUSS
HD	HEADED
HI	HIGH
HORIZ	HORIZONTAL
HSS	HOLLOW STRUCTURAL SECTION
HT	HIP TRUSS
IFM	INSIDE FACE OF MASONRY
INT	INTERIOR
JBE	JOIST BEARING ELEVATION
JT	JOINT
K	KIP-S
KB	KICKER BRACE
KSI	KIPS PER SQUARE INCH
(L)	LONG SIDE REINFORCEMENT
LB	LONG BAR
LBS	POUNDS
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LOW	LOW
LOC	LOCATION
LWC	LIGHT WEIGHT CONCRETE
MAX	MAXIMUM
MC	MOMENT CONNECTION
MECH	MECHANICAL
MFR	MANUFACTURER
MID	MIDDLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MOW	MIDDLE OF WALL
MP	MASONRY PILASTER
d	NAILS - PENNY
No	NUMBER
NS	NEAR SIDE
NTS	NOT TO SCALE
NWC	NORMAL WEIGHT CONCRETE
OC	ON CENTER
OFB	OUTSIDE FACE OF BRICK
OFM	OUTSIDE FACE OF MASONRY
OFS	OUTSIDE FACE OF STUD
OPNG	OPENING
OPP	OPPOSITE HAND
PEBS	PRE-ENGINEERED BUILDING SUPPLIER
PED	PEDESTAL
PL	PLATE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSL	PARALLEL STRAND LUMBER
PLF	POUNDS PER LINEAR FOOT
PT	PRESSURE TREATED
REF	REFERENCE
REINF	REINFORCING
REQD	REQUIRED
(S)	SHORT SIDE REINFORCEMENT
SB	SHORT BAR
SCHD	SCHEDULE
SF	STEP FOOTING
SIM	SIMILAR
SOG	SLAB ON GRADE
SPEC(S)	SPECIFICATION(S)
SPF	SPRUCE PINE FUR
SQ	SQUARE
STD	STANDARD
STIFF	STIFFENER
STIRR	STIRRUP
STL	STEEL
STR	STRUCTURAL
SW	SHEAR WALL
SYP	SOUTHERN YELLOW PINE
T	TOP
TCX	TOP CHORD EXTENSION
TOC	TOP OF CONCRETE
TOS	TOP OF STEEL
TOW	TOP OF WALL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VB	VEHICLE BARRIER
VERT	VERTICAL
VIF	VERIFY IN FIELD
W	WITH
WWF	WELDED WIRE FABRIC

DO NOT SCALE DIGITAL OR HARD COPIES OF THESE DRAWINGS:

Unless Specifically Noted - Drawings, Plans, Sections, Details, Etc. are a graphic representation of the framing conditions and/or requirements.
Rebar lengths, bends & etc. SHALL NOT be determined by scaling any drawings included in this set of documents. Lengths & sizes shall be determined by the schedules only, or specifically requested if not numerically shown. Submit a written request to Woods Engineering, PA if further clarification is needed.

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CONSULTANT INFORMATION

W.M. Jordan COMPANY

CAPE FEAR COMMUNITY COLLEGE

WOODS ENGINEERING P.A. CORPORATE SEAL No. C-1806 NORTH CAROLINA

NORTH CAROLINA PROFESSIONAL SEAL 041563 ENGINEER ADAM L. SISK

PROJECT TITLE

CFCC SURF CITY SA ADDITION

621 NC HWY 210E, SURF CITY, NC

SCO ID#24-28220-01A

SHEET TITLE

GENERAL NOTES

ISSUE BLOCK

Mark	Date	Description
3	02.12.2025	SCO CD DOCUMENTS
2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	08.31.2024	SCO-SD/DD REVIEW

PROJECT NO: 2024077.00
DATE: 2/12/2025
SCALE: As indicated
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Schedule of Special Inspection Services
Wood Construction

Inspection Task	Task Req'd	Freq	Reference for Criteria		Agent
			Standard	NCBC	
1. Fabricator certification / verification of quality control procedures for prefabricated wood structural elements and assemblies					
a. Verify fabricator qualifications	☒	C		1704.2.5.1, 1705.5	
b. Collect certificates of compliance from the fabricator at completion of fabrication	☒	C		1704.5, 1705.5	
2. High-load diaphragms				2306.2	
a. Verify that wood structural panel sheathing is the correct grade and thickness	☐	P		1705.5.1	
b. Verify nominal size of framing members and blocking at adjoining panel edges	☐	P	AWC-SDPWS 4.2.7.1.2	1705.5.1	
c. Nail and or staple diameter, length, quantity and spacing comply with the contract documents	☐	P		1705.5.1	
3. For metal-plate-connected trusses clear spanning 60 feet or more, verify that both temporary and permanent restraints and braces are installed in accordance with the approved truss submittal package	☐	P		1705.5.2	
4. Inspect all structural framing for member size, grade, spacing, fastening and connections. Verify floor and roof truss installation with approved shop drawings	☒	P			
5. Inspect all structural sheathing for thickness, grade, and fastening	☒	P			
6. Inspect all connections including truss hangers, roof truss holdowns, and shear wall holdown rods	☒	P			

Schedule of Special Inspection Services
Soils

Inspection Task	Task Req'd	Freq	Reference for Criteria		Agents
			Standard	NCBC	
1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity	☒	P		1705.6	
2. Verify excavations extend to proper depth and have reached the correct soil material	☒	P		1705.6	
3. Perform classification and testing of compacted fill materials	☒	P		1705.6	
4. Verify that materials used, densities, lift thickness and procedures used during placement and compaction of compacted fill are in accordance with the approved soils report and the construction documents	☒	C		1705.6	
5. Prior to placement of compacted fill, verify that the subgrade has been prepared in accordance with the approved soils report and the construction documents	☒	P		1705.6	

Schedule of Special Inspection Services
Concrete Construction

Inspection Task	Task Req'd	Freq	Reference for Criteria		Agent
			Standarda	NCBC	
1. Inspect reinforcement, including prestressing tendons, and verify placement	☒	P	ACI Ch.20, 25.2, 25.3, 26.6.1-26.6.3	1908.4	
2. Reinforcing Bar Welding:			AWS D1.4		
e. Verify weldability of reinforcing bars other than ASTM A706 and collect reports	☐	P	ACI 26.6.4	1704.5	
f. Inspect single-pass fillet welds ≤ 5/16"	☐	P	ACI 26.6.4		
g. Inspect all welds other than single-pass fillet welds ≤ 5/16"	☐	C	ACI 26.6.4		
3. Concrete Anchors:					
a. Inspect anchors cast in concrete	☒	P	ACI 17.8.2		
b. Inspect adhesive anchors installed in hardened concrete with horizontally or upwardly inclined orientations that resist sustained tension loads	☒	C	ACI 17.8.2.4		
c. Inspect adhesive anchors installed in hardened concrete with orientations different from Item 3.b	☒	P	ACI 17.8.2		
d. Inspect mechanical anchors installed in hardened concrete	☒	P	ACI 17.8.2		
4. Collect mix designs and verify the correct mix used during installation	☒	P	ACI Ch19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3	
5. Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete	☒	C	ASTM C172, ASTM C31, ACI 26.4, 26.12	1908.10	
6. Inspect concrete and shotcrete placement for proper application techniques	☒	C	ACI 26.5	1908.6, 1908.7, 1908.8	
7. Collect reports of preconstruction tests for shotcrete when preconstruction tests are required by NCBC Section 1908.4	☐	C		1704.5, 1908.5	
8. Verify maintenance of specified curing temperature and techniques	☒	P	ACI 26.5.3-26.5.5	1908.9	
9. Inspections for prestressed concrete					
a. Observe application of prestressing force	☐	C	ACI 26.10		
b. Inspect grouting of bonded prestressing tendons	☐	C	ACI 26.10		
10. Verify concrete strength prior to stressing of PT tendons and prior to removal of shores and forms from PT & mild beams and structural slabs	☐	P	ACI 26.11.2		
11. Inspect erection of precast members	☐	P	ACI 26.8		
12. Inspect formwork for shape, location and dimensions of the concrete member being formed	☒	P	ACI 26.11.1.2(b)		
13. Collect mill test reports for ASTM A615 rebar used by SFRS special moment frames, special structural walls or coupling beams	☐	C	ACI 20.2.2.5	1704.5	

a. References to "ACI" in this table are to the ACI 318-14.

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 041563 ADAM L SISK

PROJECT TITLE

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621 NC HWY 210E, SURF CITY, NC

SCO ID#24-28220-01A

SHEET TITLE

STRUCTURAL INSPECTIONS

ISSUE BLOCK

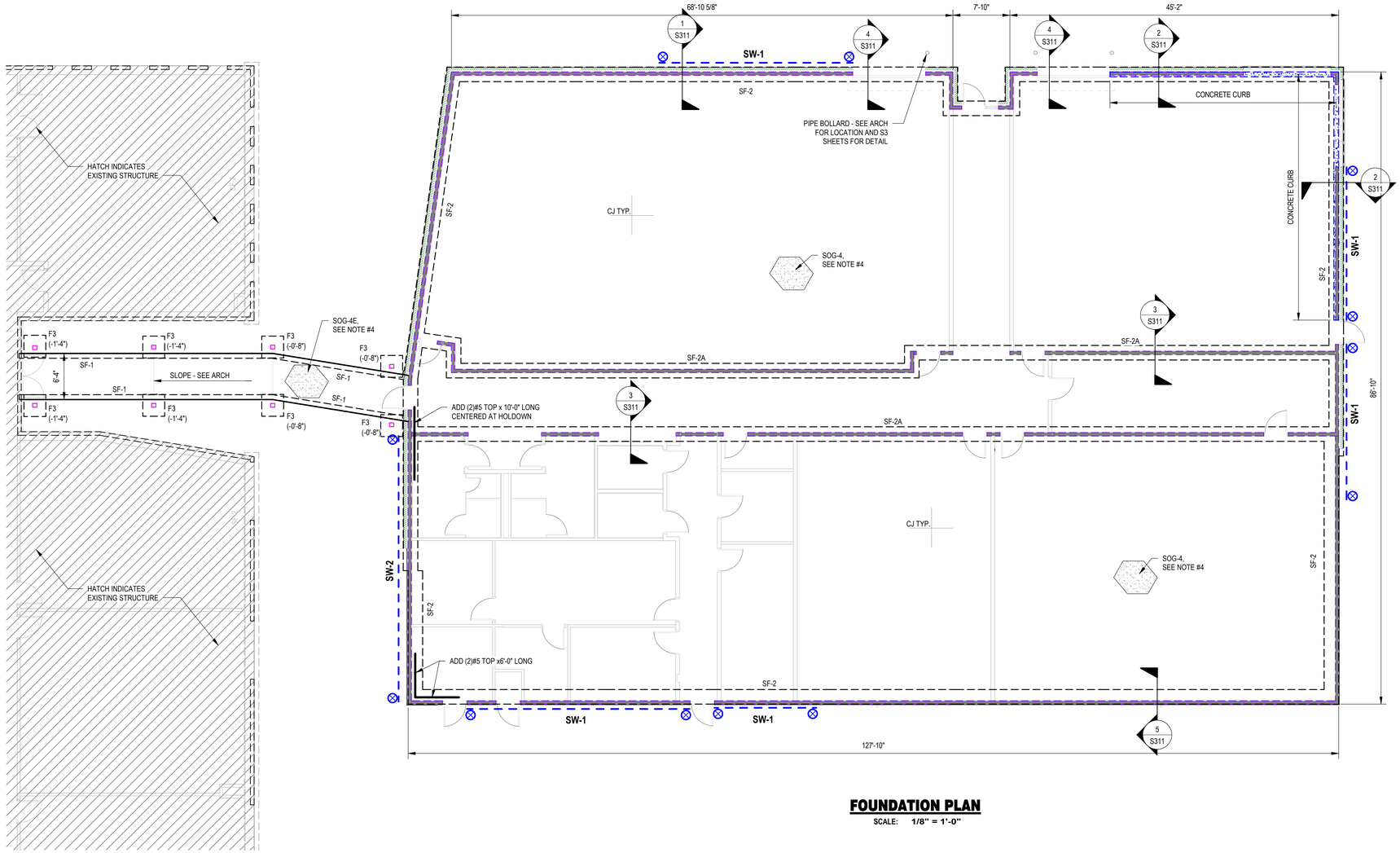
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FOUNDATION PLAN

SCALE: 1/8" = 1'-0"

FOUNDATION LEGEND

- FX — SPREAD FOOTING DESIGNATION SEE SCHEDULE ON S3 SHEETS
- SF-X — STRIP FOOTING DESIGNATION SEE SCHEDULE ON S3 SHEETS
- LOAD BEARING WALLS (ABOVE) SEE SCHEDULE ON S4 SHEETS
- CJ — CONCRETE SLAB CONTRACTION JOINTS SEE TYPICAL DETAIL ON S3 SHEETS SEE PLAN FOR LOCATIONS MAXIMUM SPACING = 12' IN EACH DIRECTION
- EXTERIOR BRICK, PER ARCH
- CONCRETE CURB SEE S3 SHEETS
- SW — SHEAR WALL DESIGNATION SEE S5 SHEETS FOR SCHEDULE, DETAILS & REQUIREMENTS
- APPROXIMATE LOCATION OF SHEAR WALL HOLDOWN SEE SCHEDULE ON S5 SHEETS
- AWNING COLUMNS, BY OTHERS
- BRICK VENEER, BY OTHERS

FOUNDATION NOTES

1. SEE S1 SHEETS FOR ADDITIONAL GENERAL NOTES, FOUNDATION NOTES, CONCRETE NOTES, AND REINFORCING STEEL NOTES.
2. DATUM ELEVATION = TOP OF SLAB ELEVATION = ASSUMED 0'-0". OTHER ELEVATIONS ARE NOTED AS (+ OR -) FROM DATUM ELEVATION. TOP OF SLAB OF NEW BUILDING IS +0'-8" ABOVE EXISTING BUILDING. SEE CIVIL FOR ELEVATIONS RELATIVE TO MSL.
3. FOOTINGS SHALL BE MONOLITHIC W/ SLAB, U.N.O.
4. SEE SLAB-ON-GRADE SCHEDULE S3 SHEETS.
5. REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND OTHER DISCIPLINE DRAWINGS FOR OPENINGS AND DEPRESSIONS NOT SHOWN ON THESE DRAWINGS.
6. SEE S5 SHEETS FOR SHEAR WALL INFORMATION AND REQUIREMENTS.
7. SEE ARCHITECTURAL DRAWINGS FOR BREEZEWAY SLAB SLOPE.
8. WHEN A SECTION IS CUT OR A DETAIL IS LABELED FOR A PARTICULAR CONDITION, THAT SECTION OR DETAIL SHALL APPLY FOR ALL SIMILAR CONDITIONS REGARDLESS OF WHETHER CUT OR LABELED, U.N.O.
9. RELOCATE ANY UTILITY LINES THAT CONFLICT WITH THE FOUNDATIONS OR DROP THE FOUNDATIONS TO AN ELEVATION BELOW THE PROPOSED UTILITIES. RELOCATE ANY GRAVITY FLOW LINES THAT CONFLICT WITH SPREAD FOOTINGS AS SHOWN ON STRUCTURAL FOUNDATION PLANS. IF A GRAVITY FLOW LINE TRAVELS UNDER A CONTINUOUS STRIP FOOTING EITHER:

   a. DROP THE FOOTING ELEVATION BELOW THE PROPOSED LINE.
   b. IF THE UTILITY LINE IS < 2'-0" BELOW THE STRIP FOOTING, THEN ENCASE THE LINE IN A STEEL PIPE 2" LARGER IN DIAMETER THAN THE LINE AND EXTEND THE PIPE 1'-0" PAST EACH SIDE OF THE CONCRETE FOOTING. BACKFILL THE TRENCH WITH #57 STONE. THE BEARING CAPACITY OF THIS AREA MUST MEET OR EXCEED THE ALLOWABLE SOIL BEARING CAPACITY.
   c. IF THE UTILITY LINE IS > 2'-0" BELOW BOTTOM OF FOOTING, THEN STEEL PIPE IS NOT REQUIRED. BACKFILL THE TRENCH WITH #57 STONE. THE BEARING CAPACITY OF THIS AREA MUST MEET OR EXCEED THE ALLOWABLE SOIL BEARING CAPACITY.
10. DIMENSIONS SHOWN ARE TO E.O.S. AND O.F.B. (U.N.O.) COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS.
11. IF DISCREPANCIES EXIST NOTIFY (AOR) AND (EOR) FOR CLARIFICATIONS.

PLAN-ORIENTATION

TRUE-NORTH — PLAN-NORTH

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SCO ID#24-28220-01A

SHEET TITLE

FOUNDATION PLAN

ISSUE BLOCK

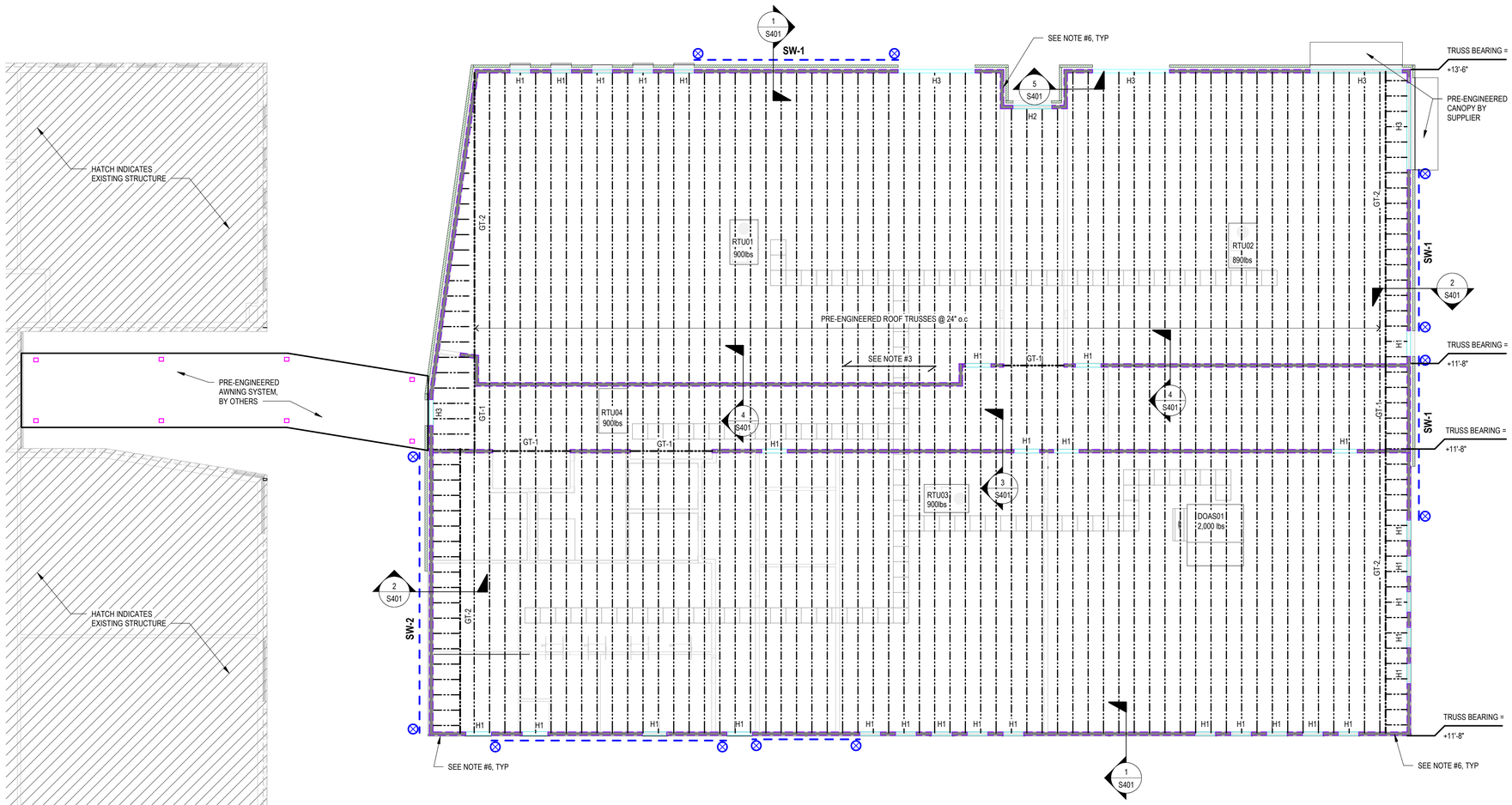
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		SCO CONSTRUCTION DOCUMENTS
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1	08.31.2024	SCO-SD/DD REVIEW

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ROOF FRAMING PLAN

SCALE: 1/8" = 1'-0"

ROOF FRAMING LEGEND

- LBW-x — LOAD BEARING WALLS (BELOW) SEE SCHEDULE ON S4 SHEETS
- ROOF TRUSSES @ 24"o.c. U.N.O.
- GT — GIRDER TRUSS SEE SCHEDULE ON S4 SHEETS
- Hx — HEADER SEE SCHEDULE ON S4 SHEETS
- SW — SHEAR WALL DESIGNATION SEE S5 SHEETS FOR SCHEDULE, DETAILS & REQUIREMENTS
- AWNING COLUMNS, BY OTHERS
- BRICK VENEER, BY OTHERS

ROOF FRAMING NOTES

1. SEE S1 SHEETS FOR ADDITIONAL GENERAL NOTES, MATERIAL NOTES AND MATERIAL SPECIFICATIONS. ALSO, SEE S4 SHEETS FOR TYPICAL DETAILS. TYPICAL DETAILS ARE GENERALLY NOT SHOWN ON PLAN BUT RATHER ARE INTENDED TO DEFINE TYPICAL CONSTRUCTION CONDITIONS.
2. HEADERS, BEAMS, SHEAR WALLS AND LOAD BEARING WALLS SHOWN ARE FOR FRAMING BELOW THIS LEVEL.
3. ROOF SHEATHING SHALL BE 5/8" PLYWOOD SPAN AS NOTED ON PLAN.
4. WHEN A SECTION IS CUT OR A DETAIL IS LABELED FOR A PARTICULAR CONDITION, THAT SECTION OR DETAIL SHALL APPLY FOR ALL SIMILAR CONDITIONS REGARDLESS OF WHETHER CUT OR LABELED, U.N.O.
5. TRUSS DESIGNER TO COORDINATE WEIGHT AND LOCATION OF ROOF TOP MECHANICAL UNITS WITH MECHANICAL DRAWINGS.
6. SEE SECTION S/S401 FOR LOCATIONS WHERE ROOF TRUSSES DO NOT FORM PARAPET WALL.

PLAN-ORIENTATION

TRUE-NORTH — PLAN-NORTH

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SCO ID#24-28220-01A

SHEET TITLE

ROOF FRAMING PLAN

ISSUE BLOCK

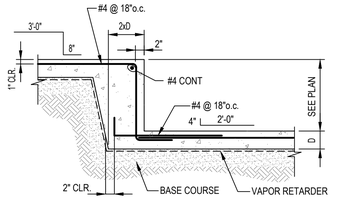
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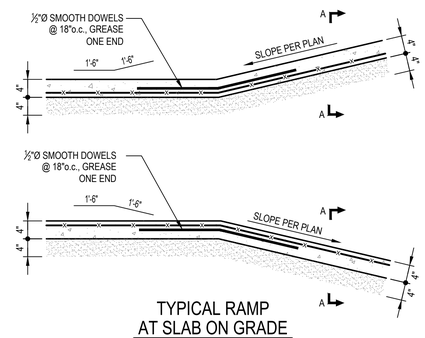
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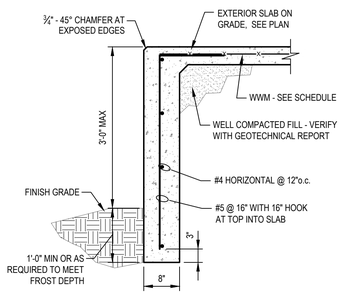
TYPICAL SLAB STEP

SCALE: 3/4" = 1'-0"



TYPICAL RAMP AT SLAB ON GRADE

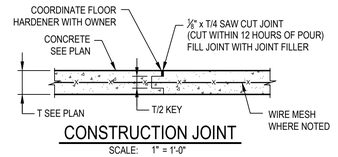
SCALE: 3/4" = 1'-0"



DETAIL A

SCALE: 3/4"= 1'-0"

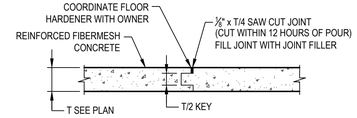
RAMP FOOTING DETAIL



CONSTRUCTION JOINT

SCALE: 1" = 1'-0"

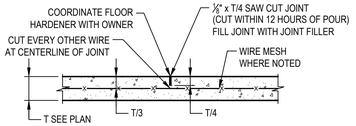
WITH WIRE MESH



CONSTRUCTION JOINT

SCALE: 1" = 1'-0"

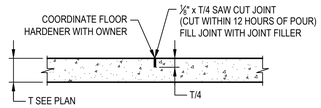
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CONTRACTION JOINT

SCALE: 1" = 1'-0"

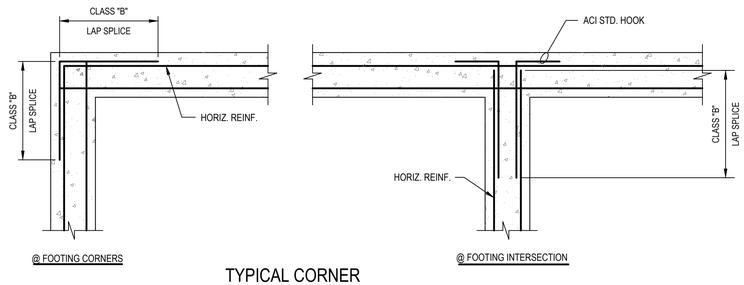
WITH WIRE MESH



CONTRACTION JOINT

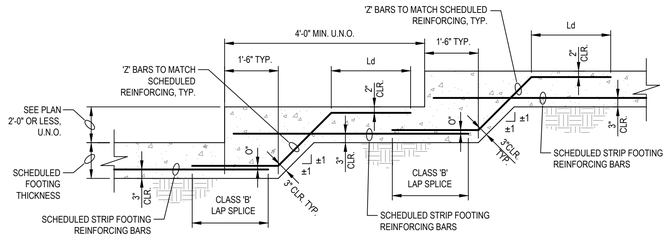
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WITHOUT WIRE MESH



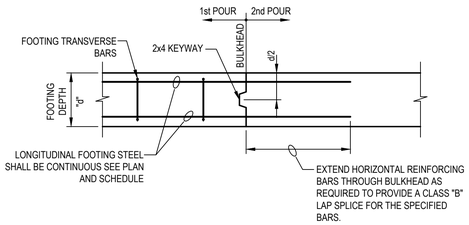
TYPICAL CORNER REINFORCING FOR CONCRETE FOOTINGS

SCALE: 3/4" = 1'-0"



STEP FOOTING DETAIL

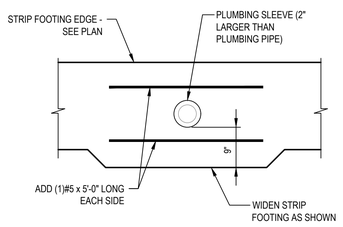
SCALE: 1/2" = 1'-0"



TYPICAL FOOTING CONSTRUCTION JOINT SECTION

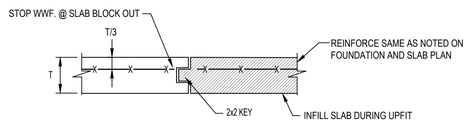
SCALE: 3/4" = 1'-0"

28 DAY CONCRETE STRENGTH AND DENSITY REQUIREMENTS		
CONCRETE TYPE	CONCRETE COMPRESSIVE STRENGTH	DENSITY
FOOTINGS	3000 PSI	±145pcf
INTERIOR SLAB ON GRADE	SEE SLAB SCHEDULE	±145pcf
EXTERIOR SLAB ON GRADE	SEE SLAB SCHEDULE	±145pcf



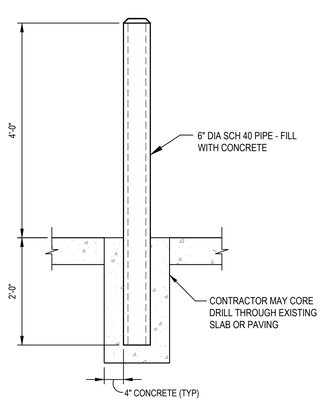
PLAN DETAIL OF VERTICAL PIPE PENETRATION AT STRIP FOOTING

SCALE: 3/4" = 1'-0"



TYPICAL SLAB CONSTRUCTION JOINT @ SLAB BLOCKOUT

NOT TO SCALE



PIPE BOLLARD DETAIL

SCALE: 3/4" = 1'-0"

SLAB ON GRADE SCHEDULE							
MARK	THICKNESS	CONCRETE STRENGTH	REINFORCEMENT	AIR ENTRAINMENT	TYPICAL LOCATION	VAPOR BARRIER	COMMENTS
SOG-4	4"	3,000psi	WWM6x6W2.0xW2.0 OR 3lb/cy MACROFIBER	NO	TYP INTERIOR	15mil	-
SOG-4E	4"	4,000psi	WWM6x6xW2.0xW2.0 FLAT SHEETS	YES	TYP EXTERIOR	10mil	LIGHT BROOM FINISH

NOTE:
-SLAB-ON-GRADE ON WELL COMPACTED SUBGRADE LAYER PER GEOTECHNICAL REPORT.
VERIFY COMPACTION AND MATERIAL WITH QUALIFIED GEOTECHNICAL ENGINEER.

STRIP FOOTING SCHEDULE				
MARK	SIZE length x width x thickness	REINFORCEMENT		TYPICAL LOCATION, U.N.O.
		BOTTOM BARS U.N.O.	TOP BARS U.N.O.	
SF-1	0'-8" x 1'-4" x CONT.	(1) #4 CONT	(1) #5 CONT	TYP EXTERIOR
SF-2	2'-0" x 2'-0" x CONT.	(1) #4 CONT	(3) #5 x CONT.	TYP EXTERIOR
SF-2A	2'-0" x 1'-0" x CONT.	-	(3) #4 x CONT.	TYP INTERIOR

NOTES:
- FOOTING MONOLITHIC WITH SLABS.
- THICKEN FOOTINGS TO 1'-0" THICK MIN (OR TO MAINTAIN FROST DEPTH) WHERE MONOLITHIC AND LOCATED AT SLAB EDGE

SPREAD FOOTING SCHEDULE				
MARK	SIZE length x width x thickness	REINFORCING EACH WAY U.N.O.		REMARKS
		BOTTOM BARS U.N.O.	TOP BARS U.N.O.	
F3	3'-0" x 3'-0" x 1'-8"	(4)#4	(4)#4	CANOPY FOOTING

GENERAL NOTE:
DETAILS SHOWN ON THIS SHEET ARE GENERIC IN NATURE AND MAY NOT PORTRAY EXACT CONDITIONS. THESE DETAILS ARE INTENDED TO PROVIDE GENERAL GUIDELINES FOR TYPICAL CONSTRUCTION CONDITIONS.

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 041563 ADAM L SISK

PROJECT TITLE

CFCC SURF CITY SA ADDITION

621 NC HWY 210E, SURF CITY, NC

SCO ID#24-28220-01A

SHEET TITLE

FOUNDATION TYPICAL DETAILS & SECTIONS

ISSUE BLOCK

Mark	Date	Description
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2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	08.31.2024	SCO SD/DD REVIEW

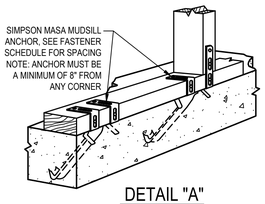
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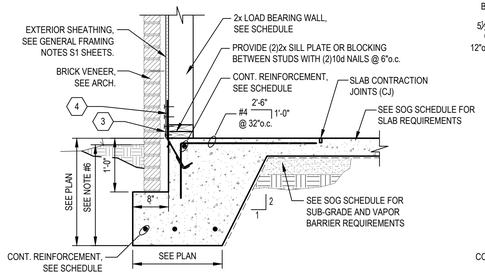
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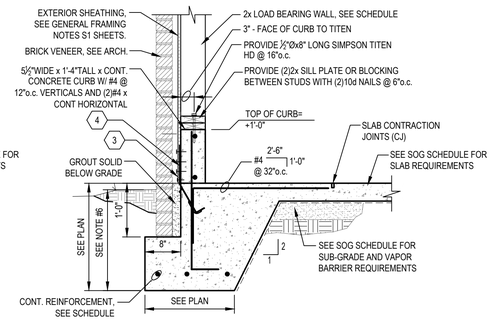
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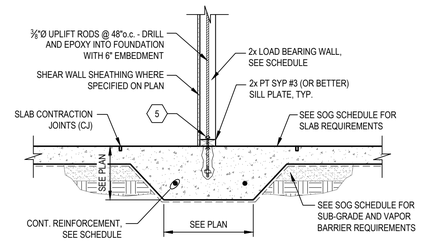
DETAIL "A"
SCALE: 3/4" = 1'-0"



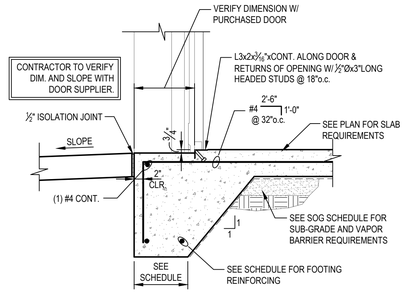
SECTION 1
SCALE: 3/4" = 1'-0"
EXTERIOR LOAD BEARING WALL W/ BRICK



SECTION 2
SCALE: 3/4" = 1'-0"
AT EXTERIOR LOAD BEARING WALL @ CONCRETE CURB



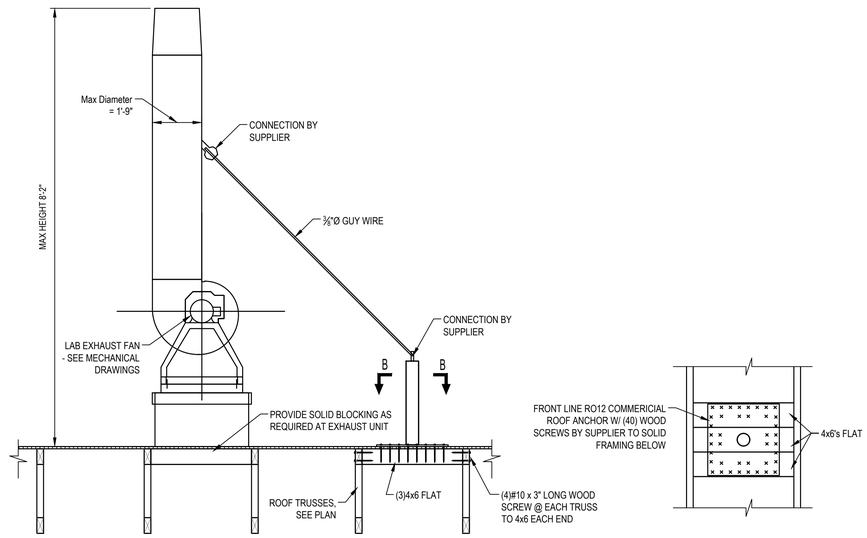
SECTION 3
SCALE: 3/4" = 1'-0"
INTERIOR LOAD BEARING WALL



SECTION 4
SCALE: 3/4" = 1'-0"
TYPICAL AT ROLL UP DOOR

SECTION 5
SCALE: 3/4" = 1'-0"
AT EXTERIOR LOAD BEARING WALL WITHOUT BRICK

CANOPY FOOTING DETAIL
SCALE: 3/4" = 1'-0"



GUY WIRE TO ROOF CONNECTION DETAIL FOR LAB EXHAUST FAN
SCALE: 3/4"= 1'-0"

DETAIL B
SCALE: 3/4" = 1'-0"

FOUNDATION SECTION FASTENING SCHEDULE			
MARK	LOCATION	FASTENER REQUIREMENTS	COMMENTS
3	SHEATHING TO SILL PLATE,	(2) ROWS OF 8d @ 3"o.c.	
4	MASA SPACING	24"o.c. @ SHEAR WALLS 32"o.c. @ NON-SHEAR WALLS	SEE DETAIL A THIS SHEET
5	PINS AT SILL PLATE TO SLAB @ INTERIOR	HILTI X-CP @ 32"o.c. @ NON-SHEAR WALLS HILTI X-CP @ 4"o.c. @ SHEAR WALLS	

FOUNDATION SECTION NOTES

1. DO NOT SCALE SECTIONS. SEE PLANS AND SCHEDULES FOR SIZES NOT SHOWN.
2. REBAR IS SHOWN FOR REFERENCE ONLY. SEE PLANS AND SCHEDULES FOR REINFORCEMENT REQUIREMENTS. WHERE REINFORCEMENT IS SPECIFIED IN SECTIONS IT IS IN ADDITION TO SCHEDULES.
3. IF A HOOK IS SHOWN ON REINFORCEMENT A STANDARD HOOK PER ACI IS REQUIRED U.N.O.
4. IF A DISCREPANCY EXISTS BETWEEN THE SECTIONS AND PLAN THE MORE STRINGENT REQUIREMENTS SHALL APPLY
5. WHEN A SECTION IS CUT OR A DETAIL IS LABELED FOR A PARTICULAR CONDITION, THAT SECTION OR DETAIL SHALL APPLY FOR ALL SIMILAR CONDITIONS REGARDLESS OF WHETHER CUT OR LABELED, U.N.O.
6. SEE S1 SHEETS FOR MINIMUM DEPTH OF FOOTING BEARING BELOW GRADE
7. ALL EPOXY FOR CONCRETE SHALL BE HILTI HY-200 OR APPROVED EQUAL

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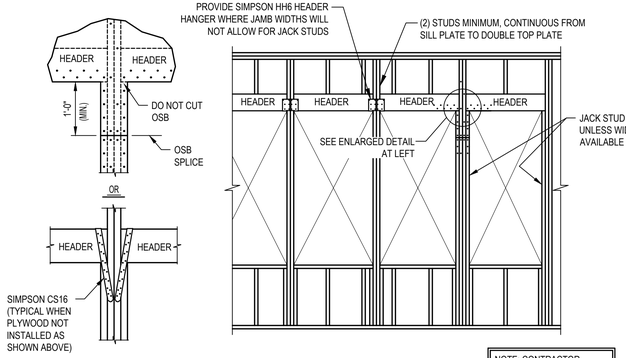
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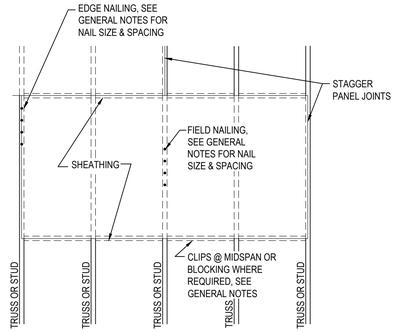
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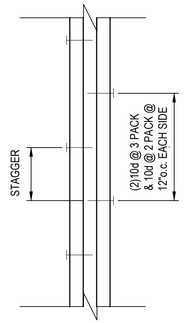
TYPICAL FRAMING AT EXTERIOR WINDOW OR DOOR OPENING

SCALE: 3/8" = 1'-0"



NAILING PATTERN FOR ROOF, FLOOR, OR WALL SHEATHING

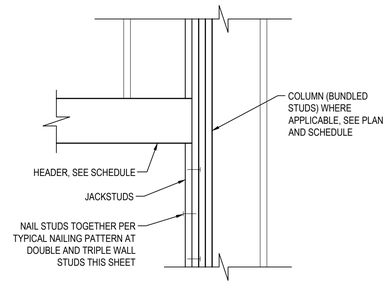
SCALE: 1/2" = 1'-0"



TYPICAL NAILING PATTERN AT DOUBLE AND TRIPLE WALL STUDS

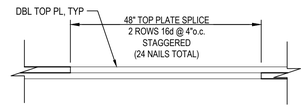
SCALE: 1 1/2"= 1'-0"

FOR ADDITIONAL PLYS PROVIDE 10d @ 12" o.c.



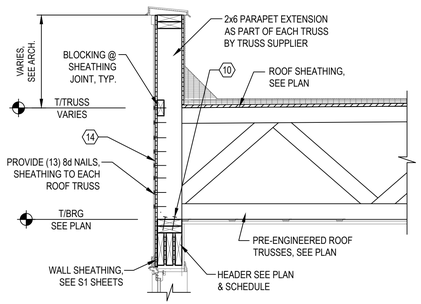
TYPICAL WINDOW AND DOOR

SCALE: 3/4" = 1'-0"



TYPICAL TOP PLATE SPLICE

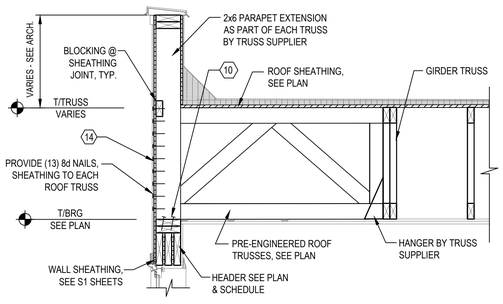
SCALE: 1" = 1'-0"



SECTION 1

SCALE: 3/4"= 1'-0"

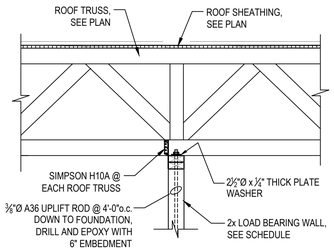
EXTERIOR WALL @ ROOF PERPENDICULAR TO MAIN TRUSSES



SECTION 2

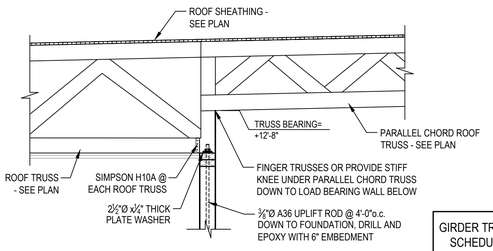
SCALE: 3/4"= 1'-0"

EXTERIOR WALL @ ROOF PARALLEL TO MAIN TRUSSES



SECTION 3

SCALE: 3/4"= 1'-0"



SECTION 4

SCALE: 3/4"= 1'-0"

SECTION AT TRUSS STEP

HEADER SCHEDULE		JAMB REQUIREMENTS
MARK	HEADER REQUIREMENTS	FL #1
H1	(3) 2x6	2K/1J
H2	(3) 2x8	2K/2J
H3	(3) 1¾" x 11⅞" LVL	3K/3J

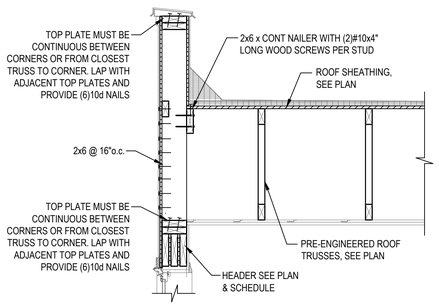
NOTES:
1. 2x's TO HAVE ⅞" OSB OR PLYWOOD BETWEEN PLYS TO FLUSH OUT WITH WALL FRAMING
2. K = KING STUDS / J = JACK STUDS
3. MIN. 3 JACK STUDS REQUIRED BETWEEN WINDOWS, IF HEADER IS TO RUN CONTINUOUS OVER MULTIPLE WINDOWS, ONLY ALLOWED WHERE SHOWN ON PLAN

GIRDER TRUSS SCHEDULE	BUNDLED STUDS (U.N.O)
MARK	FL #1
GT-1	3
GT-2	4

NOTES:
1. STUD PACKS SHOWN AS (2x6)
2. GIRDER TRUSS DESIGN BY TRUSS SUPPLIER.

LOAD BEARING WALL (LBW #X) SCHEDULE	
FLOOR LEVEL	STUD WALL REQUIREMENT BY TYPE
	LBW #1
1st	2x6
TYP. LOCATION, U.N.O.	EXTERIOR AND INTERIOR

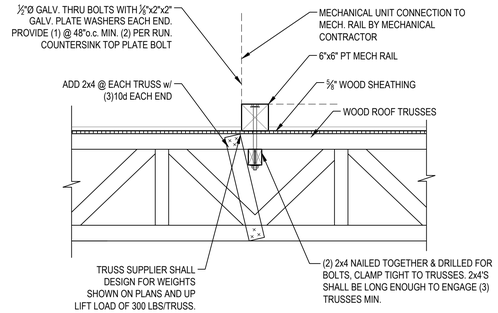
NOTES:
1. ALL STUDS TO BE LOCATED @ 16" o.c. U.N.O.
2. ALL STUDS TO BE SPF #2 OR BETTER, EXCEPT AS NOTED BELOW AND IN SCHEDULE.
4. SEE GENERAL WALL FRAMING DETAILS ON S4 SHEETS.



SECTION 5

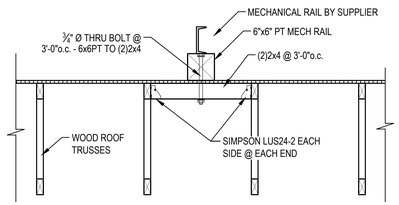
SCALE: 3/4"= 1'-0"

EXTERIOR WALL @ ROOF PARALLEL TO TRUSSES



DETAIL @ MECHANICAL CURB PERPENDICULAR TO ROOF TRUSS

SCALE: 3/4"= 1'-0"



DETAIL @ MECHANICAL CURB PARALLEL TO ROOF TRUSS

SCALE: 3/4"= 1'-0"

STEEL LINTEL SCHEDULE					
HEIGHT OF BRICK ABOVE (FT)	LENGTH OF LINTEL (FT)				
	4	6	8	10	12
4	L4x4x5/16	L4x4x5/16	L6x4x5/16	L6x4x5/16"	L7x4x5/16"
6	L4x4x5/16	L4x4x5/16	L6x4x5/16	L6x4x5/16"	L8x4x7/16"
8	L4x4x5/16	L6x4x5/16	L6x4x5/16	L7x4x3/8"	L8x4x7/16"
10	L4x4x5/16	L6x4x5/16	L6x4x5/16	L8x4x7/16"	BP10x4x7/16"
12	L4x4x5/16	L6x4x5/16	L6x4x3/8"	L8x4x7/16"	BP12x4x7/16"

NOTES:
1. WHERE LINTELS BEAR ON HOLLOW MASONRY UNITS FILL ALL CORES UNDER BEARING WITH GROUT FROM BOTTOM OF LINTEL TO 16" MINIMUM BELOW.
2. THESE LINTELS ARE NOT DESIGNED FOR MASONRY WALLS THAT CARRY FLOOR OR ROOF LOAD.
3. LINTELS ARE DESIGNED TO CARRY THE MAXIMUM HEIGHT OF BRICK LISTED IN SCHEDULE. IF STACKED BRICK HEIGHT EXCEEDS LISTED VALUE, THEN CONTACT STRUCTURAL ENGINEER FOR ALTERNATE DESIGN.
4. ALL STEEL LINTELS SHALL BE HOT DIP GALVANIZED AND PAINTED.
5. SEE DETAIL BELOW FOR REQUIREMENTS
6. ALL LINTELS HAVE LONG LEG VERTICAL U.N.O.
7. "BP" INDICATES STEEL BENT PLATE

FRAMING SECTION FASTENING SCHEDULE			
MARK	LOCATION	FASTENER REQUIREMENTS	COMMENTS
10	ROOF TRUSS TO TOP PLATE	(3)10d TOENAILS PER TRUSS	
14	EXTERIOR SHEATHING AT FLOOR LEVEL	TYPICAL NO SPLICE ZONE	SEE DETAIL ON S4 SHEETS

GENERAL NOTE:
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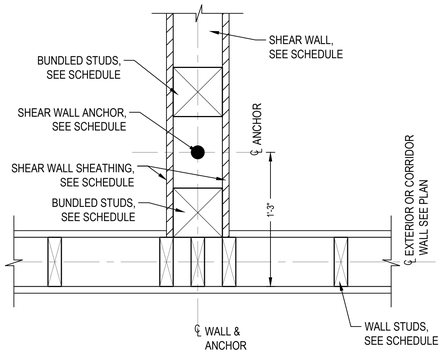
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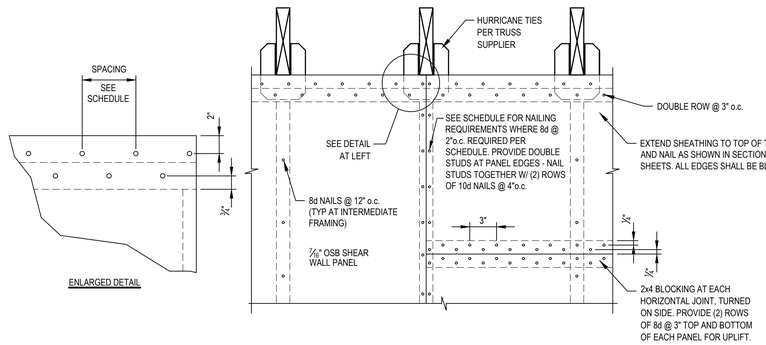
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DETAIL "A"

SCALE: 1 1/2"= 1'-0"

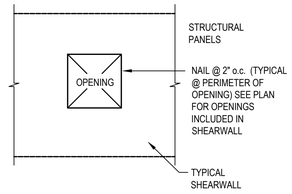
TYPICAL SHEAR WALL HOLDOWN
AT PERPENDICULAR INTERSECTION



DETAIL B

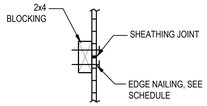
SCALE: 1 1/2"= 1'-0"

TYPICAL OSB SHEAR WALL NAILING PATTERN



DETAIL 'C'

SCALE:1-1/2"= 1'-0"



DETAIL "G"

SCALE: 1 1/2"= 1'-0"

SHEAR WALL BLOCKING

ROD SIZES FOR HOLDOWNS	
HOLDOWN	ROD SIZE
HDU5-SDS2.5	⅝"Ø
HDU8-SDS2.5	⅞"Ø

Shear Wall Schedule			
SW-1			
Level	Sheathing Requirement	Holdown	# Compression Studs @ Each Holdown
Fdn-Roof	TYP	HDU5-SDS2.5	(4)-2x6
SW-2			
Level	Sheathing Requirement	Holdown	# Compression Studs @ Each Holdown
Fdn-Roof	TYP	HDU8-SDS2.5	(4)-2x6

SHEAR WALL NOTES:

1. FOR GENERAL FRAMING INFORMATION, SEE SHEET S1.01
2. SEE DETAILS THIS SHEET FOR TYPICAL SHEAR WALL DETAILS.
3. SHEAR WALL SHEATHING SHALL BE ⅜" OSB OR PLYWOOD WITH 8d NAILS @ 3"o.c. AT EDGES AND 12"o.c. IN FIELD (NOTED AS "TYP"). SEE SCHEDULES THIS SHEET FOR ADDITIONAL INFORMATION
4. PROVIDE SIMPSON HDU5-SDS2.5 WITH ⅝"Ø ROD AND (2) STUDS AROUND DOOR OPENINGS AT THE BOTTOM FLOOR.
5. ALL RODS SHALL BE ASTM A36. SEE TABLE THIS SHEET FOR CAPACITIES USED IN DESIGN
6. ALL STUDS SHALL MATCH LOAD BEARING WALL SPACING AND SPECIES.
7. PSL = 1.8E PARALLAM PSL BY WEYERHAEUSER.
8. ALL ROD HOLDOWNS TO BE LOCATED A MAXIMUM DISTANCE OF 12" FROM END OF WALL. (TYP. OF ALL SHEAR WALLS)
9. EPOXY SHALL BE HILTI HY-200. SEE TABLE THIS SHEET FOR REQUIRED EMBEDMENT.
10. ALL HOLDOWN RODS LOCATED ON EXTERIOR WALL SHALL BE CAST-IN-PLACE. WITH MIN 12" EMBEDMENT AND A NUT ON BOTTOM OF ROD
11. HOLES DRILLED FOR EPOXY RODS SHALL BE INSPECTED BY THIRD PARTY INSPECTOR FOR CLEANLINESS AND DEPTH PRIOR TO INSTALLATION.

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Consulting Structural Engineers
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Suite 201 Fax: 910.343.8088
Wilmington, N.C. 28401 www.woodseng.com

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CAPE FEAR COMMUNITY COLLEGE

WOODS ENGINEERING P.A. CORPORATE SEAL No. C-1806 NORTH CAROLINA

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 041563 ADAM L SISK

PROJECT TITLE

CFCC SURF CITY SA ADDITION

621 NC HWY 210E, SURF CITY, NC

SCO ID#24-28220-01A

SHEET TITLE

SHEAR WALL DETAILS & SCHEDULES

ISSUE BLOCK

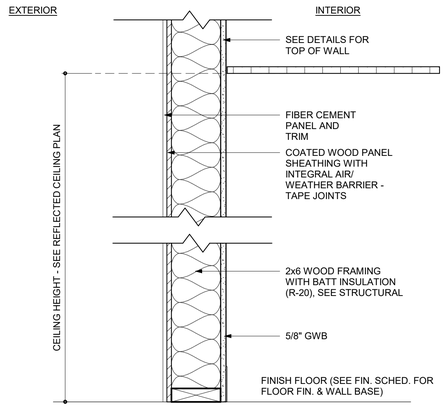
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2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	08.31.2024	SCO SD/DD REVIEW

PROJECT NO: 2024077.00
DATE: 2/12/2025
SCALE: As indicated
DRAWN BY: JM CHECKED BY: AS

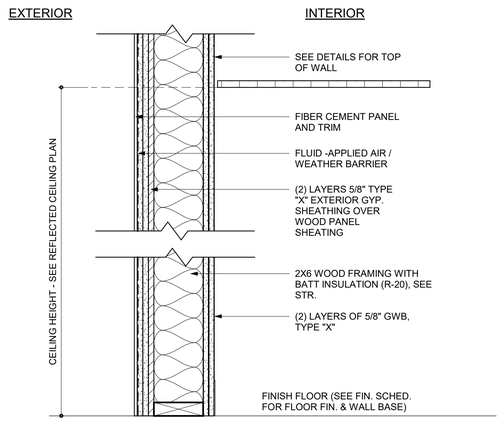
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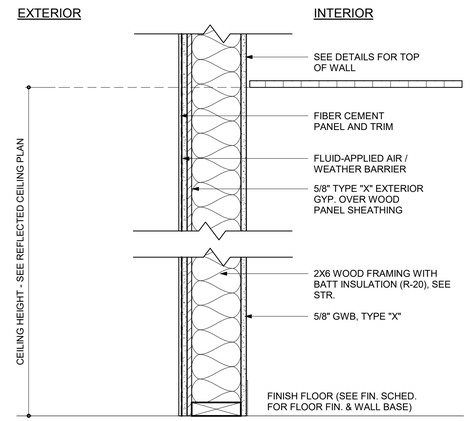
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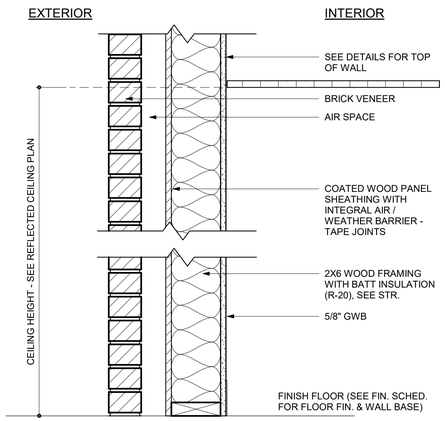
WALL TYPE 7A



WALL TYPE 7B 2-HR FIRE WALL, NCSBC, TABLE 721.1(2) 15.1.16, NOTE L



WALL TYPE 7C 1-HR FIRE BARRIER, NCSBC, TABLE 721.1(2) 15.1.14, NOTE L



WALL TYPE 7D



WALL TYPE 7E 1-HR FIRE BARRIER, NCSBC, TABLE 721.1(2) 15.1.14, NOTE L



WALL TYPE 7F 2-HR FIRE WALL, NCSBC, TABLE 721.1(2) 15.1.16, NOTE L

SLAB TYPE 1

ROOF TYPE 1

0' 4" 8" 16"
SCALE: 1-1/2" = 1'-0"

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BECKER MORGAN GROUP, INC. Registered Architectural Corporation North Carolina 51922 WILMINGTON, NC

PROJECT TITLE

CFCC SURF CITY SA ADDITION

621 NC HWY 210E, SURF CITY, NC

SCO ID#24-28220-01A

SHEET TITLE

CONSTRUCTION TYPES - EXTERIOR WALLS, ROOFS, AND SOFFITS

ISSUE BLOCK

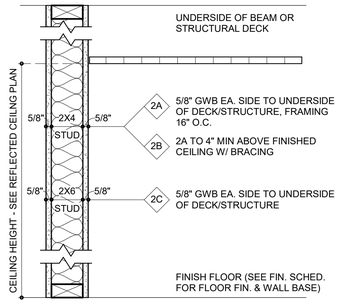
Mark	Date	Description
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2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	11.11.2024	GMP PRICING

PROJECT NO: 2024077.00
DATE: 02/12/2025
SCALE: 1 1/2" = 1'-0"
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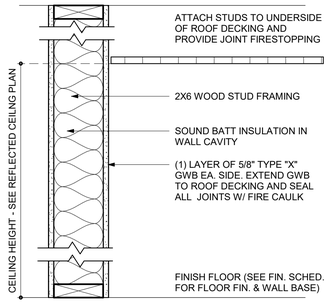
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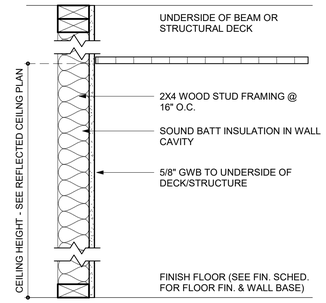
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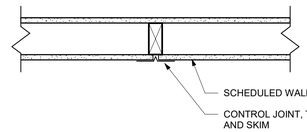
WALL TYPES 2A 2B 2C



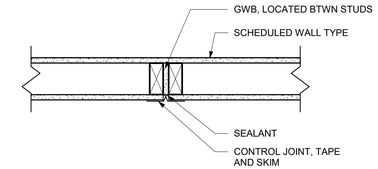
WALL TYPE 2D 1-HR FIRE PARTITION, UL DESIGN: U305 STUDS TO BE 16" O.C., U.N.O.



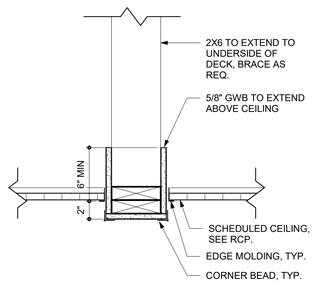
WALL TYPE 2E



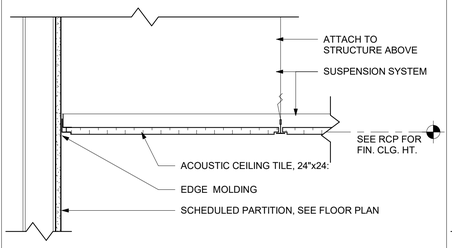
PLAN DETAIL - GWB CONTROL JOINT: WALL TYPES 2A, 2B, 2C, 2E



PLAN DETAIL - GWB CONTROL JOINT: WALL TYPE 2D

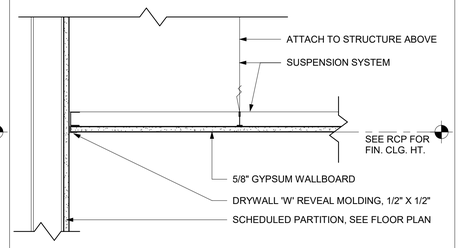


INTERIOR SOFFIT TYPE 1

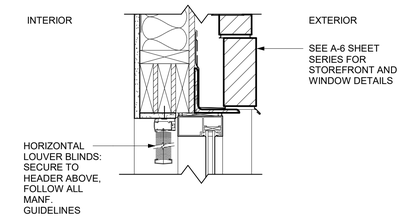


CEILING TYPE 1 - ACOUSTIC CEILING TILE

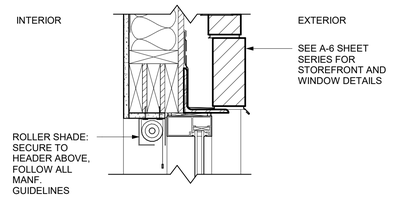
NOTE: BOTH METAL STUD AND SUSPENSION FRAMING ACCEPTABLE



CEILING TYPE 2 - GWB ON SUSPENSION SYSTEM



SECTION DETAIL - HORIZONTAL BLINDS



SECTION DETAIL - ROLLER SHADE

0' 4" 8" 16"
SCALE: 1-1/2" = 1'-0"

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02/18/2025

BECKER MORGAN GROUP, INC. Registered Architectural Corporation 51922 North Carolina WILMINGTON, NC

PROJECT TITLE

CFCC SURF CITY SA ADDITION

621 NC HWY 210E, SURF CITY, NC

SCO ID#24-28220-01A

SHEET TITLE

CONSTRUCTION TYPES - WALL TYPES AND DETAILS

ISSUE BLOCK

Mark	Date	Description
3	02.12.2024	SCO CD COMMENTS
2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	11.11.2024	GMP PRICING

PROJECT NO: 2024077.00
DATE: 02/12/2025
SCALE: 1 1/2" = 1'-0"
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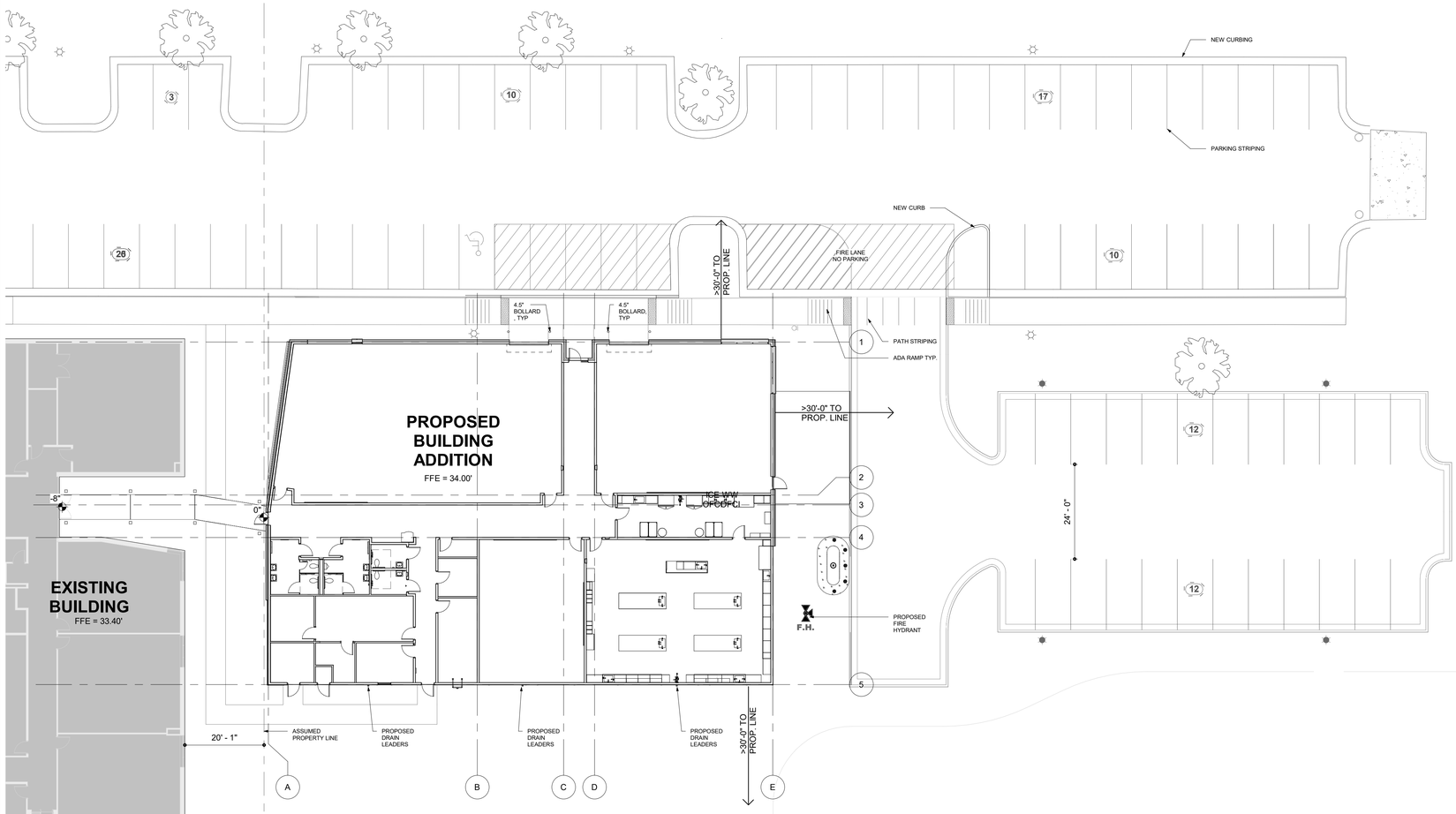
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PLAN-ORIENTATION



GENERAL NOTES

1. SEE CIVIL DRAWINGS FOR DETAILED GRADING AND UTILITY INFORMATION



1 SITE PLAN

SCALE: 1/16" = 1'-0"

0' 8' 16' 32'

SCALE: 1/16" = 1'-0"

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02/18/2025

BECKER MORGAN GROUP, INC. Registered Architectural Corporation North Carolina 51922 WILMINGTON, NC

PROJECT TITLE

CFCC SURF CITY SA ADDITION

621 NC HWY 210E, SURF CITY, NC

SCO ID#24-28220-01A

SHEET TITLE

SITE PLAN

ISSUE BLOCK

Mark	Date	Description
3	02.12.2024	SCO CD COMMENTS
2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	11.11.2024	GMP PRICING

PROJECT NO:	2024077.00
DATE:	02/12/2025
SCALE:	As indicated
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PLAN-ORIENTATION

TRUE-NORTH

PLAN-NORTH

EXISTING BUILDING SA | ADDITION

AH LAB
EX: 106

CLASSROOM
EX: 118

CLASSROOM
EX: 121

CLASSROOM
EX: 124

EWD CLASS/COMBO LAB
127

EWD LAB
128

CORRIDOR
126

PREP ROOM
129

FEMALE TOILET
142

MALE TOILET
141

TOILET
140

TOILET
139

SUPPLY STORAGE
138

PT SHARED OFFICE
137

MECH
143

STORAGE
136

PT PRIVATE OFFICE
135

STORAGE
133

LAPTOP STORAGE
132

CLASSROOM
131

VETERANS
134

SCIENCE LAB
130
1695 SF

PRE-ENGINEERED WALKWAY COVER COLUMN (TYP.)

PRE-ENGINEERED WALKWAY COVER ABOVE

RAMP DOWN 8"

RAISED CONCRETE CURB
REFERENCE 3/A501

ROOF ACCESS LADDER

FEC

16' MB

ALIGN

W.H.
144

D.S.

ICE DEC

WW DEC

1 FIRST FLOOR, SA ADDITION
SCALE: 1/8" = 1'-0"

0' 4' 8' 16'
SCALE: 1/8" = 1'-0"

GENERAL NOTES

1. GRID LINES ARE DIMENSIONED TO FACE OF STUD. DIMENSIONS ARE TO FACE OF STUD OR BRICK VENEER U.N.O.
2. THE CONTRACTOR SHALL PROTECT EXISTING BUILDING OCCUPANTS, MATERIALS AND FINISHES DURING CONSTRUCTION.
3. NOISE, SECURITY AND DUST BARRIERS BETWEEN CONSTRUCTION AREA AND AREAS WHICH ARE OCCUPIED SHALL BE MAINTAINED BY THE CONTRACTOR. CONTRACTOR SHALL PROVIDE AND MAINTAIN EXITS, EXIT LIGHTING, FIRE PROTECTION DEVICES AND ALARMS.
4. THE CONTRACTOR SHALL MAINTAIN THE FIRE RATING OF WALLS AT INTERSECTIONS, CONNECTIONS, AND PENETRATIONS.
5. FIRE-RATED PARTITIONS SHALL BE IDENTIFIED AS SUCH IN LARGE RED STENCIL ABOVE FINISHED CEILING.
6. REVIEW WALL EXIT SIGNS AND FIRE EXTINGUISHER LOCATIONS WITH LOCAL FIRE OFFICIALS PRIOR TO END OF CONSTRUCTION. COORDINATE VARIATIONS FROM CONSTRUCTION DOCUMENTS WITH ARCHITECT.
7. PROVIDE WATER RESISTANT GYPSUM BOARD AT TILED WALLS (ABOVE TILE).
8. PROVIDE CEMENT BOARD AT STUD WALLS RECEIVING TILE FINISH.
9. PROVIDE CONCEALED BLOCKING AT PARTITIONS FOR SECURING WALL-HUNG CABINETS, SHELVING, TRIM, MARKERBOARDS AND OTHER ITEMS.
10. TRANSITIONS OF FLOOR MATERIALS TO BE LOCATED AT CENTERLINE OF DOORS IN CLOSED POSITION; TYPICAL, UNLESS OTHERWISE NOTED.
11. PATCH, REPAIR AND REFINISH ALL SURFACES EXPOSED BY DEMOLITION WORK OR CUTTING TO ALIGN WITH EXISTING SURFACES SCHEDULED TO REMAIN, OR NEW FINISHES SPECIFIED AS REQUIRED TO ACHIEVE A 'LIKE NEW' CONDITION, WITH NO EVIDENCE OF PATCHING OR REPAIR.
12. WHERE DOORS IN PARTITIONS ARE NOT SPECIFICALLY LOCATED ON THE PLANS, PROVIDE A HINGE SIDE JAMB DIMENSION OF 6" TO THE FRAME.
13. CAULK JOINTS WHERE DISSIMILAR MATERIALS INTERSECT.

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02/18/2025

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PROJECT TITLE

CFCC SURF CITY SA ADDITION

621 NC HWY 210E, SURF CITY, NC

SCO ID#24-28220-01A

SHEET TITLE

FIRST FLOOR PLAN

ISSUE BLOCK

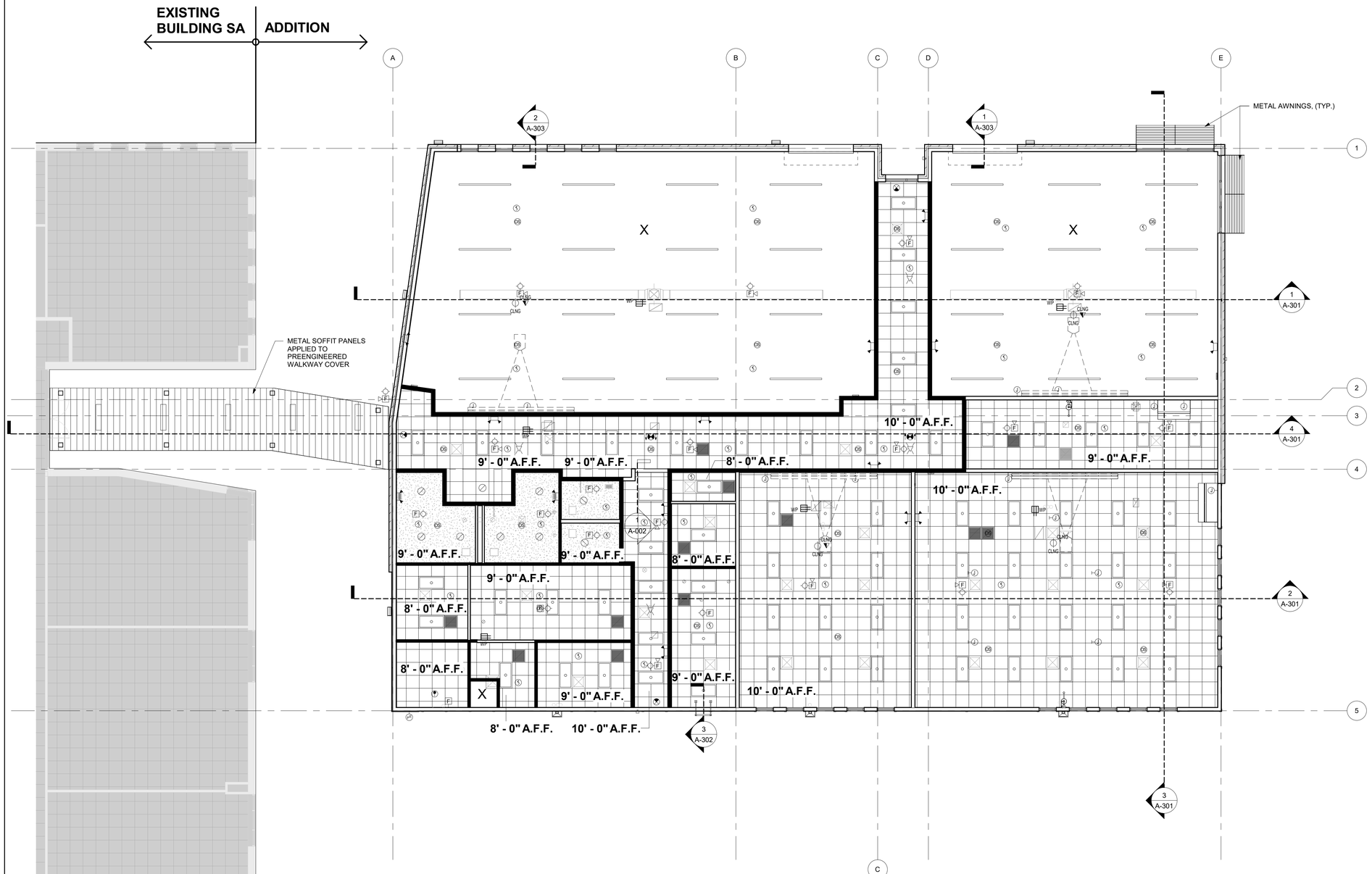
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2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	11.11.2024	GMP PRICING

PROJECT NO: 2024077.00
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2 FIRST FLOOR RCP, SA ADDITION

SCALE: 1/8" = 1'-0"

0' 4' 8' 16'

SCALE: 1/8" = 1'-0"

PLAN-ORIENTATION

TRUE-NORTH

PLAN-NORTH

CEILING LEGEND

- AREAS NOT IN CONTRACT
- CEILING TYPE 1: 2x2 ACT CEILING
- CEILNG TYPE 2: INTERIOR - GWB CEILINGS /BULKHEADS
- X — EXPOSED
- PROJECTION SCREEN AND PROJECTOR BY OWNER. LOCATION TO BE CONFIRMED BY OWNER. COORDINATE LOCATION W/ ELEC. DWGS.
- 2x4 LIGHT FIXTURE - SEE ELEC.
- RECESSED CAN LIGHT FIXTURE - SEE ELEC.
- SUSPENDED LIGHT FIXTURE - SEE ELEC.
- OCCUPANCY SENSOR - SEE ELEC.
- SPRINKLER HEAD - SEE ELEC.
- EMERGENCY LIGHTING - SEE ELEC.
- EXIT SIGN - SEE ELEC.

CEILING NOTES

1. SEE FINISH SCHEDULE FOR ACT TYPES.
2. SEE MECHANICAL DRAWINGS FOR G.R.D. TYPES, LOCATIONS, AND ADDITIONAL WORK.
3. SEE ELECTRICAL DRAWINGS FOR LIGHT FIXTURE TYPES AND LOCATIONS
4. CEILING HEIGHTS INDICATED ARE FROM FINISH FLOOR. CEILINGS AT LANDINGS, RAMPS ETC., REFER TO NEAREST FLOOR LEVEL. COORDINATE WITH EXG. WINDOW MULLION LOCATIONS.
5. ALL EXPOSED LINTELS SHALL BE PAINTED.
6. SEE FINISH PLAN FOR WINDOW COVERINGS

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BECKER MORGAN GROUP, INC. Professional Architectural Corporation 51922 North Carolina WILMINGTON, N.C.

PROJECT TITLE

CFCC SURF CITY SA ADDITION

621 NC HWY 210E, SURF CITY, NC

SCO ID#24-28220-01A

SHEET TITLE

FIRST FLOOR REFLECTED CEILING PLAN

ISSUE BLOCK

Mark	Date	Description
3	02.12.2024	SCO CD COMMENTS
2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	11.11.2024	GMP PRICING

PROJECT NO:	2024077.00
DATE:	02/12/2025
SCALE:	As indicated
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PLAN-ORIENTATION

TRUE-NORTH

PLAN-NORTH

ROOF LEGEND

	AREAS NOT IN CONTRACT
	PVC ROOFING SYSTEM OVER RIGID INSULATION
	CRICKET
	WALKWAY PAD
D.S.	DOWNSPOUT
RTU	PACKAGED UNIT, SEE MECH.
DOAS	DEDICATED OUTDOOR AIR UNIT, SEE MECH.
LEF	LAB EXHAUST FAN, SEE MECH.
DHP	MINI-SPLIT SYSTEM, SEE MECH.
RV	ROOF HOOD, SEE MECH.
PV	POWER VENTILATOR, SEE MECH.

ROOF NOTES

1. SLOPE ALL CRICKETS 1/4" / 12" MINIMUM, EXCEPT WHERE REQUIRED TO MAINTAIN MINIMUM 8" ROOFING/FLASHING TURN-UP HEIGHT.
2. TIE DOWNSPOUTS INTO BOOT AT GRADE AND CONNECT TO STORMWATER SYSTEM, UNLESS OTHERWISE NOTED. REFER TO CIVIL DRAWINGS FOR CONTINUATION.
3. PROVIDE CRICKETS AT ALL ROOF TOP EQUIPMENT, FIRE VENTS, EXHAUST FANS, CURBS, ETC. AS REQUIRED TO MAINTAIN POSITIVE DRAINAGE.
4. PROVIDE WALKWAY PADS AROUND MECHANICAL EQUIPMENT, BASE AND TOP OF LADDERS, AND AT DOORS.
5. REFER TO MECHANICAL FOR ROOFTOP EQUIPMENT.
6. REFER ALSO TO A-504 FOR TYPICAL ROOF DETAILS.

EXISTING BUILDING SA

ADDITION

PRE-FIN. METAL COPING CAP (TYP.)

PRE-ENGINEERED AWNING (TYP.)

ROOF TYPE 1

RTU01

RTU02

RTU03

RTU04

RV01

DOAS01

LEF01

LEF02

PV01

DHP01

WALKWAY PAD (TYP.)

PREENGINEERED WALKWAY COVER

1/4" / 12"

D.S.

ROOF ACCESS LADDER

25' - 4"

39' - 1"

39' - 1"

24' - 4"

Sim TYP.

2 A-303

1 A-303

1 A-301

4 A-301

2 A-301

2 A-501

3 A-302

3 A-301

2 ROOF PLAN, SA ADDITION

SCALE: 1/8" = 1'-0"

0' 4' 8' 16'

SCALE: 1/8" = 1'-0"

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CAPE FEAR COMMUNITY COLLEGE

ERNEST W. OLDS REGISTERED ARCHITECT 10595 N.C. WILMINGTON, N.C. 02/18/2025

BECKER MORGAN GROUP, INC. Registered Architectural Corporation 51922 North Carolina WILMINGTON, N.C.

PROJECT TITLE

CFCC SURF CITY SA ADDITION

621 NC HWY 210E, SURF CITY, NC

SCO ID#24-28220-01A

SHEET TITLE

ROOF PLAN

ISSUE BLOCK

Mark	Date	Description
3	02.12.2024	SCO CD COMMENTS
2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	11.11.2024	GMP PRICING

PROJECT NO:	2024077.00
DATE:	02/12/2025
SCALE:	As indicated
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PLAN-ORIENTATION

TRUE-NORTH

PLAN-NORTH

FINISH PLAN LEGEND

ROOM FINISH TAG:

XX-1	CEILING FINISH
XX-1	WALL FINISH (FIELD)
XX-1	WALL BASE FINISH
XX-1	FLOOR FINISH

FLOOR FINISH PATTERN:

CONC | CPT | PFT-1 | PFT-2 | QTZ-1/QTZ-2

NOTE: HATCH PATTERNS REPRESENT MATERIAL ONLY.

- TRANSITION STRIP BETWEEN MATERIALS - SEE INTERIOR DETAILS
- CJ — GWB CONTROL JOINT
- XX-# — SEE FINISH LEGEND
- XX-# — ACCENT WALL, SEE FINISH LEGEND
- RS — WINDOW TREATMENT: ROLLER SHADE (SEE SHEET A-002 FOR DTL)
- HB — WINDOW TREATMENT: HORIZONTAL BLINDS (SEE SHEET A-002 FOR DTL)

FINISH PLAN NOTES

1. REFER TO SHEET A604 FOR ROOM SCHEDULE AND FINISH SCHEDULE.
2. REVIEW ALL FIELD CONDITIONS AND PLANNED WORK. ANY DISCREPENCIES FOUND SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT. DO NOT PROCEED WITH WORK AFFECTED BY DISCREPENCIES WITHOUT APPROVAL OF THE ARCHITECT.
3. ALL FINISHES SHALL BE TYPE 1 / CLASS A FLAME AND SMOKE SPREAD, REFER TO FINISH AND MATERIAL SCHEDULES.
4. SEE G-100 CODE SHEET FOR INTERIOR REQUIREMENTS.
5. REFER TO ELEVATIONS, REFLECTED CEILING PLANS AND DETAILS FOR ADDITIONAL INFORMATION REGARDING FINISHES, PATTERNS, ORIENTATIONS AND TRANSITIONS.
6. PREPARE SURFACES PER FINISH MANUFACTURER'S INSTRUCTIONS PRIOR TO APPLICATIONS OF FINISHES, CONFIRM SURFACES TO RECEIVE FINISHES ARE CLEAN, TRUE, AND FREE OR IRREGULARITIES.
7. PREPARE SLAB TO RECEIVE NEW FINISHES, INCLUDING STRUCTURALLY BONDED HYDRAULIC CEMENT UNDERLAY AND FLASH PATCHING REQUIRED TO LEVEL AND SMOOTH FLOOR TO 1/8" IN 20'-0" NON-CUMULATIVE, UNLESS OTHERWISE INDICATED AS IRREGULARITIES AND SHALL EXHIBIT NEUTRALLY RELATIVE TO ACIDITY AND ALKALINITY. REMOVE GREASE, DIRT CURING COMPOUNDS AND OTHER MATERIALS THAT WILL IMPAIR THE PERFORMANCE AND/OR ADHESION OF THE SCHEDULED FLOORING.
8. LOCATE FLOOR FINISH TRANSITIONS AT CENTERLINE OF DOOR, UNLESS OTHERWISE NOTED.
9. LAY RESILIENT FLOORING DIRECTIONAL PATTERNS OR GRAINS AS NOTED, OR IF NOT NOTED AS DIRECTED BY THE ARCHITECT.
10. PROVIDE COMPLETE EXTRUDED REVEALS IN ALL REVEAL LOCATIONS. FINISH TO MATCH ADJACENT SURFACE FINISH, UNLESS OTHERWISE NOTED.
11. SEE SPECIFICATIONS FOR APPROPRIATE PAINT SHEENS.
12. USE PRIMER COMPATIBLE WITH SUBSTRATE TO BE PAINTED AND APPLY FINAL FINISH COAT AS RECOMMENDED BY MANUFACTURER TO MATCH SPECIFIED FINISH.
13. SPRAY-APPLY PAINT TO METAL SURFACES UNLESS OTHERWISE NOTED OR APPROVED BY ARCHITECT.
14. PAINT AND FINISH EXPOSED SURFACES UNLESS OTHERWISE NOTED. PAINT SURFACES BEHIND REMOVABLE EQUIPMENT / FURNITURE. PAINT BEHIND NON-REMOVABLE ITEMS WITH PRIME COAT ONLY.
15. PRIME ALL MATERIAL PRIOR TO PAINTING.
16. GRILLES, PLATES, DIFFUSERS, AND OTHER ITEMS OCCURRING IN WALLS OR CEILINGS SHALL BE FACTORY FINISHED IN PAINT OF COLOR OR SHEEN TO MATCH SURFACES ON WHICH THEY OCCUR UNLESS OTHERWISE NOTED.
17. SEALANT TO BE APPLIED BETWEEN BASE OF ALL DOOR FRAMES AND RESILIENT OR TILE FLOORING. SEALANT TO MATCH COLOR OF DOOR FRAMES.
18. CLEANING AND PROTECTION
    - A. COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS FOR CLEANING AND PROTECTION OF FLOOR COVERINGS.
    - B. IMMEDIATELY AFTER COMPLETING FLOOR COVERINGS INSTALLATION:
        1. REMOVE ADHESIVE AND OTHER BLEMISHES FROM FLOOR COVERING SURFACES.
        2. SWEEP AND VACUUM FLOOR COVERINGS THOROUGHLY.
        3. DAMP – MOP FLOOR COVERINGS TO REMOVE MARKS AND SOIL.
    - C. PROTECT FLOOR COVERINGS FROM DAMAGE DURING REMAINDER OF CONSTRUCTION.
        1. 1/8" MASONITE SMOOTH BOARD AT HEAVY TRAFFIC AREAS.
        2. 5 MM CORREX TWIN-WALL TAPED JOINTS POLYPROPYLENE SHEET, FINE FLUTE.
19. EXTEND FLOORING INTO ALL TOE KICKS, KNEE SPACES AND EXPOSED AREAS UNDER EXISTING CASEWORK. FLOORING AS SCHEDULED SHALL BE INSTALLED UNDER ALL NEW CASEWORK.
20. MOLD AND MOISTURE RESISTANT GYPSUM BOARD SHALL BE USED AT ALL TOILET ROOMS, AND CUSTODIAN SERVICE CLOSETS SCHEDULED TO HAVE GYPSUM BOARD FINISHES. THIS INCLUDES UNDER ALL NEW CASEWORK AND APPLIANCES.
21. SEE REFLECTED CEILING PLAN & NOTES FOR CEILING HEIGHTS, MATERIAL EXTENTS, LOCATIONS, & HEIGHTS OF BULKHEADS, SOFFITS, ETC.
22. PLAN WALL TYPES TAKE PRECEDENCE OVER SCHEDULED WALL FINISH. PROVIDE APPROPRIATE WALL FINISH TO CORRESPOND TO WALL TYPES.
23. PROVIDE SEALANT / CAULK AT INTERSECTIONS OF DISSIMILAR MATERIALS AND AS RECOMMENDED BY MANUFACTURER'S GUIDELINES.
24. WALL AND CEILING FINISHES SHALL INCLUDE ALL PROJECTIONS, BEAMS ENCLOSURES, RECESSES, BULKHEADS MATERIAL CHANGES, OR OTHER ENCLOSURES. REFER TO REFLECTED CEILING PLANS.
25. WALLS MAY CONTAIN MORE THAN ONE MATERIAL OR FINISH. REFER TO CONSTRUCTION TYPES, FLOOR PLANS, SECTIONS, DETAILS, AND INTERIOR ELEVATIONS.
26. ORIENTATION - ON PLANS NORTH WALL IS UP, EAST IS RIGHT, SOUTH IS DOWN, WEST IS LEFT.
27. FINISHES CALLED OUT IN TAG ARE FIELD FINISHES. SEE FINISH PLAN(S), ELEVATIONS, RCP(S) & ROOM SCHEDULE FOR EXTENTS OF ACCENTS.

EXISTING BUILDING SA | ADDITION

STORAGE EX: 104 | AH LAB EX: 106 | DATA EX: 105 | CLASSROOM EX: 118 | CORRIDOR EX: 117 | CLASSROOM EX: 121 | CLASSROOM EX: 124

EWD CLASS/COMBO LAB 127 (EXP, PT, R-2, CONC)

EWD LAB 128 (EXP, PT, R-2, CONC)

CORRIDOR 126 (ACT, PT, R-2, QTZ-1 / QTZ-2)

PREP ROOM 129 (ACT, PT, R-2, QTZ-1 / QTZ-2)

SCIENCE LAB 130 (ACT, PT, R-2, QTZ-1 / QTZ-2)

CLASSROOM 131 (ACT, PT, R-2, QTZ-1 / QTZ-2)

LAPTOP STORAGE 132 (ACT, PT, R-2, QTZ-1 / QTZ-2)

STORAGE 133 (ACT, PT, R-2, QTZ-1 / QTZ-2)

VETERANS 134 (ACT, PT, R-2, QTZ-1 / QTZ-2)

PT PRIVATE OFFICE 135 (ACT, PT, R-1, CPT)

STORAGE 136 (ACT, PT, R-1, CPT)

PT SHARED OFFICE 137 (ACT, PT, R-1, CPT)

SUPPLY STORAGE 138 (ACT, R-1, CPT)

MECH 143 (EXP, PT, R-2, CONC)

W.H. 144 (EXP, PT, R-2, CONC)

FEMALE TOILET 142 | MALE TOILET 141 | TOILET 140 | TOILET 139

GWB CWT-1/PT PTB PFT

CONTROL JOINT TO ALIGN W/ STOREFRONT OPENING

CONTROL JOINT TO ALIGN W/ DOOR FRAME

CONTROL JOINT TO ALIGN W/ WINDOW OPENING

30' - 0" | 27' - 1 1/2"

1 FIRST FLOOR FINISH PLAN, SA ADDITION

SCALE: 1/8" = 1'-0"

0' 4' 8' 16'

SCALE: 1/8" = 1'-0"

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ERNEST W. OLDS REGISTERED ARCHITECT 10595 NORTH CAROLINA WILMINGTON, N.C. 02/18/2025

BECKER MORGAN GROUP, INC. Professional Architectural Corporation 51922 North Carolina WILMINGTON, NC

PROJECT TITLE

CFCC SURF CITY SA ADDITION

621 NC HWY 210E, SURF CITY, NC

SCO ID#24-28220-01A

SHEET TITLE

FIRST FLOOR FINISH PLAN

ISSUE BLOCK

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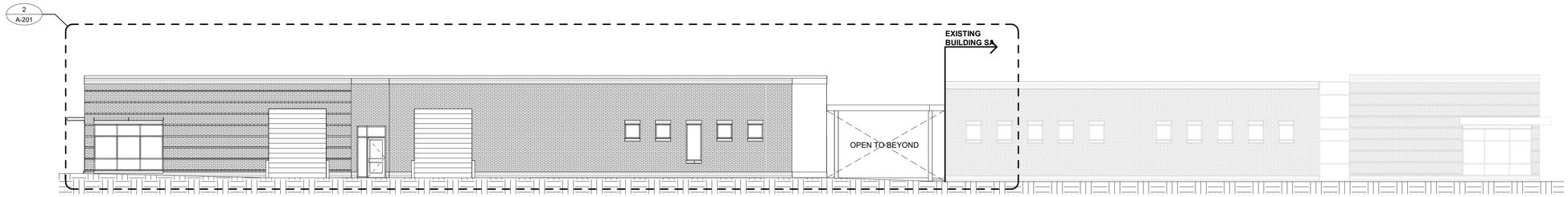
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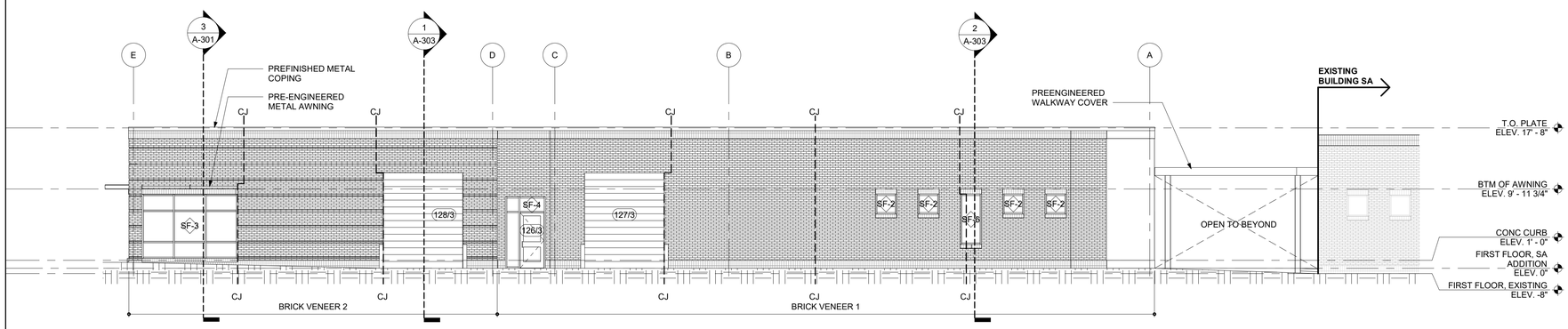
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1 NORTH ELEVATION - OVERALL

SCALE: 1" = 10'-0"

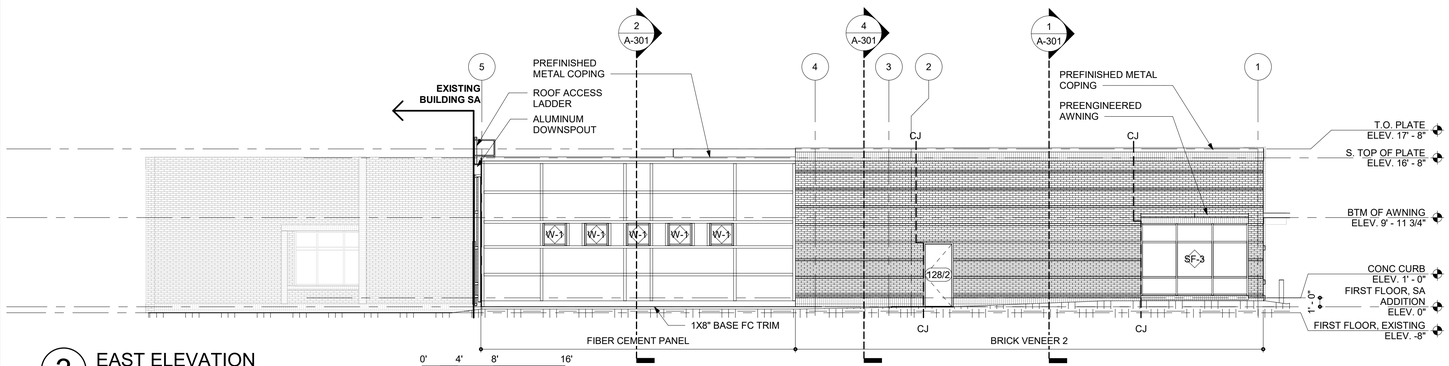
0' 5' 10' 20'
SCALE: 1" = 10'



2 NORTH ELEVATION

SCALE: 1/8" = 1'-0"

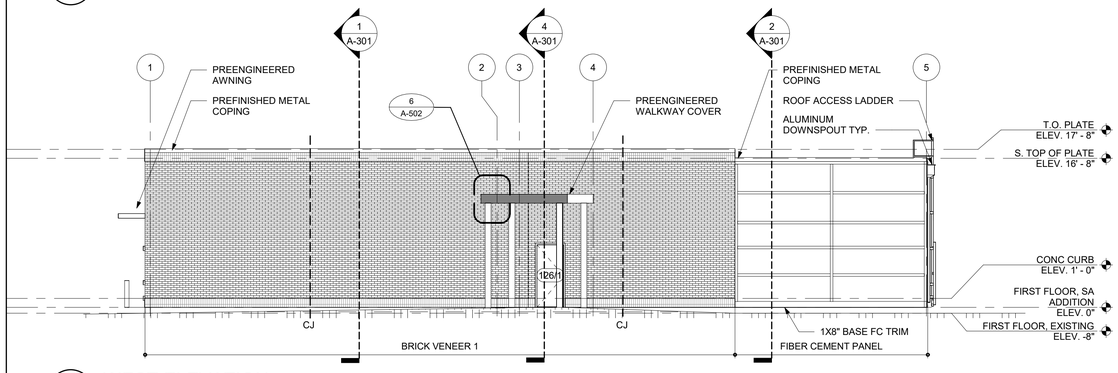
0' 4' 8' 16'
SCALE: 1/8" = 1'-0"



3 EAST ELEVATION

SCALE: 1/8" = 1'-0"

0' 4' 8' 16'
SCALE: 1/8" = 1'-0"



4 WEST ELEVATION

SCALE: 1/8" = 1'-0"

0' 4' 8' 16'
SCALE: 1/8" = 1'-0"

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02/18/2025

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North Carolina
WILMINGTON, NC

PROJECT TITLE

CFCC SURF CITY SA ADDITION

621 NC HWY 210E, SURF CITY, NC

SCO ID#24-28220-01A

SHEET TITLE

EXTERIOR ELEVATIONS

ISSUE BLOCK

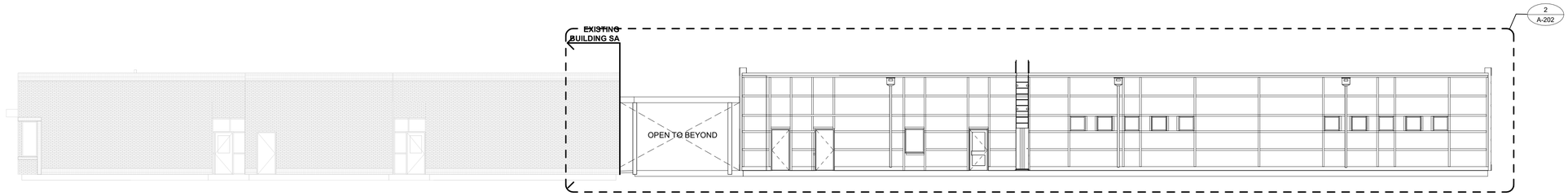
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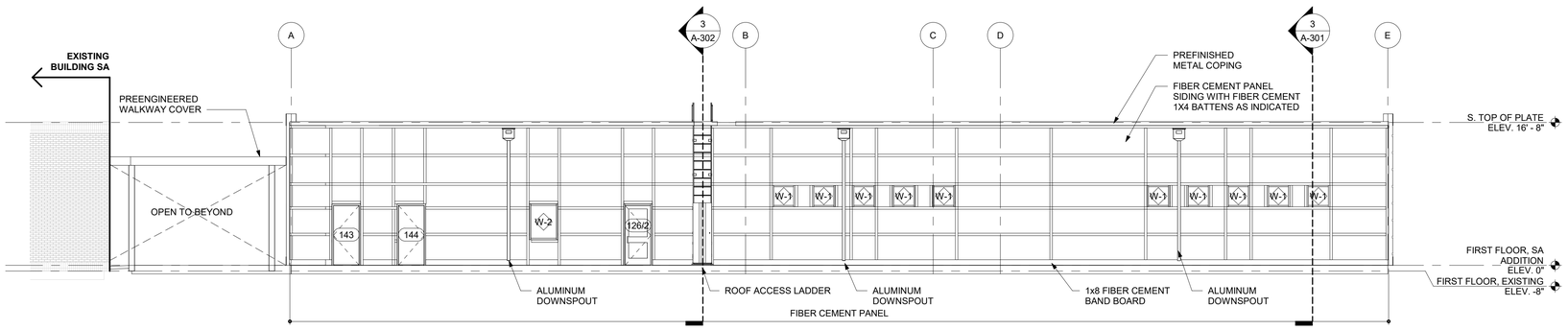


1 SOUTH ELEVATION - OVERALL

SCALE: 1" = 10'-0"

0' 5' 10' 20'

SCALE: 1" = 10'



2 SOUTH ELEVATION

SCALE: 1/8" = 1'-0"

0' 4' 8' 16'

SCALE: 1/8" = 1'-0"

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SHEET TITLE

EXTERIOR ELEVATIONS

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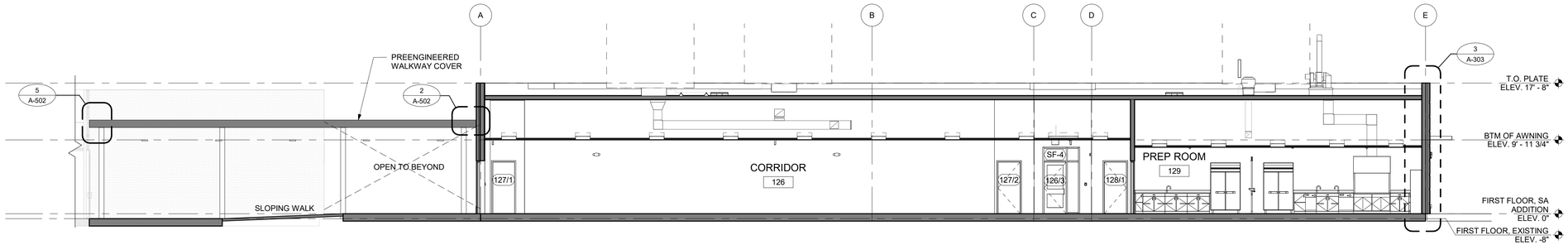
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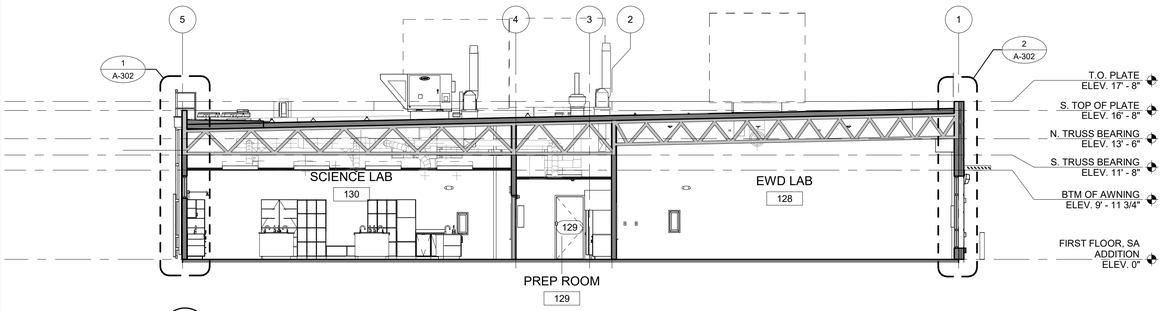
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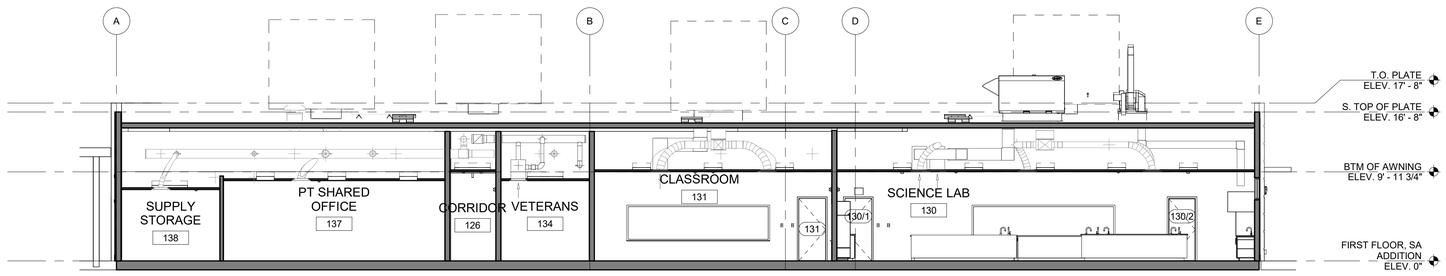
4 SECTION 4

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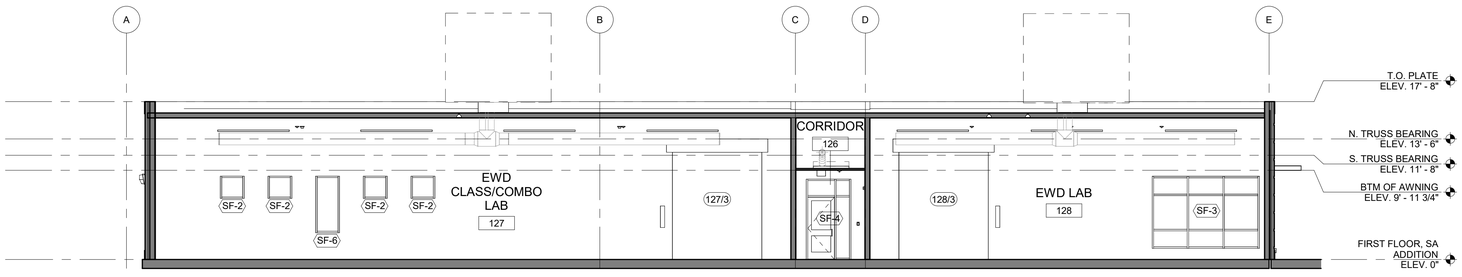
3 SECTION 3

SCALE: 1/8" = 1'-0"



2 SECTION 2

SCALE: 1/8" = 1'-0"



1 SECTION 1

SCALE: 1/8" = 1'-0"

0' 4' 8' 16'

SCALE: 1/8" = 1'-0"

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CFCC SURF CITY SA ADDITION

621 NC HWY 210E, SURF CITY, NC

SCO ID#24-28220-01A

SHEET TITLE

BUILDING SECTIONS

ISSUE BLOCK

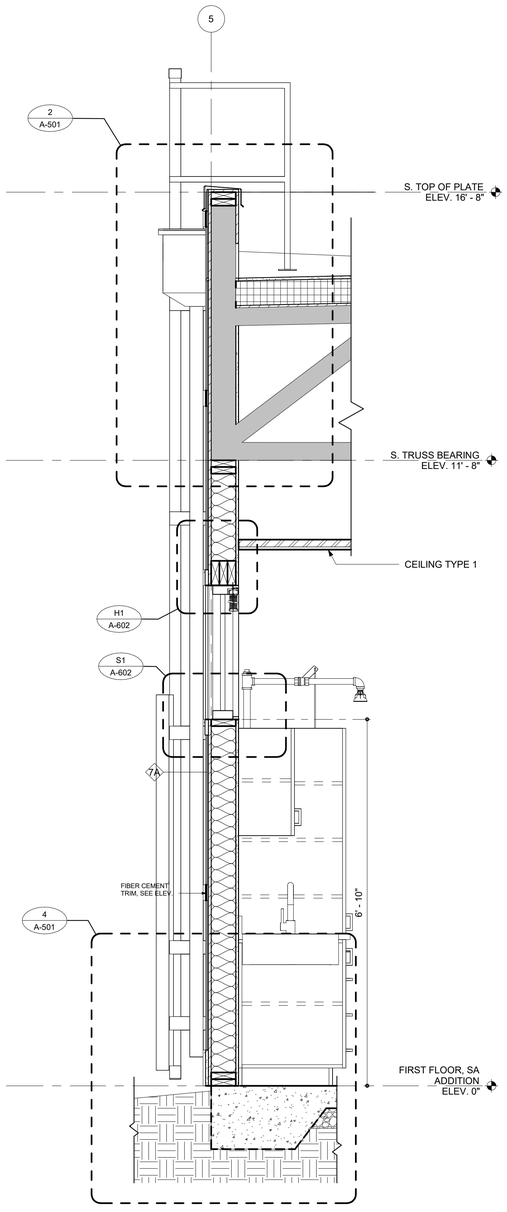
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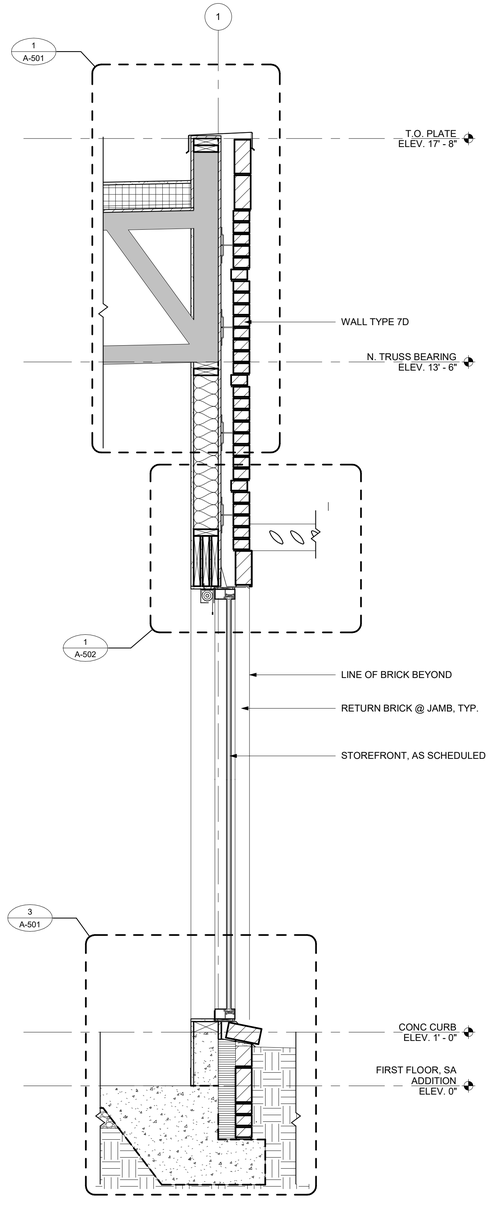
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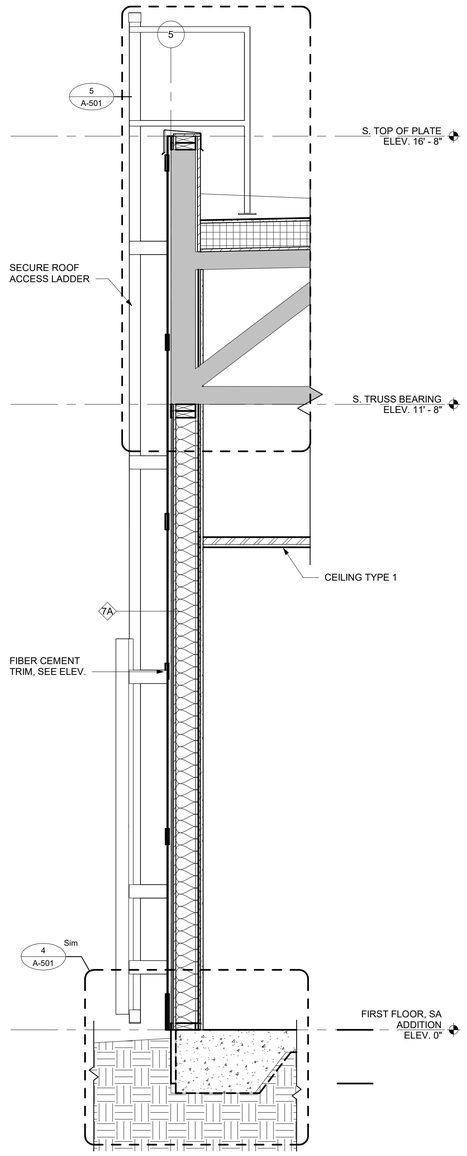
1 WALL SECTION @ LOW ROOF W/ SCUPPER

SCALE: 3/4" = 1'-0"



2 WALL SECTION @ BRICK VENEER, STOREFRONT 3

SCALE: 3/4" = 1'-0"



3 WALL SECTION @ FIBER CEMENT PANEL ON WOOD STUD

SCALE: 3/4" = 1'-0"

0' 6" 1' 2' 3'

SCALE: 3/4" = 1'-0"

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SHEET TITLE

WALL SECTIONS

ISSUE BLOCK

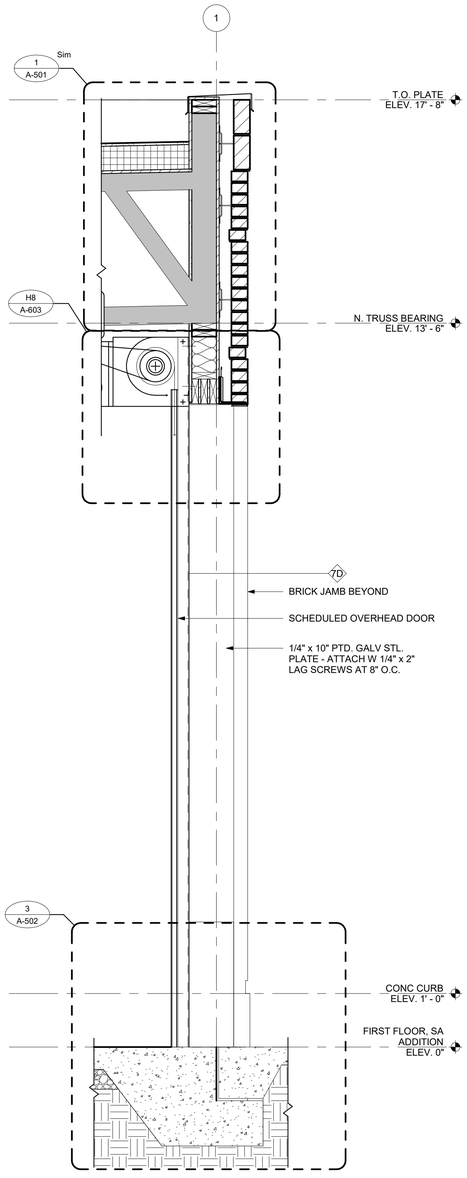
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A-302

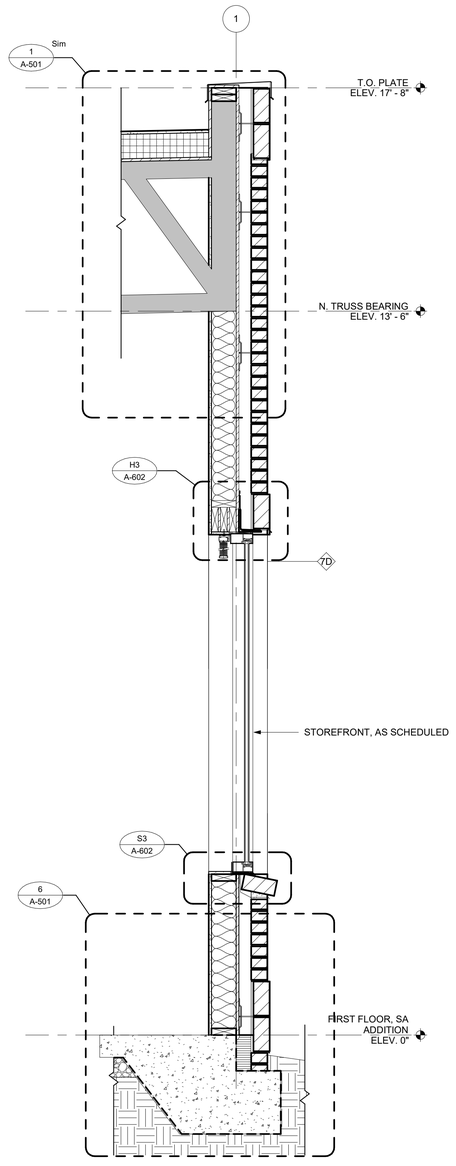
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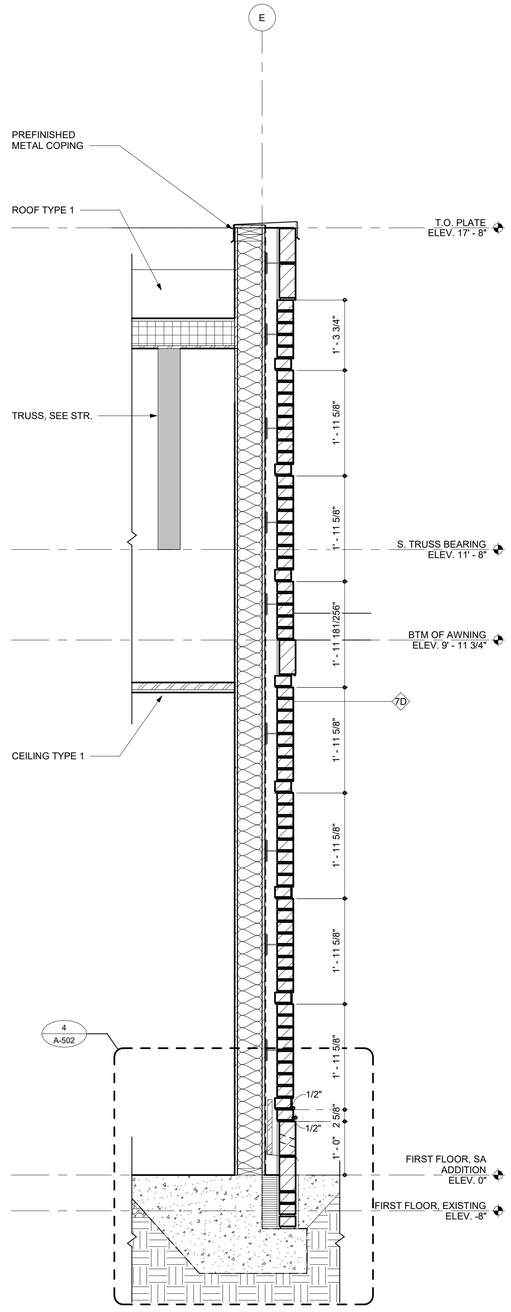
1 WALL SECTION @ BRICK VENEER W/ OH DOOR

SCALE: 3/4" = 1'-0"



2 WALL SECTION @ BRICK VENEER, STOREFRONT 6

SCALE: 3/4" = 1'-0"



3 WALL SECTION @ BRICK VENEER, EXTERIOR LANDING

SCALE: 3/4" = 1'-0"

0' 6" 1' 2' 3'

SCALE: 3/4" = 1'-0"

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ERNEST W. OLDS REGISTERED ARCHITECT 10595 NORTH CAROLINA WILMINGTON, N.C.

02/18/2025

BECKER MORGAN GROUP, INC. Professional Architectural Corporation 51922 North Carolina WILMINGTON, NC

PROJECT TITLE

CFCC SURF CITY SA ADDITION

621 NC HWY 210E, SURF CITY, NC

SCO ID#24-28220-01A

SHEET TITLE

WALL SECTIONS

ISSUE BLOCK

Mark	Date	Description
3	02.12.2024	SCO CD COMMENTS
2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	11.11.2024	GMP PRICING

PROJECT NO: 2024077.00

DATE: 02/12/2025

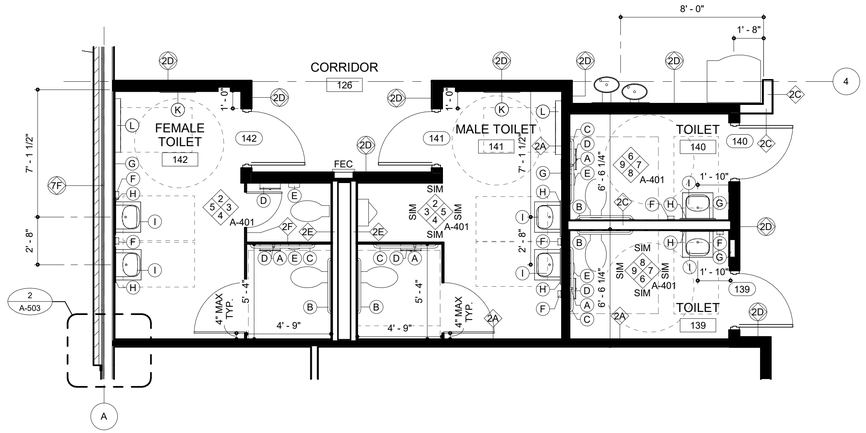
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TOILET 139, TOILET 140, MALE TOILET 141, FEMALE TOILET 142_ENLARGED PLAN

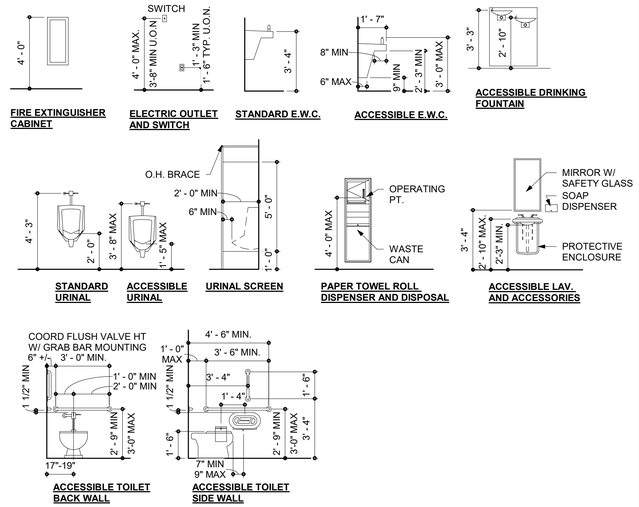
1 SCALE: 1/4" = 1'-0"

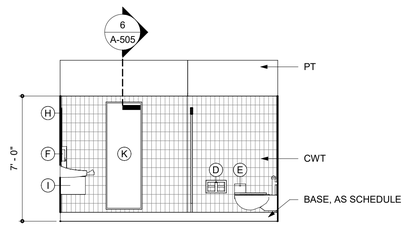
TOILET ACCESSORY SCHEDULE

Type Mark	Description	Comments
A	18" Length,1 1/4" Diameter Stainless Steel Grab Bars with Snap Flange	
B	36" Length, 1 1/4" Diameter Stainless Steel Grab Bars with Snap Flange	
C	42" Length, 1 1/4" Diameter Stainless Steel Grab Bars with Snap Flange	
D	Toilet Paper Dispenser	OFCI
E	Surface-Mounted Sanitary Napkin Disposal	
F	Soap Dispenser	OFCI
G	Paper Towel Dispenser	OFCI
H	24"X36" Mirror	
I	Lav Shield	
J	Wall Hook	
K	24"X72" Mirror	
L	Baby Changing Station	

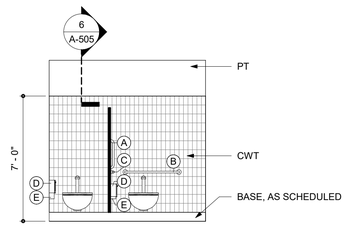
*OFCI = OWNER FURNISHED, CONTRACTOR INSTALLED

STANDARD MOUNTING HEIGHTS

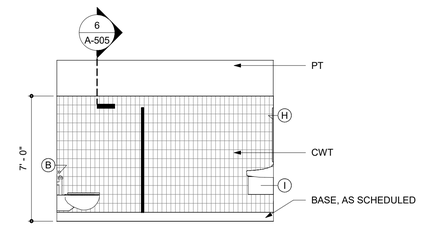




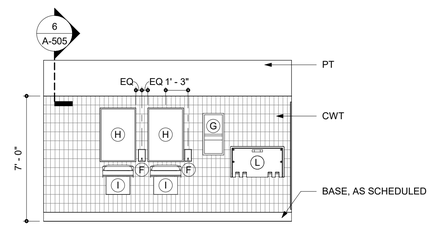
2 TYPICAL RESTROOM, ELEVATION A
SCALE: 1/4" = 1'-0"



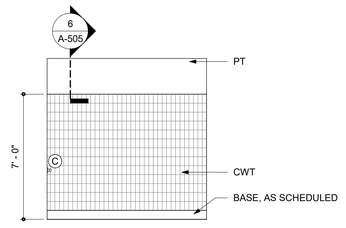
3 TYPICAL RESTROOM, ELEVATION B
SCALE: 1/4" = 1'-0"



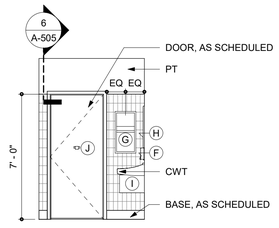
4 TYPICAL RESTROOM, ELEVATION C
SCALE: 1/4" = 1'-0"



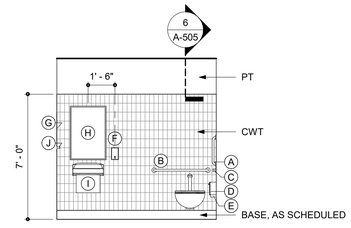
5 TYPICAL RESTROOM, ELEVATION D
SCALE: 1/4" = 1'-0"



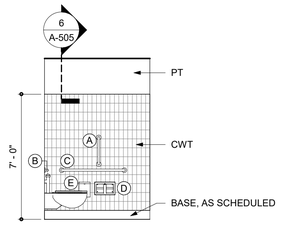
6 TYPICAL TOILET, ELEVATION A
SCALE: 1/4" = 1'-0"



7 TYPICAL TOILET, ELEVATION B
SCALE: 1/4" = 1'-0"



8 TYPICAL TOILET, ELEVATION C
SCALE: 1/4" = 1'-0"



9 TYPICAL TOILET, ELEVATION D
SCALE: 1/4" = 1'-0"

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W.M. Jordan COMPANY

CAPE FEAR COMMUNITY COLLEGE





PROJECT TITLE

CFCC SURF CITY SA ADDITION

621 NC HWY 210E, SURF CITY, NC

SCO ID#24-28220-01A

SHEET TITLE

ENLARGED PLANS AND SECTIONS

ISSUE BLOCK

Mark	Date	Description
3	02.12.2024	SCO CD COMMENTS
2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	11.11.2024	GMP PRICING

PROJECT NO: 2024077.00
DATE: 02/12/2025
SCALE: 1/4" = 1'-0"
DRAWN BY: ALJ/BJP/CRF | PROJ MGR: JPB

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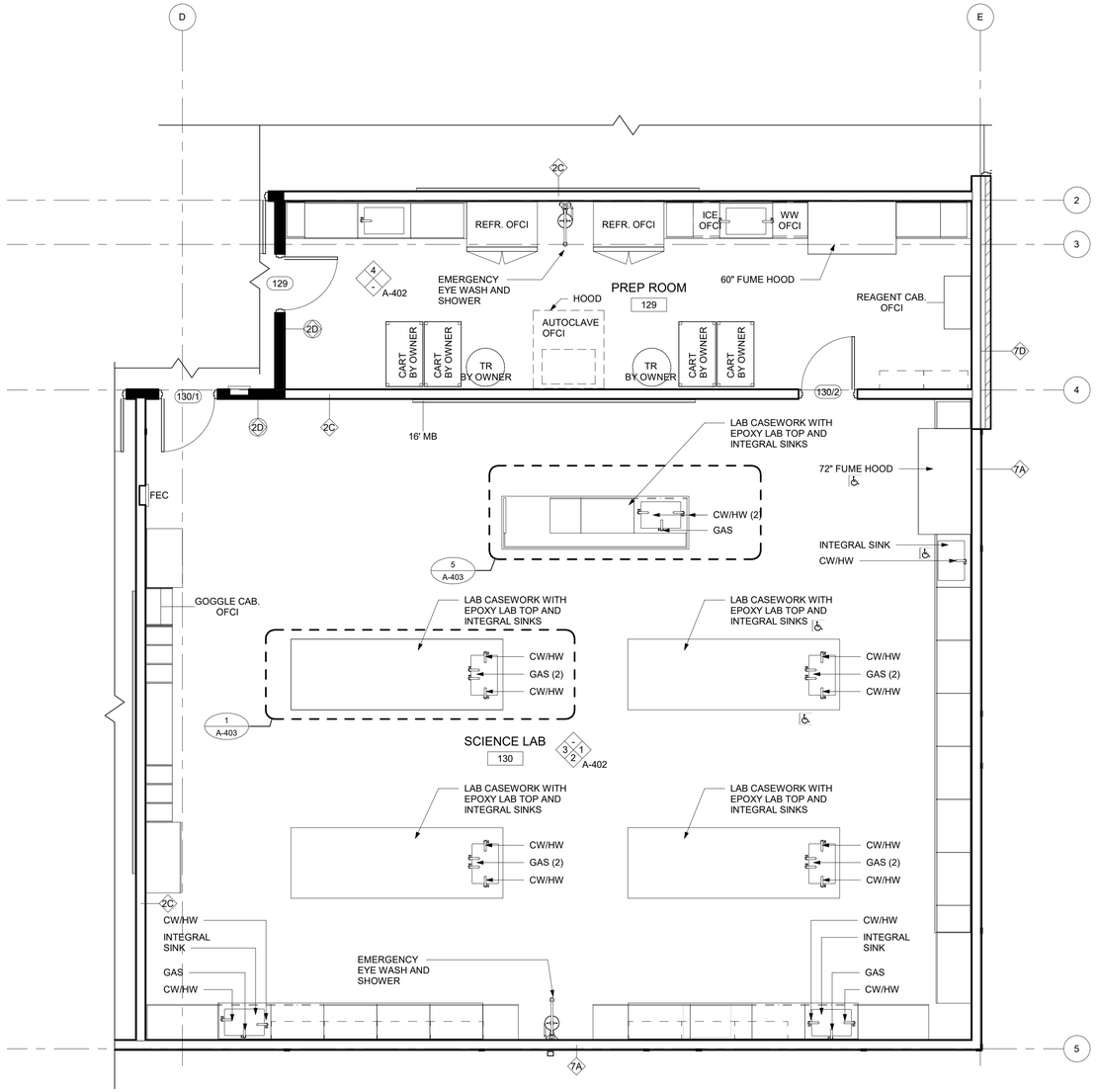
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GENERAL NOTES

1. LAB COUNTERTOPS SHALL BE 34" H. A.F.F. TYP.
2. LAB DOORS AND DRAWERS SHALL BE LOCKABLE.

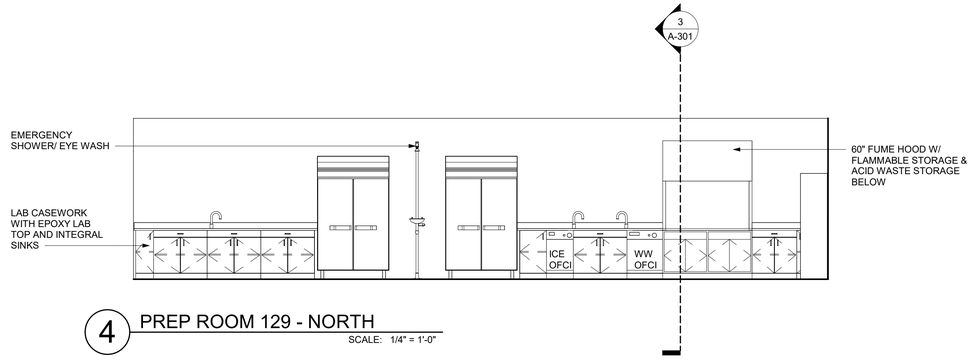
LEGEND

ITEMS MARKED WITH ACCESSIBLE SYMBOL SHALL BE ACCESSIBLE.



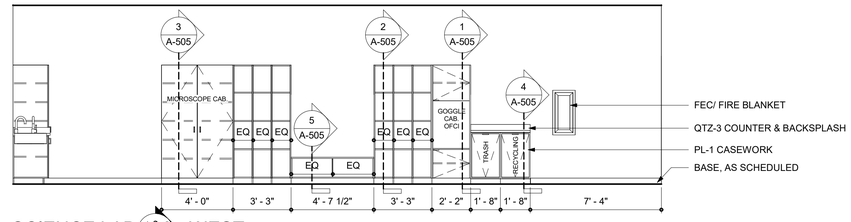
6 SCIENCE LAB 130 & PREP ROOM 129 - ENLARGED PLAN

SCALE: 1/4" = 1'-0"



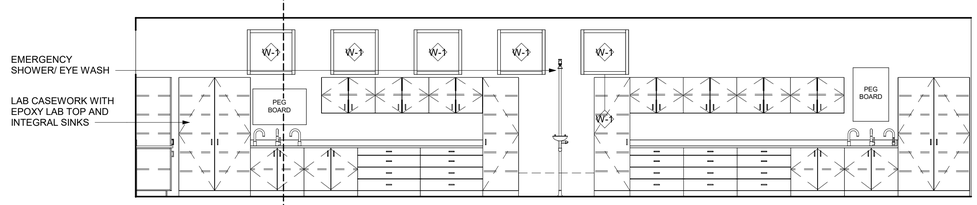
4 PREP ROOM 129 - NORTH

SCALE: 1/4" = 1'-0"



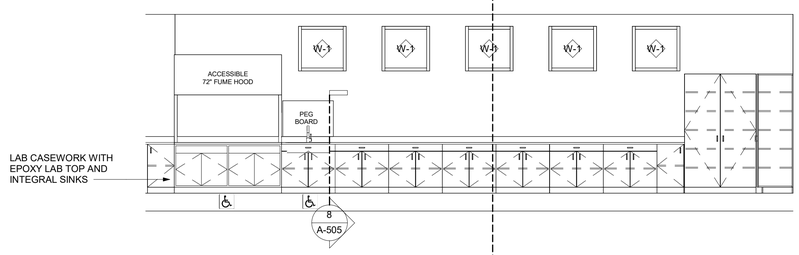
3 SCIENCE LAB 130 - WEST

SCALE: 1/4" = 1'-0"



2 SCIENCE LAB 130 - SOUTH

SCALE: 1/4" = 1'-0"



1 SCIENCE LAB 130 - EAST

SCALE: 1/4" = 1'-0"

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PROJECT TITLE

CFCC SURF CITY SA ADDITION

621 NC HWY 210E, SURF CITY, NC

SCO ID#24-28220-01A

SHEET TITLE

ENLARGED PLANS AND ELEVATIONS

ISSUE BLOCK

Mark	Date	Description
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PROJECT NO: 2024077.00
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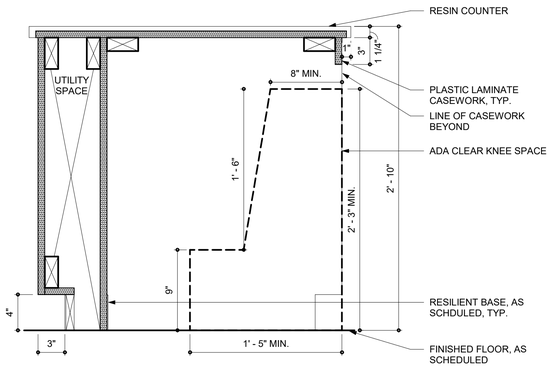
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LAB CASEWORK TABLE NOTES

THIS SHEET SERVES AS A BASIS OF DESIGN FOR STUDENT LAB TABLES AND INSTRUCTOR LAB TABLES. ALL STUDENT AND INSTRUCTOR TABLES TO BE PART OF THE LAB CASEWORK MANUFACTURER'S SCOPE OF WORK.

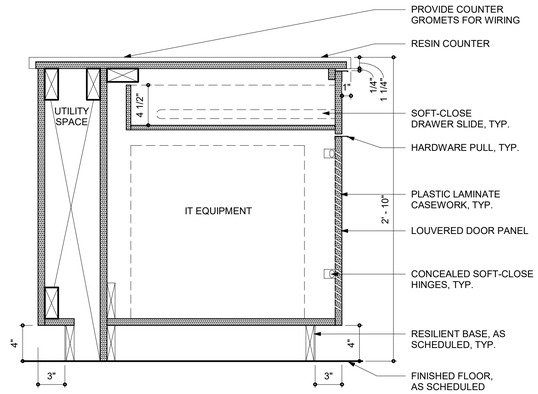
ALL DIMENSIONS AND FINISHES TO BE CONFIRMED WITH OWNER PRIOR TO FABRICATION.

A MINIMUM OF (1) STUDENT TABLE TO BE ADA ACCESSIBLE.



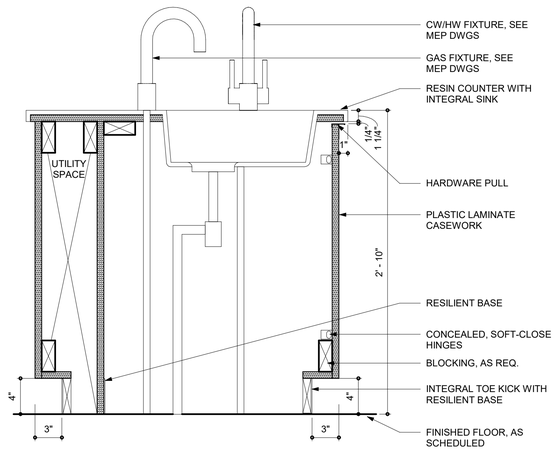
VERTICAL DETAIL - INSTRUCTOR LAB TABLE KNEE SPACE

13 SCALE: 1 1/2" = 1'-0"



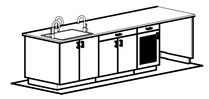
VERTICAL DETAIL - DRAWER AND CABINET VENT

12 SCALE: 1 1/2" = 1'-0"



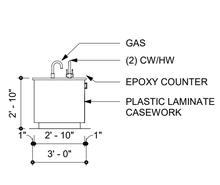
VERTICAL DETAIL - INSTRUCTOR LAB TABLE SINK

10 SCALE: 1 1/2" = 1'-0"



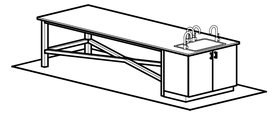
AXON_INSTRUCTOR LAB TABLE

8 SCALE:



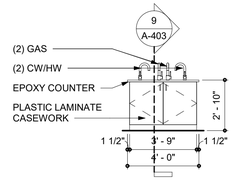
INSTRUCTOR LAB TABLE ELEVATION B

7 SCALE: 1/4" = 1'-0"



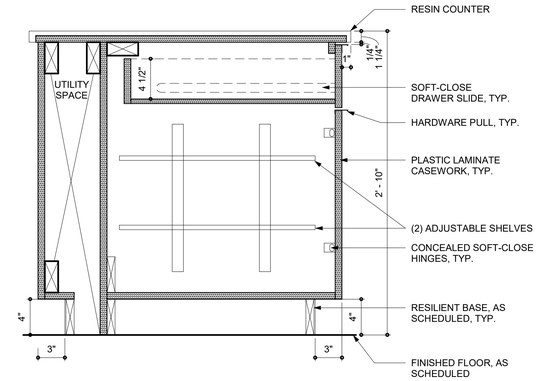
AXON_STUDENT LAB TABLE

4 SCALE:



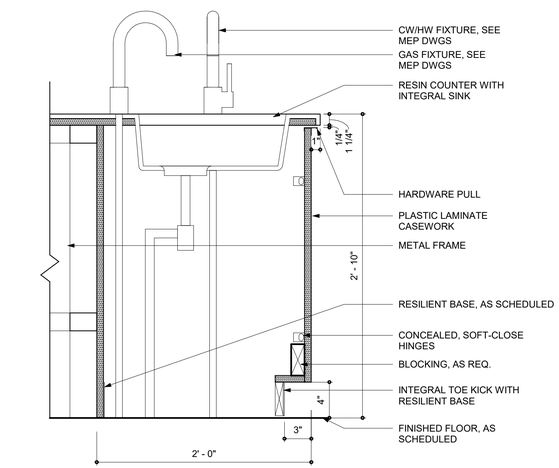
STUDENT LAB TABLE ELEVATION B

3 SCALE: 1/4" = 1'-0"



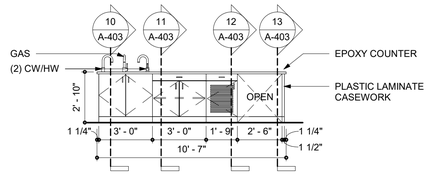
VERTICAL DETAIL - DRAWER AND CABINET

11 SCALE: 1 1/2" = 1'-0"



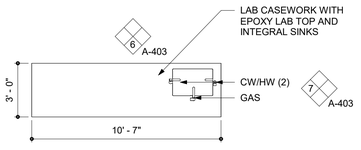
VERTICAL DETAIL - STUDENT LAB TABLE SINK

9 SCALE: 1 1/2" = 1'-0"



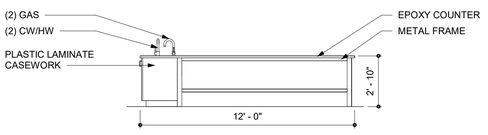
INSTRUCTOR LAB TABLE ELEVATION A

6 SCALE: 1/4" = 1'-0"



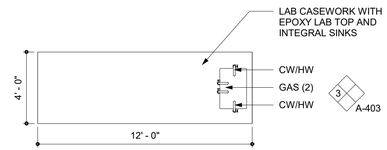
INSTRUCTOR LAB TABLE_ENLARGED PLAN

5 SCALE: 1/4" = 1'-0"



STUDENT LAB TABLE ELEVATION A

2 SCALE: 1/4" = 1'-0"



STUDENT LAB TABLE_ENLARGED PLAN

1 SCALE: 1/4" = 1'-0"

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BECKER MORGAN GROUP, INC. Registered Architectural Corporation North Carolina 51922 WILMINGTON, NC

PROJECT TITLE

CFCC SURF CITY SA ADDITION

621 NC HWY 210E, SURF CITY, NC

SCO ID#24-28220-01A

SHEET TITLE

ENLARGED PLANS AND ELEVATIONS

ISSUE BLOCK

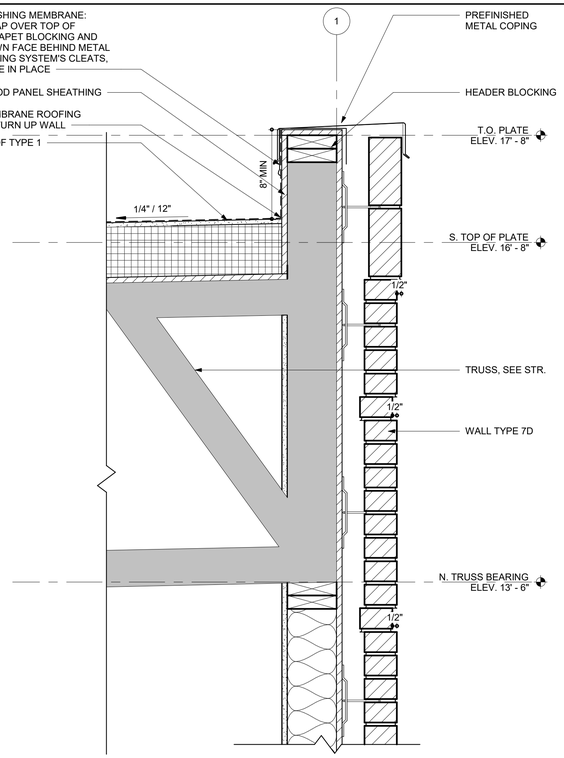
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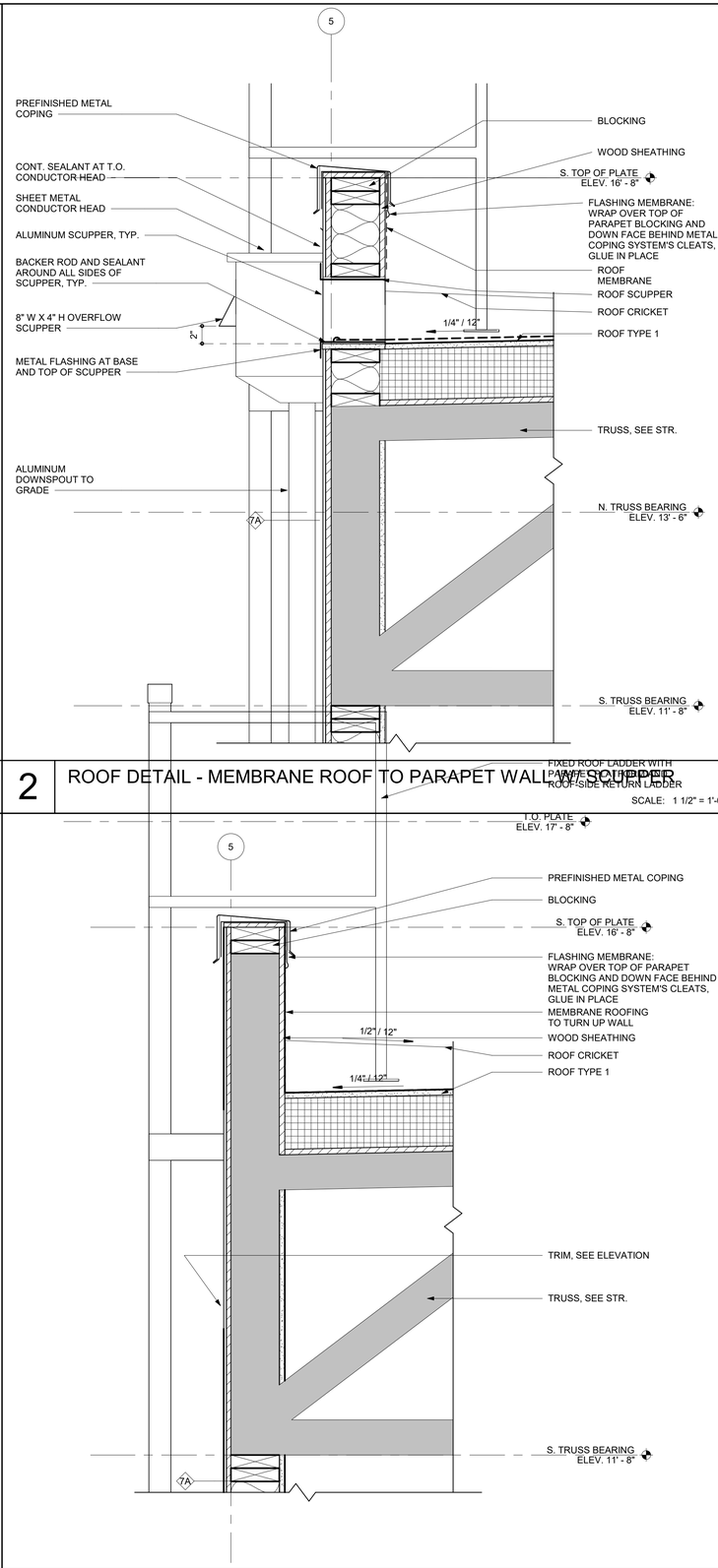
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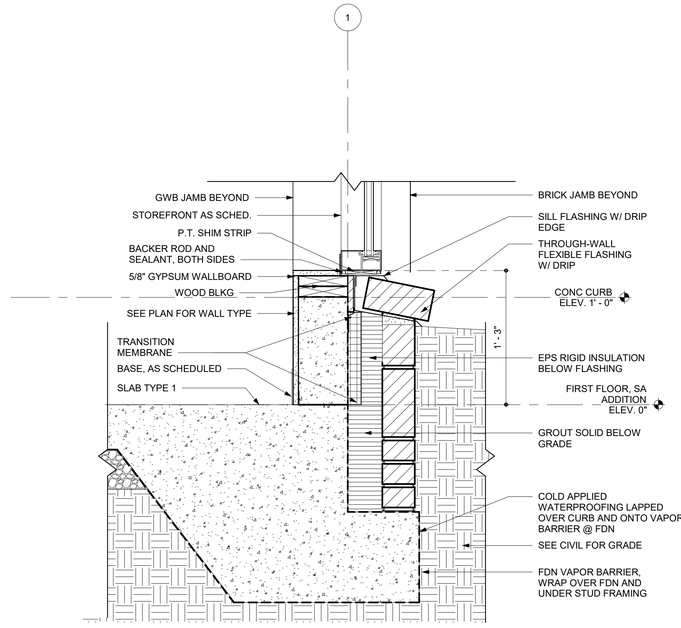
1 ROOF DETAIL - MEMBRANE ROOF TO BRICK VENEER PARAPET WALL

SCALE: 1 1/2" = 1'-0"



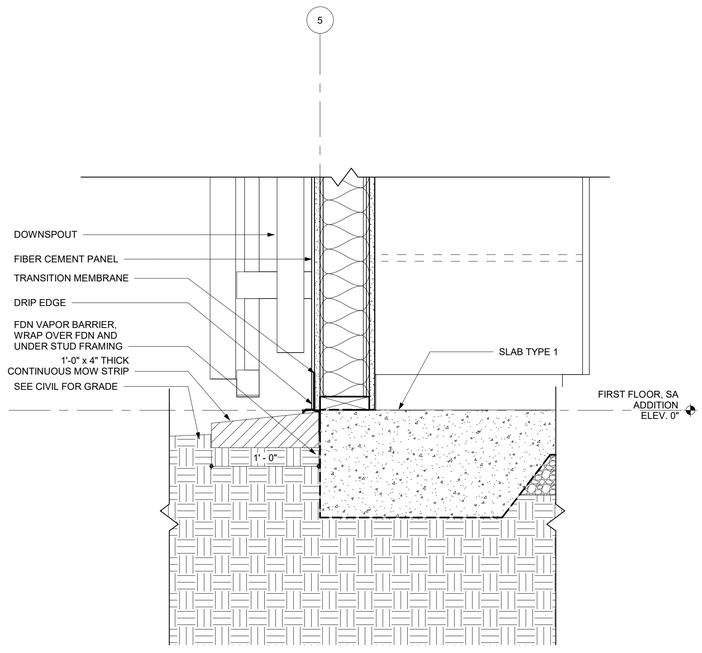
2 ROOF DETAIL - MEMBRANE ROOF TO PARAPET WALL

SCALE: 1 1/2" = 1'-0"



3 SECTION DETAIL - TYP. FOUNDATION AT BRICK VENEER ON CURB

SCALE: 1 1/2" = 1'-0"

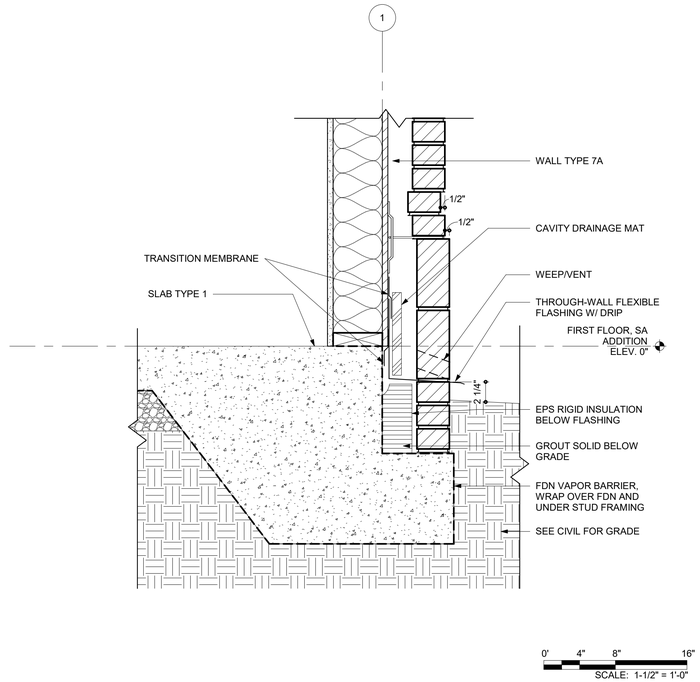


4 SECTION DETAIL - TYP. FOUNDATION AT FIBER CEMENT PANEL ON STUD WALL

SCALE: 1 1/2" = 1'-0"

5 ROOF DETAIL - MEMBRANE ROOF TO PARAPET WALL

SCALE: 1 1/2" = 1'-0"



6 SECTION DETAIL - TYP. FOUNDATION AT BRICK VENEER ON STUD WALL

SCALE: 1-1/2" = 1'-0"

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ERNEST W. OLDS REGISTERED ARCHITECT 10595 N.C. WILMINGTON, N.C. 02/18/2025

BECKER MORGAN GROUP, INC. Registered Architectural Corporation 51922 North Carolina WILMINGTON, NC

PROJECT TITLE

CFCC SURF CITY SA ADDITION

621 NC HWY 210E, SURF CITY, NC

SCO ID#24-28220-01A

SHEET TITLE

DETAILS

ISSUE BLOCK

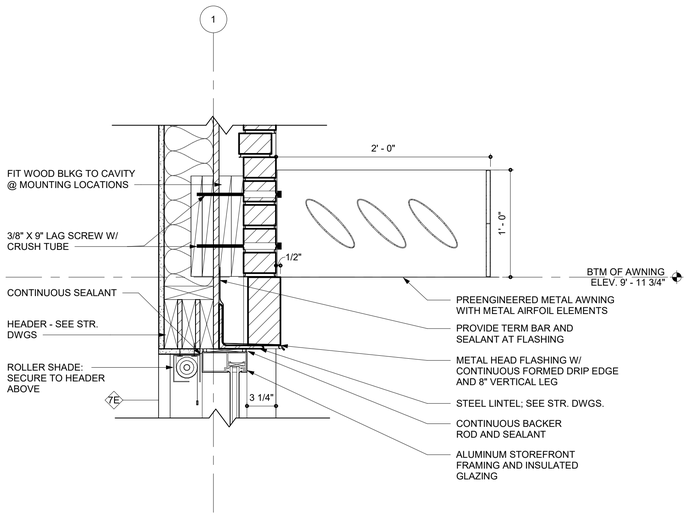
Mark	Date	Description
3	02.12.2024	SCO CD COMMENTS
2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	11.11.2024	GMP PRICING

PROJECT NO: 2024077.00
DATE: 02/12/2025
SCALE: 1 1/2" = 1'-0"
DRAWN BY: ALJ/BJP/CRF PROJ MGR: JPB

A-501

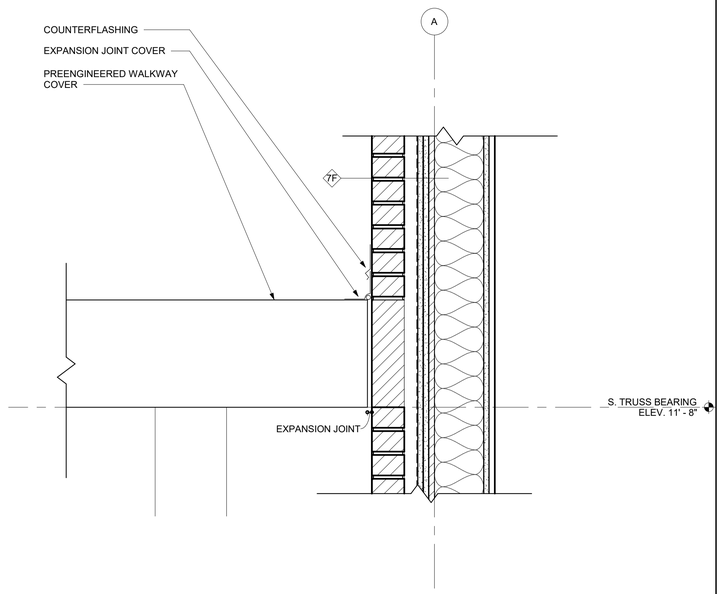
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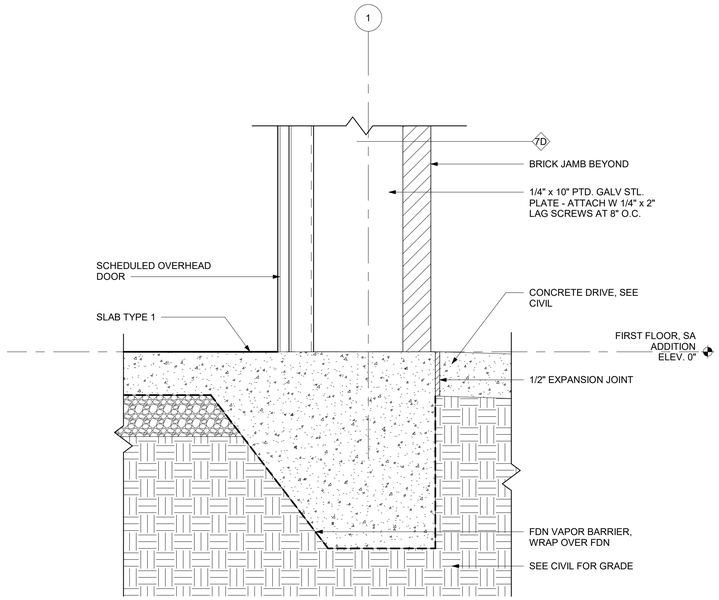
1 SECTION DETAIL - PREENGINEERED METAL AWNING

SCALE: 1 1/2" = 1'-0"



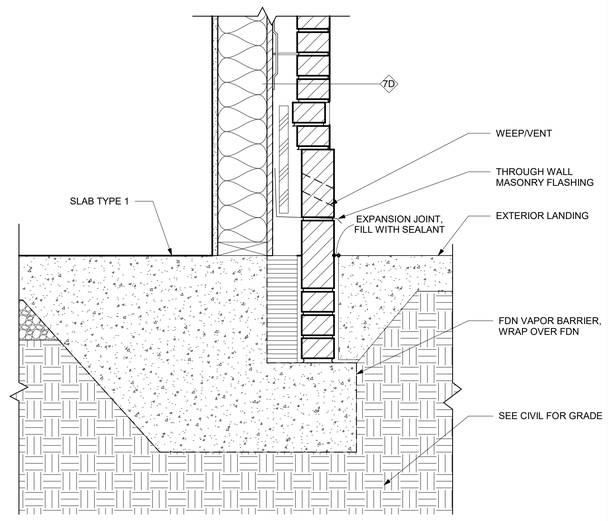
2 PREENGINEERED WALKWAY COVER CONNECTION DETAIL

SCALE: 1 1/2" = 1'-0"



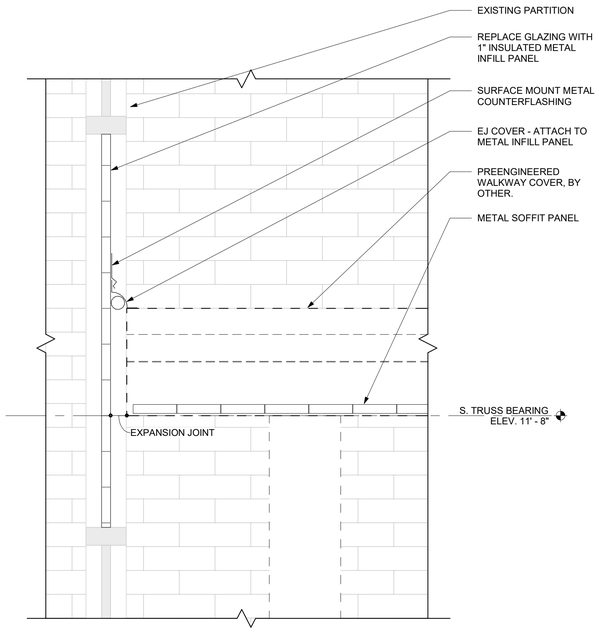
3 SECTION DETAIL - FOUNDATION AT OH DOOR ON BRICK VENEER ON STUD WALL

SCALE: 1 1/2" = 1'-0"



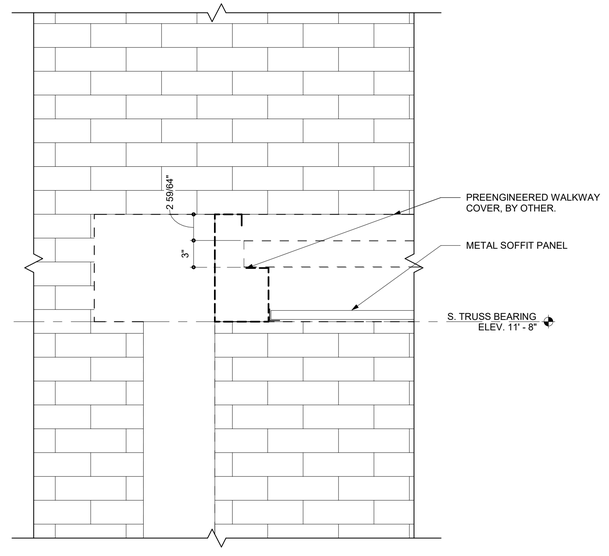
4 WALL SECTION @ BRICK VENEER, EXTERIOR LANDING - FOUNDATION & EXTERIOR LANDING DETAIL

SCALE: 1 1/2" = 1'-0"



5 PREENGINEERED WALKWAY COVER EXISTING BUILDING CONNECTION DETAIL

SCALE: 1 1/2" = 1'-0"



SCALE: 1-1/2" = 1'-0"

6 PREENGINEERED WALKWAY COVER BEAM AND DECK

SCALE: 1 1/2" = 1'-0"

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02/18/2025

BECKER MORGAN GROUP, INC. Registered Architectural Corporation 51922 North Carolina WILMINGTON, NC

PROJECT TITLE

CFCC SURF CITY SA ADDITION

621 NC HWY 210E, SURF CITY, NC

SCO ID#24-28220-01A

SHEET TITLE

DETAILS

ISSUE BLOCK

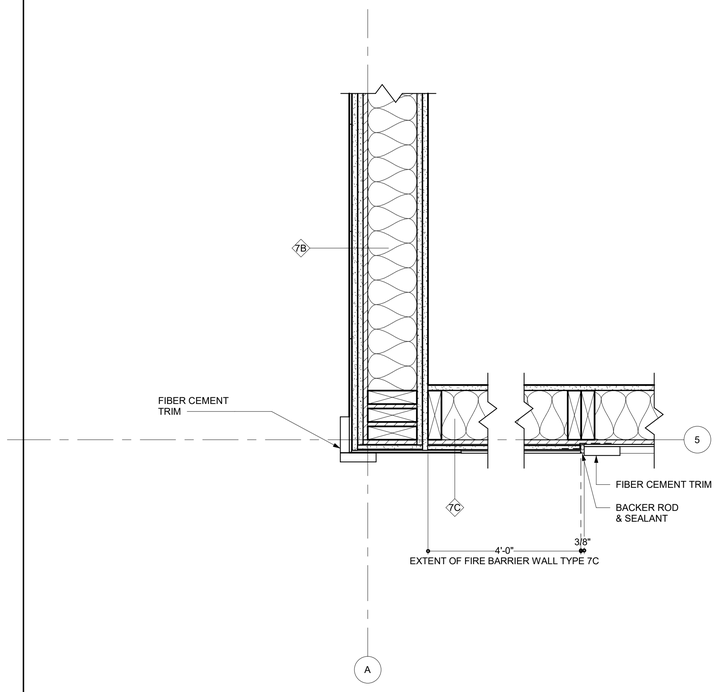
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PROJECT NO: 2024077.00
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SCALE: 1 1/2" = 1'-0"
DRAWN BY: ALJ/BJP/CRF PROJ MGR: JPB

A-502

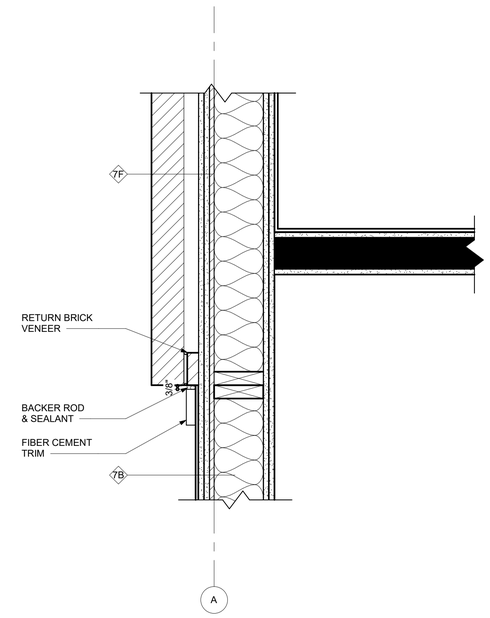
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1 TRANSITION FROM 2 HR RATED WALL TO 1 HR RATED WALL

SCALE: 1 1/2" = 1'-0"



2 TRANSITION FROM BRICK TO FIBER CEMENT PANEL

SCALE: 1 1/2" = 1'-0"

0' 4" 8" 16"

SCALE: 1-1/2" = 1'-0"

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02/18/2025

BECKER MORGAN GROUP, INC. Registered Architectural Corporation 51922 North Carolina WILMINGTON, NC

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621 NC HWY 210E, SURF CITY, NC

SCO ID#24-28220-01A

SHEET TITLE

DETAILS

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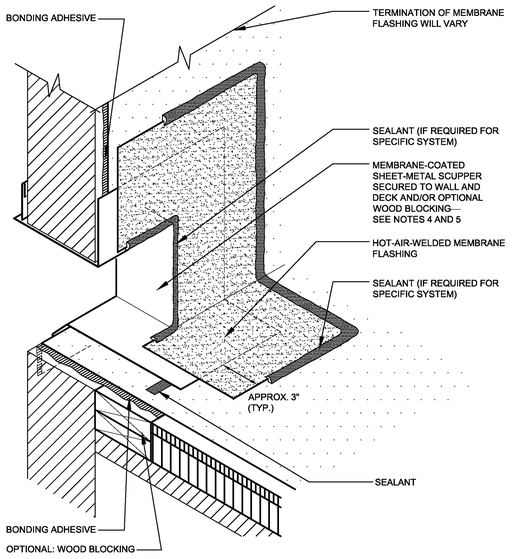
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PROJECT NO:	2024077.00
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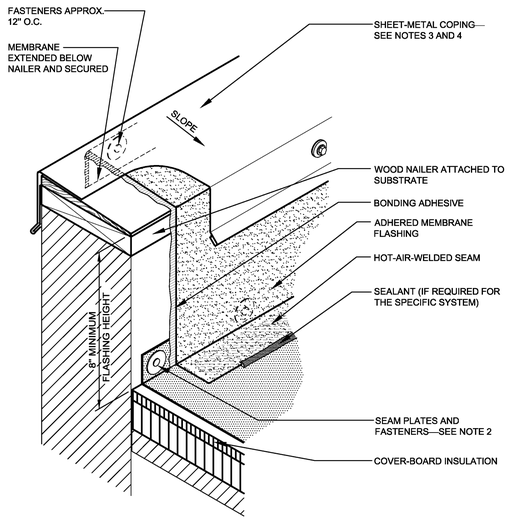
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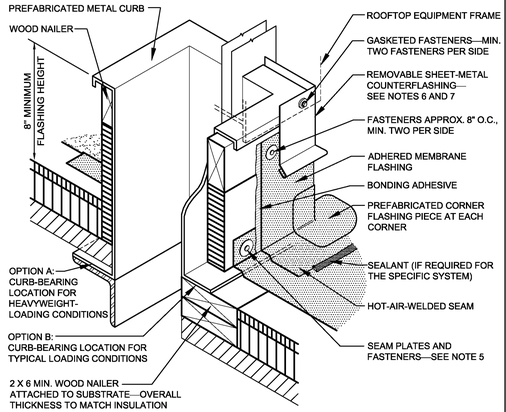
1 ROOF DETAIL - BASE FLASHING AT THROUGH-WALL SCUPPER

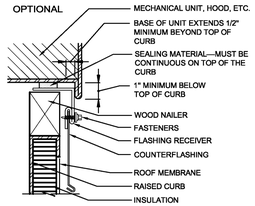
0" 2" 4" 8"
SCALE: 3" = 1'-0"



2 ROOF DETAIL - BASE FLASHING AT PARAPET WALL WITH METAL COPING

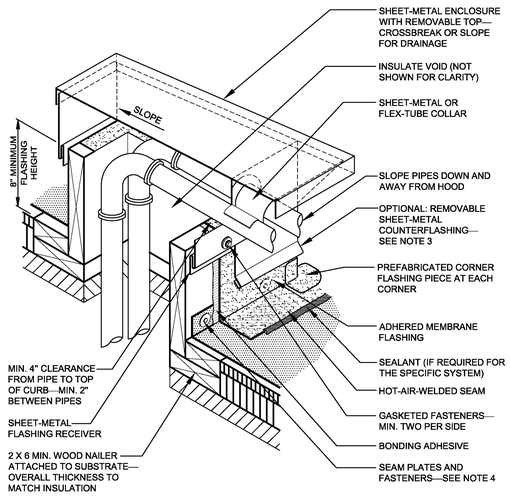
0' 4" 8" 16"
SCALE: 1-1/2" = 1'-0"





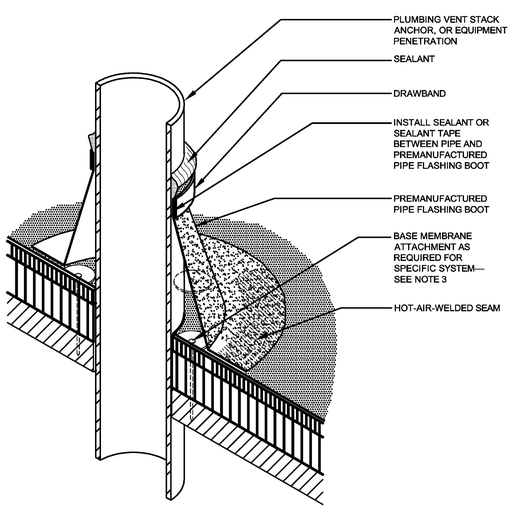
4 ROOF DETAIL - BASE FLASHING AT PREFABRICATED METAL CURB

0' 4" 8" 16"
SCALE: 1-1/2" = 1'-0"



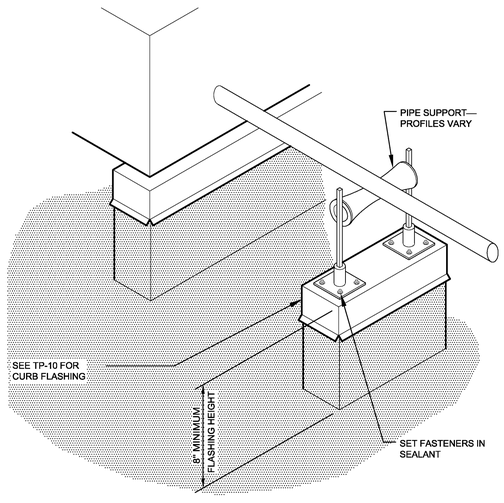
5 ROOF DETAIL - BASE FLASHING AT SHEET-METAL ENCLOSURE FOR PIPING THROUGH ROOF DECK

0' 4" 8" 16"
SCALE: 1-1/2" = 1'-0"



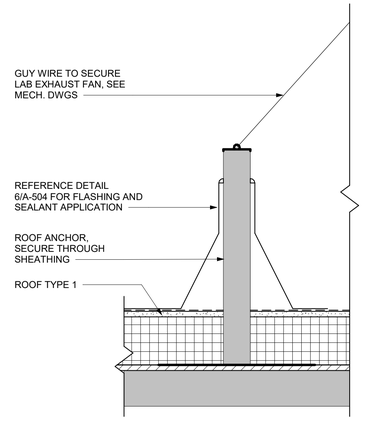
6 ROOF DETAIL - PLUMBING VENT

0' 4" 8" 16"
SCALE: 1-1/2" = 1'-0"



7 ROOF DETAIL - PIPE SUPPORT CURB

0' 4" 8" 16"
SCALE: 1-1/2" = 1'-0"



8 ROOF DETAIL - GUY WIRE TIE DOWN

0' 4" 8" 16"
SCALE: 1-1/2" = 1'-0"

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02/18/2025

BECKER MORGAN GROUP, INC. Registered Architectural Corporation 51922 North Carolina WILMINGTON, NC

PROJECT TITLE

CFCC SURF CITY SA ADDITION

621 NC HWY 210E, SURF CITY, NC

SCO ID#24-28220-01A

SHEET TITLE

ROOF DETAILS

ISSUE BLOCK

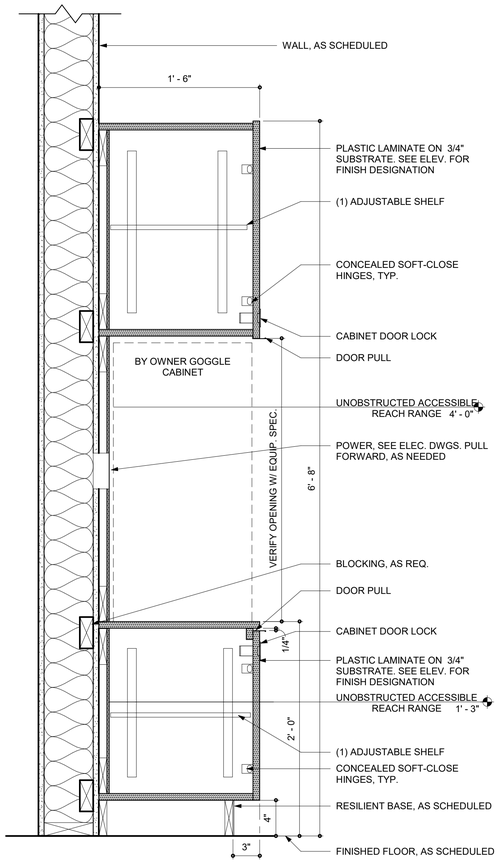
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2	11.26.2024	SCO CONSTRUCTION DOCUMENTS

PROJECT NO: 2024077.00
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SCALE: As indicated
DRAWN BY: ALJ/BJP/CRF PROJ MGR: JPB

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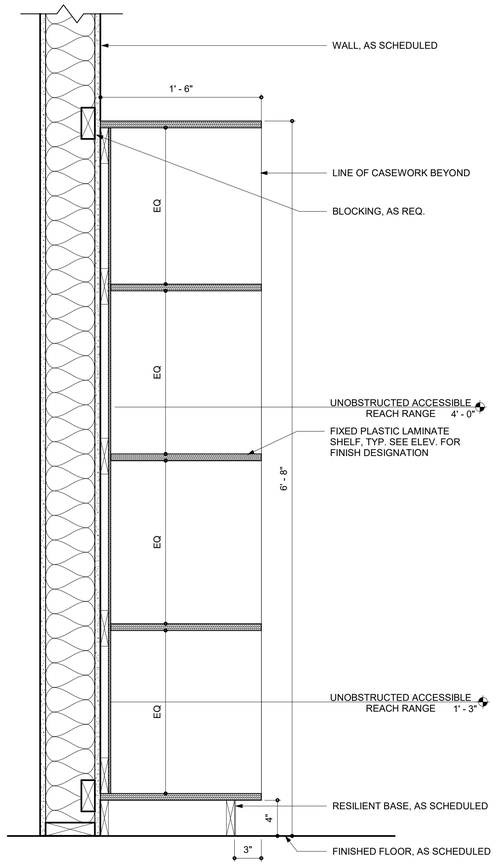
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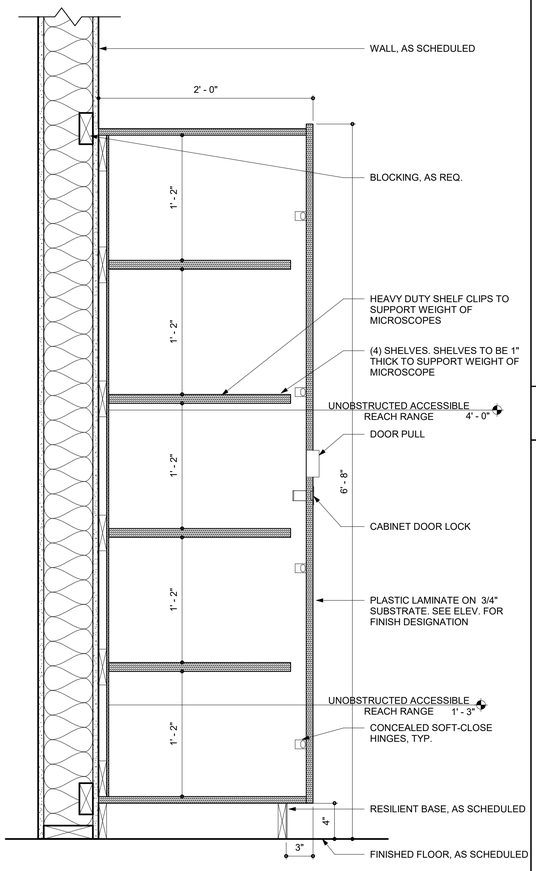
1 VERTICAL DETAIL - FULL HT GOGGLE CABINET

SCALE: 1 1/2" = 1'-0"



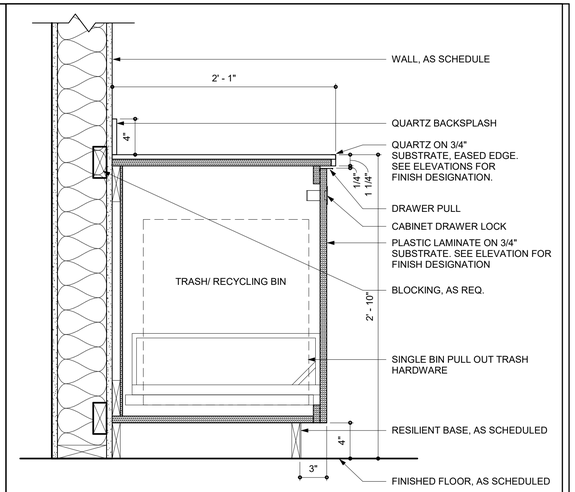
2 VERTICAL DETAIL - FULL HT CUBBIES

SCALE: 1 1/2" = 1'-0"



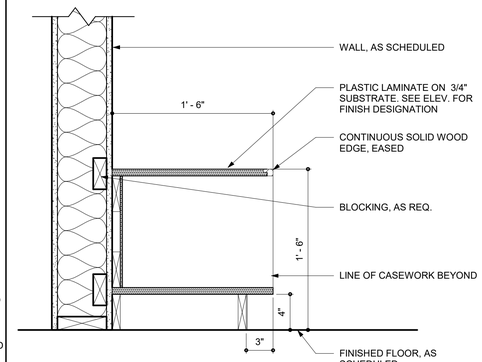
3 VERTICAL DETAIL - FULL HT CUBBIES

SCALE: 1 1/2" = 1'-0"



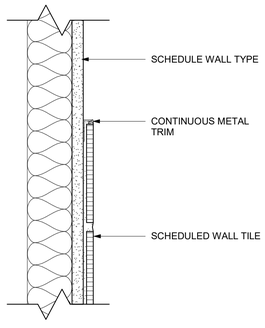
4 VERTICAL DETAIL - TRASH/RECYCLE DRAWER

SCALE: 1 1/2" = 1'-0"



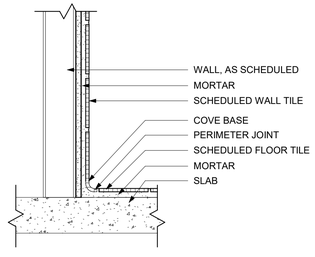
5 VERTICAL DETAIL - BUILT-IN-BENCH

SCALE: 1 1/2" = 1'-0"



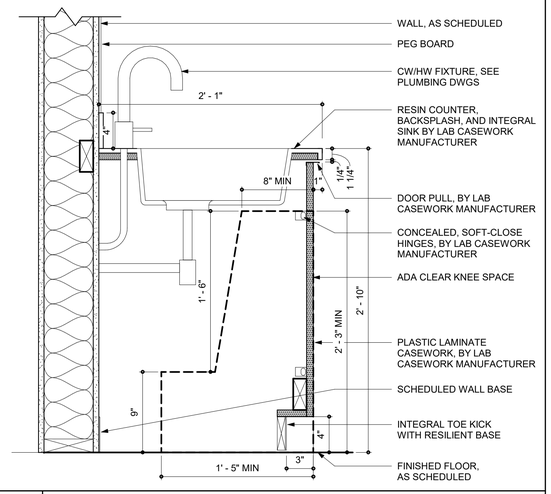
6 VERTICAL DETAIL - WALL TILE TO GWB TRANSITION

SCALE: 3" = 1'-0"



7 VERTICAL DETAIL - WALL TILE TO FLOOR TILE TRANSITION

SCALE: 1 1/2" = 1'-0"



8 VERTICAL DETAIL - ACCESSIBLE SINK

SCALE: 1 1/2" = 1'-0"

0" 2" 4" 8"
SCALE: 3" = 1'-0"

0' 4" 8" 16"
SCALE: 1-1/2" = 1'-0"

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BECKER MORGAN GROUP, INC. Registered Architectural Corporation 51922 North Carolina WILMINGTON, NC

PROJECT TITLE

CFCC SURF CITY SA ADDITION

621 NC HWY 210E, SURF CITY, NC

SCO ID#24-28220-01A

SHEET TITLE

INTERIOR DETAILS

ISSUE BLOCK

Mark	Date	Description
3	02.12.2024	SCO CD COMMENTS
2	11.26.2024	SCO CONSTRUCTION DOCUMENTS

PROJECT NO:	2024077.00
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SCALE:	As indicated
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RATED GLAZING & ASSEMBLY SCHEDULE

LOCATION	WALL ASSEMBLY RATING	DOOR		
		RATING	GLAZ TYPE	GLAZ RATING
FIREWALL	2 HR	90 MIN	FG-FP	D-H-90
FIRE BARRIER: OTHER (INCIDENTAL & MIXED USE	N/A	N/A	N/A	N/A
FIRE PARTITION	1 HR	20 MIN	FG-FP	D-20

NOTES:

1. PROVIDE FIRE GLAZING AS NOTED IN CHART
2. PROVIDE SAFETY GLAZING PER IBC SECTION 2406.
3. REFER TO DOOR SCHEDULE, DOOR AND FRAME TYPES, STOREFRONT, AND H.M. FRAME TYPES.
4. REFER TO LIFE SAFETY PLANS FOR LOCATIONS OF RATED WALLS.

LEGEND:

FG-FR = FIRE RESISTANCE RATED GLAZING
FG-FP = FIRE PROTECTION RATED GLAZING

GLAZING NOTES

1. GLAZING SHALL BE TEMPERED IN DOORS, BORROW LIGHTS, SIDE LIGHTS, AND AS REQUIRED BY CODE, AND AS INDICATED.
2. PROVIDE FIRE-PROTECTION AND FIRE-RESISTANCE RATED GLAZING AS INDICATED.
3. EXTERIOR GLAZING SHALL BE INSULATED, U.N.O.

DOOR SCHEDULE LEGEND

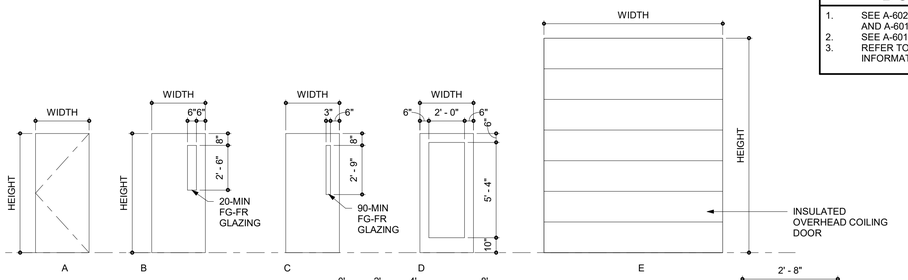
-	NONE (IE., NOT APPLICABLE OR FACTORY FINISHED)
ALUM, AL	ALUMINUM
CW	CURTAINWALL
FG	FIRE PROTECTION/FIRE-RESISTANCE RATED GLAZING
HM	HOLLOW METAL
IG	INSULATED GLAZING
LAM	LAMINATED GLAZING
PT	PAINTED
SCWD	SOLID CORE WOOD DOOR
SF	STOREFRONT
SST	STAINLESS STEEL
STL	STEEL
TEMP	TEMPERED GLAZING

DOOR SCHEDULE NOTES

1. SEE A-602 AND A-603 FOR STOREFRONT AND DOOR DETAILS, AND A-601 FOR STOREFRONT AND WINDOW TYPES.
2. SEE A-601 FOR RATED GLAZING SCHEDULE.
3. REFER TO GLAZING NOTES FOR ADDITIONAL GLAZING INFORMATION.

DOOR SCHEDULE

MARK	FIRE RATING	DOOR SIZE WIDTH	DOOR SIZE HT	DOOR DESCRIPTION TYPE	DOOR DESCRIPTION MATERIAL	DOOR DESCRIPTION FINISH	FRAME DESCRIPTION MATERIAL	FRAME DESCRIPTION FINISH	FRAME DETAILS HEAD	FRAME DETAILS JAMB	Hardware Set	COMMENTS
FIRST FLOOR, SA ADDITION												
126/1	90 MIN	3' - 0"	7' - 0"	C	HM	PT	HM	PT	H4	J4	1	ACCESS CONTROL
126/2	-	3' - 0"	7' - 0"	D	ALUM	ANOD	ALUM	ANOD	H2	J2	3	
126/3	-	3' - 0"	7' - 0"	D	ALUM	ANOD	ALUM	ANOD	H5	J5 / J6	9	ACCESS
127/1	20 MIN	3' - 0"	7' - 0"	B	SCWD	STAIN	HM	PT	H7	J8	2	
127/2	20 MIN	3' - 0"	7' - 0"	B	SCWD	STAIN	HM	PT	H7	J8	2	
127/3		10' - 0"	12' - 0"	E	INSUL STL	FACTORY	STEEL	PT	H8	J9	-	O.H. COILING DOOR
128/1	20 MIN	3' - 0"	7' - 0"	B	SCWD	STAIN	HM	PT	H7	J8	5	
128/2	-	3' - 0"	7' - 0"	A	HM	PT	HM	PT	H4	J4	4	
128/3		10' - 0"	12' - 0"	E	INSUL STL	FACTORY	STEEL	H	H8	J9	-	O.H. COILING DOOR
129	20 MIN	3' - 0"	7' - 0"	B	SCWD	STAIN	HM	PT	H7	J8	5	
130/1	20 MIN	3' - 0"	7' - 0"	B	SCWD	STAIN	HM	PT	H7	J8	5	
130/2	-	3' - 0"	7' - 0"	B	SCWD	STAIN	HM	PT	H7	J8	7	
131	20 MIN	3' - 0"	7' - 0"	B	SCWD	STAIN	HM	PT	H7	J8	5	
132	20 MIN	3' - 0"	7' - 0"	A	SCWD	STAIN	HM	PT	H7	J8	6	
133	20 MIN	3' - 0"	7' - 0"	A	SCWD	STAIN	HM	PT	H7	J8	6	
134	20 MIN	3' - 0"	7' - 0"	B	SCWD	STAIN	HM	PT	H7	J8	5	
135	20 MIN	3' - 0"	7' - 0"	B	SCWD	STAIN	HM	PT	H7	J8	5	
136	-	3' - 0"	7' - 0"	A	SCWD	STAIN	HM	PT	H7	J8	7	
137	20 MIN	3' - 0"	7' - 0"	B	SCWD	STAIN	HM	PT	H7	J8	5	
138	-	3' - 0"	7' - 0"	A	SCWD	STAIN	HM	PT	H7	J8	7	
139	20 MIN	3' - 0"	7' - 0"	A	SCWD	STAIN	HM	PT	H7	J8	5	
140	20 MIN	3' - 0"	7' - 0"	A	SCWD	STAIN	HM	PT	H7	J8	5	
141	20 MIN	3' - 0"	7' - 0"	A	SCWD	STAIN	HM	PT	H7	J8	5	
142	20 MIN	3' - 0"	7' - 0"	A	SCWD	STAIN	HM	PT	H7	J8	5	
143	-	3' - 0"	7' - 0"	A	HM	PT	HM	PT	H6	J7	8	
144	-	3' - 0"	7' - 0"	A	HM	PT	HM	PT	H6	J7	8	

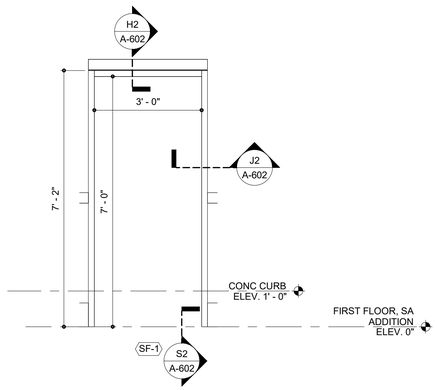


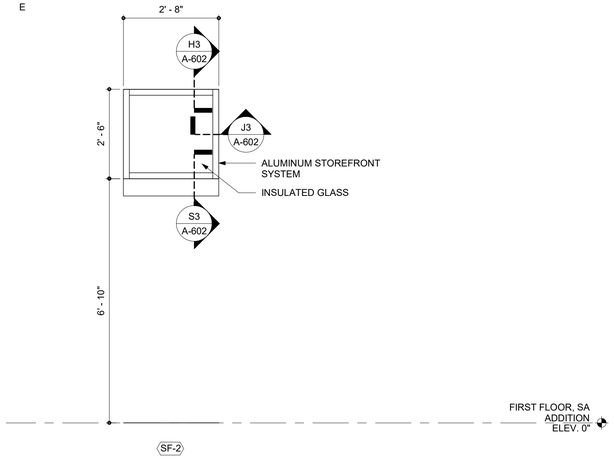
DOOR TYPES

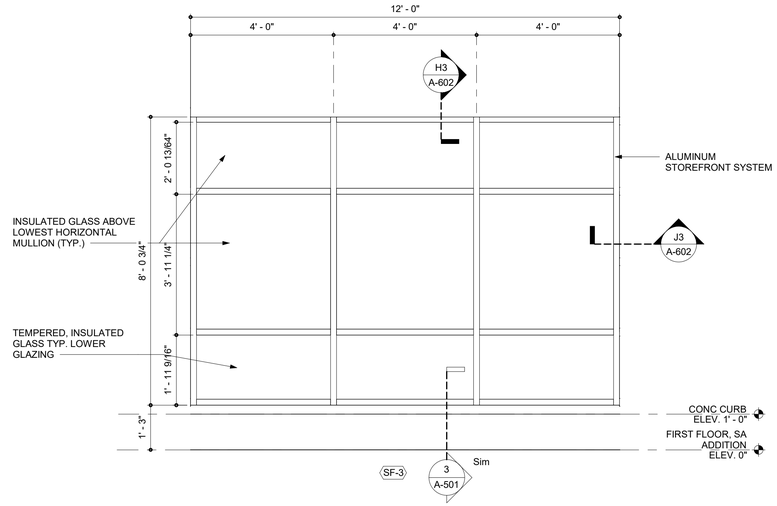
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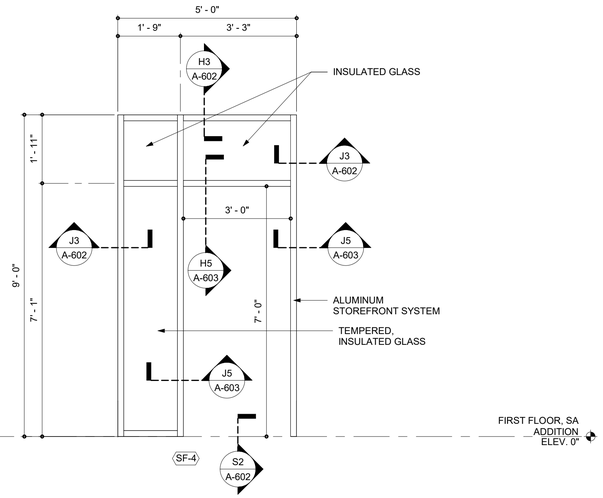
0' 2' 4' 8'

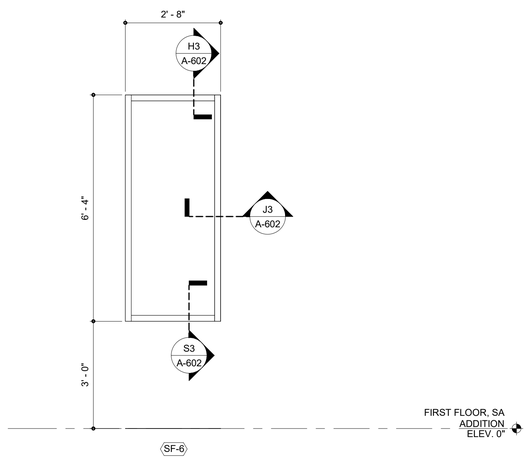
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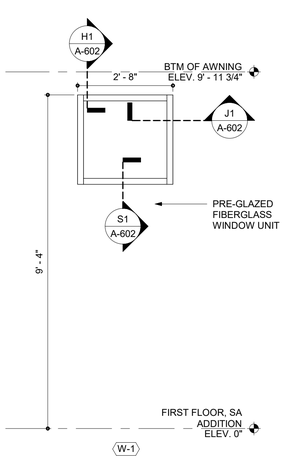


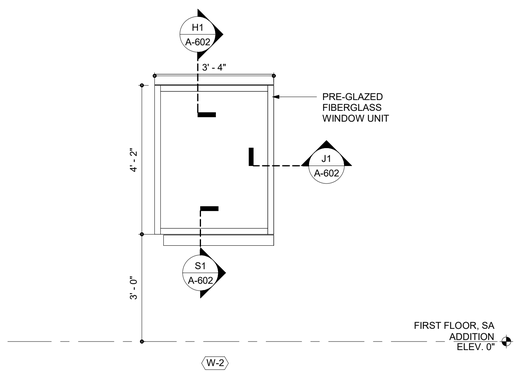












0' 1' 2' 4'

SCALE: 1/2" = 1'-0"

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BECKER MORGAN GROUP, INC. Registered Architecture Firm 51922 North Carolina WILMINGTON, N.C.

PROJECT TITLE

CFCC SURF CITY SA ADDITION

621 NC HWY 210E, SURF CITY, NC

SCO ID#24-28220-01A

SHEET TITLE

DOOR AND WINDOW TYPES AND SCHEDULE

ISSUE BLOCK

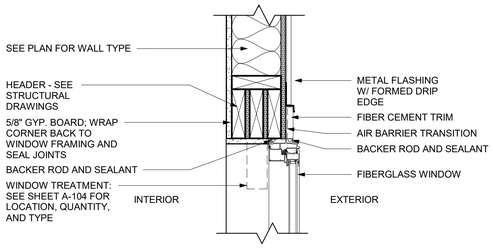
Mark	Date	Description
3	02.12.2024	SCO CD COMMENTS
2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	11.11.2024	GMP PRICING

PROJECT NO:	2024077.00
DATE:	02/12/2025
SCALE:	As indicated
DRAWN BY: ALJ/BJP/CRF	PROJ MGR: JPB

A-601

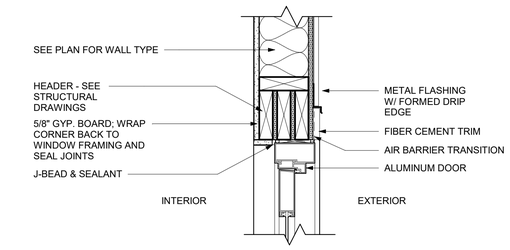
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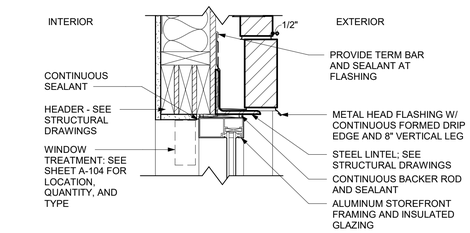
H1 EXTERIOR FIBERGLASS WINDOW AT FIBER CEMENT SIDING ON WOOD STUD - HEAD DETAIL

SCALE: 1 1/2" = 1'-0"



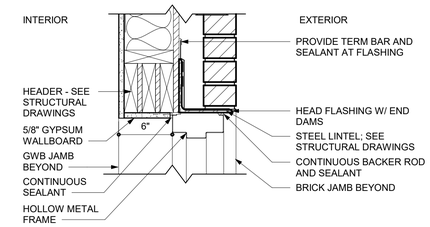
H2 EXTERIOR SF DOOR AT FIBER CEMENT ON WOOD STUD - HEAD DETAIL

SCALE: 1 1/2" = 1'-0"



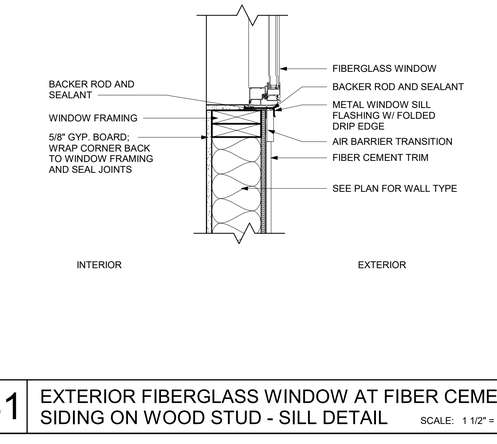
H3 EXTERIOR SF WINDOW AT BRICK ON WOOD STUD - HEAD DETAIL

SCALE: 1 1/2" = 1'-0"



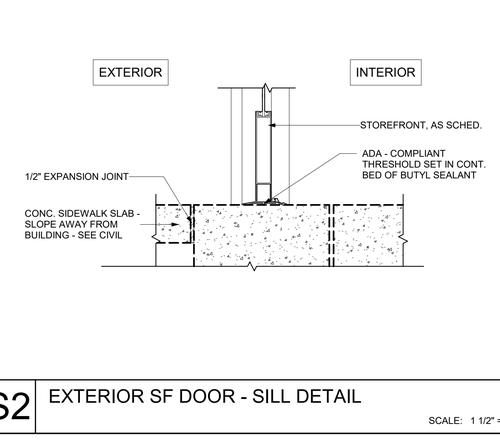
H4 EXTERIOR HM DOOR AT BRICK ON WOOD STUD - HEAD DETAIL

SCALE: 1 1/2" = 1'-0"



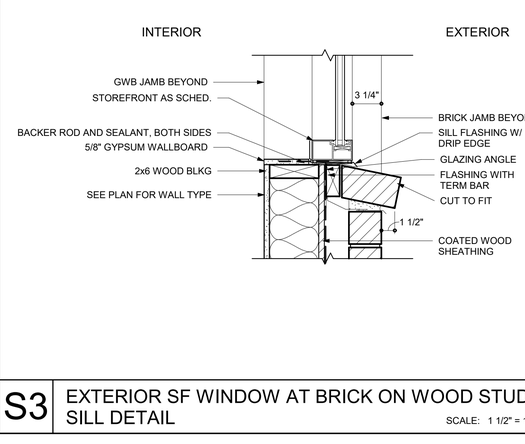
J1 EXTERIOR FIBERGLASS WINDOW AT FIBER CEMENT SIDING ON WOOD STUD - JAMB DETAIL

SCALE: 1 1/2" = 1'-0"



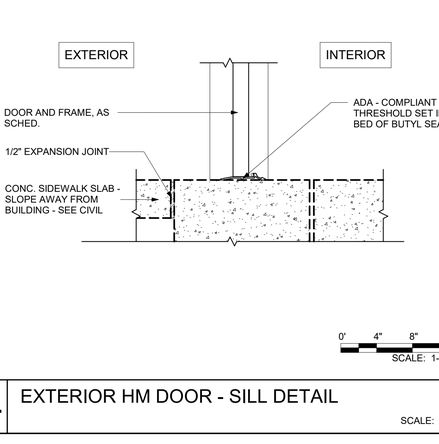
J2 EXTERIOR SF DOOR AT FIBER CEMENT ON WOOD STUD - JAMB DETAIL

SCALE: 1 1/2" = 1'-0"



J3 EXTERIOR SF WINDOW AT BRICK ON WOOD STUD - JAMB DETAIL

SCALE: 1 1/2" = 1'-0"



J4 EXTERIOR HM DOOR AT BRICK ON WOOD STUD - JAMB DETAIL

SCALE: 1 1/2" = 1'-0"

S1 EXTERIOR FIBERGLASS WINDOW AT FIBER CEMENT SIDING ON WOOD STUD - SILL DETAIL

SCALE: 1 1/2" = 1'-0"

S2 EXTERIOR SF DOOR - SILL DETAIL

SCALE: 1 1/2" = 1'-0"

S3 EXTERIOR SF WINDOW AT BRICK ON WOOD STUD - SILL DETAIL

SCALE: 1 1/2" = 1'-0"

S4 EXTERIOR HM DOOR - SILL DETAIL

SCALE: 1 1/2" = 1'-0"

0' 4" 8" 16"

SCALE: 1-1/2" = 1'-0"

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PROJECT TITLE

CFCC SURF CITY SA ADDITION

621 NC HWY 210E, SURF CITY, NC

SCO ID#24-28220-01A

SHEET TITLE

DOOR AND WINDOW DETAILS

ISSUE BLOCK

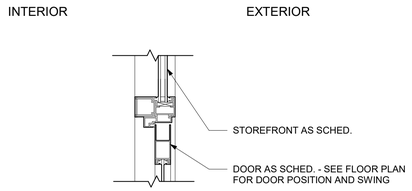
Mark	Date	Description
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2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	11.11.2024	GMP PRICING

PROJECT NO:	2024077.00
DATE:	02/12/2025
SCALE:	1 1/2" = 1'-0"
DRAWN BY: ALJ/BJP/CRF	PROJ MGR: JPB

A-602

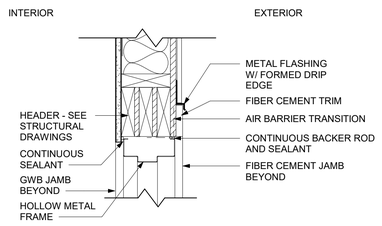
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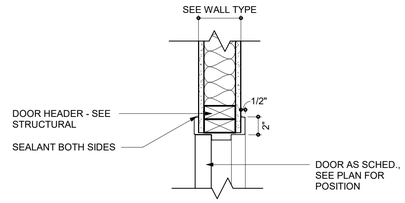
H5 EXTERIOR SF DOOR AT TRANSOM - HEAD DETAIL

SCALE: 1 1/2" = 1'-0"



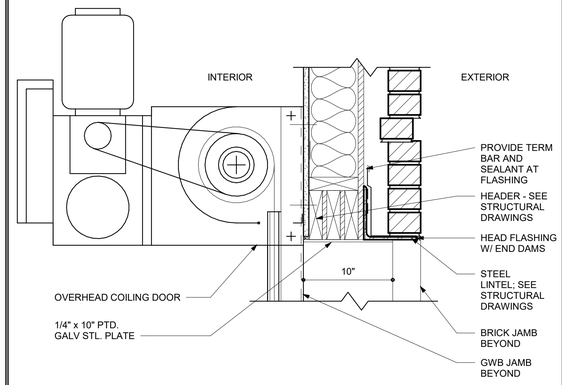
H6 EXTERIOR HM DOOR AT FIBER CEMENT ON WOOD STUD - HEAD DETAIL

SCALE: 1 1/2" = 1'-0"



H7 INTERIOR HM DOOR AT WOOD STUD PARTITION - HEAD DETAIL

SCALE: 1 1/2" = 1'-0"



H8 EXTERIOR COILING DOOR AT BRICK ON WOOD STUD - HEAD DETAIL

SCALE: 1 1/2" = 1'-0"

J5 EXTERIOR SF DOOR AT SIDELITE AND TYPICAL MULLION - JAMB DETAIL

SCALE: 1 1/2" = 1'-0"

J7 EXTERIOR HM DOOR AT FIBER CEMENT ON WOOD STUD - JAMB DETAIL

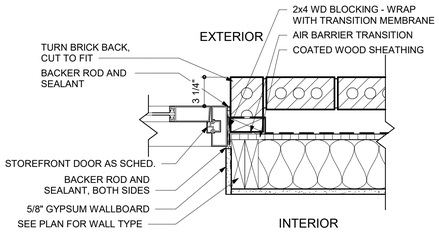
SCALE: 1 1/2" = 1'-0"

J8 INTERIOR HM DOOR AT WOOD STUD PARTITION - JAMB DETAIL

SCALE: 1 1/2" = 1'-0"

J9 EXTERIOR COILING DOOR AT BRICK ON WOOD STUD - JAMB DETAIL

SCALE: 1 1/2" = 1'-0"



J6 EXTERIOR SF DOOR AT BRICK ON WOOD STUD - JAMB DETAIL

SCALE: 1 1/2" = 1'-0"

0' 4" 8" 16"

SCALE: 1-1/2" = 1'-0"

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PROJECT TITLE

CFCC SURF CITY SA ADDITION

621 NC HWY 210E, SURF CITY, NC

SCO ID#24-28220-01A

SHEET TITLE

DOOR AND WINDOW DETAILS

ISSUE BLOCK

Mark	Date	Description
3	02.12.2024	SCO CD COMMENTS
2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	11.11.2024	GMP PRICING

PROJECT NO: 2024077.00

DATE: 02/12/2025

SCALE: 1 1/2" = 1'-0"

DRAWN BY: ALJ/BJP/CRF PROJ MGR: JPB

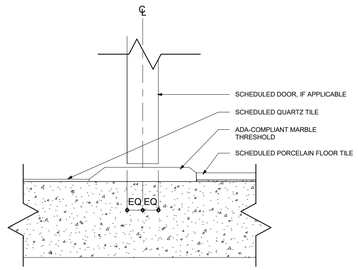
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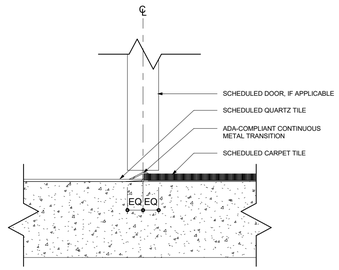
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FINISH SCHEDULE LEGEND

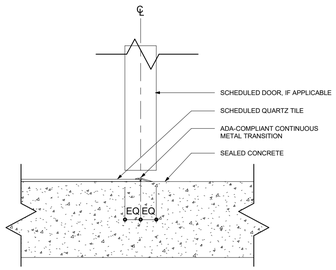
KEY NAME	DESCRIPTION	SPEC. REF
FLOOR		
-	NOT APPLICABLE / EXISTING TO REMAIN	-
CONC	CONCRETE WITH SEALER/HARDENER: SEALER TO BE PENETRATIVE AND FILM FORMING. FINISH TO BE A TRANSLUCENT GRAY TINT	033000
CPT	CARPET TILE	096816
PFT-1	PORCELAIN FLOOR TILE, SIZE: 1"x1", FIELD TILE	093000
PFT-2	PORCELAIN FLOOR TILE, SIZE: 1"x1", ACCENT TILE	093000
QTZ-1	QUARTZ TILE, SIZE: 24"x24", COLOR: MULTIPLE COLORWAYS, INSTALLATION: PATTERNED WITH QTZ-2	096519
QTZ-2	QUARTZ TILE, SIZE: 12"x12", COLOR: MULTIPLE COLORWAYS, INSTALLATION: PATTERNED WITH QTZ-1	096519
BASE		
-	NOT APPLICABLE / EXISTING TO REMAIN	-
PTB	PORCELAIN TILE BASE, COVE	093000
R-1	RESILIENT WALL BASE. STRAIGHT	096513
R-2	RESILIENT WALL BASE, COVE	096513
WALL		
-	NOT APPLICABLE / EXISTING TO REMAIN	
CWT-1	CERAMIC WALL TILE, SIZE: 3"x6"	093013
FRP	FIBER REINFORCED POLYMER PANEL	066400
GWB	GYPSUM WALL BOARD	092900
PT	PAINT	099123
CEILING		
-	NOT APPLICABLE / EXISTING TO REMAIN	-
ACT-1	2x2 ACOUSTICAL CEILING TILE	095113
EXP	EXPOSED STRUCTURE, FIRE PROTECTOIN, PLUMBING, MECHANICAL, ELECTRICAL, TECHNOLOGY	-
GWB	GYPSUM BOARD CEILING	092900
PT	PAINT	099123
CASEWORK		
PL-1	PLASTIC LAMINATE	064116
QTZ-3	QUARTZ COUNTERTOP	123661
ORIENTATION		
	ON PLANS NORTH WALL IS UP, EAST IS RIGHT, SOUTH IS DOWN, WEST IS LEFT	
GENERAL NOTES		
1	WALLS AND CEILINGS MAY CONTAIN MORE THAN ONE MATERIAL OR FINISH AS INDICATED. COORDINATE WITH CONSTRUCTION TYPE AND FINISH SIMILAR TO ADJACENT MATERIALS	
2	SEE REFLECTED CEILING PLANS & CEILING NOTES FOR CEILING HEIGHTS, MATERIAL EXTENTS, LOCATIONS AND HEIGHTS OF BULKHEADS, SOFFITS, ETC.	
3	PLAN WALL TYPES TAKE PRECEDENCE OVER SCHEDULED WALL FINISH. PROVIDE APPROPRIATE WALL FINISH TO CORRESPOND TO WALL TYPES.	
5	WALL AND CEILING FINISHES SHALL INCLUDE ALL PROJECTIONS, BEAM ENCLOSURES, RECESSES, BULKHEADS, MATERIAL CHANGES, OR OTHER ENCLOSURES. REFER TO REFLECTED CEILING PLANS	
6	PROVIDE SEALANT/CAULK AT INTERSECTIONS OF DISSIMILAR MATERIALS AND AS RECOMMENDED BY MANUFACTURERS' GUIDELINES.	



FLOOR TRANSTITION - QUARTZ TILE TO PORCELAIN FLOOR TILE



FLOOR TRANSITION - QUARTZ TILE TO CARPET TILE



FLOOR TRANSITION - QUARTZ TILE TO SEALED CONCRETE

FINISH SCHEDULE

#	ROOM NAME	FLOOR MAT	BASE MAT	WALL NORTH MAT	WALL NORTH FIN	WALL EAST MAT	WALL EAST FIN	WALL SOUTH MAT	WALL SOUTH FIN	WALL WEST MAT	WALL WEST FIN	CEILING MAT	CEILING FIN	COMMENTS
FIRST FLOOR, SA ADDITION														
126	CORRIDOR	QTZ-1 / QTZ-2	R-2	GWB	PT	GWB	PT	GWB	PT	GWB	PT	ACT	ACT-1	
127	EWD CLASS/COMBO LAB	CONC	R-2	GWB	PT	GWB	PT	GWB	PT	GWB	PT	EXP	-	
128	EWD LAB	CONC	R-2	GWB	PT	GWB	PT	GWB	PT	GWB	PT	EXP	-	
129	PREP ROOM	QTZ-1 / QTZ-2	R-2	GWB	PT	GWB	PT	GWB	PT	GWB	PT	ACT	ACT-1	
130	SCIENCE LAB	QTZ-1 / QTZ-2	R-2	GWB	PT	GWB	PT	GWB	PT	GWB	PT	ACT	ACT-1	
131	CLASSROOM	QTZ-1 / QTZ-2	R-2	GWB	PT	GWB	PT	GWB	PT	GWB	PT	ACT	ACT-1	
132	LAPTOP STORAGE	QTZ-1 / QTZ-2	R-2	GWB	PT	GWB	PT	GWB	PT	GWB	PT	ACT	ACT-1	
133	STORAGE	QTZ-1 / QTZ-2	R-2	GWB	PT	GWB	PT	GWB	PT	GWB	PT	ACT	ACT-1	
134	VETERANS	QTZ-1 / QTZ-2	R-2	GWB	PT	GWB	PT	GWB	PT	GWB	PT	ACT	ACT-1	
135	PT PRIVATE OFFICE	CPT	R-1	GWB	PT	GWB	PT	GWB	PT	GWB	PT	ACT	ACT-1	
136	STORAGE	CPT	R-1	GWB	PT	GWB	PT	GWB	PT	GWB	PT	ACT	ACT-1	
137	PT SHARED OFFICE	CPT	R-1	GWB	PT	GWB	PT	GWB	PT	GWB	PT	ACT	ACT-1	
138	SUPPLY STORAGE	CPT	R-1	GWB	PT	GWB	PT	GWB	PT	GWB	PT	ACT	ACT-1	
139	TOILET	PFT	PTB	GWB	PT/CWT	GWB	PT/CWT	GWB	PT/CWT	GWB	PT/CWT	GWB	PT	CWT TO 7'-0" A.F.F., GWB TO CLG
140	TOILET	PFT	PTB	GWB	PT/CWT	GWB	PT/CWT	GWB	PT/CWT	GWB	PT/CWT	GWB	PT	CWT TO 7'-0" A.F.F., GWB TO CLG
141	MALE TOILET	PFT	PTB	GWB	PT/CWT	GWB	PT/CWT	GWB	PT/CWT	GWB	PT/CWT	GWB	PT	CWT TO 7'-0" A.F.F., GWB TO CLG
142	FEMALE TOILET	PFT	PTB	GWB	PT/CWT	GWB	PT/CWT	GWB	PT/CWT	GWB	PT/CWT	GWB	PT	CWT TO 7'-0" A.F.F., GWB TO CLG
143	MECH	CONC	R-2	GWB	PT	GWB	PT	GWB	PT	GWB	PT	EXP	-	
144	W.H.	CONC	R-2									EXP		

0" 2" 4" 8"
SCALE: 3" = 1'-0"

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BECKER MORGAN GROUP, INC. Registered Architectural Corporation 51922 North Carolina WILMINGTON, N.C.

PROJECT TITLE

CFCC SURF CITY SA ADDITION

621 NC HWY 210E, SURF CITY, NC

SCO ID#24-28220-01A

SHEET TITLE

FINISH SCHEDULE AND LEGEND

ISSUE BLOCK

Mark	Date	Description
3	02.12.2024	SCO CD COMMENTS
2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	11.11.2024	GMP PRICING

PROJECT NO: 2024077.00
DATE: 02/12/2025
SCALE: 3" = 1'-0"
DRAWN BY: ALJ/BJP/CRF | PROJ MGR: JPB

A-604

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AIR COMPRESSOR SCHEDULE

DRAWING CODE		LOCATION	COMPRESSOR TYPE	AIRFLOW @ 175 PSIG (ACFM)	MAX PRES. (PSIG)	MOTOR HP	POWER (V/PH/HZ)	NOTES
AC01		MECH ROOM	TANK MOUNTED RECIPROCATING, DUPLEX	24	175	7.5	460/3/60	1-11
NOTES:	1	REFER TO SPECIFICATIONS FOR FURTHER INFORMATION.						
	2	BASIS OF DESIGN: QUINCY COMPRESSOR QT-7.5 AND LISTED ACCESSORIES.						
	3	SUPPLY COMPRESSOR WITH 120 GAL. HORIZONTAL RECEIVER, WITH ELECTRIC DRAIN VALVE QTD 115..						
	4	SUPPLY WITH PRE-FILTER - QMF 25						
	5	SUPPLY WITH POST FILTER - QWS 25.						
	6	SUPPLY WITH OIL/WATER SEPARATOR - QOCS 53						
	7	SUPPLY WITH ODP MOTOR WITH MOTOR OVERLOAD PROTECTION						
	8	SUPPLY WITH AUTOMATIC START-STOP						
	9	SUPPLY WITH LOW OIL CUT-OFF.						
	10	SUPPLY WITH VIBRATION ISOLATORS.						
	11	SET COMPRESSOR TO SUPPLY AIR AT 120 PSIG.						

HIGH TEMPERATURE REFRIGERATED AIR DRYER SCHEDULE

DRAWING CODE		LOCATION	AIRFLOW @ 100 PSIG (ACFM)	MAX PRES. (PSIG)	POWER CONSUMPTION Kw	POWER (V/PH/HZ)	NOTES
RAD-1		MECH. ROOM	50	232	0.8	120/1/60	1-3
NOTES:	1	REFER TO SPECIFICATIONS FOR FURTHER INFORMATION.					
	2	BASIS OF DESIGN - QUINCY QRHT 25.					
	3	INSTRUMENTATION TO INCLUDE ON/OFF SWITCH, REFERIGERANT SUCTION PRESSURE GAUGE AND DRAIN TEST BUTTON COALESCING FILTER.					

PLUMBING SUMMARY WORKSHEET

FIXTURE	OCCUPANCY	TYPE OF CONTROL	QUANTITY	DOMESTIC WATER SYSTEM (W.S.F.U.)						WASTE & VENT SYSTEM (D.F.U.)	
				INDIVIDUAL FIXTURE UNITS			TOTAL FIXTURE UNITS				
				COLD	HOT	TOTAL	COLD	HOT	TOTAL	EACH	TOTAL
DRINKING FOUNTAIN	OFFICES, ETC.	3/8" VALVE	1	0.25	0.0	0.25	0.3	0.0	0.3	0.5	0.5
CLASSROOM SINK	PRIVATE	FAUCET	10	1.0	1.0	1.4	10.0	10.0	14.0	2.0	20.0
LAVATORY	PUBLIC	FAUCET	6	1.5	1.5	2.0	9.0	9.0	12.0	1.0	6.0
URINAL	PUBLIC	3/4"FLUSH VALVE	1	5.00	0.00	5.00	5.0	0.0	5.0	2.0	2.0
WATER CLOSET	PUBLIC	FLUSH VALVE	5	10.00	0.00	10.00	50.0	0.0	50.0	4.0	20.0
TOTALS							74.3	19.0	81.3		48.5

BASED ON AN ESTIMATED DEMAND OF 77.1 W.S.F.U.(60 GPM), PROVIDE A 2" INCOMING WATER LINE.
BASED ON A WASTE COUNT OF 42.5 D.F.U., PROVIDE A 4" OUTGOING WASTE LINE.

GAS LOAD SCHEDULE

FIXTURE CODE	DESCRIPTION	BTUH RATING	QUANTITY	TOTAL
GWH1	GAS-FIRED WATER HEATER	199,000	1	199,000
	SCIENCE TABLE GAS OUTLET	6,000	8	48,000
	FUME HOOD GAS OUTLET	6,000	2	12,000
	EWD LAB 127 (FUTURE LOAD)	200,000	1	200,000
	EWD LAB 127 (FUTURE LOAD)	200,000	1	200,000
TOTAL LOAD				659,000
BUILDING SERVICE GAS PRESSURE				<2 psi

PUMP SCHEDULE

DRAWING CODE	DESCRIPTION	MANUFACTURER	MODEL	FLOW GPM@FT. HD	WATTS	POWER (V/PH/HZ)	PIPE CONNECTION (INCHES)	NOTES
CP1	DOMESTIC HOT WATER CIRCULATION, IN-LINE WET ROTOR, STAINLESS STEEL VOLUTE, 3-SPEED, BUILT IN THERMAL PROTECTION.	GRUNDFOS	UPS-15-35/SFC	5 @ 9FT	125	115/1/60	3/4"	1
NOTES:	1. PROVIDE AQUASTAT TO CONTROL PUMP.							

GAS-FIRED STORAGE TANK WATER HEATER SCHEDULE

DRAWING CODE	DESCRIPTION	MANUFACTURER - MODEL	ALTERNATE APPROVED MANUFACTURERS	PIPE SIZE			RECOVERY (GPH)	FUEL SOURCE	GAS INPUT	ELECTRICAL				NOTES
				DCW	DHW	GAS	@ 100°F RISE		BTHU	VOLTAGE	PHASE	Hz.	AMPS	
GWH1	100 GALLON CONDENSING, MODULATING BURNER	A.O. SMITH - BTH-199A	BRADFORD-WHITE, STATE	1-1/2"	1-1/2"	3/4"	235	PROPANE	199,900	120	1	60	5	1-5

NOTES:
1. MINIMUM GAS INLET FLOW PRESSURE 3.5"W.C. MAXIMUM STATIC PRESSURE 14.0"W.C.
2. PROVIDE CONDENSATE NEUTRALIZATION KIT.
3. PROVIDE 4" THICK CONCRETE HOUSEKEEPING PAD.
4. VENT WATER HEATER IN ACCORDANCE WITH MANUFACTURERS WRITTEN INSTALLATION MANUAL
5. TEMPERATURE SETPOINT 140°F

PLUMBING FIXTURE SCHEDULE

DRAWING CODE	FIXTURE		DESCRIPTION	MANUFACTURER	MODEL	ALTERNATE APPROVED MANUFACTURERS	NOTES	PIPE SIZE			
								DCW	DHW	WASTE	VENT
WC1	HANDS FREE FLUSH VALVE. WATER CLOSET FLOOR MTD., 1.28GPF, ADA	BOWL	16.5" HIGH BOWL, ELONGATED, V.C., 2-1/8" TRAPWAY; TOP SPUD; MADERA	KOHLER	K-4405	ZURN, AMERICAN STANDARD		1"	-	4"	2"
		FLUSH VALVE	11.5" BATTERY POWERED, PISTON OPERATION, 1.28GPF, FLUSH TUBE TRAP PRIMER CONNECTION WHERE REQUIRED	ZURN	ZTR6200EV	SLOAN, KOHLER					
		SEAT	OFLC w/ SELF-SUSTAINING S.S. CHECK HINGE; HEIGHT 17-19" AFF	KOHLER	K-4731	CHURCH, OLSONITE					
WC2	HANDS FREE FLUSH VALVE WATER CLOSET, FLOOR MTD.. 1.28GPF	BOWL	15" HIGH BOWL, ELONGATED, V.C., 2-1/8" TRAPWAY; TOP SPUD; MADERA	KOHLER	K-4406	ZURN, AMERICAN STANDARD		1"	-	4"	2"
		FLUSH VALVE	11.5" BATTERY POWERED, PISTON OPERATION, 1.28GPF, FLUSH TUBE TRAP PRIMER CONNECTION WHERE REQUIRED	ZURN	ZTR6200EV	SLOAN, KOHLER					
		SEAT	OFLC w/ SELF-SUSTAINING S.S. CHECK HINGE	KOHLER	K-4731	CHURCH, OLSONITE					
UR1	HANDS FREE URINAL WALL HUNG, 0.125GPF, ADA	BOWL	WASHOUT, TOP SPUD, VITREOUS CHINA, RIM HEIGHT 17"MAX. AFF	KOHLER	K-4914-ET	ZURN, AMERICAN STANDARD	1	3/4"	-	2"	2"
		FLUSH VALVE	11.5" HIGH, EXPOSED, BATTERY POWERED, PISTON OPERATION, POLISHED CHROME, SENSOR OPERATED	ZURN	ZTR6203-ULF	SLOAN, KOHLER					
LAV1	LAVATORY, HANDS FREE, WALL HUNG, 0.5GPM, ADA	BOWL	20"x18" ENAMELED CAST IRON, GLOSSY PORCELAIN FINISH, FRONT OVERFLOW, 4" CENTERS, RIM 34" AFF MAX.	KOHLER	K-2812	ZURN, AMERICAN STANDARD	1,2,3,6	1/2"	1/2"	2"	2"
		FAUCET	BATTERY POWERED, SENSOR ACTIVATED, CHROME PLATED BRASS, 4" CENTERSET, VANDAL RESISTANT SPRAY HEAD, BATTERIES INCLUDED	SLOAN	EBF-650	ZURN, MOEN					
		DRAIN	CAST BRASS, CHROME PLATED, OPEN GRID STRAINER P.O. PLUG WITH BRASS TAILPIECE	MCGUIRE	155A	DEARBORN, DELTA					
		MIXING VALVE	LEAD FREE, CHROME PLATED, THERMOSTATIC MIXING VALVE - SETPOINT = 105°F INSTALL ON HOT WATER SUPPLY, ASSE 1070	CASH ACME	HG-135	LEONARD, WATTS					
SK1	LAB SINK	BOWL	INTEGRAL TO COUNTERTOP	-	-		4,8	1/2"	1/2"	2"	2"
		FAUCET	RIGID GOOSENECK, TWO HANDLE, 3 HOLE, 1.5GPM, SOLID BRASS CONSTRUCTION, BLACK FINISH PROVIDED WITH CASEWORK	-	-	-					
		AAV	CHEMICAL VENT AIR ADMITTANCE VALVE MEETING ASSE 1049	-	-	-					
		DRAIN	PROVIDED WITH CASEWORK								
ANT1	ACID NEUTRALIZATION TANK	FIXT	POLYETHELENE, 57 GALLON HOLDING CAPACITY, LIMESTONE, HIGH WATER HOLD DOWN KIT, EXTENSION RISER	STRIEM	LB-50	SPEARS, MIFAB					
DS1	COMBINATION EYE/FACE WASH DRENCH SHOWER	FIXT	GALVANIZED STEEL PIPE WITH SAFETY YELLOW COATING, STAY OPEN BALL VALVE, SHOWER MIN. 20GPM@30PSI; EYE/FACE WASH MIN. 3.0GPM@30PSI; PLASTIC SHOWER HEAD, STAINLESS BOWL W/ DUST COVER, BARRIER FREE	BRADLEY	S19314DCBF	GUARDIAN, ACORN		1/2"	1/2"	-	-
EW1	FAUCET MOUNT EYE WASH	FIXT	CHROME PLATED BRASS, THREADED TO MATCH FAUCET OUTLET	BRADLEY	S19-200	GUARDIAN, ACORN		1/2"	1/2"	-	-
EWC1	WALL HUNG WATER COOLER, ADA	FIXT	SPLIT LEVEL, S.S. TOP, LIGHT GREY BODY, BOTTLE FILLING STATION, 8 GPH @ 50/80/90, 120V/1PH WITH FILTER	ELKAY	LZSTL8WSLK	HALSEY TAYLOR, OASIS	1,7	1/2"	-	2"	2"
DS1	COMBINATION EYE/FACE WASH DRENCH SHOWER	FIXT	GALVANIZED STEEL PIPE WITH SAFETY YELLOW COATING, STAY OPEN BALL VALVE, SHOWER MIN. 20GPM@30PSI; EYE/FACE WASH MIN. 3.0GPM@30PSI; PLASTIC SHOWER HEAD, STAINLESS BOWL W/ DUST COVER, BARRIER FREE	BRADLEY	S19314DCBF	GUARDIAN, ACORN	9	1/2"	1/2"	-	-
FCO	FLOOR CLEANOUT	FIXT	4"SCH. 40 HUB, PVC BASE ADAPTER, ROUND NICKEL-BRONZE COVER, VANDAL RESISTANT SCREWS	SIOUX CHIEF	834-4PNRV	ZURN, SMITH		-	-	MATCH	-
GCO	GRADE CLEANOUT	FIXT	4"SCH. 40 HUB, PVC BASE ADAPTER, ROUND NICKEL-BRONZE COVER, VANDAL RESISTANT SCREWS	SIOUX CHIEF	851-44NV	ZURN, SMITH		-	-	MATCH	-
WCO	WALL CLEANOUT	FIXT	ROUND S/S ACCESS COVER & SCREW, RECESS BRONZE THRD. PLUG	SIOUX CHIEF	870	ZURN, SMITH		-	-	MATCH	-
FD1	FLOOR DRAIN	FIXT	FINISHLINE ADJUSTABLE, SCH. 40 HUB CONNECTION, ABS/PVC BASE ADAPTER, SQUARE NICKEL BRONZE STRAINER, TRAP PRIMER CONNECTION	SIOUX CHIEF	832	ZURN, SMITH	5	-	-	MATCH	-
FD2	FLOOR DRAIN	FIXT	FINISHLINE ADJUSTABLE, SCH. 40 HUB CONNECTION, ABS/PVC BASE ADAPTER, SQUARE NICKEL BRONZE STRAINER, TRAP PRIMER CONNECTION	SIOUX CHIEF	832	ZURN, SMITH	10	-	-	MATCH	-
FS1	FLOOR SINK	FIXT	PVC BODY, 14"x14" PLASTIC TOP w/ 1/2 GRATE, BEEHIVE STRAINER	SIOUX CHIEF	861	ZURN, SMITH		-	-	MATCH	-
WH1	WALL HYDRANT	FIXT	CHROME PLATED BRASS, ANTI-SIPHON, VACUUM BREAKER, REMOVABLE TEE HANDLE, 3/4" HOSE THREAD	WOODFORD	65	ZURN, WATTS		3/4"	-	-	-
RH1	ROOF HYDRANT	FIXT	FREEZELESS, ANTI-SIPHON, VACUUM BREAKER, 3/4" HOSE THREAD	WOODFORD	SRH	ZURN, WATTS		1"	-	1/8"	-

NOTES
1. PROVIDE MATCHING CAST IRON AND STEEL FLOOR SUPPORT CARRIER WITH BEARING PLATE AND WALL HANGER.
2. PROVIDE BRASS 1-1/2" TAILPIECE, CAST BRASS SLIP JOINT P-TRAP WITH CLEANOUT; PROVIDE ADA OFFSET ARRANGEMENT WHERE REQUIRED.
3. PROVIDE ADA INSULATION KIT
4. PROVIDE 1/2" IPS X 3/8" OD STRAIGHT BRASS STOP(S) WITH RIGID COPPER RISERS. ALL EXPOSED PIPING SHALL BE CHROME PLATED.
5. TRAP TO BE PRIMED VIA WATER CLOSET FLUSH TUBE TRAP PRIMER CONNECTION.
6. PROVIDE 1/2" IPS X 3/8" OD ANGLE BRASS STOP(S) WITH RIGID COPPER RISERS. ALL EXPOSED PIPING SHALL BE CHROME PLATED.
7. PROVIDE 1/2"IPS x 3/8" O.D. BRASS STOP CONCEALED BEHIND CABINET.
8. CHEMICAL VENT AIR ADMITTANCE VALVE REQUIRED AT ISLAND SINKS ONLY.
9. PROVIDE WITH THERMOSTATIC MIXING VALVE MEETING ASSE 1071. TEMPERATURE SETPOINT TO BE 90°F
10. TRAP TO BE PRIMED VIA PRESSURE TYPE TRAP PRIMING DEVICE LOCATED ABOVE CEILING. REFER TO DOMESITIC WATER PLAN.

GENERAL PLUMBING NOTES:

1. SCOPE OF WORK: THESE DRAWINGS AND ACCOMPANYING SPECIFICATIONS DESCRIBE SCOPE OF WORK REQUIRED FOR PLUMBING SYSTEMS. LABOR AND MATERIAL SHALL BE PROVIDED AS REQUIRED FOR A COMPLETE, WORKMANLIKE INSTALLATION OF ALL SYSTEMS SHOWN ON DIAGRAMMATIC DRAWINGS AND/OR AS SPECIFIED HEREIN.
2. CONTRACTOR: THE WORD "CONTRACTOR", "PLUMBING CONTRACTOR", AND "P.C." AS USED HEREIN SHALL MEAN THE PLUMBING INSTALLER UNLESS OTHERWISE QUALIFIED.
3. DRAWINGS: DRAWINGS ARE DIAGRAMMATIC AND MAY NOT COMPLETELY DESCRIBE EVERY DETAIL OF THE INSTALLATION. HOWEVER, CONTRACTOR IS RESPONSIBLE FOR FURNISHING COMPLETE SYSTEMS INCLUDING ALL REQUIRED EQUIPMENT AND ACCESSORIES TO OBTAIN FULLY FUNCTIONING PLUMBING SYSTEMS.
4. CODE COMPLIANCE: COMPLY WITH THE 2018 EDITIONS OF THE FOLLOWING STANDARDS AND CODES, INSOFAR AS THEY APPLY:

   NORTH CAROLINA STATE BUILDING CODE (CODE), 2018 EDITION AND REVISIONS.

   LOCAL JURISDICTION REQUIREMENTS.
5. PERMITS AND INSPECTIONS: OBTAIN ALL PERMITS, LICENSES, INSPECTIONS, ETC., REQUIRED FOR THE WORK AND PAY FOR SAME. FURNISH A FINAL CERTIFICATE OF INSPECTION AND APPROVAL FROM THE AUTHORITY HAVING JURISDICTION PRIOR TO ACCEPTANCE OF THE WORK.
6. SUPERVISION: PROVIDE SKILLED SUPERINTENDENTS TO SUPERVISE THE WORK FROM THE BEGINNING TO COMPLETION AND FINAL INSPECTION.
7. PROGRESS OF WORK: PERFORM WORK IN ACCORDANCE WITH SCHEDULE AND REQUIREMENTS OF THE GENERAL CONTRACTOR. UNDER NO CIRCUMSTANCES SHALL THIS CONTRACTOR DELAY THE OVERALL PROJECT SCHEDULE.
8. COORDINATION: COORDINATE PLUMBING WORK WITH THE WORK OF OTHER TRADES. LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE UNLESS SPECIFICALLY DIMENSIONED. ARRANGE PLUMBING SO AS NOT TO INTERFERE WITH THE WORK OF OTHER TRADES. VERIFY ACTUAL BUILDING STRUCTURE PRIOR TO DUCT FABRICATION AND ADJUST LAYOUT AS REQUIRED. INCLUDE ALL OFFSETS IN DUCTS, FITTINGS, PIPING, ETC. AS REQUIRED TO PROPERLY INSTALL EQUIPMENT.
9. EQUIPMENT LOCATIONS: DETERMINE EXACT EQUIPMENT AND MATERIALS LOCATIONS TO PROVIDE BEST ARRANGEMENT AND TO FACILITATE PROPER MAINTENANCE AND SERVICING OF EQUIPMENT.
10. LISTING AND LABELING: ALL EQUIPMENT SHALL BE LABELED OR LISTED BY UL OR OTHER APPROVED TESTING AGENCY WHERE REQUIRED.
11. STORAGE SPACE: CONSULT WITH THE GENERAL CONTRACTOR REGARDING JOB SITE STORAGE FOR PLUMBING MATERIALS TO BE INSTALLED UNDER THIS PROJECT. STORAGE SPACE MUST BE SECURED AND CONTRACTOR'S REPRESENTATIVE MUST BE ON JOB BEFORE ANY MATERIAL MAY BE RECEIVED.
12. CLEANUP: REMOVE ALL DEBRIS GENERATED IN THE ACCOMPLISHMENT OF WORK UNDER THIS PROJECT. CLEAN, REPLACE OR REPAIR ALL SURFACES SOILED OR DAMAGED DURING THE COURSE OF THE WORK. REMOVE DEBRIS DAILY SO TO MAINTAIN SAFE WORKING CONDITIONS.
13. RECORD DRAWINGS: MAINTAIN ONE SET OF "RED-LINED" RECORD DRAWINGS ON SITE AT ALL TIMES AND PROVIDE DRAWINGS TO ARCHITECT/ENGINEER PRIOR TO FINAL INSPECTION.

PLUMBING ABBREVIATIONS

(X)	EXISTING
AAV	AIR ADMITTANCE VALVE
A.F.F.	ABOVE FINISHED FLOOR
A.R.C.I.	ACID RESISTANT CAST IRON
ADA	AMERICANS WITH DISABILITIES ACT
AW	ACID WASTE PIPING
AV	ACID VENT PIPING
BRZ.	BRONZE
BT	BATHTUB
C.I.	CAST IRON
CO	CLEANOUT
CONC.	CONCRETE
DCW	DOMESTIC COLD WATER
DHW	DOMESTIC HOT WATER
DIA.	DIAMETER
E.C.I.	ENAMELED CAST IRON
EC	ELECTRICAL CONTRACTOR
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FS	FLOOR SINK
GA.	GAUGE
GAL.	GALLON
GC	GENERAL CONTRACTOR
GCO	GRADE CLEANOUT
GPF	GALLONS PER FLUSH
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GWH	GAS-FIRED WATER HEATER
HB	HOSE BIBB
INCL.	INCLUDED
KS	KITCHEN SINK
LAV	LAVATORY
LP	LIQUID PROPANE
MS	MOP SERVICE BASIN
NAT.	NATURAL GAS
NKL.	NICKEL
NON SIMULT.	NON SIMULTANEOUS
O.F.L.C.	OPEN FRONT LESS COVER
OB	OUTLET BOX
OC	ON CENTER
ORDL	OVERFLOW ROOF DRAIN LEADER
PC	PLUMBING CONTRACTOR
PRESS. BAL.	PRESSURE BALANCED
RCVY.	RECOVERY
RDL	ROOF DRAIN LEADER
SA	WATER HAMMER ARRESTOR
SH	SHOWER
SK	SINK
SLD.	SLIDE
SS	STAINLESS STEEL
TDH	TOTAL DYNAMIC HEAD
TP	TRAP PRIMER
UR	URINAL
V	VENT
VB	VACUUM BREAKER
VC	VITREOUS CHINA
VR	VANDAL RESISTANT
VTR	VENT THROUGH ROOF
W	WASTE
WC	WATER CLOSET
WCO	WALL CLEANOUT
WH	WALL HYDRANT

NOTE: ALL ABBREVIATIONS MAY NOT BE USED IN PROJECT.

PLUMBING LEGEND

	COMPRESSED AIR PIPING
	CONDENSATE PIPING
	DOMESTIC 140°F WATER PIPING
	DOMESTIC 140°F RETURN WATER PIPING
	DOMESTIC COLD WATER PIPING
	DOMESTIC HOT WATER CIRCULATION PIPING
	DOMESTIC HOT WATER PIPING
	FILTERED WATER PIPING
	FIRE SPRINKLER PIPING
	FORCE MAIN PIPING
	NATURAL GAS PIPING
	LP GAS PIPING
	GREASE WASTE PIPING
	MEDICAL COMPRESSED AIR PIPING
	NITROUS OXIDE PIPING
	O2 (0XYGEN) PIPING
	OVERFLOW ROOF DRAIN PIPING
	ROOF DRAIN PIPING
	STORM DRAIN PIPING
	SANITARY VENT PIPING
	SANITARY WASTE PIPING
	TEPID WATER PIPING
	TRAP PRIMER PIPING
	VACUUM PIPING
	NON-POTABLE WATER
	BACKFLOW PREVENTION DEVICE
	BALL VALVE
	CHECK VALVE
	CIRCUIT SETTER (BALANCING VALVE)
	CIRCULATION PUMP
	CONTROL VALVE
	EXTENT OF DEMOLITION
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FS	FLOOR SINK
	GAS-REGULATOR VALVE
	GATE VALVE
	GATE VALVE IN RISER
GCO	GRADE CLEANOUT
HB	HOSE BIBB
	PIPE CAP
	PIPE ELBOW
	PIPE ELBOW DOWN
	PIPE ELBOW UP
	PIPE TEE
	PIPE TEE DOWN
	PIPE TEE UP
SP	SUMP PUMP
1	DEMOLITION KEYED NOTE TAG
1	NEW WORK KEYED NOTE
	POINT OF CONNECTION - NEW TO EXISTING
	PRESSURE REDUCING VALVE
	SOLENOID VALVE
M	THERMOSTATIC MIXING VALVE
WCO	WALL CLEANOUT
WH	WALL HYDRANT
	WASHING MACHINE BOX
"X"	WATER HAMMER ARRESTOR

NOTE: ALL ITEMS LISTED IN THIS SCHEDULE MAY NOT BE USED IN PROJECT

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CAPE FEAR COMMUNITY COLLEGE

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23551 DAVID M. HAHN
02/17/2025

PROJECT TITLE

CFCC Surf City Bldg SA Addition

621 NC HWY 210E,
HAMPSTEAD, NC

SCO ID# 24-28220-01A

SHEET TITLE

PLUMBING NOTES, ABBREVIATIONS, LEGEND AND SCHEDULES

ISSUE BLOCK

Mark	Date	Description
4	02.12.2025	ISSUED FOR PERMIT
3	02.12.2025	SCO CD COMMENTS
2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	11.11.2024	GMP PRICING

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SCALE: 12" = 1'-0"
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PLAN-ORIENTATION

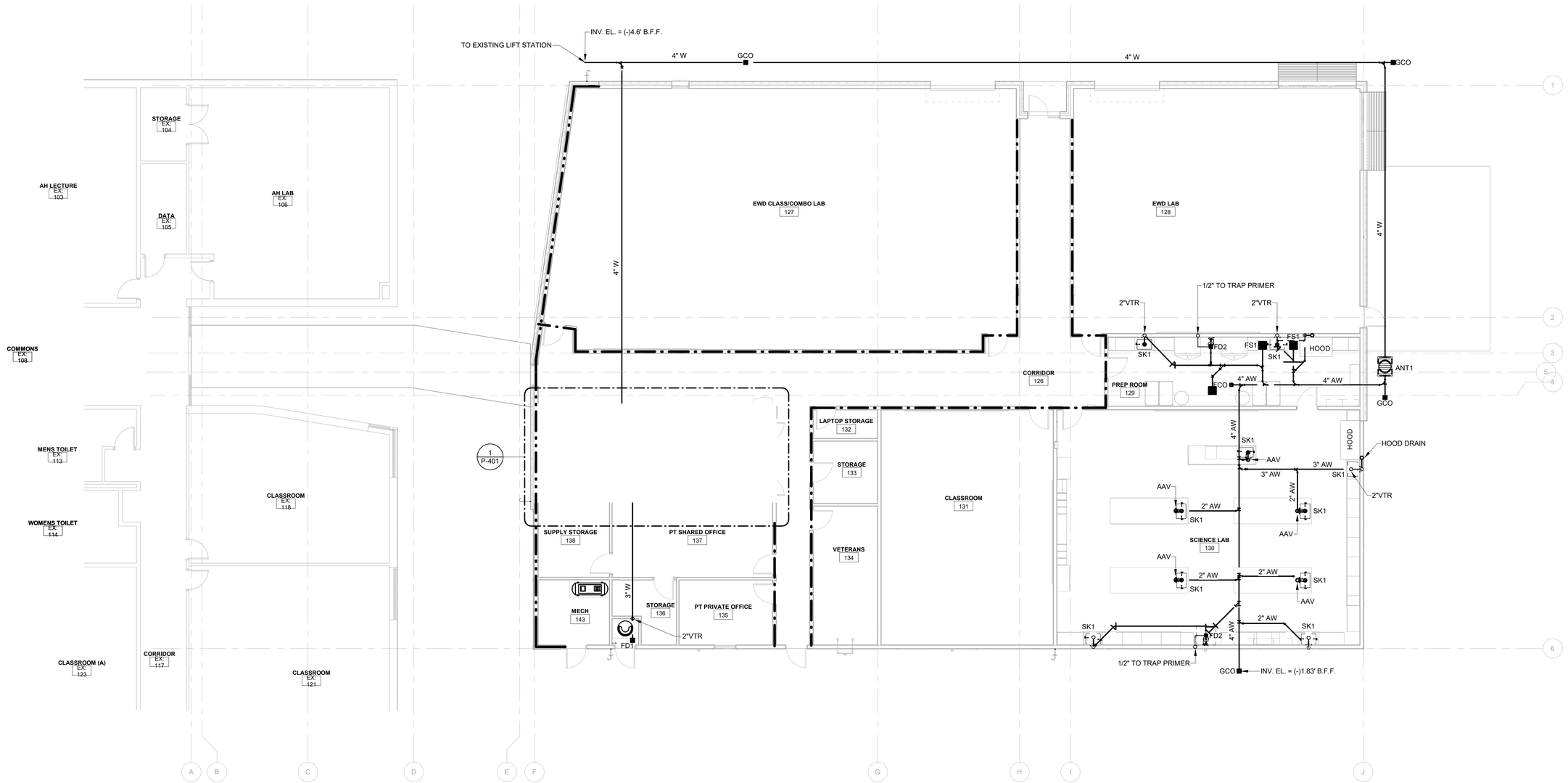
TRUE-NORTH

N
PLAN-NORTH

CONSTRUCTION LEGEND

1-HR FIRE PARTITION AND 1-HR FIRE BARRIER

2-HR FIRE WALL



1 FIRST FLOOR PLAN - WASTE-VENT

SCALE: 1/8" = 1'-0"

8' 4' 0' 8'

SCALE : 1/8" = 1'-0"

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SHEET TITLE

FIRST FLOOR PLAN - WASTE-VENT

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KEYNOTES

#	
1	PC MUST CONNECT WATER SUPPLIES TO TWO (2) FAUCETS AT LAB SINK. COORDINATE WITH GC AND CASEWORK VENDOR.
2	PC MUST CONNECT WATER SUPPLIES TO SINGLE FAUCET AT LAB SINK. COORDINATE WITH GC AND CASEWORK VENDOR.
3	PC MUST CONNECT WATER SUPPLIES TO FUME HOOD . COORDINATE WITH GC AND CASEWORK VENDOR.
4	PC MUST PROVIDE AND INSTALL TRAP PRIMER VALVE.
5	PC MUST PROVIDE 1/2" SUPPLY WITH STOP FOR ICE MAKER. COORDINATE FINAL LOCATION WITH GC.
6	PC MUST PROVIDE WATER SUPPLY FOR AUTOCLAVE. PROVIDE WALL MOUNTED ANGLE STOP 18" A.F.F. PROVIDE INLINE DOUBLE CHECK BACKFLOW PREVENTER INLINE BETWEEN STOP AND CONNECTION TO AUTOCALVE. PC MUST PROVIDE 1/2" SOFT COPPER DRAIN LINE FROM AUTOCLAVE TO SPILL INDIRECT INTO FLOOR SINK. COORDINATE FINAL CONNECTION LOCATION WITH GC AND EQUIPMENT SUPPLIER.
7	INSTALL DRENCH SHOWER PER MANUFACTURERS WRITTEN INSTALLATION INSTRUCTIONS. SEE DETAIL 6/P-501 FOR GENERAL PIPING DIAGRAM
8	SEE DETAIL 3/P-501 FOR TYPICAL WATER HEATER PIPING DETAIL

PLAN-ORIENTATION

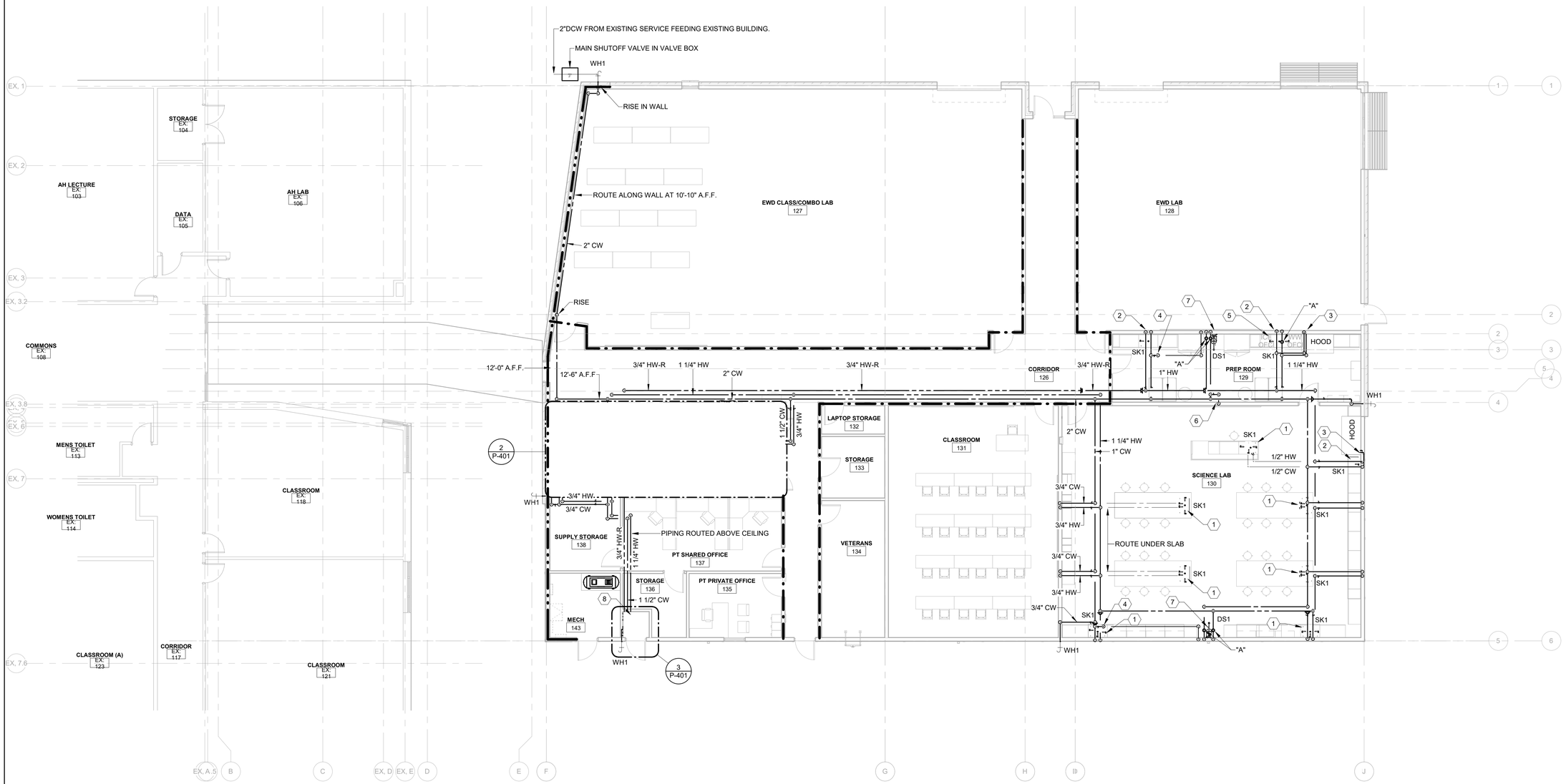
TRUE-NORTH

N
PLAN-NORTH

CONSTRUCTION LEGEND

1-HR FIRE PARTITION AND 1-HR FIRE BARRIER

2-HR FIRE WALL



1 FIRST FLOOR PLAN - DOMESTIC WATER

SCALE: 1/8" = 1'-0"

8' 4' 0' 8'

SCALE : 1/8" = 1'-0"

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02/17/2025

PROJECT TITLE

CFCC Surf City Bldg SA Addition

621 NC HWY 210E,
HAMPSTEAD, NC

SCO ID# 24-28220-01A

SHEET TITLE

FIRST FLOOR PLAN - DOMESTIC WATER

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#	KEYNOTES THIS SHEET
1	CAP LP GAS PIPING APPROXIMATELY 9'-0" A.F.F. FOR FUTURE USE. COORDINATE FINAL LOCATION WITH G.C.
2	PC MUST CONNECT TO LP GAS OUTLET(S) AT SINK. COORDINATE WITH GC AND CASEWORK SUPPLIER.
3	PC MUST CONNECT LP GAS TO FUNE HOOD. COORDINATE WITH GC AND FUME HOOD SUPPLIER.
4	PC MUST INSTALL GAS PIPING UNDERNEATH BUILDING TO ISLAND DESK. PIPING MUST BE INSTALLED IN ACCORDANCE WITH THE 2018 NC FUEL GAS CODE, CHAPTER 4, SECTION 404.14.1.
5	CAP COMPRESSED AIR PIPING APPROXIMATELY 11'-0" A.F.F. FOR FUTURE USE. COORDINATE FINAL LOCATION WITH G.C.
6	PC MUST CONNECT COMPRESSED AIR PIPING TO FUME HOOD. COORDINATE WITH GC AND FUME HOOD SUPPLIER.
7	LP GAS PIPING UNDERGROUND FROM LP GAS TANK. REFER TO CIVIL SITE UTILITY DRAWINGS FOR CONTINUATION
8	SECOND STAGE LP GAS REGULATOR
9	EMERGENCY SHUTOFF SWITCH INSTALLED ON WALL AT EXIT CONNECTED TO EMERGENCY SHUTOFF VALVE AS REQUIRED BY SECTION 409.6 OF THE NC FUEL GAS CODE. PROVIDE SIGNAGE AS REQUIRED.

PLAN-ORIENTATION

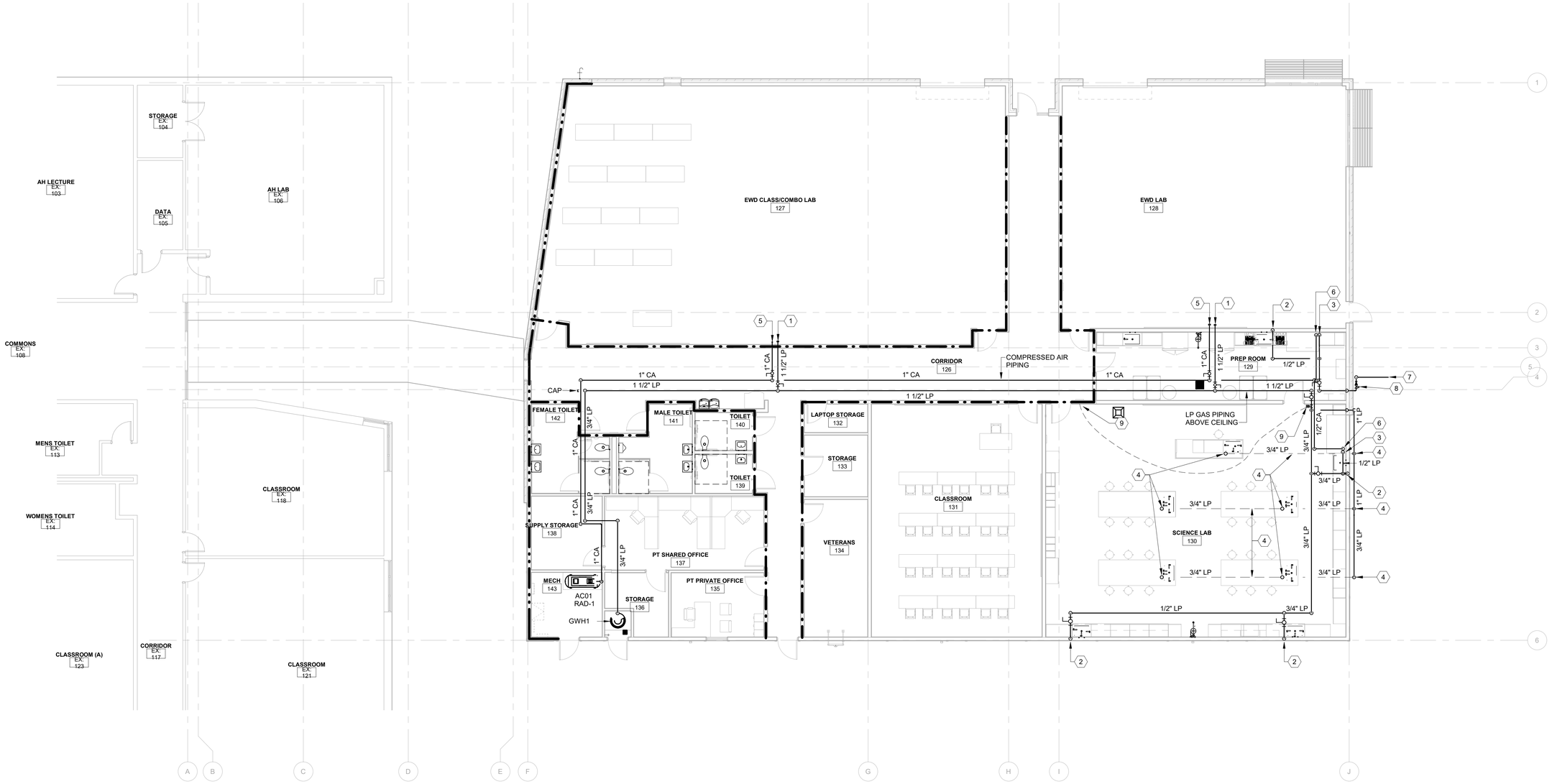
TRUE-NORTH

PLAN-NORTH

CONSTRUCTION LEGEND

1-HR FIRE PARTITION AND 1-HR FIRE BARRIER

2-HR FIRE WALL



1 FIRST FLOOR PLAN - GAS AND COMPRESSED AIR PIPING

SCALE: 1/8" = 1'-0"

8' 4' 0' 8'

SCALE : 1/8" = 1'-0"

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02/17/2025

PROJECT TITLE

CFCC Surf City Bldg SA Addition

621 NC HWY 210E,
HAMPSTEAD, NC

SCO ID# 24-28220-01A

SHEET TITLE

FIRST FLOOR PLAN - LP GAS AND COMPRESSED AIR PIPING PLAN

ISSUE BLOCK

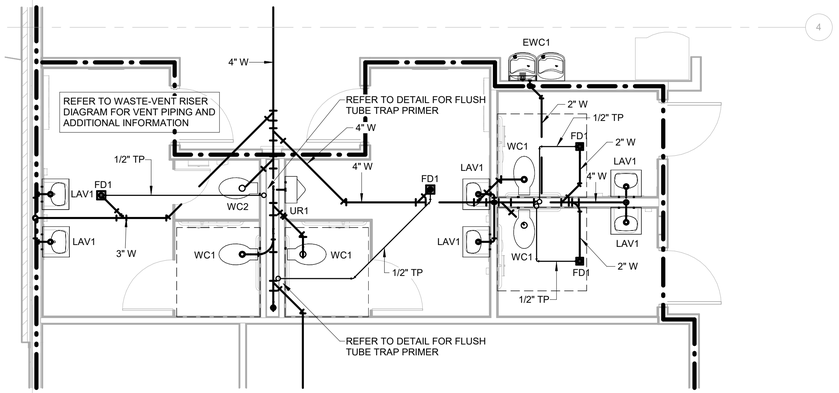
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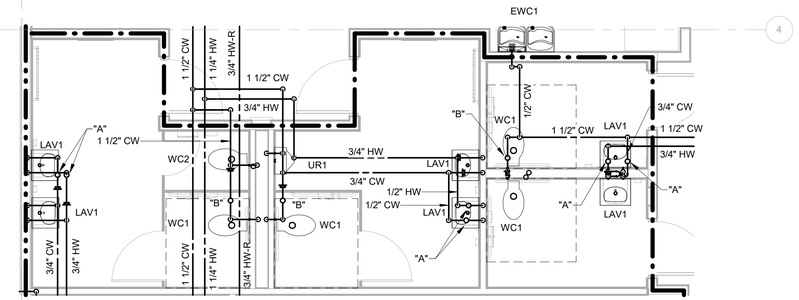
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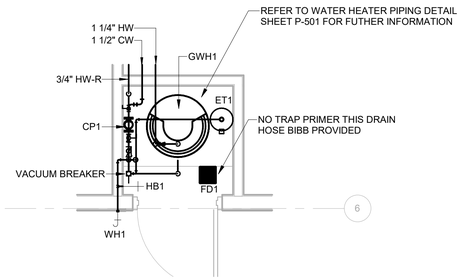
1 ENLARGED WASTE-VENT TOILET PLAN

SCALE: 1/4" = 1'-0"



2 ENLARGED DOMESTIC WATER TOILET PLAN

SCALE: 1/4" = 1'-0"



3 ENLARGED WATER HEATER ROOM PLAN

SCALE: 3/8" = 1'-0"

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02/17/2025

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SHEET TITLE

ENLARGED PLUMBING PLANS

ISSUE BLOCK

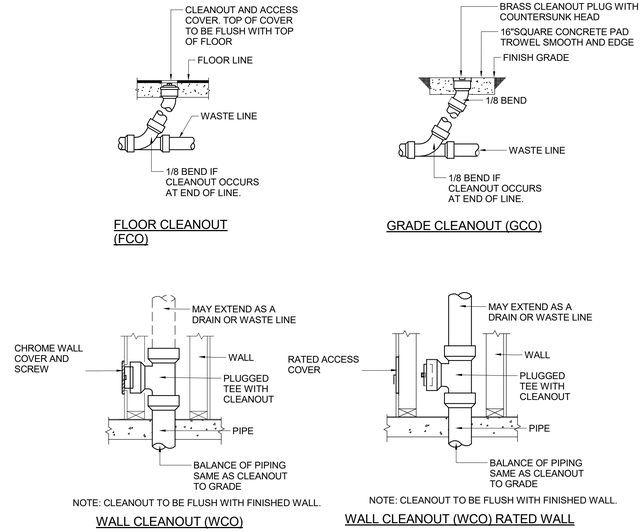
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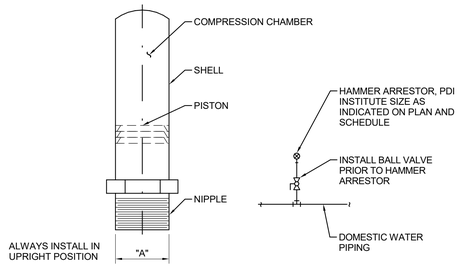
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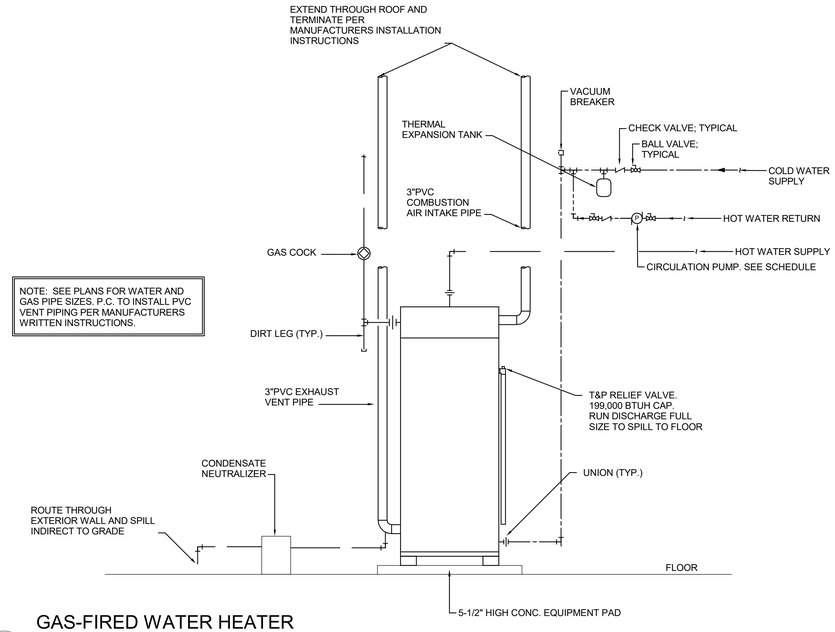


1 TYPICAL CLEANOUT DETAILS
NO SCALE



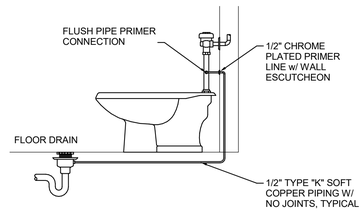
P.D.I. SYMBOL	FIXTURE UNIT RATING	A SIZE
A	1-11	1/2"
B	12-32	3/4"
C	33-60	1"
D	61-113	1"
E	114-154	1"
F	155-330	1"

2 HAMMER ARRESTOR DETAIL
NO SCALE

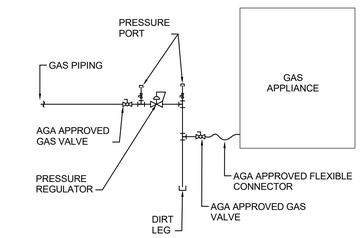


NOTE: SEE PLANS FOR WATER AND GAS PIPE SIZES. P.C. TO INSTALL PVC VENT PIPING PER MANUFACTURERS WRITTEN INSTRUCTIONS.

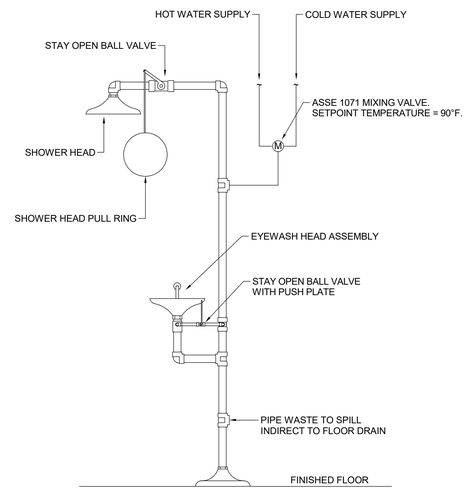
3 GAS-FIRED WATER HEATER DETAIL
NO SCALE



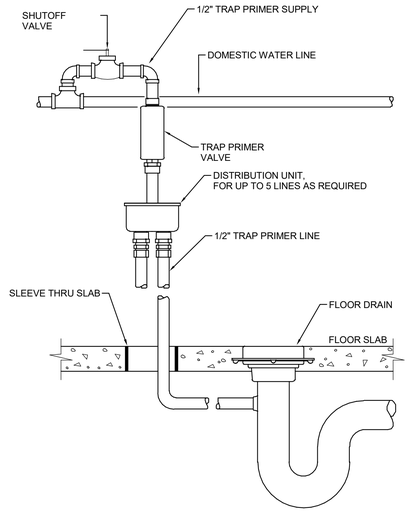
4 TRAP PRIMER DETAIL
NO SCALE



5 GAS APPLIANCE CONNECTION DETAIL
NO SCALE



6 DRENCH SHOWER DETAIL
NO SCALE



7 PRESSURE TYPE TRAP PRIMER DETAIL
NO SCALE

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NORTH CAROLINA PROFESSIONAL SEAL 23551 ENGINEER DAVID M. HAHN
02/17/2025

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SCO ID# 24-28220-01A

SHEET TITLE

PLUMBING DETAILS

ISSUE BLOCK

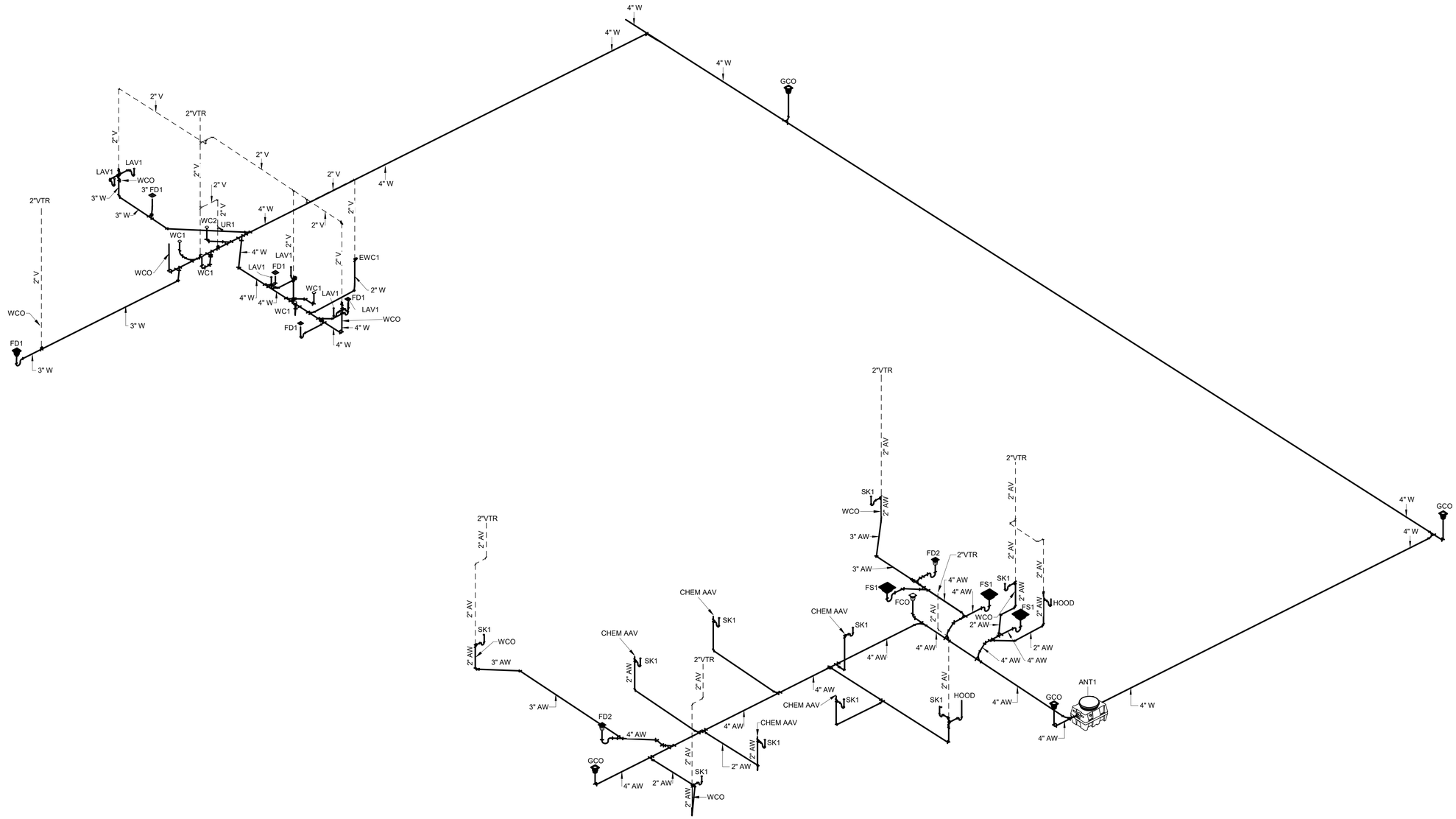
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1 WASTE-VENT RISER DIAGRAM
NO SCALE

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SHEET TITLE

WASTE & VENT RISER DIAGRAM

ISSUE BLOCK

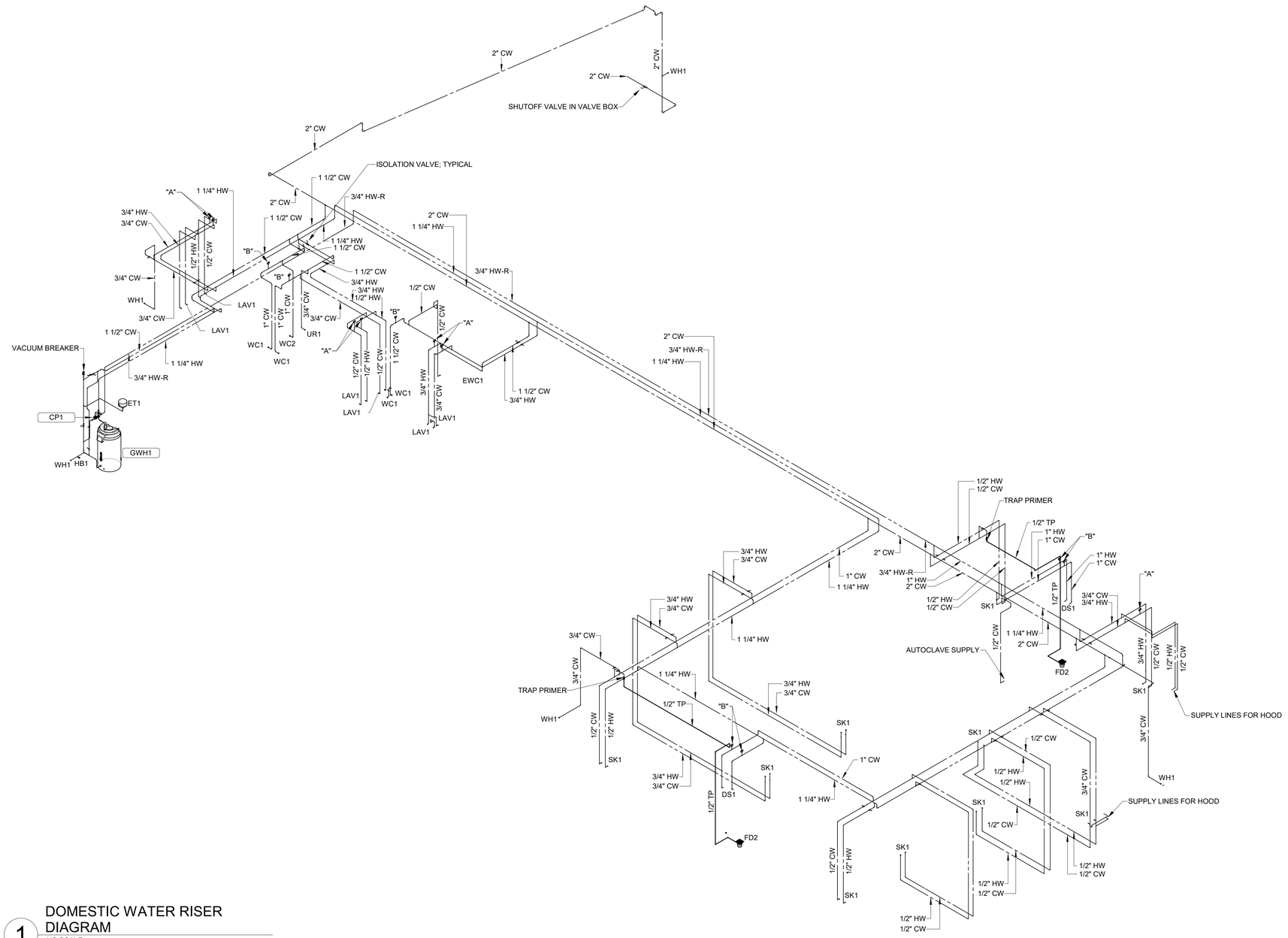
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1 DOMESTIC WATER RISER DIAGRAM
NO SCALE

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02/17/2025

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SCO ID# 24-28220-01A

SHEET TITLE

DOMESTIC WATER RISER DIAGRAM

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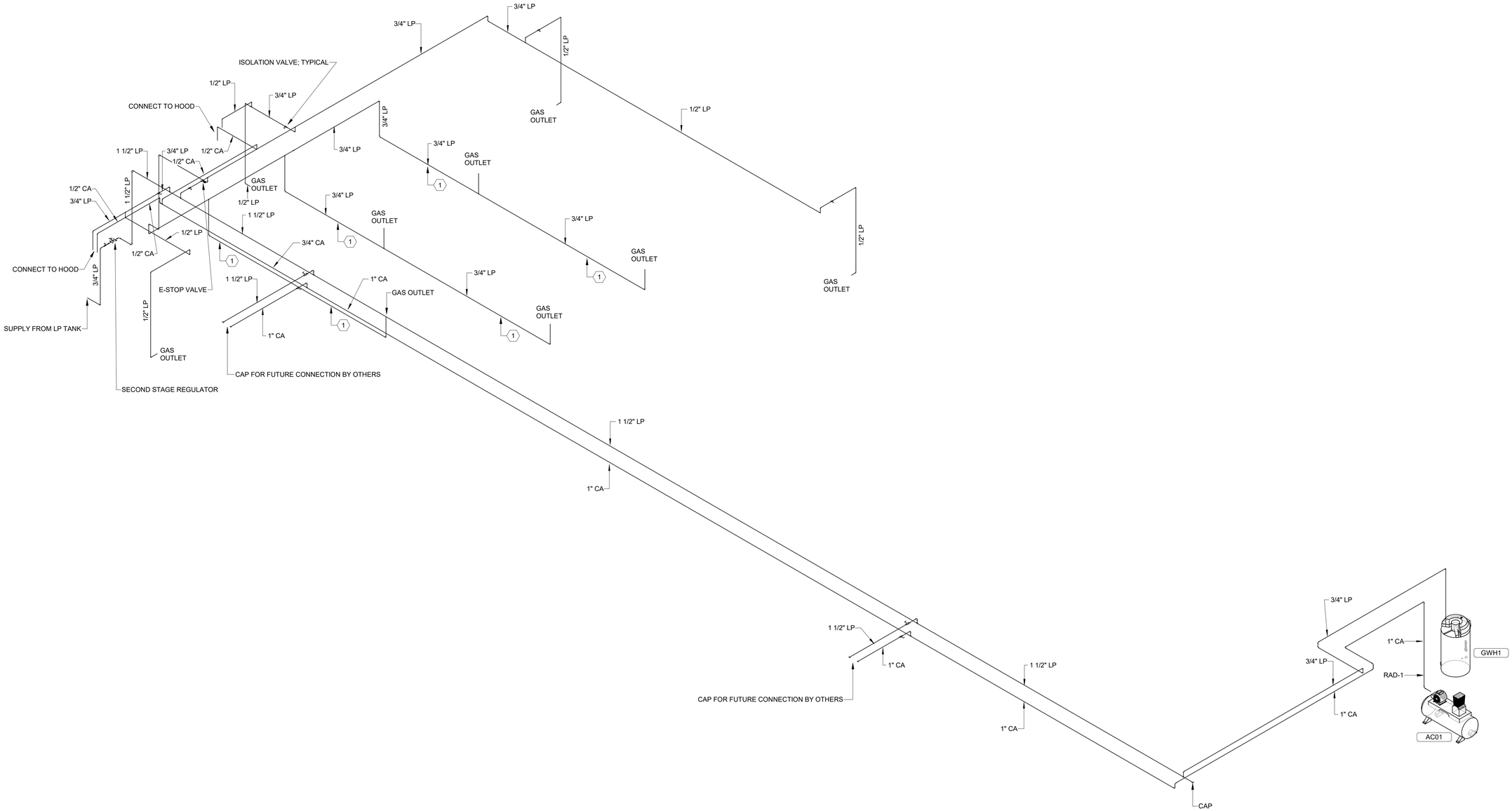
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KEYNOTES THIS SHEET	
1	PC MUST INSTALL GAS PIPING UNDERNEATH BUILDING TO ISLAND DESK. PIPING MUST BE INSTALLED IN ACCORDANCE WITH THE 2018 NC FUEL GAS CODE, CHAPTER 4, SECTION 404.14.1.



1 COMPRESEED AIR AND LP GAS PIPING RISER DIAGRAM

NO SCALE

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CAPE FEAR COMMUNITY COLLEGE

NORTH CAROLINA PROFESSIONAL SEAL 23551 ENGINEER DAVID M. HAHN
02/17/2025

PROJECT TITLE

CFCC Surf City Bldg SA Addition

621 NC HWY 210E,
HAMPSTEAD, NC

SCO ID# 24-28220-01A

SHEET TITLE

COMPRESSED AIR AND LP GAS PIPING RISER DIAGRAM

ISSUE BLOCK

Mark	Date	Description
4	02.12.2025	ISSUED FOR PERMIT
3	02.12.2025	SCO CD COMMENTS
2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	11.11.2024	GMP PRICING

PROJECT NO:	2024077.00
DATE:	02.12.2025
SCALE:	
DRAWN BY: JBS	PROJ MGR: DMH

P-504

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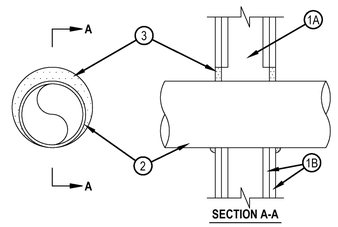
2/17/2025 1:35:00 PM Autodesk Docs://CFCC Surf City Building SA/24133.CFCC SURF CITY EXPANSION (R24).rvt

WL 1054

System No. W-L-1054

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings —1 and 2 Hr (See Items 1 and 3)	F Ratings — 1 and 2 Hr (See Items 1 and 3)
T Rating — 0 Hr	FT Rating — 0 Hr
L Rating (Without Movement) at Ambient — Less Than 1 CFM/sq ft	FH Ratings —1 and 2 Hr (See Items 1 and 3)
L Rating (Without Movement) at 400°F — Less Than 1 CFM/sq ft	FTH Rating — 0 Hr
M Rating (Movement) — See Table 1	FTH Rating — 0 Hr
	L Rating at Ambient — Less Than 5.1 L/s/m2
	L Rating at 204°C — Less Than 5.1 L/s/m2



SECTION A-A

1. Wall Assembly — The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
   A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC. For M Rating, steel studs to be min 3-5/8 in. (92 mm) wide. When steel studs are used and the diam of opening exceeds the width of stud cavity, the opening shall be framed on all sides using lengths of steel stud installed between the vertical studs and screw-attached to the steel studs at each end. The framed opening in the wall shall be 4 to 6 in. (102 to 152 mm) wider and 4 to 6 in. (102 to 152 mm) higher than the diam of the penetrating item such that, when the penetrating item is installed in the opening, a 2 to 3 in. (51 to 76 mm) clearance is present between the penetrating item and the framing on all four sides.
   B. Gypsum Board* — 5/8 in. (16 mm) thick, 4 ft (122 cm) wide with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 32-1/4 in. (819 mm) for steel stud walls. Max diam of opening is 14-1/2 in. (368 mm) for wood stud walls.

The F and FH Ratings of the firestop system are equal to the fire rating of the wall assembly. The M Rating is applicable only to 1 hr rated walls.

Hilti Firestop Systems

Reproduced by HILTI, Inc. Courtesy of Underwriters Laboratories, Inc. January 21, 2020

WL 1054

System No. W-L-1054

2. Through-Penetrants — One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. The annular space shall be min 0 in. to max 2-1/4 in. (57 mm). Pipe may be installed with continuous point contact. Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:
   A. Steel Pipe — Nom 30 in. (762 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
   B. Iron Pipe — Nom 30 in. (762 mm) diam (or smaller) cast or ductile iron pipe.
   C. Conduit — Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing or 6 in. (152 mm) . diam steel conduit.
   D. Copper Tubing — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing.
   E. Copper Pipe — Nom 6 in. (152 mm) diam (or smaller) regular (or heavier) copper pipe.
3. Fill, Void or Cavity Material* — Sealant — Min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. At the point or continuous contact locations between pipe and wall, a min 1/2 in. (13 mm) diam bead of fill material shall be applied at the pipe wall interface on both surfaces of wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE MAX Intumescent Sealant

Movement Direction	Penetrant Item	Nominal Penetrant Diameter	Annular Space	Movement	Sealant Depth	F-Rating	L Rating with Movement
Y	2A, 2C*	2 in.	Max 2-1/4 in.	5%	5/8 in.	1 hr	N/A
Z	2A, 2C*	2 in.	2-1/4 in.	0.25 in.	5/8 in.	1 hr	N/A

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

Hilti Firestop Systems

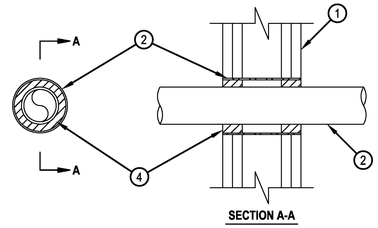
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WL 2128

System No. W-L-2128

F Rating — 1 and 2 Hr (See Item 1)
T Rating — 0 Hr

Classified by Underwriters Laboratories, Inc. to UL 1479



SECTION A-A

1. Wall Assembly — The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400, V400 or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
   A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC.
   B. Gypsum Board* — 5/8 in. (16 mm) thick, 4 ft (122 cm) wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual Wall and Partition Design. Max diam of opening is 3-1/2 in. (89 mm).
2. Metallic Sleeve Optional — Nom 3-1/2 in. (89 mm) (or smaller) cylindrical sleeve fabricated from min 0.016 in. thick (28 gauge) galv sheet steel and having a min 1-1/4 in. (32 mm) lap salong longitudinal seam. Length of sleeve to be installed flush with wall surfaces.
3. Through Penetrants — One nonmetallic pipe installed within the firestop system.. Pipe may be installed at an angle not greater than 45 degrees from perpendicular. Pipe to be rigidly supported on both sides of wall assembly. The space between pipe and periphery of opening shall be min 1/4 in. (6 mm) to max 11/16 in. (17.5 mm). The following types and sizes of nonmetallic pipes may be used:
   A. Polyvinyl Chloride (PVC) Pipe — Nom 2 in. (51 mm) diam (or smaller) Schedule 40 PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.
   B. Chlorinated Polyvinyl Chloride (CPVC) Pipe — Nom 2 in. (51 mm) diam (or smaller) SDR13.5 CPVC pipe for use in closed (process or supply) piping systems.
4. Fill, Void or Cavity Materials* — Sealant — For 1 hr F Rating, min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. For 2 hr F Rating, min 1-1/4 in. (32 mm) thickness of fill material applied within annulus, flush with both surfaces of wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE Sealant or FS-ONE MAX Intumescent Sealant

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

Hilti Firestop Systems

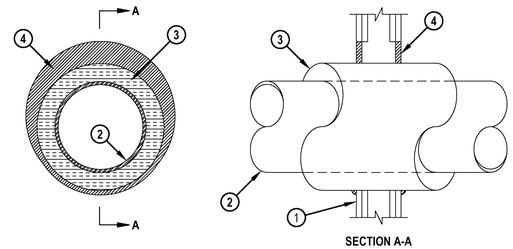
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WL 5029

System No. W-L-5029

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings — 1, 2 and 3 Hr (See Items 1, 3 and 4)	F Ratings — 1, 2 and 3 Hr (See Items 1, 3 and 4)
T Ratings — 0, 1/2, 1 and 1-1/4 Hr (See Item 3)	FT Ratings — 0, 1/2, 1 and 1-1/4 Hr (See Item 3)
L Rating At Ambient — 4 CFM/Sq Ft	FH Ratings — 1, 2 and 3 Hr (See Items 1, 2 and 4)
L Rating At 400 F — Less Than 1 CFM/Sq Ft	FTH Ratings — 0, 1/2, 1 and 1-1/4 Hr (See Item 3)
	L Rating At Ambient — 4 CFM/Sq Ft
	L Rating At 400 F — Less Than 1 CFM/Sq Ft



SECTION A-A

1. Wall Assembly — The 1, 2 or 3 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400, V400 or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
   A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide for 1 and 2 hr F and FH rating and 3-1/2 in. (89 mm) wide for 3 hr F and FH rating and spaced max 24 in. (610 mm) OC.
   B. Gypsum Board* — Min 5/8 in. (16 mm) thick with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual Wall and Partition Design. Max diam of opening is 18-5/8 in. (473 mm).
   The hourly F and FH Ratings of the firestop system are equal to the hourly fire rating of the wall assembly in which it is installed.
2. Through Penetrants — One metallic pipe or tubing to be installed within the firestop system. Pipe or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes or tubing may be used:
   A. Steel Pipe — Nom 12 in. (305 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
   B. Iron Pipe — Nom 12 in. (305 mm) diam (or smaller) cast or ductile iron pipe.
   C. Copper Tubing — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing. When the hourly F or FH Rating of the firestop system is 3 hr, the nom diam of copper tube shall not exceed 4 in. (102 mm).
   D. Copper Pipe — Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe. When the hourly F or FH Rating of the firestop system is 3 hr, the nom diam of copper pipe shall not exceed 4 in. (102 mm).

Hilti Firestop Systems

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WL 5029

System No. W-L-5029

3. Pipe Covering* — Nom 1, 1-1/2 or 2 in. (25, 38 or 51 mm) thick hollow cylindrical heavy density (min 3.5 pcf or 56 kg/m3) glass fiber units jacketed on the outside with an all service jacket. Longitudinal joints sealed with metal fasteners or factory-applied self-sealing lap tape. Transverse joints secured with metal fasteners or with butt tape supplied with the product. For 1 and 2 hr F and FH Ratings, the annular space between insulated penetrant and periphery of opening shall be min 0 in. (point contact) to max 1-7/8 in. (48 mm). For 3 hr F and FH Ratings, the annular space shall be min 0 in. (point contact) to max 1-1/4 in. (32 mm).
   See Pipe and Equipment Covering — Materials (BRGU) category in the Building Material Directory for the names of manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used.
   The hourly T, FT, FTH Ratings of the firestop system are 1/2 hr for 1 hr rated walls and 1 hr for 2 hr rated walls. For 3 hr rated walls, the hourly T, FT and FTH Ratings when steel and iron pipes are used are 1 hr. For 3 hr rated walls, the hourly T, FT and FTH Ratings when copper penetrants are used are 1-1/4 hr for 2 in. (51 mm) thick pipe covering and 0 hr for pipe covering thickness less than 2 in. (51 mm).
3A. Pipe Covering* — (Not Shown) — As an alternate to Item 3, max 2 in. (51 mm) thick cylindrical calcium silicate (min 14 pcf) units sized to the outside diam of the pipe or tube may be used. Pipe insulation secured with stainless steel bands or min 18 AWG stainless steel wire spaced max 12 in. (305 mm) OC. When the alternate pipe covering is used, the T and FT Rating shall be as specified in item 3 above.
   See Pipe and Equipment Covering — Materials (BRGU) category in the Building Materials Directory for names of manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used.
4. Fill, Void or Cavity Material* — Sealant — For 1 and 2 hr F and FH Rating, min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. For 3 hr F and FH Rating, min 1 in. (25 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. At the point contact location between pipe covering and gypsum board, a min 1/2 in. (13 mm) diam bead of fill material shall be applied at the pipe covering/gypsum board interface on both surfaces of wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-One Sealant or FS-ONE MAX Intumescent Sealant

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

Hilti Firestop Systems

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CAPE FEAR COMMUNITY COLLEGE

NORTH CAROLINA PROFESSIONAL SEAL 23551 ENGINEER DAVID M. HAHN
02/17/2025

PROJECT TITLE

CFCC Surf City Bldg SA Addition

621 NC HWY 210E,
HAMPSTEAD, NC

SCO ID# 24-28220-01A

SHEET TITLE

UL PENETRATION DETAILS

ISSUE BLOCK

Mark	Date	Description
4	02.12.2025	ISSUED FOR PERMIT
3	02.12.2025	SCO CD COMMENTS
2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	11.11.2024	GMP PRICING

PROJECT NO: 2024077.00
DATE: 02.12.2025
SCALE: 12" = 1'-0"
DRAWN BY: JBS PROJ MGR: DMH

P-505

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GENERAL MECHANICAL SYMBOLS

- REVISION NUMBER - SHOWN ON PLANS
- POINT WHERE NEW CONNECTS TO EXISTING
- NUMBER OF DETAIL ON SHEET / NUMBER OF SHEET WHERE DETAIL APPEARS
- KEYNOTE
- CONTINUATION SYMBOL
- Room / 1 — ROOM NAME AND NUMBER
- ITEM TO BE DEMOLISHED
- AREA NOT IN CONTRACT

HVAC SYMBOLS

- 16"x8" — SQUARE DUCT SIZE TAG (WIDTH x HEIGHT)
- 16"/8" — OVAL DUCT SIZE TAG (WIDTH / HEIGHT)
- 16"Ø — ROUND DUCT SIZE TAG (DIAMETER)
- (E) — EXISTING DUCT TAG
- DUCT BEING DEMOLISHED
- S/A — SUPPLY AIR
- S-O/A — SUPPLY AIR (100% OUTSIDE AIR)
- O/A — OUTSIDE AIR
- R/A — RETURN AIR
- T/A — TRANSFER AIR
- E/A — EXHAUST AIR
- L/A — RELIEF AIR
- GE/A — GREASE EXHAUST AIR
- SE/A — SMOKE EXHAUST AIR
- FLUE — EXHAUST GAS FLUE
- C/A — COMBUSTION AIR
- DROP — RECTANGULAR SUPPLY/OUTSIDE AIR DUCT RISE
- DROP — ROUND SUPPLY/OUTSIDE AIR DUCT RISE
- DROP — RECTANGULAR RETURN/TRANSFER AIR DUCT RISE
- DROP — ROUND RETURN/TRANSFER AIR DUCT RISE
- DROP — RECTANGULAR EXHAUST/RELIEF AIR DUCT RISE
- DROP — ROUND EXHAUST/RELIEF AIR DUCT RISE
- SUPPLY OUTLET — RETURN/EXHAUST INLET
- SECTORIZING BAFFLE OR BLANKOFF PANEL
- S2 / 0 — TYPE (SEE SCHEDULE) / GRILLES, REGISTERS, AND DIFFUSERS TAG
- CFM
- LINEAR DIFFUSER
- S6 / 0 — TYPE (SEE SCHEDULE) / LINEAR DIFFUSER TAG
- CFM
- MECHANICAL EQUIPMENT
- VAV-XX — MECHANICAL EQUIPMENT TAG
- EXISTING MECHANICAL EQUIPMENT
- (X)VAV-XX — EXISTING MECHANICAL EQUIPMENT TAG (TYPICAL FOR ALL EXISTING TAGS)
- MECHANICAL EQUIPMENT FOR REFERENCE
- VAV-XX — MECHANICAL EQUIPMENT TAG (REFER TO OTHER DISCIPLINE FOR ADDITIONAL INFORMATION)
- CO2 — CARBON DIOXIDE SENSOR
- D — DUCT SMOKE DETECTOR
- H — HUMIDITY SENSOR
- E — E-STOP
- T — TEMPERATURE SENSOR
- FIRE DAMPER (F) — MANUAL BALANCING DAMPER (B)
- SMOKE DAMPER (S) — BACKDRAFT DAMPER (D)
- MOTORIZED DAMPER (M) — COMBINATION FIRE/SMOKE DAMPER (C)

PIPING SYMBOLS

- 2" — PIPE SIZE TAG (DIAMETER)
- ABOVE GROUND PIPING
- 1/8" / 12" SLOPE — PIPE SLOPE TAG
- BELOW GROUND PIPING
- INVERT: -10' - 1" — PIPE INVERT ELEVATION TAG
- (E) — EXISTING PIPE TAG
- PIPING BEING DEMOLISHED
- CD — CONDENSATE DRAINAGE
- HWR — HEATING WATER RETURN
- HWS — HEATING WATER SUPPLY
- G — NATURAL GAS
- PG — PROPANE GAS
- REF-L — REFRIGERANT-LIQUID
- REF-S — REFRIGERANT-SUCTION
- REF-HG — REFRIGERANT-HOT GAS
- PIPE DROP
- PIPE RISE
- PIPE TEE
- CAP
- 4" 4" 2" 4" — PLUG / REDUCING 45 DEGREE TEE / 45 DEGREE TEE
- DOMESTIC WATER METER
- FLOW MEASURING AND BALANCING DEVICE
- BALL VALVE
- CHECK VALVE
- THREE WAY VALVE
- MOTORIZED CONTROL VALVE
- THREE WAY MOTORIZED CONTROL VALVE
- PRESSURE REDUCING VALVE
- SOLENOID VALVE
- BUTTERFLY VALVE

EQUIPMENT ABBREVIATIONS

AC	AIR CONDITIONING UNIT
ACC	AIR COOLED CONDENSER
ACCU	AIR COOLING CONDENSING UNIT
AFMS	AIR FLOW MEASURING STATION
AHU	AIR HANDLING UNIT
AS	AIR SEPARATOR
B	BOILER
CF	CABINET FAN
CF	CHEMICAL FEEDER
CFP	CHEMICAL FEEDER PUMP
CH	CHILLER
CRU	CONDENSATE RETURN UNIT
CT	COOLING TOWER
CUH	CABINET UNIT HEATER
CWP	CONDENSER WATER PUMP
CHWP	CHILLED WATER PUMP
DAH	DUCTLESS AIR HANDLER
DHP	DUCTLESS HEAT PUMP
DCP	DOMESTIC WATER CIRCULATING PUMP
EUH	ELECTRIC UNIT HEATER
EDC	ELECTRIC DUCT COIL
ET	EXPANSION TANK
EWH	ELECTRIC WATER HEATER
FCU	FAN COIL UNIT
FP	FIRE PUMP
GI	GREASE INTERCEPTOR
GRV	GRAVITY ROOF VENTILATOR
H	HUMIDIFIER
HWP	HEATING WATER PUMP
HX	HEAT EXCHANGER
HPU	HEAT PUMP UNIT
HRU	HEAT RECOVERY UNIT
ILC	INLINE CENTRIFUGAL
PF	PROPELLER FAN
PV	POWER VENTILATOR
PWF	POWER WALL FAN
RE	RETURN/EXHAUST FAN
RTU	ROOFTOP UNIT
SA	SHOCK ABSORBER
SAT	SOUND ATTENUATOR
SEP	SEWAGE EJECTOR PUMP
SF	SUPPLY FAN
SP	SUMP PUMP
UH	UNIT HEATER
US	UTILITY SET
UV	UNIT VENTILATOR
VAV	VARIABLE AIR VOLUME
WH	WATER HEATER

RATED WALL LEGEND

- 1-HR FIRE PARTITION AND 1- HR FIRE BARRIER
- 2-HR FIRE WALL

ABBREVIATIONS

&	AND
Ø	ROUND
A	AIR
AB	ABOVE BASE
ABV	ABOVE
AC	AIR CONDITIONING
ACOUS	ACOUSTICAL
AD	AREA DRAIN
ADD	ADDENDUM
ADDL	ADDITIONAL
AFF	ABOVE FINISHED FLOOR
AFUE	ANNUAL FUEL UTILIZATION EFFICIENCY
AG	ABOVE GROUND
ALT	ALTERNATE
ALUM	ALUMINUM
AP	ACCESS PANEL
APPROX	APPROXIMATE
ARCH	ARCHITECT/ARCHITECTURAL
AV	ACID RESISTANT VENT
AW	ACID RESISTANT WASTE
AUTO	AUTOMATIC
BFF	BELOW FINISHED FLOOR
BLDG	BUILDING
BLW	BELOW
BM	BEAM
BO	BY OTHER
BOT	BOTTOM
BSMT	BASEMENT
BTU	BRITISH THERMAL UNITS
BTUH	BRITISH THERMAL UNITS PER HOUR
BTWN	BETWEEN
CAP	CAPACITY
CB	CATCH BASIN
CCW	COUNTER CLOCKWISE
CFCV	CONSTANT FLOW CONTROL VALVE
CFM	CUBIC FEET PER MINUTE
CHW	CIRCULATING HOT WATER
CI	CAST IRON
CLG	CEILING
CLG	COOLING
CO	CLEAN OUT
COL	COLUMN
COMB	COMBINATION
CONC	CONCRETE
COND	CONDENSATE
CONF	CONFERENCE
CONN	CONNECT
CONST	CONSTRUCTION
CONT	CONTINUE/CONTINUATION
CONTR	CONTRACT/CONTRACTOR
COORD	COORDINATE
CTR	CENTER
CUFT	CUBIC FEET
CV	CHECK VALVE
CW	COLD WATER
CW	CLOCKWISE
D	DEGREE
DB	DRY BULB
DET	DETAIL
DIA	DIAMETER
DIAG	DIAGONAL
DISCH	DISCHARGE
DIV	DIVISION
DI	DEIONIZED WATER
DMPR	DAMPER
DN	DOWN
DWG	DRAWING
DW	DISTILLED WATER
EA	EACH
EAT	ENTERING AIR TEMPERATURE
EL	ELBOW
ELEC	ELECTRICAL
ELEV	ELEVATION
EP	EXPLOSION PROOF
EQ	EQUAL
EQUIP	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EWT	ENTERING WATER TEMPERATURE
E/A	EXHAUST AIR
EAH	EXHAUST HOOD
EXIST	EXISTING
EXP	EXPANSION
EXPJT	EXPANSION JOINT
EXT	EXTERIOR
F	DEGREES FAHRENHEIT
FCO	FLOOR CLEAN OUT
FD	FLOOR DRAIN
FD	FIRE DAMPER
FDV	FIRE DEPARTMENT VALVE
FHC	FIRE HOSE CABINET
FL	FLOOR
FLEX	FLEXIBLE
FLG	FLANGE
FO	FUEL OIL
FOV	FUEL OIL VENT
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FPM	FEET PER MINUTE
FRP	FIBERGLASS REINFORCED PIPE
FS	FULL SIZE
FS	FLOOR SINK
FT	FOOT/FEET
FTG	FOOTING
FTR	FIN TUBE RADIATION
FUT	FUTURE
GA	GAGE/GAUGE
GAL	GALLON
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GEN	GENERATOR
GENL	GENERAL
GPH	GALLONS PER MINUTE
GR	GRADE
GW	GREASE WASTE
HB	HOSE BIB
HD	HEAD
HORZ	HORIZONTAL
HP	HORSE POWER
HP	HIGH PRESSURE
HTG	HEATING
HTR	HEATER
HW	HOT WATER
HYD	HYDRANT
ID	INDIRECT
IN	INCH
INL	INLET
INSUL	INSULATION
INT	INTERIOR
INV	INVERT
INWG	INCHES WATER GAUGE
JST SPC	JOIST SPACE
JT	JOINT
LAB	LABORATORY
LB	POUND
LB/HR	POUNDS PER HOUR
LAT	LEAVING AIR TEMPERATURE
LF	LINEAL FOOT
LOC	LOCATION
LP	LOW PRESSURE
LPG	LIQUEFIED PETROLEUM GAS
LR	LIQUID REFRIGERANT
LS	LAWN SPRINKLER
L	LOUVER
LWT	LEAVING WATER TEMPERATURE
M/A	MIXED AIR
MAN	MANUAL
MATL	MATERIAL
MAV	MANUAL AIR VENT
MAX	MAXIMUM
MBD	MOTORIZED BYPASS DAMPER
MBH	ONE THOUSAND BTU PER HOUR
MCF	ONE THOUSAND CUBIC FEET
MCW	MAKE-UP COLD WATER
MD	MOTORIZED DAMPER
MECH	MECHANICAL
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MTR	MOTOR
MU/A	MAKE-UP/AIR
N	NECK
NC	NOISE CRITERIA
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NUMBER
NO	NORMALLY OPEN
NOM	NOMINAL
NTS	NOT TO SCALE
O	OXYGEN
O/A	OUTSIDE AIR
OC	ON CENTER
OF	OVERFLOW
OPNG	OPENING
ORD	OVERFLOW ROOF DRAIN
PD	PRESSURE DROP
PIV	POST INDICATOR VALVE
PLBG	PLUMBING
PR	PAIR
PREL	PRELIMINARY
PRESS	PRESSURE
PRIM	PRIMARY
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
PW	POTABLE WATER
PWR	POWER
R	DUCT RISER
R/A	RETURN AIR
RCP	RADIANT CEILING PANEL
RD	ROOF DRAIN
REC	RECESSED
RED	REDUCER
REFR	REFRIGERATION
RH	RELATIVE HUMIDITY
REQD	REQUIRED
REV	REVERSE
RL/A	RELIEF AIR
RM	ROOM
RPM	REVOLUTIONS PER MINUTE
RW	RAIN WATER
SF	SQUARE FOOT
S/A	SUPPLY AIR
SAN	SANITARY
SCHED	SCHEDULE
SECT	SECTION
SF	SQUARE FOOT
SD	SMOKE DAMPER
SHT	SHEET
SIM	SIMILAR
SLV	SLEEVE
SM	SURFACE MOUNT
SP	STANDPIPE
SP	STATIC PRESSURE
SPEC	SPECIFICATION
SPS	STATIC PRESSURE STATION
SQ	SQUARE
SR	SUCTION REFRIGERANT
SSD	SOIL SUBDRAIN
SS	STAINLESS STEEL
STD	STANDARD
STM	STEAM
STRUCT	STRUCTURAL
SUCT	SUCTION
SUSP	SUSPENDED
T	THERMOSTAT
TCP	TEMPERATURE CONTROL PANEL
TD	TEMPERATURE DROP
TDR	TRENCH DRAIN
TEFC	TOTALLY ENCLOSED FAN COOLED
TEMP	TEMPERATURE
TYP	TYPICAL
UFD	UNDER FLOOR DUCT
UG	UNDERGROUND
VAC	VACUUM
V	VENT
VAV	VARIABLE AIR VOLUME
VEL	VELOCITY
VENT	VENTILATION
VERT	VERTICAL
VOL	VOLUME
VTR	VENT THROUGH ROOF
W	WASTE
WB	WET BULB
WCO	WALL CLEAN OUT
WH	WALL HYDRANT

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 PERFORMANCE METHOD, STATE THE ANNUAL ENERGY COST FOR THE STANDARD REFERENCE DESIGN VS ANNUAL ENERGY COST FOR THE PROPOSED DESIGN.

CLIMATE ZONE: 3A

METHOD OF COMPLIANCE:

X PRESCRIPTIVE ([2018 NCECC][ENERGY CODE])

PERFORMANCE ([2018 NCECC][ENERGY CODE]))

PRESCRIPTIVE (ASHRAE 90.1)

PERFORMANCE (ASHRAE 90.1)

THERMAL ENVELOPE

ROOF CEILING ASSEMBLY (EACH ASSEMBLY)

DESCRIPTION OF ASSEMBLY: INSIDE SURFACE RESISTANCE, METAL DECK, R-25 BOARD INSULATION, MEMBRANE, OUTSIDE SURFACE RESISTANCE

U-VALUE OF TOTAL ASSEMBLY: 0.039 BTU/HR/SF/F

R-VALUE OF INSULATION: 25 (HR-SF-F)/BTU

SKYLIGHTS IN EACH ASSEMBLY: -

U-VALUE OF SKYLIGHT: -

TOTAL SQ.FT OF SKYLIGHTS IN EA.... -

EXTERIOR WALLS (EACH ASSEMBLY) (7A)

DESCRIPTION OF ASSEMBLY: INSIDE SURFACE RESISTANCE, 5/8 GYPSUM BOARD, 2x6 WOOD STUDS, R-20 BATT INSULATION, 5/8 GYPSUM BOARD, AIR SPACE, FACE BRICK, OUTSIDE SURFACE RESISTANCE

U-VALUE OF TOTAL ASSEMBLY: 0.048 BTU/HR/SF/F

R-VALUE OF INSULATION: R-20 (HR-SF-F)/BTU

OPENINGS (WINDOWS OR DOORS...

U-VALUE OF TOTAL ASSEMBLY 0.45 BTU/HR/SF/F

SHADING COEFFICIENT: 0.29

PROJECTION FACTOR: <0.5

DOOR R-VALUES: 1.4 (HR-SF-F)/BTU

WALLS BELOW GRADE (EACH...

DESCRIPTION OF ASSEMBLY: N/A

U-VALUE OF TOTAL ASSEMBLY: N/A

R-VALUE OF INSULATION: N/A

FLOORS OVER UNCONDITIONED...

DESCRIPTION OF ASSEMBLY: N/A

U-VALUE OF TOTAL ASSEMBLY: N/A

R-VALUE OF INSULATION: N/A

FLOORS SLAB ON GRADE

DESCRIPTION OF ASSEMBLY: INSIDE SURFACE RESISTANCE, 4"CONCRETE SLAB

U-VALUE OF TOTAL ASSEMBLY: 0.1 BTU/HR/SF/F

R-VALUE OF INSULATION: 0 (HR-SF-F)/BTU

HORIZONTAL/VERTICAL... HORIZONTAL

SLAB HEATED: NO

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

CLIMATE ZONE 3A - WARM/HUMID

WINTER DRY BULB: 23 °F

SUMMER DRY BULB 93 °F

INTERIOR DESIGN CONDITIONS

WINTER DRY BULB 70 °F

SUMMER DRY BULB 75 °F

RELATIVE HUMIDITY 60% RH*

*DESIGN- NOT CONTROLLED

BUILDING HEATING LOAD: 207.7 MBH

BUILDING COOLING LOAD: 311.1 MBH

MECHANICAL SPACING CONDITIONING SYSTEM

UNITARY

DESCRIPTION OF UNIT: SEE SCHEDULES

HEATING EFFICIENCY: SEE SCHEDULES

COOLING EFFICIENCY: SEE SCHEDULES

SIZE CATEGORY OF UNIT: SEE SCHEDULES

BOILER

SIZE CATEGORY, IF OVERSIZED STATE... N/A

CHILLER

SIZE CATEGORY, IF OVERSIZED STATE... N/A

LIST EQUIPMENT EFFICIENCIES: SEE SCHEDULES

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CAPE FEAR COMMUNITY COLLEGE

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23551 DAVID M. HAHN

02/17/2025

PROJECT TITLE

CFCC Surf City Bldg SA Addition

621 NC HWY 210E,
HAMPSTEAD, NC

SCO ID# 24-28220-01A

SHEET TITLE

MECHANICAL ABBREV.'s, LEGEND, & MECHANICAL SUMMARY

ISSUE BLOCK

Mark	Date	Description
4	02.12.2025	ISSUED FOR PERMIT
3	02.12.2025	SCO CD COMMENTS
2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	11.11.2024	GMP PRICING

PROJECT NO: 2024077.00

DATE: 02.12.2025

SCALE: As indicated

DRAWN BY: GRM PROJ MGR: DMH

M-001

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SEQUENCES OF OPERATION

DAH01 / DHP01 SEQUENCE OF OPERATION

COOLING: WHEN THE TERMINAL UNIT OPERATION MODE IS THE COOL STATE, LIQUID REFRIGERANT IS PROVIDED TO THE TERMINAL UNIT. THE AMOUNT OF REFRIGERANT ENTERING THE EVAPORATOR COIL IS REGULATED BY THE LINEAR EXPANSION VALVE. THE POSITION OF LEV IS DETERMINED BY AN ALGORITHM INTERNAL TO THE TERMINAL UNIT. THE ALGORITHM CALCULATES THE TEMPERATURE DIFFERENCE VALUE BETWEEN THE MEASURED ZONE AIR TEMPERATURE VALUE AND THE COOLING TEMPERATURE SETPOINT VALUE. WHEN A LARGE DIFFERENCE VALUE EXISTS, THE LEV IS DRIVEN OPEN TO ALLOW MORE REFRIGERANT INTO THE EVAPORATOR COIL. AS THE ZONE AIR TEMPERATURE DECREASES THE DIFFERENCE VALUE BECOMES LESS. THE ALGORITHM WILL RESPOND AND DRIVE THE LEV TO MORE CLOSED POSITION REDUCING THE AMOUNT OF REFRIGERANT ENTERING INTO THE EVAPORATOR COIL. AS THE DIFFERENCE VALUE APPROACHES ZERO, THE SYSTEM STABILIZES AND THE AMOUNT OF LEV MODULATION IS MINIMAL.

DRY: WHEN THE TERMINAL UNIT OPERATION MODE IS THE DRY STATE, LIQUID REFRIGERANT IS PROVIDED TO THE TERMINAL UNIT. THE AMOUNT OF REFRIGERANT ENTERING THE EVAPORATOR COIL IS REGULATED BY THE LINEAR EXPANSION VALVE. THE GOAL IN DRY MODE IS TO REMOVE WATER VAPOR FROM THE AIR, NOT CONTROL THE ZONE AIR TEMPERATURE VALUE TO A ZONE TEMPERATURE SETPOINT. WHEN THE TERMINAL UNIT IS COMMANDED TO THE DRY STATE, AN ALGORITHM INTERNAL TO THE TERMINAL UNIT DRIVES THE LEV TO AN OPEN POSITION. IT IS ASSUMED THAT THE POSITION OF THE VALVE ALLOWS A SUFFICIENT AMOUNT OF REFRIGERANT TO ENTER THE COIL TO CAUSE THE SURFACE TEMPERATURE OF THE COIL FINS TO FALL BELOW THE DEW POINT TEMPERATURE. THE RESULT IS CONDENSATION THAT REMOVES WATER VAPOR FROM THE AIR PASSING THROUGH THE COIL.

WHEN THE ZONE AIR TEMPERATURE VALUE IS GREATER THAN OR EQUAL TO THE COOLING TEMPERATURE SETPOINT, DRY STATE IS BENEFICIAL FROM BOTH A HUMIDITY AND ZONE TEMPERATURE PERSPECTIVE BECAUSE WATER VAPOR IS BEING REMOVED FROM THE AIR IN THE ZONE AND THE DIFFERENCE VALUE BETWEEN THE ZONE AIR TEMPERATURE VALUE AND THE COOLING TEMPERATURE SETPOINT VALUE IS REDUCED.

CONTINUED DEHUMIDIFICATION WILL CAUSE THE ZONE AIR TEMPERATURE VALUE TO BECOME LESS THAN THE COOLING TEMPERATURE SETPOINT, WHICH IS UNDESIRABLE. TO COMBAT THE EFFECT, THE ALGORITHM CALCULATES THE TEMPERATURE DIFFERENCE VALUE BETWEEN THE ZONE AIR TEMPERATURE VALUE AND COOLING TEMPERATURE SETPOINT. BASED ON THE DIFFERENCE VALUE, THE ALGORITHM USES A SLIDING TIME SCALE METHOD TO MODULATE THE LEV BETWEEN THE OPEN POSITION AND THE FULLY CLOSED POSITION FOR A VARIABLE LENGTH OF TIME. IT IS ASSUMED THAT WHEN THE LEV IS IN THE FULLY CLOSED POSITION LATENT HEAT WITHIN THE ZONE WILL CAUSE THE ZONE AIR TEMPERATURE VALUE TO INCREASE. THE METHOD ALLOWS SOME DEHUMIDIFICATION TO TAKE PLACE WITHOUT SIGNIFICANTLY LOWERING THE AIR TEMPERATURE IN THE ZONE BELOW THE COOLING TEMPERATURE SETPOINT.

FAN: WHEN THE TERMINAL UNIT OPERATION MODE IS THE FAN STATE, THE LEV IS CLOSED AND THE TERMINAL UNIT DOES NOT ATTEMPT REGULATE THE AIR TEMPERATURE IN THE ZONE. THE TEMPERATURE OF THE AIR IN THE ZONE MAY CHANGE DUE TO LATENT HEAT WITHIN THE ZONE. WITH THE USE OF AN EXTERNAL USER INTERFACE, THE SPEED OF THE FAN MAY BE MODULATED BETWEEN THE DISCRETE STATES SUPPORTED BY THE TERMINAL UNIT.

HEAT: WHEN THE TERMINAL UNIT OPERATION MODE IS THE HEAT STATE, HOT GAS REFRIGERANT IS PROVIDED TO THE TERMINAL UNIT. THE AMOUNT OF REFRIGERANT ENTERING THE EVAPORATOR COIL IS REGULATED BY THE LINEAR EXPANSION VALVE. THE POSITION OF LEV IS DETERMINED BY AN ALGORITHM INTERNAL TO THE TERMINAL UNIT. THE ALGORITHM CALCULATES THE TEMPERATURE DIFFERENCE VALUE BETWEEN THE MEASURED ZONE AIR TEMPERATURE VALUE AND THE HEATING TEMPERATURE SETPOINT VALUE. WHEN A LARGE DIFFERENCE VALUE EXISTS, THE LEV IS DRIVEN OPEN TO ALLOW MORE REFRIGERANT INTO THE EVAPORATOR COIL. AS THE ZONE AIR TEMPERATURE INCREASES THE DIFFERENCE VALUE BECOMES LESS. THE ALGORITHM WILL RESPOND AND DRIVE THE LEV TO MORE CLOSED POSITION REDUCING THE AMOUNT OF REFRIGERANT ENTERING INTO THE EVAPORATOR COIL. AS THE DIFFERENCE VALUE APPROACHES ZERO, THE SYSTEM STABILIZES AND THE AMOUNT OF LEV MODULATION IS MINIMAL.

FAN CONTROL: WHEN THE INDOOR UNIT IS IN THE OFF STATE, THE FAN IS CONTROLLED TO THE MINIMUM SPEED REQUIRED TO MEASURE ZONE AIR TEMPERATURE AT THE RETURN AIR TEMPERATURE SENSOR. THIS ALLOWS ZONE AIR TEMPERATURE TO BE ACCURATELY MEASURED WHILE THE INDOOR UNIT IS IN THE OFF STATE.

UPON TRANSITION FROM THE OFF STATE TO THE ON STATE, THE RPM OF THE FAN IS GOVERNED TO MATCH A MANUFACTURE SPECIFIED, RPM VALUE ASSIGNED TO THE EACH DISCRETE FAN SPEED STATE AVAILABLE IN THE UNIT. THE NUMBER OF DISTINCT FAN SPEED STATES AND THE FAN RPM VALUE FOR EACH STATE VARIES BY MANUFACTURE AND MODEL OF INDOOR UNIT. THE FAN SPEED STATE IS CONTROLLED BY ONE OF TWO METHODS, AUTOMATIC FAN SPEED CONTROL OR MANUAL FAN SPEED CONTROL. THE CHOICE OF CONTROL METHOD IS MADE BY A USER OF THE SYSTEM.

UPON INDOOR UNIT TRANSITION FROM THE ON STATE TO THE OFF STATE, THE FAN TRANSITIONS TO THE STATE DESCRIBED WHEN THE INDOOR UNIT IS IN THE OFF STATE.

MANUAL FAN SPEED CONTROL: A USER OF THE SYSTEM SELECTS A DESIRED FAN SPEED STATE. THE FAN SPEED RPM WILL CHANGE TO MATCH THE MANUFACTURE SPECIFIED RPM VALUE AND MAINTAIN THE RMP VALUE UNTIL A DIFFERENT FAN SPEED STATE IS SELECTED OR A CHANGE IS MADE TO ANOTHER CONTROL PARAMETER OF THE INDOOR UNIT THAT CAUSES THE FAN TO CHANGE TO A DIFFERENT STATE.

AUTOMATIC FAN SPEED CONTROL: WHEN A USER OF THE SYSTEM SELECTS THE FAN SPEED STATE AUTO, AN ALGORITHM INTERNAL TO THE INDOOR UNIT CONTROLS THE SELECTION OF THE FAN SPEED STATE. THE ALGORITHM CALCULATES THE TEMPERATURE DIFFERENCE VALUE BETWEEN THE MEASURED ZONE AIR TEMPERATURE VALUE AND THE ZONE TEMPERATURE SETPOINT VALUE IN USE. WHEN A LARGE DIFFERENCE VALUE EXISTS, THE FAN STATE SELECTED WILL HAVE A HIGHEST FAN SPEED RPM VALUE. AS THE DIFFERENCE VALUE IS REDUCED, THE ALGORITHM WILL CHANGE THE FAN SPEED IN USE TO A STATE WITH A SMALLER RPM VALUE.

VANE DIRECTION: THE TERMINAL UNIT HAS MOVABLE AIR VANES TO CHANGE THE DIRECTION OF AIR FLOW FROM THE UNIT. THREE AIR VANE CONTROL MODES ARE AVAILABLE: AUTO, SWING, AND MANUAL. THE EXTERNAL USER INTERFACE IS USED TO SELECT THE AIR VANE POSITION IN USE.

AUTO: WHEN THE OPERATION MODE IS COOL STATE, THE AIR VANES MODULATE TO DIRECT AIRFLOW PARALLEL TO THE CEILING. WHEN THE OPERATION MODE IS HEAT STATE, THE AIR VANES MODULATE TO DIRECT AIRFLOW PERPENDICULAR TO THE CEILING.

SWING: REGARDLESS OF OPERATION MODE STATE, THE AIR VANES CONTINUOUSLY MODULATE BETWEEN PARALLEL AND PERPENDICULAR FLOW TO THE CEILING IN A PERIODIC MANNER.

MANUAL: REGARDLESS OF OPERATION MODE STATE, THE AIR VANES ARE FIXED AT A POSITION. THE NUMBER OF INDIVIDUAL POSITIONS AVAILABLE VARIES BY MANUFACTURER AND MODEL TYPE. TYPICALLY, TWO TO FIVE FIXED POSITIONS ARE SUPPORTED.

DOAS01 SEQUENCE OF OPERATION

CONSTANT VOLUME ZONE CONTROL

OCCUPIED:
UNIT CONTROLS:

- BUILDING AUTOMATION SYSTEM (BAS) INTERFACE: THE FACTORY UNIT CONTROLLER WILL INTERFACE WITH BACNET MSTP, IP AND LON BAS SYSTEMS.
- HEAD PRESSURE CONTROL CONDENSER CONTROL: THE CONDENSER HEAD PRESSURE WILL BE MONITORED BY THE UNIT CONTROLLER TO ALWAYS MAINTAIN HEAD PRESSURE AND THE COMPRESSOR OPERATING ENVELOPE TO AVOID HIGH PRESSURE TRIPS ON HIGH LOAD DAYS. ECM MOTORS SHOULD BE PROVIDED AS WELL AS FACTORY SENSOR TO PROVIDE THIS PROTECTION.
- COMPRESSOR ENVELOPE CONTROL: THE UNIT CONTROLLER WILL CONTINUALLY MONITOR THE SUCTION AND DISCHARGE PRESSURE AND TEMPERATURE CONDITIONS DURING COMPRESSOR OPERATION. THE UNIT WILL MODULATE THE COMPRESSOR, CONDENSER HEAD PRESSURE, AND ELECTRONIC EXPANSION VALVE TO MAINTAIN A SAFE COMPRESSOR OPERATING CONDITIONS TO ADD RELIABILITY, AND LIMIT UNIT SHUT DOWN DURING FRINGE OPERATING CONDITIONS, LIKE HIGH HEAD PRESSURE OR LOW SUCTION CONDITIONS ON DESIGN DAY OPERATION.
- CHANGE OVER SETPOINTS: THE UNIT CHANGEOVER SOURCE TEMPERATURE, SPACE TEMPERATURE, WILL CHANGE THE UNIT STATE FROM COOLING TO FAN ONLY OR HEATING BASED ON SPACE TEMPERATURE HEATING OR COOLING SETPOINTS.
- HIGH AMBIENT COMPRESSOR LIMITING PREVENTS NUISANCE HIGH PRESSURE FAULTS BY SLOWING DOWN THE INVERTER COMPRESSOR WHEN THE REFRIGERANT SATURATED DISCHARGE TEMPERATURE RISES TO 133ºF. THE COMPRESSOR SPEED CONTINUES TO SLOW DOWN EVERY 10 SECONDS UNTIL THE SATURATED DISCHARGE TEMPERATURE IS BELOW 133ºF.

SUPPLY FAN: THE SUPPLY FAN WILL BE FACTORY SUPPLIED WITH A DIRECT DRIVE ELECTRICALLY COMMUTATED MOTOR (ECM). THE SUPPLY FAN WILL OPERATE CONTINUOUSLY AT A CONSTANT SPEED.

OUTSIDE AIR DAMPER CONTROL: AN EXTERNAL 0-10VDC SIGNAL MUST BE WIRED TO THE UNIT CONTROLLER TO CONTROL THE OA DAMPER POSITION BY A THIRD-PARTY SIGNAL FROM EITHER LAB EXHAUST FANS (LEF01 AND LEF02) ENERGIZED. Outside air POSITION

HEATING MODE: IN HEATING MODE, THE UNIT CONTROLLER WILL MODULATE OR STAGE THE HEAT TO SATISFY THE SPACE HEATING SET POINT.

- **HEAT PUMP:**
  - THE HEAT PUMP WILL ACTIVATE TO SERVE AS PRIMARY HEAT AND WILL MODULATE THE COMPRESSOR TO MEET THE SPACE TEMPERATURE HEATING SET POINT. IF THE HEAT PUMP CAPACITY CANNOT SATISFY THE SET POINT, THE SUPPLEMENTAL ELECTRIC HEAT WILL MODULATE AS REQUIRED TO SATISFY THE SPACE HEATING SET POINT.
  - DEFROST WILL ONLY BE ACTIVATED WHEN A FACTORY MOUNTED CONTROLLER DETERMINES FROST BUILD UP BASED ON SUCTION TEMP, LEAVING OA COIL TEMP, AND TREND DATA. DURING THE DEFROST CYCLE THE UNIT WILL CLOSE THE OUTDOOR AIR DAMPERS AND ENTER RECIRCULATION, THE UNIT WILL THEN REVERSE OPERATION INTO COOLING TO SEND HOT GAS TO THE OUTDOOR COIL FOR DEFROST. THE HEATING SPACE TEMPERATURE SET POINT WILL BE MAINTAINED BY THE SUPPLEMENTAL HEAT. THE UNIT TERMINATES DEFROST OPERATION ONCE EITHER A 10 MINUTE TIMER HAS EXPIRED OR THE LEAVING OUTDOOR COIL TEMP EXCEEDS 52 DEGREES F.
- **ELECTRIC HEAT:**
  - SCR ELECTRIC HEAT: THE SCR ELECTRIC HEAT WILL BE MODULATED BY THE UNIT CONTROLLER TO MAINTAIN THE SPACE HEATING SET POINT.

COOLING MODE: IN COOLING MODE, THE UNIT CONTROLLER WILL MODULATE THE VARIABLE SPEED COMPRESSOR TO MAINTAIN THE SPACE COOLING SET POINT.

- **COOLING DAT RESET:** THE COOLING DAT SETPOINT MUST BE RESET BY SPACE TEMPERATURE. A LINEAR RELATIONSHIP BETWEEN THE DAT AND THE RESET VARIABLE WILL BE CREATED FOR THE MINIMUM AND MAXIMUM DAT SETPOINTS. AS THE RESET VARIABLE CHANGES THE DAT WILL ADJUST ACCORDING TO THE RELATIONSHIP.

DEHUMIDIFICATION: DEHUMIDIFICATION WILL BE ACTIVATED WHEN THE RELATIVE HUMIDITY IN THE SPACE RISES ABOVE THE DEHUMIDIFICATION SET POINT (55% RH, ADJ.). A UNIT OPERATING IN COOLING WILL NOW COOL TO THE LEAVING COIL TEMPERATURE (LCT) SETPOINT SET UP IN THE DEHUMIDIFICATION MENU, THEN REHEATS TO THE MINIMUM REHEAT SETPOINT. A UNIT OPERATING IN FAN ONLY ENERGIZES THE COMPRESSOR(S) UPON DEHUMIDIFICATION ACTIVATION TO MAINTAIN THE LCT SETPOINT AND REHEATS TO THE MAXIMUM REHEAT SETPOINT. THE UNIT THEN MODULATES LINEARLY BETWEEN THE MINIMUM REHEAT SETPOINT AND THE MAXIMUM REHEAT SETPOINT TO MAINTAIN SPACE TEMPERATURE AND HUMIDITY SETPOINT.

- **LEAVING COIL TEMPERATURE (LCT) RESET:** THIS ENABLES THE UNIT TO RESET THE LEAVING COIL TEMP BETWEEN A MIN AND MAX TEMPERATURE DURING DEHUMIDIFICATION BASED ON THE SPACE RH/DEWPOINT, RETURN RH/DEWPOINT, OUTDOOR RH/DEWPOINT, OR BASED OFF AIRFLOW. THIS ALLOWS THE UNIT TO PERFORM MORE DEHUMIDIFICATION OR LESS DEHUMIDIFICATION BASED ON THE LOAD TO ALLOW TIGHTER CONTROL OF SETPOINTS, AND BETTER EFFICIENCY.
- **DEHUMIDIFICATION ALWAYS:** DEHUMIDIFICATION WILL BE ACTIVATED WHEN THE COOLING SETPOINT OF THE CONTROL TEMPERATURE SOURCE HAS BEEN SATISFIED AND THE DEHUMIDIFICATION MENU IS SET TO 'ALWAYS." WHILE OPERATING IN DEHUMIDIFICATION, THE COMPRESSORS WILL MODULATE TO MAINTAIN THE LEAVING COIL TEMPERATURE SETPOINT, AND HGRH VALVE WILL MODULATE TO MAINTAIN DISCHARGE AIR TEMPERATURE SETPOINT. DEHUMIDIFICATION WILL CONTINUE TO OPERATE UNTIL THE CONTROL TEMPERATURE SETPOINT DROPS BELOW THE OCCUPIED HEATING SETPOINT.

ECONOMIZER: THE UNIT WILL TRANSITION INTO ECONOMIZER MODE WHEN OUTDOOR AIR IS SUITABLE FOR FREE COOLING AND THE CONTROL TEMPERATURE IS ABOVE THE OCCUPIED COOLING SETPOINT BY HALF THE DEADBAND.

- **COMPARATIVE ENERGY/ENTHALPY:** THE UNIT SHALL COMPARE THE OUTDOOR ENTHALPY AND DEW POINT TO THE RETURN AIR ENTHALPY AND DEWPOINT. THEN DETERMINES THE ENERGY REQUIRED TO COOL TO THE COOLING DAT OR ZONE SETPOINT USING OUTSIDE AIR OR RETURN AIR. BY COMPARING THE RAT DEWPOINT TO THE DAT DEWPOINT, THE UNIT DETERMINES IF THE OUTSIDE AIR CONDITIONS ARE MORE SUITABLE FOR COOLING TO MINIMIZE ENERGY CONSUMPTION. THE OUTSIDE AIR AND RETURN AIR DAMPERS SHALL THEN MODULATE TO MAINTAIN SUPPLY AIR TEMPERATURE SET POINT.

A2L LEAK MITIGATION: UNITS EQUIPPED WITH R32 REFRIGERANT WILL COME STANDARD WITH A A2L LEAK DETECTION CONTROL BOARD AND A REFRIGERANT SENSOR.

- UPON NOTIFICATION FROM THE LEAK DETECTION BOARD THAT A LEAK WAS DETECTED OR A FAULTY REFRIGERANT SENSOR IS DETECTED, ALL COMPRESSORS WILL BE DEACTIVATED AND THE SUPPLY FAN MINIMUM SPEED WILL BE OVERRIDDEN TO MAINTAIN ADEQUATE AIRFLOW. THE OUTSIDE AIR DAMPER OPERATION WILL CONTINUE TO OPERATE NORMALLY AND A REFRIGERANT LEAK ALARM WILL BE TRIGGERED. AFTER THE MITIGATION CONTROLS DOES NOT DETECT REFRIGERANT FOR 5 MINUTES, THE UNIT WILL RESUME NORMAL OPERATION. IF THE MT4 NO LONGER HAS ADEQUATE REFRIGERANT PRESSURE, COOLING OPERATION WILL BE DISABLED.

FIRE ALARM ACTIVATION: UNIT WILL DE-ENERGIZE UPON RECEIVING FIRE ALARM.

RTU01 — RTU04 SEQUENCE OF OPERATION

COOLING: IF THE UNIT MECHANICAL THERMOSTAT CALLS FOR COOLING THE UNIT OPERATES THE COOLING CYCLE ALLOWING COMPRESSORS TO SATISFY THE ROOM TEMPERATURE.

HEATING: IF THE UNIT MECHANICAL THERMOSTAT CALLS FOR HEATING THE UNIT OPERATES THE HEATING CYCLE ALLOWING COMPRESSORS TO SATISFY THE ROOM TEMPERATURE. WHEN THE UNIT THERMOSTAT CALLS FOR HEATING THE REHEAT SYSTEM IS DISABLED. FOR SINGLE HEAT PUMP OPERATION 1 ELECTRIC HEAT STAGE IS POSSIBLE.

REHEAT DEHUMIDIFICATION: THE INCLUDED THERMOSTAT HAS A BUILT-IN HUMIDISTAT AND DEHUMIDIFICATION CYCLE. IN REHEAT MODE, THE DISCHARGE GAS IS INITIALLY SENT TO THE REHEAT COIL. THE GAS THEN TRAVELS BACK TO THE CONDENSER TO FINISH THE CONDENSING PART OF THE REFRIGERATION CYCLE.

- THE DE-HUMIDIFICATION CYCLE MUST BE SET TO OPERATE ONLY WITH THE COOLING CYCLE.
- OVERCOOLING SAFETY MUST BE SET TO 2 DEG F (ADJ.) BELOW THE COOLING SET POINT.
- IN REHEAT MODE, THE DISCHARGE GAS IS INITIALLY SENT TO THE REHEAT COIL. THE GAS THEN TRAVELS BACK TO THE CONDENSER TO FINISH THE CYCLE.
- DURING REHEAT MODE, THE UNIT COMPRESSOR(S) ARE ENERGIZED THROUGH THE THERMOSTAT CONTACTS.
- THE UNIT MUST REMAIN IN DEHUMIDIFICATION MODE UNTIL THE HUMIDITY IS SATISFIED (ROOM RELATIVE HUMIDITY LOWER THAN ADJUSTABLE SET POINT 55% RH (ADJ.)).

FIRE ALARM ACTIVATION: UNIT WILL DE-ENERGIZE UPON RECEIVING FIRE ALARM.

LEF01 AND LEF02 SEQUENCE OF OPERATION

FAN CONTROLLED VIA MANUAL ON/OFF SWITCH LOCATED ON EACH HOOD. FANS WILL SHUT DOWN UPON RECEIVING FIRE ALARM ACTIVATION.

PV01 SEQUENCE OF OPERATION

FAN CONTROLLED VIA MANUAL ON/OFF SWITCH (DURING OPERATION OF AUTOCLAVE). REFER TO ELECTRICAL PLANS FOR SWITCH LOCATION.

PV02 — PV05 SEQUENCE OF OPERATION

FAN CONTROLLED VIA OCCUPANCY SENSOR. REFER TO ELECTRICAL PLANS FOR SENSOR LOCATION.

GENERAL NOTES

1. SCOPE OF WORK: THESE DRAWINGS AND SPECIFICATIONS DESCRIBE THE SCOPE OF WORK REQUIRED FOR PROJECT MECHANICAL HEATING, VENTILATING AND AIR CONDITIONING SYSTEMS. CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIAL REQUIRED FOR COMPLETE, FULLY FUNCTIONING MECHANICAL SYSTEMS COMPLYING WITH THE INTENT OF THE DRAWINGS AND SPECIFICATIONS.
2. CONTRACTOR: THE WORD "CONTRACTOR" AS USED HEREIN SHALL MEAN THE HVAC INSTALLER UNLESS OTHERWISE QUALIFIED.
3. DRAWINGS: DRAWINGS ARE DIAGRAMMATIC AND MAY NOT COMPLETELY DESCRIBE EVERY DETAIL OF THE INSTALLATION. HOWEVER, CONTRACTOR IS RESPONSIBLE FOR FURNISHING COMPLETE SYSTEMS INCLUDING ALL REQUIRED EQUIPMENT AND ACCESSORIES TO OBTAIN FULLY FUNCTIONING HVAC SYSTEMS.
4. CODE COMPLIANCE: COMPLY WITH THE LATEST EDITIONS OF THE FOLLOWING STANDARDS AND CODES, INSOFAR AS THEY APPLY:
   A. NORTH CAROLINA STATE BUILDING CODE, 2018 EDITION AND REVISIONS
   B. LOCAL JURISDICTION REQUIREMENTS

   INCLUDE ALL WORK TO COMPLY WITH CODES WHETHER INDICATED ON DRAWINGS OR NOT. NOTIFY ENGINEER OF DISCREPANCIES BETWEEN DRAWINGS AND CODES PRIOR TO BEGINNING WORK.
5. PERMITS AND INSPECTIONS: OBTAIN ALL PERMITS, LICENSES, INSPECTIONS, ETC., REQUIRED FOR THE WORK AND PAY FOR THE SAME. FURNISH A FINAL CERTIFICATE OF INSPECTION AND APPROVAL FROM THE AUTHORITY HAVING JURISDICTION PRIOR TO ACCEPTANCE OF THE WORK.
6. MANUFACTURER'S RECOMMENDATIONS: INSTALL ALL EQUIPMENT IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
7. WORKMANSHIP: UTILIZE SKILLED MECHANICS TO OBTAIN A HIGH-QUALITY PROFESSIONAL FINISH INSTALLATION WHEN COMPLETED. WORK OF UNACCEPTABLE QUALITY SHALL BE REMOVED AND REWORKED AT NO ADDITIONAL COST. ENGINEER SHALL BE THE JUDGE OF WORKMANSHIP AND THEIR OPINION WILL BE FINAL. IN ADDITION, ANY EXISTING CONSTRUCTION DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE ENGINEER BY THE CONTRACTOR AT NO ADDITIONAL COST.
8. SUPERVISION: PROVIDE SKILLED SUPERINTENDENTS TO SUPERVISE THE WORK FROM THE BEGINNING TO COMPLETION AND FINAL INSPECTION.
9. PROGRESS OF WORK: PERFORM WORK IN ACCORDANCE WITH THE SCHEDULE AND REQUIREMENTS OF THE OWNER. UNDER NO CIRCUMSTANCES SHALL THIS CONTRACTOR DELAY THE OVERALL PROJECT SCHEDULE.
10. COORDINATION: COORDINATE MECHANICAL WORK WITH THE WORK OF OTHER TRADES. LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE UNLESS SPECIFICALLY DIMENSIONED. LAYOUT MECHANICAL WORK SO AS NOT TO INTERFERE WITH THE WORK OF OTHER TRADES. VERIFY ACTUAL BUILDING STRUCTURE PRIOR TO DUCT FABRICATION AND ADJUST ARRANGEMENT AS REQUIRED. INCLUDE ALL OFFSETS IN DUCTS, FITTINGS, PIPING, ETC. AS REQUIRED TO INSTALL EQUIPMENT.
11. EQUIPMENT LOCATIONS: DETERMINE EXACT EQUIPMENT AND MATERIALS LOCATIONS TO PROVIDE BEST ARRANGEMENT AND TO FACILITATE PROPER MAINTENANCE AND SERVICING OF EQUIPMENT.
12. LISTING AND LABELING: ALL EQUIPMENT SHALL BE LABELED OR LISTED BY UL OR OTHER APPROVED TESTING AGENCY WHERE REQUIRED.
13. STORAGE SPACE: CONSULT WITH THE OWNER REGARDING JOB SITE STORAGE FOR MECHANICAL MATERIALS TO BE INSTALLED UNDER THIS PROJECT. STORAGE SPACE MUST BE SECURED AND CONTRACTOR'S REPRESENTATIVE MUST BE ON JOB BEFORE ANY MATERIAL MAY BE RECEIVED.
14. CLEANUP: REMOVE ALL DEBRIS GENERATED IN THE ACCOMPLISHMENT OF WORK UNDER THIS PROJECT. CLEAN, REPLACE OR REPAIR ALL SURFACES SOILED OR DAMAGED DURING THE COURSE OF THE WORK. REMOVE DEBRIS DAILY SO TO MAINTAIN SAFE WORKING CONDITIONS.
15. ELECTRICAL WORK:
   A. PERFORM ELECTRICAL WORK FOR MECHANICAL EQUIPMENT IN COMPLIANCE WITH PROJECT ELECTRICAL REQUIREMENTS. ELECTRICAL WORK FOR MECHANICAL EQUIPMENT NOT SPECIFICALLY INDICATED TO BE PROVIDED BY THE ELECTRICAL CONTRACTOR IN THE ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR AS PART OF HIS WORK.
   B. ELECTRICAL DRAWINGS ARE BASED ON ELECTRICAL CHARACTERISTICS INDICATED IN DRAWING MECHANICAL EQUIPMENT SCHEDULES. ANY EQUIPMENT FURNISHED BY THE MECHANICAL CONTRACTOR WHICH DOES NOT MATCH THE ELECTRICAL CHARACTERISTICS INDICATED IN THE DRAWING SCHEDULES SHALL BE COORDINATED WITH THE ELECTRICAL CONTRACTOR. ANY ADDITIONAL COSTS FOR ELECTRICAL INSTALLATION REQUIRED FOR EQUIPMENT NOT MATCHING THE DRAWING SCHEDULES SHALL BE BORNE BY THE MECHANICAL CONTRACTOR.
   C. LOW VOLTAGE CONTROL WIRING FOR MECHANICAL SYSTEMS SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR.
16. RECORD DRAWINGS: MAINTAIN ONE SET OF "RED-LINED" RECORD DRAWINGS ON SITE AT ALL TIMES AND PROVIDE DRAWINGS TO ENGINEER PRIOR TO FINAL INSPECTION.
17. WARRANTY: WARRANTY THE MATERIALS AND WORKMANSHIP COVERED BY THESE DRAWINGS AND SPECIFICATIONS FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE BY THE OWNER. REPAIR AND/OR REPLACE ANY PARTS OF ANY SYSTEM THAT MAY PROVE TO BE DEFECTIVE AT NO ADDITIONAL COST TO THE OWNER WITHIN THE WARRANTY PERIOD. PROVIDE 5 YEAR WARRANTY FOR ALL AIR CONDITIONING COMPRESSORS. FURNISH WARRANTY CERTIFICATES FOR ALL MECHANICAL EQUIPMENT. WARRANTY TO COMMENCE UPON DATE OF ACCEPTANCE OF WORK BY OWNER.
18. BUILDINGS AND CONSTRUCTION:
   A. VERIFY ALL CONDITIONS AND ADJUST WORK AS REQUIRED TO SUIT ACTUAL FIELD CONDITIONS.
   B. PERFORM ALL WORK IN ACCORDANCE WITH SAFETY REGULATIONS.
   C. DO NOT CUT ANY STRUCTURAL MEMBERS WITHOUT EXPRESS WRITTEN INSTRUCTIONS FROM ENGINEER. PROVIDE CUTTING AND PATCHING FOR EXISTING FINISHES AS REQUIRED.
   D. COORDINATE THE INSTALLATION OF MECHANICAL SYSTEMS WITH OTHER BUILDING SYSTEMS. ADJUST ARRANGEMENTS AS REQUIRED TO ACCOMMODATE INTERFERENCES.
19. COMMISSIONING: DEMONSTRATE AND DOCUMENT OPERATION OF ALL MECHANICAL SYSTEMS INSTALLED UNDER THIS CONTRACT IN THE PRESENCE OF THE ENGINEER. INCLUDE ALL TESTS, TRIAL OPERATIONS, ETC. AS REQUIRED TO PROVE THAT ALL SYSTEMS ARE IN COMPLETE SERVICEABLE CONDITION AND WILL FUNCTION AS INTENDED. ALL COSTS OF COMMISSIONING SHALL BE BORNE BY THIS CONTRACTOR.

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CAPE FEAR COMMUNITY COLLEGE

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23551 DAVID M. HAHN

02/17/2025

PROJECT TITLE

CFCC Surf City Bldg SA Addition

621 NC HWY 210E,
HAMPSTEAD, NC

SCO ID# 24-28220-01A

SHEET TITLE

MECHANICAL GENERAL NOTES AND SEQUENCES OF OPERATION

ISSUE BLOCK

Mark	Date	Description
4	02.12.2025	ISSUED FOR PERMIT
3	02.12.2025	SCO CD COMMENTS
2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	11.11.2024	GMP PRICING

PROJECT NO: 2024077.00
DATE: 02.12.2025
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KEYNOTES

1	TRANSITION TO RTU01 DUCT CONNECTIONS.
2	TRANSITION TO RTU02 DUCT CONNECTIONS.
3	TRANSITION TO RTU03 DUCT CONNECTIONS.
4	TRANSITION TO RTU04 DUCT CONNECTIONS.
5	TRANSITION TO DOAS01 DUCT CONNECTIONS.
6	PROVIDE TURNING VANES IN ALL 90° ELBOWS.
7	GWH1 INTAKE AND VENT DUCTING, SEE MANUFACTURERS INFORMATION FOR INSTALLATION OPTIONS.

FLOOR PLAN SHEET NOTES

1. MAINTAIN MANUFACTURER'S CLEARANCE REQUIREMENTS FOR INDOOR EQUIPMENT.
2. MECHANICAL CONTRACTOR TO COORDINATE WITH OTHER TRADES PRIOR TO BEGINNING WORK.
3. REFER TO ARCHITECTURAL DRAWINGS FOR RATED ASSEMBLY UL NUMBERS (WALLS, FLOOR / CEILINGS, ETC.
4. COORDINATED CONDENSATE PIPE ROUTING WITH GENERAL CONTRACTOR AND OWNER, TYPICAL.
5. CONCERNING DIFFUSER LAYOUT AND CEILING TYPE, REFER TO ARCHITECTURAL PLANS FOR FURTHER INFORMATION.
6. IN GENERAL, LOCATE VAV TERMINALS ABOVE DOOR SWING TO ASSURE CONTINUED ACCESS.

PLAN-ORIENTATION

TRUE-NORTH

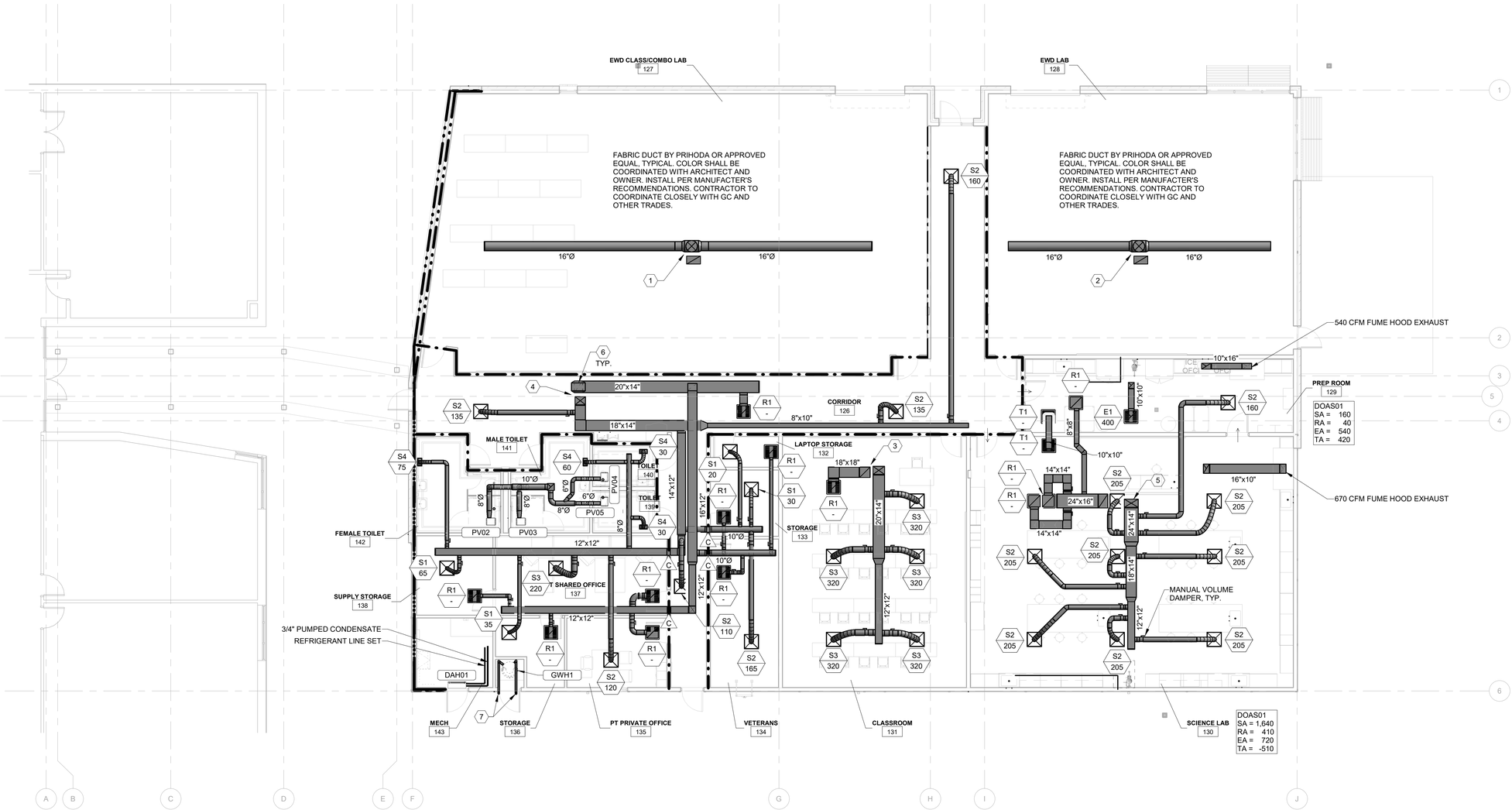
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PLAN-NORTH

CONSTRUCTION LEGEND

1-HR FIRE PARTITION AND 1-HR FIRE BARRIER

2-HR FIRE WALL



1 FLOOR PLAN - HVAC

SCALE: 1/8" = 1'-0"

8' 4' 0' 8'

SCALE : 1/8" = 1'-0"

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02/17/2025

PROJECT TITLE

CFCC Surf City Bldg SA Addition

621 NC HWY 210E,
HAMPSTEAD, NC

SCO ID# 24-28220-01A

SHEET TITLE

MECHANICAL FLOOR PLAN - HVAC

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PLAN-ORIENTATION

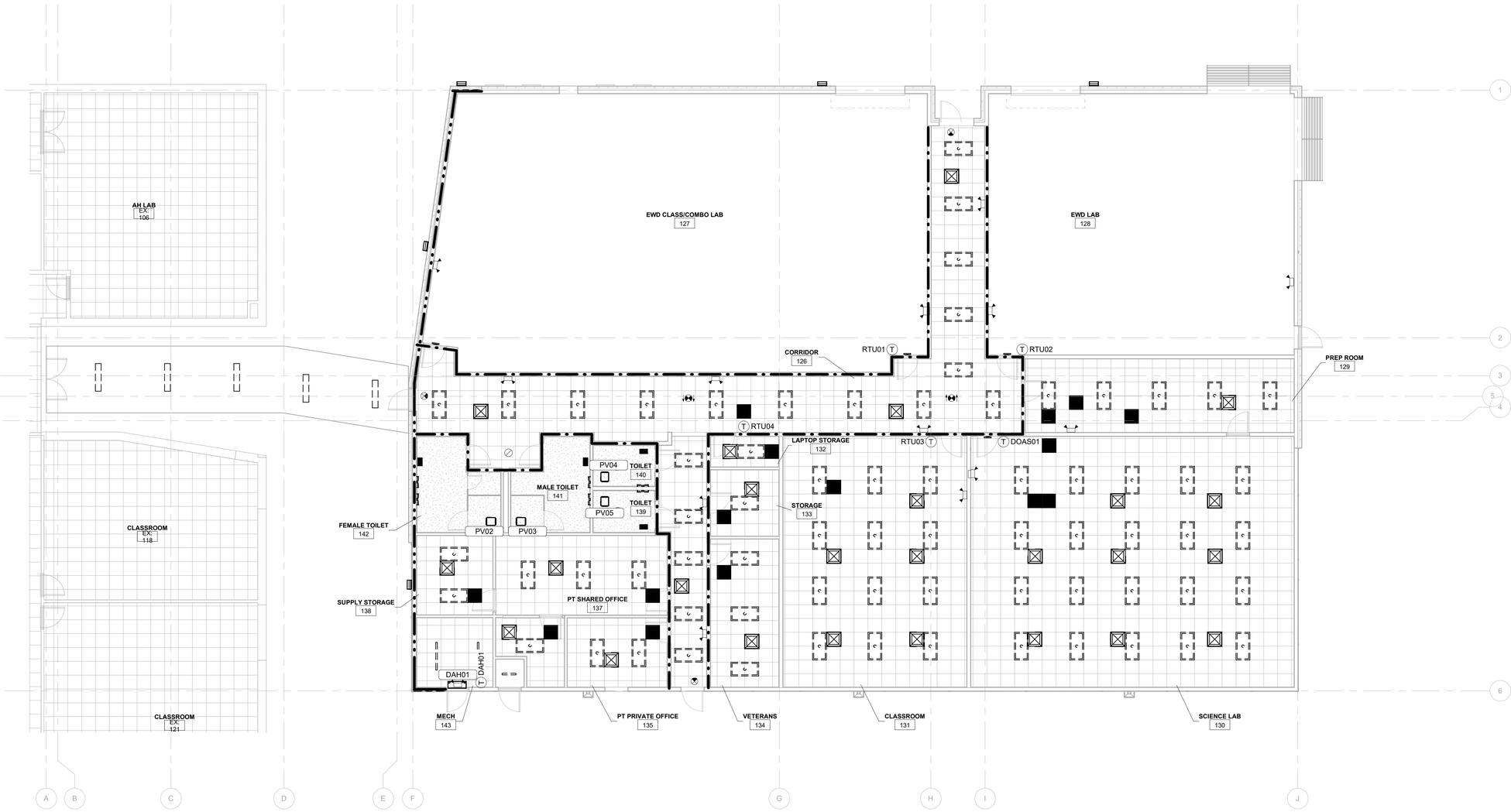
TRUE-NORTH

PLAN-NORTH

CONSTRUCTION LEGEND

1-HR FIRE PARTITION AND 1-HR FIRE BARRIER

2-HR FIRE WALL



1 RCP AND T-STAT LOCATION FLOOR PLAN - HVAC

SCALE: 1/8" = 1'-0"

8' 4' 0' 8'

SCALE : 1/8" = 1'-0"

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02/17/2025

PROJECT TITLE

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HAMPSTEAD, NC

SCO ID# 24-28220-01A

SHEET TITLE

MECHANICAL RCP & T-STAT LOC. FLOOR PLAN - HVAC

ISSUE BLOCK

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ROOF PLAN SHEET NOTES

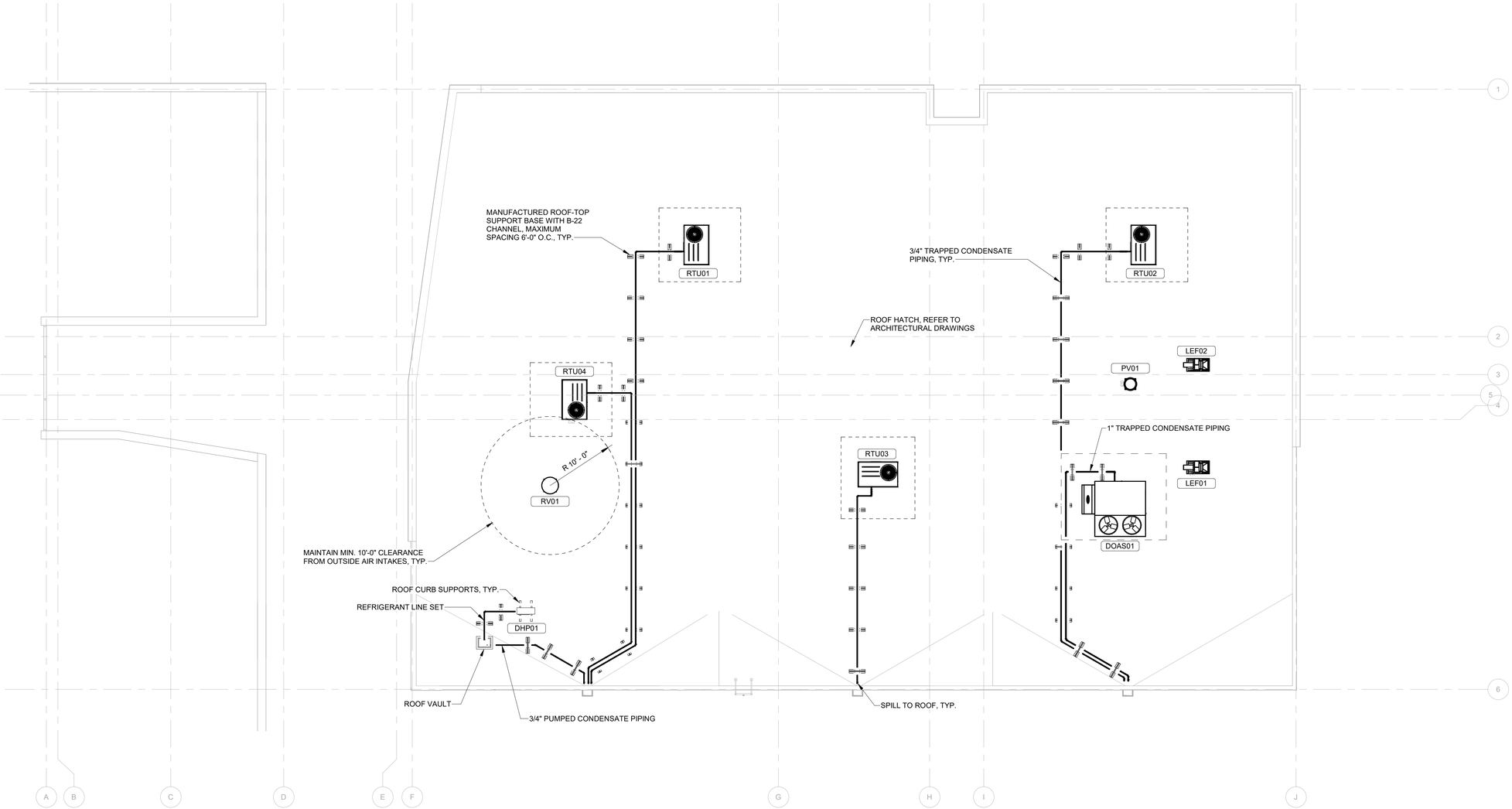
1. MAINTAIN MANUFACTURER'S CLEARANCE REQUIREMENTS FOR INDOOR EQUIPMENT.
2. MECHANICAL CONTRACTOR TO COORDINATE WITH OTHER TRADES PRIOR TO BEGINNING WORK.
3. REFER TO ARCHITECTURAL DRAWINGS FOR RATED ASSEMBLY UL NUMBERS (WALLS, FLOOR / CEILINGS, ETC.).
4. COORDINATED CONDENSATE PIPE ROUTING WITH GENERAL CONTRACTOR AND OWNER, TYPICAL.
5. REFER TO STRUCTURAL DRAWINGS FOR EQUIPMENT ROOF MOUNTING CONDITIONS
6. ALL ROOF PENETRATIONS SHALL CONFORM TO ROOF MANUFACTURER'S APPROVED METHODS.
7. MAINTAIN MINIMUM 10 FOOT SEPARATION PLUMBING VENTS AND OUTSIDE AIR INTAKE.

PLAN-ORIENTATION

TRUE-NORTH

N

PLAN-NORTH



1 ROOF PLAN - HVAC

SCALE: 1/8" = 1'-0"

8' 4' 0' 8'

SCALE : 1/8" = 1'-0"

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02/17/2025

PROJECT TITLE

CFCC Surf City Bldg SA Addition

621 NC HWY 210E,
HAMPSTEAD, NC

SCO ID# 24-28220-01A

SHEET TITLE

MECHANICAL ROOF PLAN - HVAC

ISSUE BLOCK

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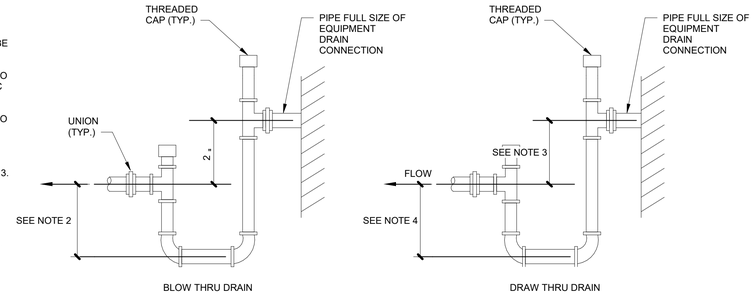
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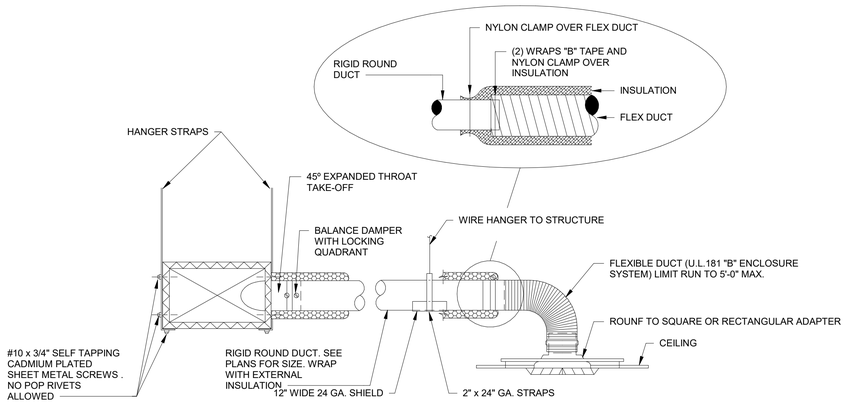
NOTES:

1. LOCATE TRAPS SO AS TO BE ACCESSIBLE FOR CLEANING.
2. HEIGHT SHALL BE EQUAL TO UNIT MAXIMUM TOTAL STATIC PRESSURE PLUS 1/2".
3. HEIGHT SHALL BE EQUAL TO UNIT MAXIMUM NEGATIVE STATIC PRESSURE PLUS 1".
4. HEIGHT SHALL BE 1/2" OF HEIGHT INSTALLED ON NOTE 3.
5. PIPE TO NEAREST DRAIN.
6. TRAP SHALL NOT BLOCK ACCESS TO EQUIPMENT.
7. PROVIDE UNIONS AT INLET AND OUTLET OF TRAP.



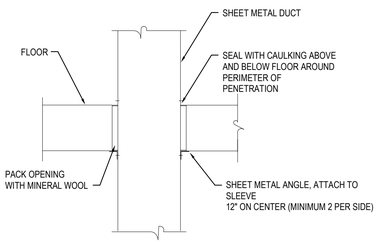
1 TYPICAL EQUIPMENT CONDENSATE DRAIN DETAIL

NO SCALE



2 TYPICAL DIFFUSER CONNECTION DETAIL

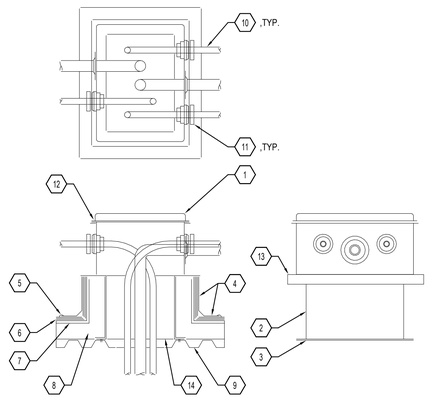
NO SCALE



NOTE: EXTERNALLY WRAPPED DUCT INSTALLED SIMILARLY, BLANKET INSULATION SHALL BE INSTALLED OVER ANGLES AND SEALED TO FLOOR BARRIER.

3 TYPICAL DUCT THROUGH NON-RATED WALL

NO SCALE

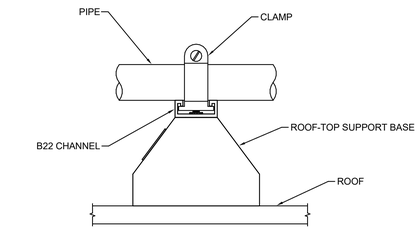


NOTE:
1. PROVIDE "PRE-FABRICATED HOUSING" MODEL AWI SERIES OR APPROVED EQUAL.
2. ANCHOR TO CURB WITH STAINLESS STEEL HARDWARE.

1. WIND RATED ALUMINUM COVER
2. ALUMINUM CURB 14" HIGH MIN. CURB MUST BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. CURB FLANGE, FASTEN TO ROOF DECK
3. FLASHING MEMBRANE
4. CONTINUOUS CAULK WITH RUBBERIZED ASPHALT SEALANT
5. ROOFING SYSTEM
6. RECOVERY BOARD
7. RIGID INSULATION
8. METAL ROOF DECK
9. CONDUIT, PIPE, REFRIGERANT LINE, ETC.
10. EXIT SEAL
11. VANDAL RESISTANT STAINLESS SCREWS
12. INSULATED CURB EXTENSION
13. CURB TO BE INSULATED TO MATCH R-RATING OF ROOF ASSEMBLY

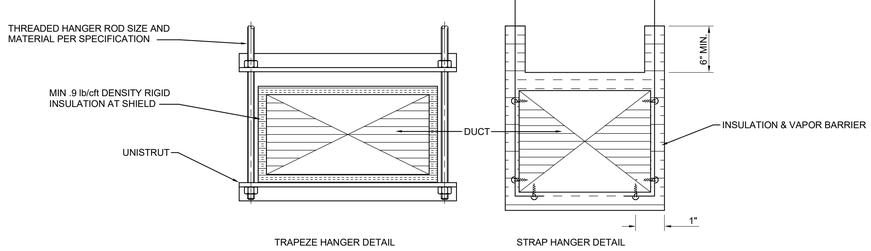
4 TYPICAL ROOF VAULT DETAIL

NO SCALE



5 TYPICAL ROOF TOP PIPE SUPPORT DETAIL

NO SCALE

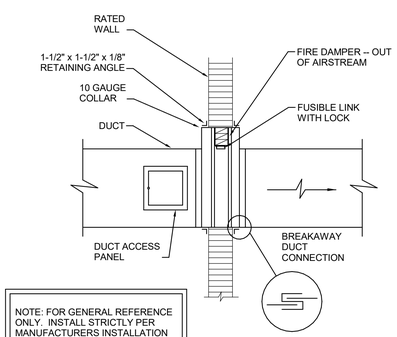


NOTES:

1. TRAPEZE HANGERS SHALL BE PROVIDED FOR ALL DUCT WORK. TRAPEZE HANGERS CANNOT BE USED FOR BRANCH DUCT WORK 12" IN WIDTH AND SHORTER REFER TO STRAP HANGER DETAIL.
2. SUPPORTS SHALL BE SPACED AND SIZED AS PER SPECIFICATIONS.
3. RIGID INSULATION SHALL EXTEND MINIMUM OF 3" BEYOND STRUT ON BOTH SIDES. MAINTAIN VAPOR BARRIER ACROSS STRUT.

6 TYPICAL DUCT SUPPORT DETAIL

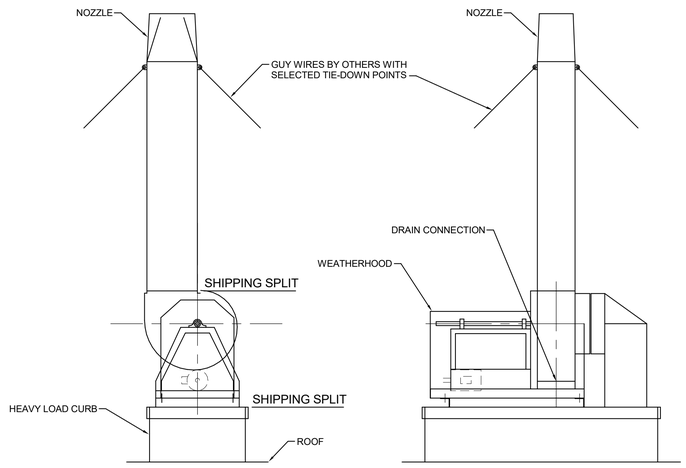
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NOTE: FOR GENERAL REFERENCE ONLY. INSTALL STRICTLY PER MANUFACTURERS INSTALLATION INSTRUCTIONS.

7 TYPICAL FIRE DAMPER DETAIL

NO SCALE



8 LAB FAN EXHAUST DETAIL

NO SCALE

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02/17/2025

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621 NC HWY 210E,
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SCO ID# 24-28220-01A

SHEET TITLE

MECHANICAL DETAILS

ISSUE BLOCK

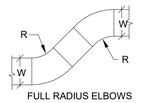
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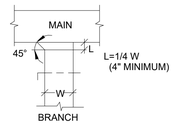
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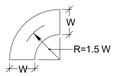
FULL RADIUS ELBOWS
WHERE POSSIBLE
(R = W)

DUCT OFFSETS

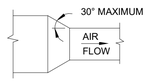


(BRANCH FLOW LESS THAN 25% OF MAIN FLOW)

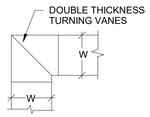
BRANCH TAKE-OFFS



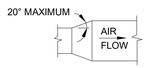
RADIUS ELBOW



CONVERGING FLOW



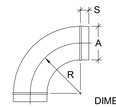
RECTANGULAR ELBOW



DIVERGING FLOW

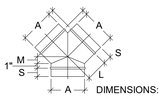
1 RECTANGULAR DUCT FITTING DETAILS

NO SCALE



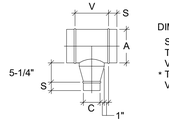
DIMENSIONS:
CR = 1.5A
S = 2"L

DIE-STAMPED 45° AND 90°



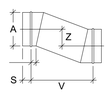
DIMENSIONS:
S = 2"
L = A/2+1"
M = .207A

Y-BRANCH 90°



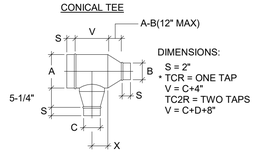
DIMENSIONS:
S = 2"
TC = ONE TAP
V = C+4"
* TC2 = TWO TAPS
V = C+D+8"

CONICAL TEE



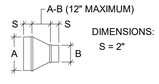
DIMENSIONS:
S = 2"
V = 2A UNLESS SPECIFIED
Z = SPECIFY OFFSET

OFFSET



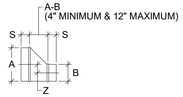
DIMENSIONS:
S = 2"
* TCR = ONE TAP
V = C+4"
TC2R = TWO TAPS
V = C+D+8"

REDUCING CONICAL TEE



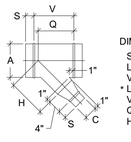
DIMENSIONS:
S = 2"

CONCENTRIC



ECCENTRIC

REDUCERS

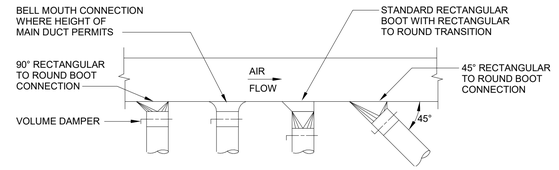


DIMENSIONS:
S = 2"
LC = ONE TAP
V = 1.414C+4.83
* LC2 = TWO TAPS
V = 1.414(C+D)+9.66
Q = A/2+.707C+2.414
H = .707A+.5C+2"

CONICAL LATERAL

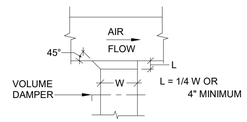
2 ROUND DUCT FITTING DETAILS

NO SCALE



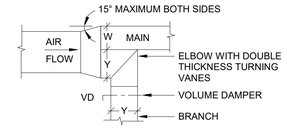
ALTERNATE RECTANGULAR TO ROUND
DUCT BRANCH CONNECTIONS

(BRANCH FLOW LESS THEN 25% OF MAIN FLOW)



STANDARD RECTANGULAR
DUCT BRANCH TAKE-OFF

(BRANCH FLOW LESS THAN 25% OF MAIN FLOW)

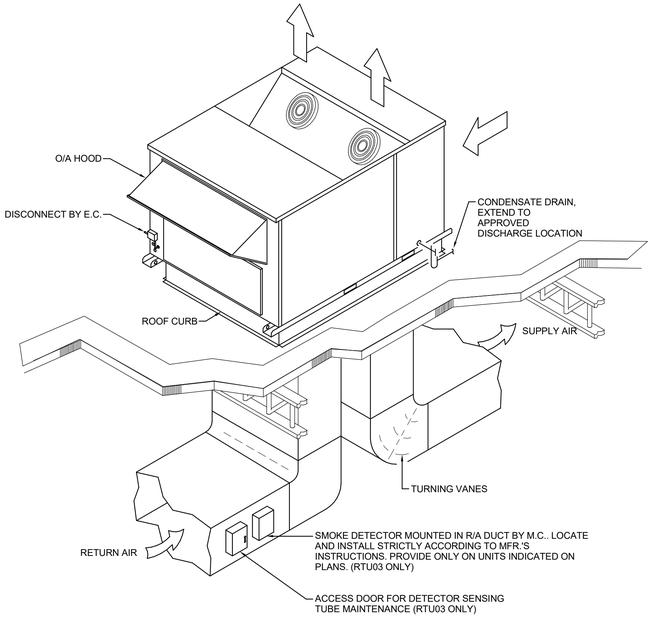


STANDARD RECTANGULAR BRANCH
TAKE-OFF

(BRANCH FLOW GREATER THAN 25% OF MAIN FLOW)

3 ROUND/RECT. DUCT TAKE-OFF FITTING DETAILS

NO SCALE



4 TYPICAL ROOF MOUNTED HEAT PUMP DETAIL

NO SCALE

BECKER MORGAN GROUP

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CAPE FEAR COMMUNITY COLLEGE

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23551 DAVID M. HAHN

02/17/2025

PROJECT TITLE

CFCC Surf City Bldg SA Addition

621 NC HWY 210E,
HAMPSTEAD, NC

SCO ID# 24-28220-01A

SHEET TITLE

MECHANICAL DETAILS

ISSUE BLOCK

Mark	Date	Description
4	02.12.2025	ISSUED FOR PERMIT
3	02.12.2025	SCO CD COMMENTS
2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	11.11.2024	GMP PRICING

PROJECT NO: 2024077.00
DATE: 02.12.2025
SCALE: 12" = 1'-0"
DRAWN BY: GRM PROJ MGR: DMH

M-502

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PACKAGED UNIT SCHEDULE

DRAWING CODE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	ALTERNATE APPROVED MANUFACTURERS	SYSTEM TYPE	COOLING (AHRI STANDARD)				HOT GAS REHEAT		HEATING (AHRI STANDARD)			AUXILIARY HEATER	EVAPORATOR FAN			ELECTRICAL				REFRIGERANT TYPE	WEIGHT (LBS.)	NOTES	ACCESSORIES
					TOTAL (MBH)	SENSIBLE (MBH)	EFFICIENCY		REHEAT CAPACITY (MBH)	COOLING LDB W/ REHEAT (°F)	TOTAL (MBH)	EFFICIENCY (AHRI 47°F)		ELECTRIC (KW)	SUPPLY AIRFLOW (CFM)	OUTSIDE AIRFLOW (CFM)	ESP (IN. WG.)	POWER SUPPLY (V/PH/HZ)	MCA (A)	MOCP (A)					
RTU01	DAIKIN	DHH0604W000038C	TRANE, DAIKIN	HEAT PUMP	60.7	47.6	EER2	12.2	22.5	71.8	53.6	HSPF2	7.7	15.0	2,000	450	1.16	460/3/60	37.9	40	R-32	630	1,2	A THRU N
RTU02	DAIKIN	DHH0604W000038C	TRANE, DAIKIN	HEAT PUMP	60.7	47.6	EER2	12.2	22.5	71.8	53.6	HSPF2	7.7	15.0	2,000	370	1.16	460/3/60	37.9	40	R-32	630	1,2	A THRU N
RTU03	DAIKIN	DHH0484W000060C	TRANE, DAIKIN	HEAT PUMP	48.2	37.4	EER2	13.0	25.2	68.1	45.6	HSPF2	7.7	15.0	1,600	265	1.16	460/3/60	34.4	35	R-32	620	1,2	A THRU N
RTU04	DAIKIN	DHH0484W000060C	TRANE, DAIKIN	HEAT PUMP	48.2	37.4	EER2	13.0	25.2	68.1	45.6	HSPF2	7.7	15.0	1,600	205	1.16	460/3/60	34.4	35	R-32	620	1,2	A THRU N

NOTES:
1 REFER TO SPECIFICATIONS FOR FURTHER INFORMATION.
2 UNITS MUST BE ETL LISTED AND CERTIFIED US STANDARDS OF SAFETY REQUIREMENTS PER UL 60335-2-40.

ACCESSORIES:
A HOT GAS REHEAT FOR DEHUM CONTROL
B CORROSION COATING ON CONDENSER COIL TO MEET ASTM B117 5,000 HOUR SALT SPRAY RATING
C CONDENSATE OVERFLOW SWITCH
D STAINLESS STEEL DRAIN PAN
E HINGED ACCESS DOORS
F MULTI-SPEED INDOOR FAN SYSTEM
G TWO-INCH MERV 8 MEDIA FILTERS
H BACNET COMMUNICATION INTERFACE (BCI)
I PHASE MONITOR
J SINGLE POINT POWER
K DOWNFLOW LOW LEAK ECONONMIZER (DRYBULB WITH BAROMETRIC RELEIF) OUTSIDE AIR DAMPER
L ROOF CURB - STANDARD KNOCKDOWN TYPE
M THERMOSTAT/HUMIDISTAT
N TWO POSITION OUTSID...

MINI-SPLIT SYSTEM SCHEDULE

DRAWING CODE (IDU / ODU)	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL (IDU / ODU)	ALTERNATE APPROVED MANUFACTURERS	INDOOR UNIT CONFIGURATION	SYSTEM TYPE	ARI COOLING 80/67/95		ARI HEATING 70/47	MIN SEER2	MIN HSPF2	INDOOR UNIT				OUTDOOR UNIT				REFRIGERANT			NOTES	ACCESSORIES
						TOTAL (MBH)	MIN (MBH)	TOTAL (MBH)			FAN	ELECTRICAL		WEIGHT (LBS)	ELECTRICAL			WEIGHT (LBS)	PIPIING		TYPE		
											SA MIN-MAX (CFM)	VOLTAGE (V/PH/HZ)	MCA (A)		VOLTAGE (V/PH/HZ)	MCA (A)	MOCP (A)		MAXIMUM LENGTH (FT.)	MAXIMUM HEIGHT DIFFERENTIAL (FT.)			
DAH01 / DHP01	DAIKIN	FTXF09AXVJU / RXF09AXVJU	MITSUBISHI, LG	WALL MOUNTED	HEAT PUMP	9.0	4.4	10.0	21.0	10.2	145 / 465	208/1/60	1.0	20	208/1/60	9.3	15	60	49	19	R-32	1,2	A,B,C

NOTES:
1 REFER TO SPECIFICATIONS FOR FURTHER INFORMATION.
2 ELECTRICAL CONTRACTOR TO PROVIDE CONDUIT AND CONDUCTOR FROM OUTDOOR UNIT TO INDOOR UNIT.

ACCESSORIES:
A SEACOAST COATING PROTECTION ON OUTDOOR UNIT.
B ROOF MOUNTING RAILS AND ACCESSORIES
C WIRED WALL-MOUNTED REMOTE CONTROLLER

POWER VENTILATOR SCHEDULE

DRAWING CODE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	ALTERNATE APPROVED MANUFACTURERS	FAN TYPE	SERVICE	DRIVE TYPE	CURB HEIGHT (IN)	DAMPER	MOTOR ENCLOSURE	CAPACITIES			ELECTRICAL							SONES	WEIGHT (LBS.)	NOTES	ACCESSORIES
										AIRFLOW (CFM)	ESP (IN. WG.)	FAN RPM	MOTOR TYPE	MOTOR SIZE (W)	MOTOR SIZE (HP)	V/PH/HZ	RLA (A)	FLA (A)	MOCP (A)				
PV01	COOK	100R17DM (VF)	GREENHECK, TWIN CITY	CENTRIFUGAL VENTILATORS - ROOF UPBLAST	EXHAUST	DIRECT	12	BACKDRAFT	OPEN...	400	0.50	1,636	ECM	-	0.1	208/1/60	1.2	-	-	9.9	58	1,3	A,B,C,D
PV02	COOK	GC-186	GREENHECK, TWIN CITY	CEILING-MOUNTED VENTILATORS	EXHAUST	DIRECT	-	BACKDRAFT	-	140	0.50	990	ECM	69	-	115/1/60	-	0.8	-	3.0	15	1,2	A,B,C,E
PV03	COOK	GC-186	GREENHECK, TWIN CITY	CEILING-MOUNTED VENTILATORS	EXHAUST	DIRECT	-	BACKDRAFT	-	140	0.50	990	ECM	69	-	115/1/60	-	0.8	-	3.0	15	1,2	A,B,C,E
PV04	COOK	GC-148	GREENHECK, TWIN CITY	CEILING-MOUNTED VENTILATORS	EXHAUST	DIRECT	-	BACKDRAFT	-	70	0.50	900	ECM	36	-	115/1/60	-	0.4	-	2.0	14	1,2	A,B,C,E
PV05	COOK	GC-148	GREENHECK, TWIN CITY	CEILING-MOUNTED VENTILATORS	EXHAUST	DIRECT	-	BACKDRAFT	-	70	0.50	900	ECM	36	-	115/1/60	-	0.4	-	2.0	14	1,2	A,B,C,E

NOTES:
1 REFER TO SPECIFICATIONS FOR FURTHER INFORMATION.
2 CONTROLLED VIA OCCUPANCY SENSOR. REFER TO ELECTRICAL PLANS.
3 CONTROLLED VIA ON/OFF SWITCH (DURING OPERATION OF AUTOCALVE). REFER TO ELECTRICAL PLANS.

ACCESSORIES:
A BIRDSCREEN
B 14" ROOF CURB W/ SEAL
C GRAVITY DAMPER
D PERMATECTOR COATING OR APPROVED EQUAL
E UNIT MOUNTED SPEED CONTROL

LAB EXHAUST FAN SCHEDULE

DRAWING CODE	LOCATION	AREA SERVED	SERVICE	DESIGN BASIS MFR	MODEL	ALTERNATE APPROVED MFRS	FAN EXHAUST				DISCHARGE				WEIGHT (TOTAL)	NOTES:	ACCESSORIES
							MAX (CFM)	BYPASS MAX (CFM)	OUTLET VEL. MIN (FPM)	S.P. (IN. H20)	EFFECTIVE PLUME HEIGHT (FT)	MAX RPM	MOTOR					
													H.P.	VOLTAGE	FLA			
LEF01	ROOF	130 SCIENCE LAB	PURGE EXH.	COOK	100 CPSLE-3	TWIN CITY, PENNBARRY	670	-	3,526	1.15	18.30	2,358	0.75	208/3/60	0.35	275	1,2	A THRU G
LEF02	ROOF	129 PREP ROOM	PURGE EXH.	COOK	100 CPSLE-4	TWIN CITY, PENNBARRY	540	-	4,500	1.15	18.40	2,520	0.75	208/3/60	0.35	270	1,2	A THRU G

NOTES:
1. REFER TO SPECIFICATIONS FOR FURTHER INFORMATION.
2. DELEGATED DESIGN SUBMITTALS: FOR GUY-WIRES INDICATED TO COMPLY WITH PERFORMANCE REQUIREMENTS AND DESIGN CRITERIA, INCLUDING ANALYSIS DATA SIGNED AND SEALED BY THE QUALIFIED PROFESSIONAL ENGINEER RESPONSIBLE FOR THEIR PREPARATION. PROVIDE DETAIL FABRICATION /ASSEMBLY AND DESIGN CALCULATIONS FOR GUY-WIRES.

ACCESSORIES:
A. PHENOLIC EPOXY POWDER WITH UV - LIGHT GRAY.
B. NEMA 3 DISCONNECT.
C. STACK EXTENSION.
D. ROOF CURB.
E. ACCESS DOOR - BOLTED
F. DAMPER, GRAVITY, ALUMINUM
G. UNIT WARRANTY: 1-YEAR STANDARD

BECKER MORGAN GROUP

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CAPE FEAR COMMUNITY COLLEGE

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23551 DAVID M. HAHN
02/17/2025

PROJECT TITLE

CFCC Surf City Bldg SA Addition

621 NC HWY 210E,
HAMPSTEAD, NC

SCO ID# 24-28220-01A

SHEET TITLE

MECHANICAL SCHEDULES

ISSUE BLOCK

Mark	Date	Description
4	02.12.2025	ISSUED FOR PERMIT
3	02.12.2025	SCO CD COMMENTS
2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	11.11.2024	GMP PRICING

PROJECT NO: 2024077.00
DATE: 02.12.2025
SCALE:
DRAWN BY: GRM PROJ MGR: DMH

M-601

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DEDICATED OUTSIDE AIR UNIT SCHEDULE

DRAWING CODE	DESIGN BASIS MANUFACTURER	MODEL	ALTERNATE APPROVED MFR	SYSTEM TYPE	SA/OA FAN					DX COOLING				HG REHEAT		DX HEATING			ELECTRIC HEAT		ELECTRICAL			REFRIG. TYPE	WEIGHT (LBS)	NOTES	ACCESSORIES
					SA (CFM)	OA (CFM)	ESP (IN H2O)	FAN QTY	MOTOR (HP)	SA LAT (°F/°Fwb)	NET TOT CAP...	NET SENS CAP (MBH)	EFFICIENCY	SA LAT (°F)	CAP (MBH)	SA LAT (°F)	TOT CAP (MBH)	EFFICIENCY	SA LAT (°F)	INPUT (KW)	VOLTAGE (V/PH/HZ)	MCA (A)	MOCP (A)				
DOAS1	DAIKIN	DPSH10B	TRANE, AAON	HEAT PUMP	1,800	1,800	1.75	1	1.7	51.9 / 51.9	123.1	66.3	EER 11.2	70.0	35.4	85.6	100.3	COP 3.5	83.9	36.0	460/3/60	81.3	90	R-32	2,000	1,2,3,4,5	A THRU R

NOTES:
1. REFER TO DIVISION 23 SPECIFICATIONS FOR ADDITIONAL INFORMATION.
2. VERTICAL DISCHARGE / VERTICAL RETURN.
3. ALL COILS TO BE COATED FOR EXPOSURE TO ASTM B117-90 10,000 HOUR SALT SPRAY RESISTANCE TEST WITH NO DEGRADATION.
4. EFFICIENCY RATED IN ACCORDANCE WITH ANSI/AHRI STANDARD 340/360.
5. UNITS MUST BE ETL LISTED AND CERTIFIED US STANDARDS OF SAFETY REQUIREMENTS PER UL 60335-2-40.

ACCESSORIES:
- A WARRANTY: ONE YEAR STANDARD PARTS, FIVE YEAR COMPRESSOR, ONE YEAR COMPRESSOR LABOR.
- B ALL COILS COATED.
- C PHASE FAILURE MONITOR.
- D BACNET MSTP COMMUNICATIONS CARD.
- E LEAVING COIL / ENTERING FAN TEMPERATURE SENSOR.
- F DUCT HIGH LIMIT SWITCH.
- G RETURN AIR TEMPERATURE SENSOR.
- H DISCHARGE AIR TEMPERATURE SENSOR.
- I OUTSIDE AIR TEMPERATURE SENSOR.
- J RETURN AIR ENTHALPY SENSOR.
- K OUTSIDE AIR ENTHALPY SENSOR.
- L DIRTY FILTER ON / OFF SWITCH
- M SUPPLY FAN AIR PROVING VIA MODBUS.
- N CONDENSATE OVERFLOW SWITCH.
- O SPACE SENSOR WITH SETPOINT ADJUSTMENT, HUMIDITY SENSOR, CO2 SENSOR.
- P 14" HIGH ROOF CURB.
- Q 0 - 100%ECONOMIZER WITH COMPARATIVE ENTHALPY CONTROL.
- R 2" MERV 8 FILTERS (INCLUDING 2 SETS OF SPARE FILTERS)

ROOF HOOD SCHEDULE

DRAWING CODE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	ALTERNATE APPROVED MANUFACTURERS	TYPE	CONSTRUCTION MATERIAL	ROOF CURB		SCREENING		FINISH	CAPACITIES AND CHARACTERISTICS							NOTES	ACCESSORIES
						CONFIGURATION	HEIGHT (IN.)	TYPE	MATERIAL		AIRFLOW (CFM)	HEIGHT (IN)	DIAMETER (IN)	BASE (IN)	THROAT AREA (SQ. FT)	AIR VELOCITY (FPM)	PRESSURE DROP (IN. WG.)		
RV01	LOREN COOK	12 PR	GREENHECK, CARNES	EXHAUST	ALUMINUM	FLAT	14	BIRD	GALVANIZED	ANODIZED	420	9.0	28.0	20	0.82	512	0.50	1	A,B,C

NOTES:
1. REFER TO...

ACCESSORIES:
- A GRAVITY BACKDRAFT DAMPER
- B ROOF CURB
- C BIRD SCREEN

DIFFUSERS, REGISTERS AND GRILLES SCHEDULE

DRAWING CODE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	ALTERNATE APPROVED MANUFACTURERS	TYPE	SERVICE	NECK SIZE (IN.)	MODULE SIZE (IN.)	MATERIAL	FINISH	MOUNTING	NOTES	ACCESSORIES
S1	PRICE	ASCD	METALAIRE, TITUS	SQUARE CEILING DIFFUSER	SUPPLY	6%%C	24 X 24	ALUMINUM	WHITE	T-BAR	1,2,3	A
S2	PRICE	ASCD	METALAIRE, TITUS	SQUARE CEILING DIFFUSER	SUPPLY	8%%C	24 X 24	ALUMINUM	WHITE	T-BAR	1,2,3	A
S3	PRICE	ASCD	METALAIRE, TITUS	SQUARE CEILING DIFFUSER	SUPPLY	10%%C	24 X 24	ALUMINUM	WHITE	T-BAR	1,2,3	A
S4	PRICE	620	METALAIRE, TITUS	LOUVER FACE DIFFUSER, DOUBLE DEFLECTION	SUPPLY	12 X 6	-	ALUMINUM	WHITE	CEILING SURFACE	1,2,3	A
R1	PRICE	630	METALAIRE, TITUS	FIXED FACE GRILLE	RETURN	20 X 20	24 X 24	ALUMINUM	WHITE	T-BAR	1,2,3	B
E1	PRICE	630	METALAIRE, TITUS	FIXED FACE GRILLE	EXHAUST	20 X 20	24 X 24	ALUMINUM	WHITE	T-BAR	1,2,3	B
T1	PRICE	630	METALAIRE, TITUS	FIXED FACE GRILLE	EXHAUST	20 X 20	24 X 24	ALUMINUM	WHITE	T-BAR	1,2,3	B

NOTES:
1. REFER TO SPECIFICATIONS FOR FURTHER INFORMATION.
2. DUCT BRANCH CONNECTION SIZE TO BE EQUAL TO THE NECK SIZE OF DIFFUSER UNLESS NOTED OTHERWISE ON PLANS.
3. PAINT ALL VISIBLE DUCTWORK THROUGH GRILLES AND REGISTERS FLAT BLACK.

ACCESSORIES:
- A VOLUME DAMPER
- B INSULATED PLENUM BOX

BECKER MORGAN GROUP

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CAPE FEAR COMMUNITY COLLEGE

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23551 DAVID M. HAHN
02/17/2025

PROJECT TITLE

CFCC Surf City Bldg SA Addition

621 NC HWY 210E,
HAMPSTEAD, NC

SCO ID# 24-28220-01A

SHEET TITLE

MECHANICAL SCHEDULES

ISSUE BLOCK

Mark	Date	Description
4	02.12.2025	ISSUED FOR PERMIT
3	02.12.2025	SCO CD COMMENTS
2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	11.11.2024	GMP PRICING

PROJECT NO: 2024077.00
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ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
	CEILING FAN, SEE LIGHTING FIXTURE SCHEDULE FOR TYPE
	2x4 LIGHT FIXTURE, RECESSED OR SURFACE MOUNTED
	2x2 LIGHT FIXTURE, RECESSED OR SURFACE MOUNTED
	4FT OR 8FT LIGHT FIXTURE, RECESSED OR SURFACE MOUNTED
	4FT OR 8FT CHANNEL LIGHT FIXTURE, SUSPENDED OR SURFACE MOUNTED
	UNDER COUNTER LIGHT FIXTURE
	DIRECT/INDIRECT FIXTURE, SUSPENDED
	TRACK WITH LIGHT KIT
	RECESSED LIGHT FIXTURE
	SURFACE LIGHT FIXTURE
	RECESSED WALL WASH LIGHT FIXTURE
	WALL MOUNTED LIGHT FIXTURE
	EXIT SIGN, SINGLE FACE, CEILING, CHEVRON INDICATES DIRECTION.
	EXIT SIGN, DOUBLE FACE, CEILING MOUNTED, CHEVRON INDICATES DIRECTION.
	EXIT SIGN W/EMERGENCY LIGHTING UNIT, CEILING MOUNTED, CHEVRON INDICATES DIRECTION.
	EXIT SIGN, SINGLE FACE, WALL/END MOUNTED, CHEVRON INDICATES DIRECTION.
	EXIT SIGN, DOUBLE FACE, WALL/END MOUNTED, CHEVRON INDICATES DIRECTION.
	EXIT SIGN W/EMERGENCY LIGHTING UNIT, WALL/END MOUNTED, CHEVRON INDICATES DIRECTION.
	EMERGENCY LIGHTING UNIT, 2-HEAD WITH BATTERY BACK-UP, WALL MOUNTED, "NOT SWITCHED"
	EMERGENCY LIGHTING UNIT, 2-HEAD WITH BATTERY BACK-UP, CEILING MOUNTED, "NOT SWITCHED"
	**FOR ALL LIGHTING FIXTURE TYPES ABOVE: LETTER ADJACENT TO FIXTURE INDICATES FIXTURE TYPE, SEE LIGHTING FIXTURE SCHEDULE
	POWER & SWITCH LEG
	UNSWITCHED LEG
	CONDUIT, HOME RUN TO PANEL BOARD
PE	PHOTOCELL, REMOTE MOUNTED, 120V, 10 SECOND TIME DELAY, UL WET LOCATION, RATED FOR 1500 W @ 120 VAC AND 4000 W @ 277 VAC (FOR USE WITH LAMP SOURCE(S) SHOWN.
$	SWITCH, SINGLE POLE, 120/277VAC, 20A, MOUNTED AT 46" AFF UNLESS OTHERWISE NOTED, SEE ELECTRICAL DEVICES MOUNTING HEIGHT DETAIL. LOWER CASE LETTER INDICATES FIXTURE SWITCHING, WHEN INDICATED.
$3	3-WAY SWITCH, 120/277 VAC, 20A, MOUNTED AT 46" AFF UNLESS OTHERWISE NOTED SEE ELECTRICAL DEVICES MOUNTING HEIGHT DETAIL. LOWER CASE LETTER INDICATES FIXTURE SWITCHING, WHEN INDICATED.
$4	4-WAY SWITCH 120/277 VAC, 20A, MOUNTED AT 46" AFF UNLESS OTHERWISE NOTED SEE ELECTRICAL DEVICES MOUNTING HEIGHT DETAIL. LOWER CASE LETTER INDICATES FIXTURE SWITCHING, WHEN INDICATED.
$	INDICATES BI-LEVEL SWITCHING, 1 SWITCH SWITCHES OUTSIDE LAMPS, 1 SWITCH SWITCHES INSIDE LAMPS. SEE ELECTRICAL DEVICES MOUNTING HEIGHT DETAIL. LOWER CASE LETTER INDICATES FIXTURE SWITCHING, WHEN INDICATED.
$WP	WEATHERPROOF SWITCH, SINGLE POLE 120/277 VAC, 20A, MOUNTED AT 46" AFF UNLESS OTHERWISE NOTED.
D$	DIMMER SWITCH, 0-10V OR LINE VOLTAGE RATING AS REQUIRED BY LIGHTING FIXTURE(S). LINE VOLTAGE RATED DIMMERS MUST BE 1500W FOR 120 VAC AND 4000W 277VAC MINIMUM.
AFC$	ADJUSTABLE FAN CONTROL, 120/277VAC, SINGLE POLE, 20A, MOUNTED AT 46" AFF UNLESS OTHERWISE NOTED, SEE ELECTRICAL DEVICES MOUNTING HEIGHT DETAIL. LOWER CASE LETTER INDICATES FIXTURE SWITCHING, WHEN INDICATED

SYMBOL	DESCRIPTION
OS	CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, 360° COVERAGE 2 = SECOND CONTACT TO BE PROVIDED FOR CONNECTION TO BUILDING MANAGEMENT
OS	CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, LONG RANGE COVERAGE 2 = SECOND CONTACT TO BE PROVIDED FOR CONNECTION TO BUILDING MANAGEMENT
OS	WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, 180° COVERAGE 2 = SECOND CONTACT TO BE PROVIDED FOR CONNECTION TO BUILDING MANAGEMENT
OS	WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, PIR TECHNOLOGY OCCUPANCY SENSOR, LOW VOLTAGE (24VDC) 19mA DRAW, WATTSTOPPER CX100-1, LONG RANGE SENSOR. INSTALL WHERE FREE OF OBSTRUCTIONS.
OS	WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, PIR TECHNOLOGY OCCUPANCY SENSOR, LOW VOLTAGE (24VDC) 19mA DRAW, WATTSTOPPER CX100-3, TWO SIDED AISLEWAY. INSTALL WHERE FREE OF OBSTRUCTIONS.
O$	WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, SINGLE BUTTON ON/OFF CONTROL, 180° COVERAGE, MOUNTED AT 46" AFF UNLESS OTHERWISE NOTED.
O$2	WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, DUAL BUTTON ON/OFF CONTROL, 180° COVERAGE, MOUNTED AT 46" AFF UNLESS OTHERWISE NOTED.
O$D	WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, DUAL BUTTON ON/OFF CONTROL WITH 0-10V DIMMING, 180° COVERAGE, MOUNTED AT 46" AFF UNLESS OTHERWISE NOTED. WATTSTOPPER DW-311 OR EQUAL.
O$F	WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, DUAL BUTTON ON/OFF CONTROL, 180° COVERAGE, ADDITIONAL POWER SUPPLY FOR FAN OPERATION, MOUNTED AT 46" AFF UNLESS OTHERWISE NOTED.
$T	WALL MOUNTED DIGITAL TIMED SWITCH (5 MIN'S TO 12 HR'S), SINGLE BUTTON ON/OFF CONTROL, MOUNTED AT 46" AFF UNLESS OTHERWISE NOTED.
	RECESSED SINGLE/DOUBLE GANG BOX WITH BLANK COVER PLATE, MOUNTED 16" AFF, UNLESS OTHERWISE NOTED
	RECESSED DEDICATED/PICTURE/CLOCK SINGLE OUTLET, 120VAC, 20A, MOUNTED AS INDICATED ON DRAWING.
	RECEPTACLE, DUPLEX, 120VAC, 20A, MOUNTED 16" AFF, UNLESS OTHERWISE NOTED. (SEE ELECTRICAL MOUNTING HEIGHT DETAIL)
	RECEPTACLE, DUPLEX, 120VAC, 20A, MOUNTED 6" ABOVE COUNTER TOP OR BACK SPLASH.
	RECEPTACLE, QUADPLEX, 120VAC, 20A MOUNTED 16"AFF UNLESS OTHERWISE NOTED (SEE ELECTRICAL MOUNTING HEIGHT DETAIL)
	RECEPTACLE, QUADPLEX, 120VAC, 20A, MOUNTED 6" ABOVE COUNTER TOP OR BACK SPLASH.
	RECEPTACLE, DUPLEX, GROUND FAULT CIRCUIT INTERRUPTER TYPE, 120VAC, 20A, MOUNTED 16" AFF, UNLESS OTHERWISE NOTED. (SEE ELECTRICAL MOUNTING HEIGHT DETAIL)
	RECEPTACLE, DUPLEX, GROUND FAULT CIRCUIT INTERRUPTER TYPE, 120VAC, 20A, MOUNTED 6" ABOVE COUNTER TOP OR BACK SPLASH.
	RECEPTACLE, QUADPLEX, GROUND FAULT CIRCUIT INTERRUPTER TYPE, 120VAC, 20A MOUNTED 16"AFF UNLESS OTHERWISE NOTED (SEE ELECTRICAL MOUNTING HEIGHT DETAIL)
	RECEPTACLE, QUADPLEX, GROUND FAULT CIRCUIT INTERRUPTER TYPE, 120VAC, 20A, MOUNTED 6" ABOVE COUNTER TOP OR BACK SPLASH.
	RECEPTACLE, 250VAC, 2 POLE, 3 WIRE, WALL MOUNTED, SIZE AS INDICATED ON DRAWING
	RECEPTACLE, 480VAC, 2 POLE, 3 WIRE, WALL MOUNTED, SIZE AS INDICATED ON DRAWING
	RECEPTACLE, DUPLEX, 120VAC, 20A CEILING MOUNTED (LAY-IN / GYPBOARD / SUSPENDED)
	RECEPTACLE, DUPLEX, 120VAC, 20A RECESSED FLOOR MOUNTED.
	UPS FED RECEPTACLE, DUPLEX, 120VAC, 20A, MOUNTED 16" AFF, UNLESS OTHERWISE NOTED. (SEE ELECTRICAL MOUNTING HEIGHT DETAIL)
	UPS FED RECEPTACLE, QUADPLEX, 120VAC, 20A, MOUNTED 16" AFF, UNLESS OTHERWISE NOTED. (SEE ELECTRICAL MOUNTING HEIGHT DETAIL)
	**FOR ALL RECEPTACLE TYPES ABOVE: +XX"- INDICATES MOUNTING HEIGHT OF DEVICE IN INCHES AFF (IF GIVEN) (SEE ELECTRICAL MOUNTING HEIGHT DETAIL) WP - LISTED WEATHER-RESISTANT TYPE DEVICE WITH WEATHERPROOF IN USE COVER TR - TAMPER RESISTANT S - INDICATES THE TOP RECEPTACLE OF THE DEVICE IS CONTROLLED VIA WALL SWITCH H - DEVICE MOUNTED HORIZONTALLY U - USB IN-WALL CHARGER
30A/3/3R W/ 30AF	DISCONNECT SWITCH, FUSED, HEAVY DUTY, SIZE AS INDICATED ON DRAWINGS (SIZE AS INDICATED IN THE EQUIPMENT CONNECTION SCHEDULE) ##A = DISCONNECT SIZE / # = NUMBER OF POLES / # = NEMA RATING, /##AF = FUSE SIZE
CB	ENCLOSED BREAKER, HEAVY DUTY, SIZE AS INDICATED ON DRAWINGS ##A = BREAKER SIZE / # = NUMBER OF POLES / # = NEMA RATING,
	VARIABLE FREQUENCY DRIVE (VFD)
"Equip" #AMP HMCP (#HP) NEMA #	COMBINATION STARTER WITH CIRCUIT BREAKER DISCONNECT, FULL VOLTAGE, NON-REVERSING, (600V, 3P, NEMA)
M$##	MANUAL MOTOR STARTER, ELECTRICAL CONTRACTOR SHALL COORDINATE POLES AND SIZE WITH EQUIPMENT ## = AMPERAGE RATING WHEN INDICATED ON DRAWING
	1 BUTTON CONTROLLER

SYMBOL	DESCRIPTION
	2 START/STOP PUSHBUTTON CONTROLLER
	3 UP/STOP/DN PUSHBUTTON CONTROLLER
EPO	WALL MOUNTED 120V EMERGENCY OFF PUSH BUTTON WITH RED MUSHROOM STYLE HEAD WITH MANUAL PULL REST, NORMALLY OPEN, WITH CLEAR PROTECTIVE COVER. MOUNTED AT 46" AFF UNLESS OTHERWISE NOTED.
	WALL MOUNTED PUSH PLATE MOUNTED AT 46" AFF UNLESS OTHERWISE NOTED.
208/120V 480/277V	PANELBOARD, SURFACE OR RECESSED MOUNTED AS SHOWN. SIZE, RATINGS, AND MOUNTING AS INDICATED ON PANEL SCHEDULE. CONTRACTOR IS RESPONSIBLE FOR REQUIRED CLEARANCE IN FRONT OF ELECTRICAL PANEL. SEE NEC TABLE 110.26 WORKING SPACES FOR ADDITIONAL CLEARANCE CONDITIONS.
	TRANSFORMER, SIZE AS INDICATED ON DRAWING
	METER
PP	SERVICE POLE, HUBBEL, LEGRAND, OR EQUAL, EXTRUDED ALUMINUM SERVICE POLE, 2-CHANNELS WITH CEILING TRIM, ANODIZED ALUMINUM, MULTI-SERVICE, TWO-CHANNEL POLE WITH (2) KNOCKOUTS, (2) 20AMP RECEPTACLES. ADJUSTABLE T-BAR ASSEMBLY FOR MOUNTING POLES IN MIDDLE OF CEILING. UL LISTED. EACH POWER POLE SHOWN ON PLAN SHALL HAVE PROVISIONS FOR(2) DATA DROPS AND (1) VOICE DROP.
M	ELECTRICAL MOTOR
	GROUND BUS, "E" INDICATES ELECTRICAL GROUND BAR, "TG" INDICATES TELECOMMUNICATIONS GROUND BAR
	CABLE TRAY, LADDER TYPE
	CABLE TRAY, CENTER HUNG TYPE
	CABLE TRAY, BASKET TYPE
	HAND HOLE, IN GRADE, TIER RATING AS INDICATED ON DRAWING
	HATCHING INDICATES ITEMS TO BE DEMOLISHED. REMOVE DEVICE, EQUIPMENT, FIXTURE INDICATED, CIRCUIT, AND CONDUIT BACK TO SOURCE UNLESS OTHERWISE NOTED.
1	DEMOLITION KEY NOTE SYMBOL
1	KEY NOTE SYMBOL
1	REVISION DELTA
WP WAP WALL CLNG	WIRELESS ACCESS POINT, 1 DATA IN A DUAL GANG BOX WITH A SINGLE GANG PLASTER RING, OWNER SHALL PROVIDE SURGE PROTECTOR AND WAP DEVICE, THE ELECTRICAL CONTRACTOR SHALL INSTALL. WP - LISTED WEATHER-RESISTANT TYPE DEVICE
1V/1D	COMBINATION DATA/TELEPHONE OUTLET, MOUNTED 18" AFF UNLESS OTHERWISE NOTED. PROVIDE 11/4" CONDUIT TO ABOVE ACCESSIBLE GRID CEILING W/PULL STRING FOR OUTLETS LOCATED BELOW HARD (GYPBOARD) CEILINGS, ROUTE 11/4" CONDUIT TO TELEPHONE/DATA ROOM. #V = NUMBER OF VOICE CONNECTIONS / #D = NUMBER OF DATA CONNECTIONS, IF INDICATED
	WALL TELEPHONE OUTLET, MOUNTED 60" AFF UNLESS OTHERWISE NOTED. PROVIDE 11/4" CONDUIT TO ABOVE ACCESSIBLE GRID CEILING W/PULL STRING FOR OUTLETS LOCATED BELOW HARD (GYPBOARD) CEILINGS, ROUTE 11/4" CONDUIT TO TELEPHONE/DATA ROOM.
1V/1D	COMBINATION DATA/TELEPHONE OUTLET, RECESSED CEILING MOUNTED (LAY-IN / GYPBOARD) PROVIDE 11/4" CONDUIT TO ABOVE ACCESSIBLE GRID CEILING W/PULL STRING FOR OUTLETS LOCATED BELOW HARD (GYPBOARD) CEILINGS, ROUTE 11/4" CONDUIT TO TELEPHONE/DATA ROOM. #V = NUMBER OF VOICE CONNECTIONS / #D = NUMBER OF DATA CONNECTIONS, IF INDICATED
1V/1D	COMBINATION POWER/DATA/TELEPHONE BOX, RECESSED FLOOR MOUNTED (POKE-THROUGH SIMILAR TO HUBBELL S1PT4X48RS). PROVIDE BRASS COVER PLATE WITH FLUSH ACCESS COVERS FOR EACH PLUG IN CONNECTION. PROVIDE PULL STRING IN CONDUIT. SEE DETAIL #, SHEET E####
1V/1D	COMBINATION POWER/DATA/TELEPHONE BOX, RECESSED FLOOR MOUNTED (CAST-IN-PLACE). PROVIDE BRASS COVER PLATE WITH FLUSH ACCESS COVERS FOR EACH PLUG IN CONNECTION. PROVIDE PULL STRING IN CONDUIT.SEE DETAIL #, SHEET E### #V = NUMBER OF VOICE CONNECTIONS / #D = NUMBER OF DATA CONNECTIONS; 1"CND UNDER SLAB TO NEAREST WALL, STUB ABOVE CEILING #G = GANG FLOOR BOX WITH TWO DUPLEX RECEPTACLES, VOICE AND DATA
2G	4 GANG FLOOR BOX WITH DUPLEX RECEPTACLE AND DATA CAPABILITIES (CONFIRM WITH OWNER FOR REQUIREMENTS). PROVIDE METALLIC IN-USE COVER (HUBBELL CFB4G30CR OR EQUIVALENT). SIZE AS INDICATED ON DRAWINGS
FBX	
	JUNCTION BOX - WALL MOUNTED +## - INDICATES MOUNTING HEIGHT OF DEVICE IN INCHES AFF (if given)
	JUNCTION BOX - CEILING/ABOVE CEILING MOUNTED
	JUNCTION BOX - FLOOR MOUNTED

SYMBOL	DESCRIPTION
	WALL MOUNTED DOUBLE GANG BOX FOR TELEVISION MOUNTED AT 72" AFF UNLESS NOTED OTHERWISE. BOX SHALL HAVE DUPLEX RECEPTACLE AND DATA CONNECTIONS FOR TELEVISION AS DIRECTED BY OWNER/CLIENT/TENANT. BOX SHALL BE PASS & SEYMOUR TV2MW OR APPROVED EQUIVALENT.
	CEILING MOUNTED DOUBLE GANG BOX FOR TELEVISION RECESSED IN CEILING. BOX SHALL HAVE DUPLEX RECEPTACLE AND DATA CONNECTIONS FOR TELEVISION AS DIRECTED BY OWNER/CLIENT/TENANT. BOX SHALL BE PASS & SEYMOUR TV2MW OR APPROVED EQUIVALENT.
	ELECTRIC STRIKE
	MAGNETIC LOCK
	DOOR CONTACTS
	CARD READER
	KEYPAD
	MOTION DETECTOR (TYPE DENOTED)
WP	WALL MOUNTED CAMERA, WP INDICATES WEATHERPROOF
	CEILING MOUNTED CAMERA
S	CEILING MOUNTED SPEAKER
S	WALL MOUNTED SPEAKER
	FLOOR MOUNTED DATA RACK
	WALL MOUNTED DATA RACK
	PROJECTOR PAN, CEILING MOUNTED
	GROUND ROD, COPPER, 3/4"DIA x 10'-0" LONG
"A"	COPPER AIR TERMINAL IN BRONZE BASE
"B"	ALUMINUM AIR TERMINAL IN ALUMINUM BASE
T	226V - STYLE THRU-ROOF CONNECTOR (TYPE T)
T1	230V - STYLE THRU-ROOF CONNECTOR (TYPE T1)
"BM"	LIGHTNING CONDUCTOR CABLE CONNECTOR
	GROUNDING ELECTRODE CONDUCTOR, 10' COILED ABOVE GRADE

TYPICAL ABBREVIATIONS:

A, AMP	AMPERE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
AIC	AMPERE INTERRUPTING CAPACITY
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BOF	BOTTOM OF FIXTURE
BRKR	BREAKER
C, CND	CONDUIT
CAB	CABINET
CAT	CATALOG
CL	CHLORINE
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
CLG	CEILING
CP	CONTROL PANEL
CR	CONTROL RELAY, CORROSION RESISTANT
CS	CONTROL SWITCH
CV	CONTROL VALVE
CT	CURRENT TRANSFORMER
CU	COPPER
EF	EXHAUST FAN
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
EQ, EQIP	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EPRF	EXPLOSION PROOF
FA	FIRE ALARM
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FBO	FURNISHED BY OTHERS
FLA	FULL LOAD AMPS
FLUOR	FLUORESCENT
FLR	FLOOR
FWE	FURNISHED WITH EQUIPMENT
GEN	GENERATOR
G, GND	GROUND
GFI, GFCI	GROUND FAULT CIRCUIT INTERRUPTER
HH	HANDHOLE
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTO
HP	HORSE POWER
HPF	HIGH POWER FACTOR
HPS	HIGH PRESSURE SODIUM
HTR	HEATER
HV	HIGH VOLTAGE
Hz	HERTZ
I.F.P.	INTERACTIVE FLAT PANEL
IMC	INTERMEDIATE METALLIC CONDUIT
INCAND	INCANDESCENT
JB	JUNCTION BOX
K	THOUSAND
Kcmil	THOUSAND CIRCULAR MILLS
KVA	KILOVOLT AMPERE
KW	KILOWATTS
KWH	KILOWATT-HOURS
LP	LIGHTING PANEL, LIGHT POLE
LTG	LIGHTING
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MDP	MAIN DISTRIBUTION PANEL
MFR	MANUFACTURER
MH	MANHOLE
MLO	MAIN LUGS ONLY
MTD	MOUNTED
MTG	MOUNTING
MTS	MANUAL TRANSFER SWITCH
MV	MEDIUM VOLTAGE
N, NEUT	NEUTRAL
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
P	POLE
PA	PUBLIC ADDRESS
PB	PULL BOX, PUSH-BUTTON
PF	POWER FACTOR
PH,φ	PHASE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PNL	PANEL
PP	POWER PANEL, POWER POLE
PT	POTENTIAL TRANSFORMER
PWR	POWER
RECPT,RC	RECEPTACLE
REQ'D	REQUIRED
RGS	RIGID GALVANIZED STEEL CONDUIT
RM	ROOM
RTU	REMOTE TELEMETRY UNIT
SCR	DC MOTOR DRIVE
SH	SHEET
SM	SURFACE MOUNTED
SPEC	SPECIFICATION
SS	SELECTOR SWITCH
SST	STAINLESS STEEL
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCH GEAR
TEL	TELEPHONE
TPS	TWISTED PAIR SHIELDED
T.S.	TEACHERS STATION
TVSS, SPD	TRANSIENT VOLTAGE SURGE SUPPRESSER
TYP	TYPICAL
UG, UGND	UNDERGROUND
UH	UNIT HEATER
UON	UNLESS OTHERWISE NOTED
UTIL	UTILITY
V	VOLTS
VFD	VARIABLE FREQUENCY DRIVE
W	WIRE, WATT
WH	WATT-HOUR
WP	WEATHERPROOF
XFMR	TRANSFORMER
(X)	EXISTING

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CAPE FEAR COMMUNITY COLLEGE

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230 JASON P. FAMIGLIETTI
02/17/2025

PROJECT TITLE

CFCC Surf City Bldg SA Addition

621 NC HWY 210E,
HAMPSTEAD, NC

SCO ID# 24-28220-01A

SHEET TITLE

ELECTRICAL SYMBOLS AND ABBREVIATIONS

ISSUE BLOCK

Mark	Date	Description
4	02.12.2025	ISSUED FOR PERMIT
3	02.12.2025	SCO CD COMMENTS
2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	11.11.2024	GMP PRICING

PROJECT NO: 2024077.00
DATE: 02.12.2025
SCALE: 12" = 1'-0"
DRAWN BY: RRD | PROJ MGR: JPF

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ELECTRICAL GENERAL NOTES:

1. ALL ELECTRICAL WORK SHALL BE IN FULL COMPLIANCE WITH NFPA 70, THE NORTH CAROLINA STATE BUILDING CODE, ALL LOCAL CODES AND ORDINANCES AND IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.

2. ALL EQUIPMENT PROVIDED BY THE CONTRACTOR SHALL BE LISTED AND LABELED BY A NATIONALLY-RECOGNIZED TESTING AGENCY, ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION, FOR THE CONDITIONS OF INSTALLATION. ALL MATERIAL, EQUIPMENT AND DEVICES SHALL BE NEW CURRENT PRODUCTS OF MANUFACTURERS REGULARLY ENGAGED IN THE PRODUCTION OF SUCH PRODUCTS. EQUIPMENT SHALL BE SUITABLE FOR ITS APPLICATION (E.G. WHEN INSTALLED OUTDOORS, IT SHALL BE WEATHERPROOF, ETC.)

3. THE CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS FOR WORK REQUIREMENTS, THE AMOUNT OF SPACE AVAILABLE FOR ELECTRICAL EQUIPMENT, AND LAYOUT HIS WORK IN A COMPATIBLE AND COMPLEMENTARY MANNER.

4. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THOROUGHLY FAMILIARIZING HIMSELF WITH ANY CONTRACTUAL REQUIREMENTS AS MAY BE SET FORTH IN THE OTHER DIVISIONS OF THE PROJECT SPECIFICATIONS.

5. UNLESS SPECIFICALLY NOTED OTHERWISE, SYSTEMS PROVIDED OR INSTALLED BY THE ELECTRICAL CONTRACTOR SHALL BE COMPLETE AND FULLY-FUNCTIONING AFTER INSTALLATION. INCIDENTAL COMPONENTS MAY NOT BE SHOWN, AND ALL WORK WHICH MAY BE REASONABLY IMPLIED AS BEING INCIDENTAL TO THIS WORK, BUT REQUIRED FOR THE PROPER OPERATION OF THE EQUIPMENT OR SYSTEM, SHALL BE PROVIDED BY THE CONTRACTOR AND INCLUDED IN THE BID. ADDITIONAL CIRCUITS SHALL BE INSTALLED WHEREVER NEEDED TO CONFORM TO THE SPECIFIC REQUIREMENTS OF EQUIPMENT.

6. TEMPORARY POWER CONNECTIONS AS REQUIRED SHALL BE PROVIDED BY THE CONTRACTOR AND INCLUDED IN THE BID. ALL TEMPORARY EQUIPMENT WIRING SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE. THE CONTRACTOR SHALL PROVIDE DETAILS, METHODS, MATERIALS, ETC. FOR REVIEW PRIOR TO MAKING TEMPORARY CONNECTIONS. FURNISH AND INSTALL ALL EQUIPMENT AND MATERIALS INCLUDING CONTROL EQUIPMENT, MOTOR STARTERS, BRANCH AND FEEDER CIRCUIT BREAKERS, PANELBOARDS, TRANSFORMERS, ETC. FOR TEMPORARY POWER. COORDINATE WITH THE ELECTRICAL UTILITY COMPANY AS REQUIRED.

7. THE WORK SHALL INCLUDE COMPLETE TESTING OF ALL EQUIPMENT AND WIRING AT THE COMPLETION OF WORK AND ANY MINOR CORRECTIONS, CHANGES OR ADJUSTMENTS NECESSARY FOR THE PROPER FUNCTIONING OF THE SYSTEM AND EQUIPMENT.

8. ALL EQUIPMENT SHOWN DOTTED OR DASHED IS BY OTHERS OR IS EXISTING, AS NOTED.

9. ALL ELECTRICAL EQUIPMENT SHALL, AT ALL TIMES DURING CONSTRUCTION, BE ADEQUATELY PROTECTED AGAINST MECHANICAL INJURY, OR DAMAGE BY WATER AND/OR THE ELEMENTS. ELECTRICAL EQUIPMENT SHALL NOT BE STORED OUT OF DOORS, BUT SHALL BE STORED IN DRY PERMANENT SHELTERS. IF AN APPARATUS HAS BEEN DAMAGED, OR HAS BEEN SUBJECT TO POSSIBLE INJURY BY WATER OR THE ELEMENTS, SUCH DAMAGE SHALL BE REPLACED AT NO ADDITIONAL COST.

10. DO NOT SCALE ELECTRICAL DRAWINGS. REFER TO THE ARCHITECTURAL DRAWINGS FOR DIMENSIONS.

11. CIRCUIT LAYOUTS ARE NOT INTENDED TO SHOW THE NUMBER OF FITTINGS, OR OTHER INSTALLATION DETAILS. UNLESS NOTED OTHERWISE, THE EXACT ROUTING OF FEEDER AND BRANCH CIRCUIT RACEWAYS AND CABLES IS THE RESPONSIBILITY OF THE CONTRACTOR. RISER AND GENERAL CIRCUIT ARRANGEMENTS ARE SHOWN SCHEMATICALLY/DIAGRAMMATICALLY ONLY. THE CONTRACTOR SHALL ROUTE CONDUITS AS REQUIRED BY THE CONDITIONS OF THE INSTALLATION.

12. UNLESS DIMENSIONED, DEVICE LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE. ADJUST EXACT LOCATIONS AS REQUIRED TO SERVE THE INTENDED PURPOSE AND TO AVOID CONFLICTS AND INTERFERENCES WITH OTHER TRADES. EXACT DEVICE LOCATIONS SHALL BE AS INDICATED ON THE ARCHITECTURAL DRAWINGS OR AS DIMENSIONED. IF NOT SHOWN ON THE ARCHITECTURAL DRAWINGS OR DIMENSIONED ON THE ELECTRICAL DRAWINGS, VERIFY EXACT LOCATION WITH THE ARCHITECT/ENGINEER PRIOR TO ROUGH-IN.

13. CONDUIT TERMINATING IN PRESSED STEEL BOXES SHALL HAVE DOUBLE LOCKNUTS AND INSULATED BUSHINGS. CONDUITS TERMINATING IN GASKETED ENCLOSURES SHALL BE TERMINATED WITH GROUNDING TYPE CONDUIT HUBS.

14. DEVICE BOXES SHOWN BACK-TO-BACK SHALL BE OFFSET A MINIMUM OF TWELVE (12) INCHES TO REDUCE SOUND TRANSMISSION BETWEEN ROOMS.

15. BRANCH CIRCUIT HOMERUNS SHOWN ON DRAWINGS INDICATE PHASE CONDUCTORS, NEUTRAL, EQUIPMENT GROUND CONDUCTORS AS REQUIRED. ADDITIONAL CONDUCTORS REQUIRED FOR CONTROL SHALL BE INCLUDED EVEN IF NOT EXPLICITLY SHOWN.

16. SEAL ALL CONDUIT OPENINGS THROUGH EXTERIOR BUILDING WALLS WATERTIGHT.

17. IN WET LOCATIONS AND EXTERIOR, ALL WIRING DEVICES SHALL BE WEATHER-RESISTANT LISTED WITH WEATHERPROOF WHILE IN USE COVER. LIGHTING FIXTURES SHALL BE APPROPRIATELY RATED AND LISTED FOR THE ENVIRONMENT.

18. RACEWAYS PENETRATING FLOORS, CEILINGS OR WALLS SHALL BE PROPERLY SEALED SMOKETIGHT.

19. RACEWAYS PENETRATING RATED FLOOR, CEILING OR WALL ASSEMBLIES SHALL BE PROPERLY SEALED IN ACCORDANCE WITH THE CORRESPONDING UNDERWRITERS LABORATORIES (OR OTHER APPROVED THIRD PARTY TESTING AGENCY) APPROVED AND LISTED FIRESTOPPING MATERIALS AND MANUFACTURER APPROVED INSTALLATION TECHNIQUES COMPLYING WITH ALL APPLICABLE CODES. SEE ARCHITECTURAL DRAWINGS FOR IDENTIFICATION OF RATED WALLS AND CEILINGS.

20. LIGHTING FIXTURES, SPEAKER ASSEMBLIES, ETC. MOUNTED IN FIRE-RATED CEILINGS SHALL BE PROVIDED WITH UL-LISTED, PRE-FABRICATED OR FIELD FABRICATED SHROUDS/ACCESSORIES NECESSARY TO MAINTAIN THE CEILING FIRE RATING.

21. ALL RACEWAYS SHALL BE CONCEALED WHERE POSSIBLE. IF APPLICABLE, MATCH EXISTING RACEWAY INSTALLATION METHODS AND ROUTINGS AT OR NEAR EXISTING FACILITIES.

22. INSTALL EXPOSED RACEWAYS PARALLEL TO OR AT RIGHT ANGLES TO NEARBY SURFACES OR STRUCTURAL MEMBERS, AND FOLLOW THE SURFACE CONTOURS AS MUCH AS POSSIBLE. NO DIAGONAL RUNS WILL BE ALLOWED. ALL CONDUITS SHALL BE RUN STRAIGHT AND TRUE. RUN PARALLEL OR BANKED RACEWAYS TOGETHER ON COMMON SUPPORTS WHERE PRACTICAL. MAKE BENDS IN PARALLEL OR BANKED RUNS FROM SAME CENTERLINE TO MAKE BENDS PARALLEL.

23. USE FLUSH MOUNTING OUTLET BOXES IN FINISHED AREAS AND FOR EXTERIOR DEVICES/LIGHT FIXTURES UNLESS NOTED OTHERWISE.

24. PROVIDE AND PLACE ALL SLEEVES FOR CONDUITS PENETRATING WALLS, FLOORS, PARTITIONS, ETC. LOCATE ALL NECESSARY SLOTS FOR ELECTRICAL WORK AND FORM BEFORE CONCRETE IS POURED.

25. PATCHING OF WATERPROOFED SURFACES SHALL RENDER THE AREA OF THE PATCHING COMPLETELY WATERPROOF.

26. ALL MOTORS, DRY TYPE TRANSFORMERS AND OTHER VIBRATING EQUIPMENT SHALL BE CONNECTED TO THE CONDUIT SYSTEM BY MEANS OF A SHORT SECTION (18 INCH MINIMUM) OF FLEXIBLE CONDUIT UNLESS OTHERWISE INDICATED. AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE INSTALLED INSIDE THE FLEXIBLE CONDUIT AND TERMINATE AT THE LOAD END WITH AN APPROVED GROUNDING CLAMP OR LUG.

27. SURFACE MOUNTED PANELBOARDS, JUNCTION, OUTLET AND PULL BOXES, RACEWAYS, ETC., INSTALLED ON EXTERIOR SURFACES OR INSIDE ON EXTERIOR WALLS SHALL BE SUPPORTED BY SPACERS TO PROVIDE A 1/4" MINIMUM CLEARANCE BETWEEN THE WALL AND EQUIPMENT.

28. CEILING MOUNTED DEVICES INSTALLED IN ACOUSTICAL TILE CEILING AREAS SHALL BE SUPPORTED FROM THE STRUCTURE ABOVE WITH RODS OF SUFFICIENT SIZE TO PREVENT VERTICAL MOVEMENT OF THE OUTLET BOX. BRIDGES ALONE ARE NOT ADEQUATE UNLESS SPECIFICALLY APPROVED. CEILING MOUNTED EXIT LIGHT FIXTURES SHALL BE INSTALLED LEVEL. DO NOT SUPPORT DEVICES FROM ACCOUSTICAL CEILING TILE.

29. EXCAVATION AND TRENCHING REQUIRED FOR THE INSTALLATION OF ELECTRICAL POWER AND TELECOMMUNICATIONS RACEWAYS SHALL BE PROVIDED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF DIVISION 26 OF THE PROJECT SPECIFICATIONS.

30. PRIOR TO TRENCHING IN ANY AREA, THE CONTRACTOR SHALL CONTACT ELECTRICAL, COMMUNICATIONS/DATA/FIBER, CABLE TELEVISION, GAS AND WATER UTILITY PROVIDERS AND HAVE ALL UTILITIES IN THE AREA IDENTIFIED. DAMAGE TO ANY UNDERGROUND UTILITIES OR STRUCTURES SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE PROJECT.

31. ALL UNDERGROUND RACEWAYS SHALL BE IDENTIFIED BY UNDERGROUND LINE MARKING TAPE LOCATED DIRECTLY ABOVE THE RACEWAY AT 6 TO 8 INCHES BELOW FINISHED GRADE. SEE SPECIFICATIONS SECTION 260553.

32. WHERE UNDERGROUND RACEWAYS ARE REQUIRED TO TURN UP INTO CABINETS, EQUIPMENT, ETC., AND ON TO POLES, THE ELBOW REQUIRED AND THE STUB-UP OUT OF THE SLAB OR EARTH SHALL BE OF PLASTIC-COATED RIGID STEEL.

33. PROVIDE 200% RATED NEUTRAL FEEDERS AND NEUTRAL BARS FOR PANELBOARDS FED BY K-RATED TRANSFORMERS.

34. PROVIDE ADHESIVE BACKED RECEPTACLE AND SWITCH/DIMMER/OCCUPANCY SENSOR DEVICE PLATE LABELS IDENTIFYING THE PANEL AND CIRCUIT FEEDING THE DEVICE. LABELS SHALL INDICATE PANEL AND CIRCUIT NUMBER. SEE SPECIFICATIONS SECTION 260553 FOR REQUIREMENTS.

35. FINAL TYPED PANELBOARD DIRECTORIES INSTALLED IN THE PANELBOARD DOOR POCKET SHALL INCLUDE FINAL ACTUAL ROOM NAMES AND NUMBERS IN ADDITION TO THE GENERAL DESCRIPTION SHOWN ON THE PANEL SCHEDULES ON THE DRAWINGS.

36. CONDUCTOR SIZING IS BASED ON 75 DEGREE C. COPPER NEC RATINGS, UNLESS NOTED OTHERWISE. THE CONTRACTOR SHALL VERIFY, PRIOR TO INSTALLATION OF CONDUCTORS OR CONDUIT FEEDING ANY EQUIPMENT, THE ELECTRICAL EQUIPMENT IS RATED FOR USE WITH 75 DEGREE C. WIRING. IF ANY EQUIPMENT IS RATED FOR USE WITH LESS THAN 75 DEGREE C. CONDUCTORS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER IMMEDIATELY FOR EVALUATION/CORRECTION.

37. DO NOT PULL CONDUCTORS UNTIL THE CONDUIT SYSTEM IS COMPLETE IN EVERY DETAIL. IN THE CASE OF CONCEALED WORK, "COMPLETE" MEANS UNTIL ALL ROUGH PLASTERING OR MASONRY HAS BEEN COMPLETED.

38. WHERE SIZE IS NOT SHOWN ON THE DRAWINGS, BRANCH CIRCUITS SHALL CONSIST OF #12 OR #10 AWG MINIMUM PHASE, NEUTRAL AND EQUIPMENT GROUND CONDUCTORS IN 3/4" MINIMUM RACEWAY.

39. LIGHTING AND RECEPTACLE BRANCH CIRCUITS SHALL CONSIST OF #12 AWG AND/OR #10 AWG MINIMUM PHASE, NEUTRAL AND EQUIPMENT GROUND CONDUCTORS IN 1/2" MINIMUM RACEWAY. OTHER BRANCH CIRCUITS MAY BE INDICATED AND MINIMUM CONDUCTOR SIZES MAY BE SHOWN ON THE DRAWINGS, REGARDLESS, THE CONTRACTOR SHALL REFER TO THE "MINIMUM CONDUCTORS SIZE CHART" ON THE DRAWINGS AND PROVIDE CONDUCTORS SIZES AS REQUIRED TO MAINTAIN A MAXIMUM 3% VOLTAGE DROP.

40. USE #10 AWG CONDUCTORS FOR 20 AMPERE, 120 VOLT BRANCH CIRCUITS WITH A TOTAL INSTALLED LENGTH GREATER THAN 75 FEET AND/OR BRANCH CIRCUIT HOMERUNS LONGER THAN 50 FEET, I.E.; #12 AWG INCREASED TO #10 AWG FOR RECEPTACLE BRANCH CIRCUITS OVER 75 FEET TOTAL LENGTH (INCLUDING THE HOMERUN SEGMENT) AND HOMERUNS OVER 50 FEET. IF 277 VOLT CIRCUITS ARE SHOWN, USE #10 AWG CONDUCTORS FOR 20 AMPERE, 277 VOLT BRANCH CIRCUITS WITH TOTAL INSTALLED LENGTH GREATER THAN 200 FEET AND/OR BRANCH CIRCUIT HOMERUNS LONGER THAN 125 FEET, I.E.; #12 AWG INCREASED TO #10 AWG FOR RECEPTACLE BRANCH CIRCUITS OVER 75 FEET TOTAL LENGTH (INCLUDING THE HOMERUN SEGMENT) AND HOMERUNS OVER 50 FEET.

41. COMMON NEUTRAL BRANCH CIRCUITS ARE NOT PERMITTED. PROVIDE SEPARATE, INDIVIDUAL NEUTRAL CONDUCTORS FOR ALL BRANCH CIRCUITS.

42. KEEP CONDUCTOR SPLICES TO A MINIMUM. INSTALL SPLICES AND TAPES THAT POSSESS EQUIVALENT OR BETTER MECHANICAL STRENGTH AND INSULATION RATINGS THAN CONDUCTORS BEING SPLICED. USE SPLICE AND TAP CONNECTORS COMPATIBLE WITH CONDUCTOR MATERIAL. INSTALL CONDUCTORS AT EACH OUTLET WITH AT LEAST 6 INCHES OF SLACK. CONNECT OUTLETS AND COMPONENTS TO WIRING AND TO GROUND AS INDICATED AND INSTRUCTED BY THE MANUFACTURER.

43. DO NOT SPLICE BRANCH CIRCUIT HOMERUNS WITHOUT THE PERMISSION OF THE ARCHITECT/ENGINEER. HOMERUNS SHALL BE CONTINUOUS FROM THE LAST OUTLET BOX TO THE SERVING PANELBOARD.

44. DO NOT COMBINE BRANCH CIRCUIT HOMERUNS UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS.

45. DO NOT CHANGE CIRCUITING SHOWN WITHOUT PERMISSION OF THE ARCHITECT/ENGINEER.

46. INSTALL WIRING DEVICES AT HEIGHTS AS SHOWN ON THE DRAWINGS. ALSO COORDINATE MOUNTING HEIGHTS WITH THE ARCHITECTURAL DRAWINGS AND CASEWORK DETAILS. IF CONFLICTING, ARCHITECTURAL DRAWINGS AND DETAILS SHALL GOVERN.

47. PROVIDE GROUND FAULT CIRCUIT-INTERRUPTER PROTECTION FOR PERSONNEL IN ACCORDANCE WITH THE NEC INCLUDING ALL ELECTRIC WATER COOLERS, EXTERIOR RECEPTACLES AND RECEPTACLES IN AREAS SUBJECT TO POSSIBLE WET CONDITIONS. ALL RECEPTACLES INSTALLED WITHIN 6 FEET OF A SINK SHALL BE GFI PROTECTED. ALL RECEPTACLES IN NON-RESIDENTIAL KITCHENS SHALL BE GFI PROTECTED.

48. CONNECT BATTERY PACK TYPE EMERGENCY AND EXIT LIGHTING TO THE UNSWITCHED LIGHTING CIRCUIT SERVING THE SPACE LIGHTED BY THE EMERGENCY AND EXIT FIXTURES. THESE CONNECTIONS ARE INTENTIONALLY NOT SHOWN TO MAINTAIN DRAWING FOR CLARITY.

49. COORDINATE LIGHTING FIXTURE LOCATIONS WITH THE ARCHITECTURAL REFLECTED CEILING PLAN. IF CONFLICTS ARE NOTED, REQUEST CLARIFICATION FROM THE ARCHITECT/ENGINEER BEFORE PROCEDING.

50. ADJACENT SWITCHES SHALL BE GANGED. INSTALL BARRIERS BETWEEN UNLIKE VOLTAGE SECTIONS.

51. SEPARATE NEUTRALS ARE REQUIRED FOR ALL DIMMED LIGHTING CIRCUITS.

52. WHERE THE DRAWINGS INDICATE A LIGHTING FIXTURE IS TO BE PROVIDED WITH SPECIAL FEATURES/SWITCHING (DIMMING, EMERGENCY BATTERY BALLAST, MULTI-LEVEL, ETC), THE CONTRACTOR SHALL PROVIDE THESE FIXTURES WITH THE APPROPRIATE BALLASTING TO ACCOMMODATE THE SPECIAL FEATURE. THE CONTRACTOR SHALL PROVIDE THE FIXTURES AS INDICATED IN THE LIGHTING FIXTURE SCHEDULE WITH MODIFICATIONS AS REQUIRED BY DRAWING NOTES.

53. COORDINATE LOCATIONS OF PLUMBING, MECHANICAL, ELEVATOR, DATA AND TELEPHONE AND AUDIO/VISUAL EQUIPMENT AND OF OWNER-PROVIDED EQUIPMENT WITH THE RESPECTIVE CONTRACTORS AND VENDORS AND THE OWNER BEFORE ROUGH-IN. ADJUST LIGHTING FIXTURES, RECEPTACLES AND ELECTRICAL EQUIPMENT TO ACCOMMODATE THIS EQUIPMENT. ADVISE THE ARCHITECT/ENGINEER OF CONFLICTS BEFORE ROUGH-IN.

54. BEFORE COMMENCING WORK OR ORDERING MATERIALS, THE CONTRACTOR SHALL COORDINATE WITH OTHER TRADES AND VERIFY THE NAMEPLATE RATINGS OF ALL EQUIPMENT (MOTORS, HEATERS, COMPRESSORS, ETC.) AND ADJUST THE RATINGS OF THE ELECTRICAL EQUIPMENT (SWITCHES, FUSES, CIRCUIT BREAKERS, FEEDERS, ETC.) AS APPROPRIATE TO SERVE THIS EQUIPMENT.

55. UNLESS SPECIFICALLY NOTED OTHERWISE, THE CONTRACTOR PROVIDING THE EQUIPMENT SHALL MAKE FINAL CONNECTIONS TO HIS EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE MECHANICAL, PLUMBING AND GENERAL CONTRACTORS, PRIOR TO ORDERING OR INSTALLATION OF ANY EQUIPMENT, TO VERIFY MECHANICAL, PLUMBING AND GENERAL CONTRACTOR PROVIDED EQUIPMENT REQUIREMENTS ARE PROVIDED IN THE ELECTRICAL DESIGN. IF ELECTRICAL REQUIREMENTS DIFFER FROM THOSE SHOWN ON THE DRAWINGS, THE CONTRACTOR PROVIDING THE EQUIPMENT SHALL BE RESPONSIBLE FOR DESIGN AND CONSTRUCTION COSTS ASSOCIATED WITH CHANGING THE ELECTRICAL SYSTEM TO MATCH UTILIZATION EQUIPMENT.

56. THE MECHANICAL AND PLUMBING CONTRACTORS SHALL FURNISH ALL STARTERS AND CONTROLS FOR THEIR EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL PROVIDE SAFETY SWITCHES AND CIRCUIT BREAKERS AND PROVIDE WIRING AND CONNECTIONS TO THE LINE SIDE OF SAFETY SWITCHES AND/OR CIRCUIT BREAKERS. THE CONTRACTOR PROVIDING THE EQUIPMENT SHALL PROVIDE LOAD SIDE WIRING AND CONNECTIONS TO EQUIPMENT. THE MECHANICAL AND PLUMBING CONTRACTORS SHALL PROVIDE ALL CONTROL WIRING AND CONNECTIONS AND DEVICES FOR THEIR EQUIPMENT.

57. ENERGIZE EQUIPMENT ONLY AFTER OBTAINING PERMISSION FROM THE CONTRACTOR PROVIDING THE EQUIPMENT.

58. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL EQUIPMENT TERMINATIONS, PLUGS AND CORDSETS WITH VENDOR EQUIPMENT AND VERIFY ALL DEVICE LOCATIONS FOR SPECIALITY EQUIPMENT WITH CASEWORK PRIOR TO ROUGH-IN.

59. THE LAYOUT AND PLACEMENT OF ELECTRICAL DISTRIBUTION EQUIPMENT IN ELECTRICAL AND MECHANICAL EQUIPMENT ROOMS IS BASED ON PUBLISHED EQUIPMENT SIZES AND SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE. DEVIATIONS FROM CONFIGURATIONS SHOWN IS THE RESPONSIBILITY OF THE CONTRACTOR. PROVIDE NATIONAL ELECTRIC CODE REQUIRED CLEARANCES FOR ALL ELECTRICAL EQUIPMENT, PANELBOARDS, TRANSFORMERS, SAFETY SWITCHES, SWITCHBOARDS, ETC. COORDINATE RESOLUTION OF CONFLICTS WITH OTHER TRADES. ADVISE THE ARCHITECT/ENGINEER OF CONFLICTS BEFORE ROUGH-IN.

60. TELECOMMUNICATIONS AND DATA CABLES WILL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. LEAVE PULL WIRES OR ROPES OF ADEQUATE TENSILE STRENGTH IN ALL EMPTY CONDUITS.

61. PROVIDE TELEPHONE, CABLE TELEVISION, FIBER AND DATA CONDUIT IN SIZES AND LOCATIONS AS SHOWN ON THE DRAWINGS AND AS REQUIRED BY THE OWNER AND THE SERVICE UTILITIES. LEAVE PULL WIRES OR ROPES OF ADEQUATE TENSILE STRENGTH IN ALL EMPTY CONDUITS.

62. EXACT SPACING OF SMOKE AND HEAT DETECTORS AND A/V DEVICES SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE WITH POSITIONS SHOWN ON THE DRAWINGS. DETECTOR SPACING IS BASED UPON NFPA 72 INCLUDING APPENDIX A. SLIGHT ADJUSTMENTS MAY BE MADE IN SPACING IF REQUIRED BY FIELD CONDITIONS, BUT SPACING SHALL NOT EXCEED ADA, NFPA AND EQUIPMENT MANUFACTURERS SPACING CRITERIA. DO NOT INSTALL SMOKE DETECTORS WITHIN 3 FEET OF SUPPLY AIR DIFFUSERS OR RETURN GRILLES. PROVIDE FLEX CONDUIT CONNECTION TO SMOKE AND HEAT DETECTORS OF ADEQUATE LENGTH TO ALLOW HORIZONTAL ADJUSTMENT OF FOUR FEET FROM POSITION INDICATED ON DRAWINGS.

63. COORDINATE FIRE ALARM SYSTEM MODIFICATIONS WITH THE OWNER AND THE OWNER'S FIRE ALARM SYSTEM VENDOR. THE EXISTING SYSTEM SHALL REMAIN OPERATIONAL AT ALL TIMES UNLESS PRIOR ARRANGEMENTS HAVE BEEN MADE WITH THE OWNER.

64. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR FIRE ALARM WORK ON THIS PROJECT. THIS INCLUDES BUT NOT LIMITED TO DE-PROGRAMMING REMOVED DEVICES, PUTTING SYSTEM ON TEST, PROTECTING EXISTING DEVICES DURING CONSTRUCTION, ETC. EC SHALL INCLUDE IN BID THE COST FOR THE SCHOOL'S FIRE ALARM VENDOR TO PERFORM THIS WORK. THE CURRENT NHCS FIRE ALARM VENDOR IS KELLER'S INC. THE EC SHALL BE RESPONSIBLE FOR PAYING FOR ANY FALSE ALARMS CAUSED BY THE CONSTRUCTION FOR THIS PROJECT.

65. INSTALLATION INFORMATION PACKED WITH LIGHTING FIXTURES, DEVICES AND EQUIPMENT SHALL BE RETAINED FOR INCLUSION IN THE OPERATIONS AND MAINTENANCE MANUALS.

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CAPE FEAR COMMUNITY COLLEGE

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230 JASON P. FAMIGLIETTI

02/17/2025

PROJECT TITLE

CFCC Surf City Bldg SA Addition

621 NC HWY 210E,
HAMPSTEAD, NC

SCO ID# 24-28220-01A

SHEET TITLE

GENERAL NOTES

ISSUE BLOCK

Mark	Date	Description
4	02.12.2025	ISSUED FOR PERMIT
3	02.12.2025	SCO CD COMMENTS
2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	11.11.2024	GMP PRICING

PROJECT NO:	2024077.00
DATE:	02.12.2025
SCALE:	12" = 1'-0"
DRAWN BY: RRD	PROJ MGR: JPF

E-002

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PLAN-ORIENTATION

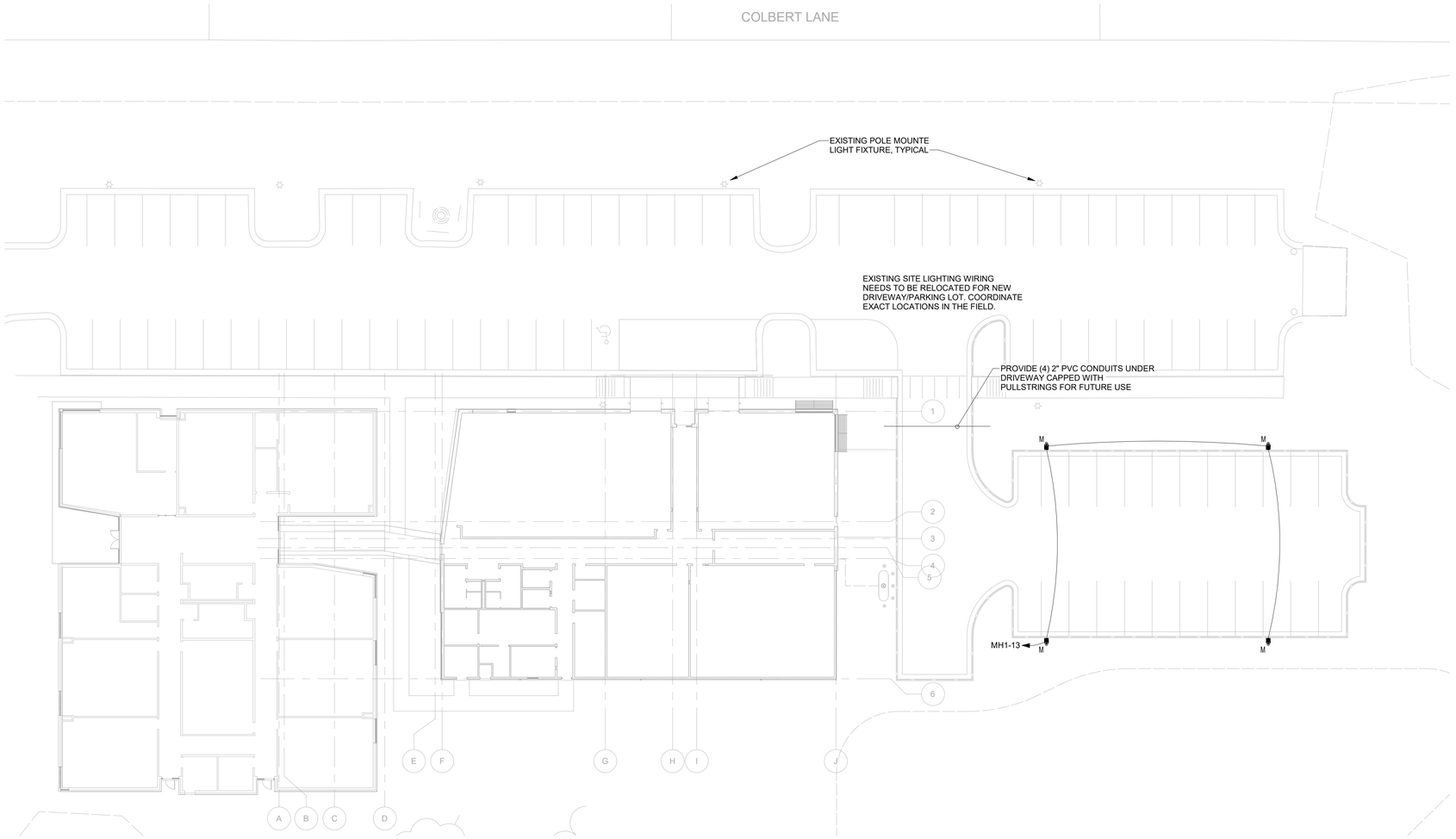
TRUE-NORTH

PLAN-NORTH

CONSTRUCTION LEGEND

1-HR FIRE PARTITION AND 1-HR FIRE BARRIER

2-HR FIRE WALL



1 ELECTRICAL SITE PLAN

SCALE: 1" = 20'-0"

20' 10' 0' 20'

SCALE : 1" = 20'-0"

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SCO ID# 24-28220-01A

SHEET TITLE

ELECTRICAL SITE PLAN

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PLAN-ORIENTATION

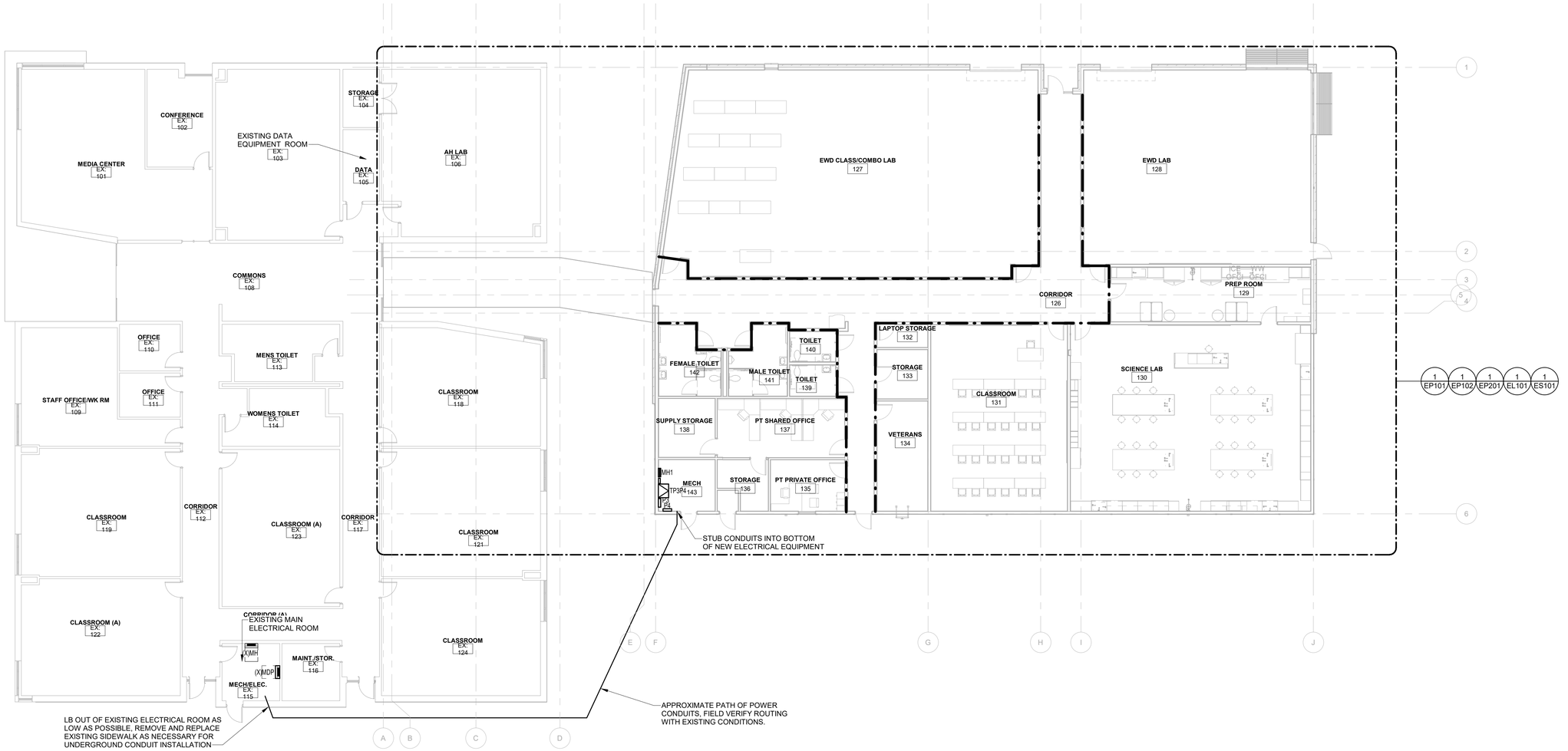
TRUE-NORTH

PLAN-NORTH

CONSTRUCTION LEGEND

1-HR FIRE PARTITION AND 1-HR FIRE BARRIER

2-HR FIRE WALL



1 FIRST FLOOR PLAN - OVERALL

SCALE: 3/32" = 1'-0"

8' 4' 2' 0' 8'

SCALE : 3/32" = 1'-0"

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02/17/2025

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HAMPSTEAD, NC

SCO ID# 24-28220-01A

SHEET TITLE

ELECTRICAL OVERALL PLAN

ISSUE BLOCK

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PLAN-ORIENTATION

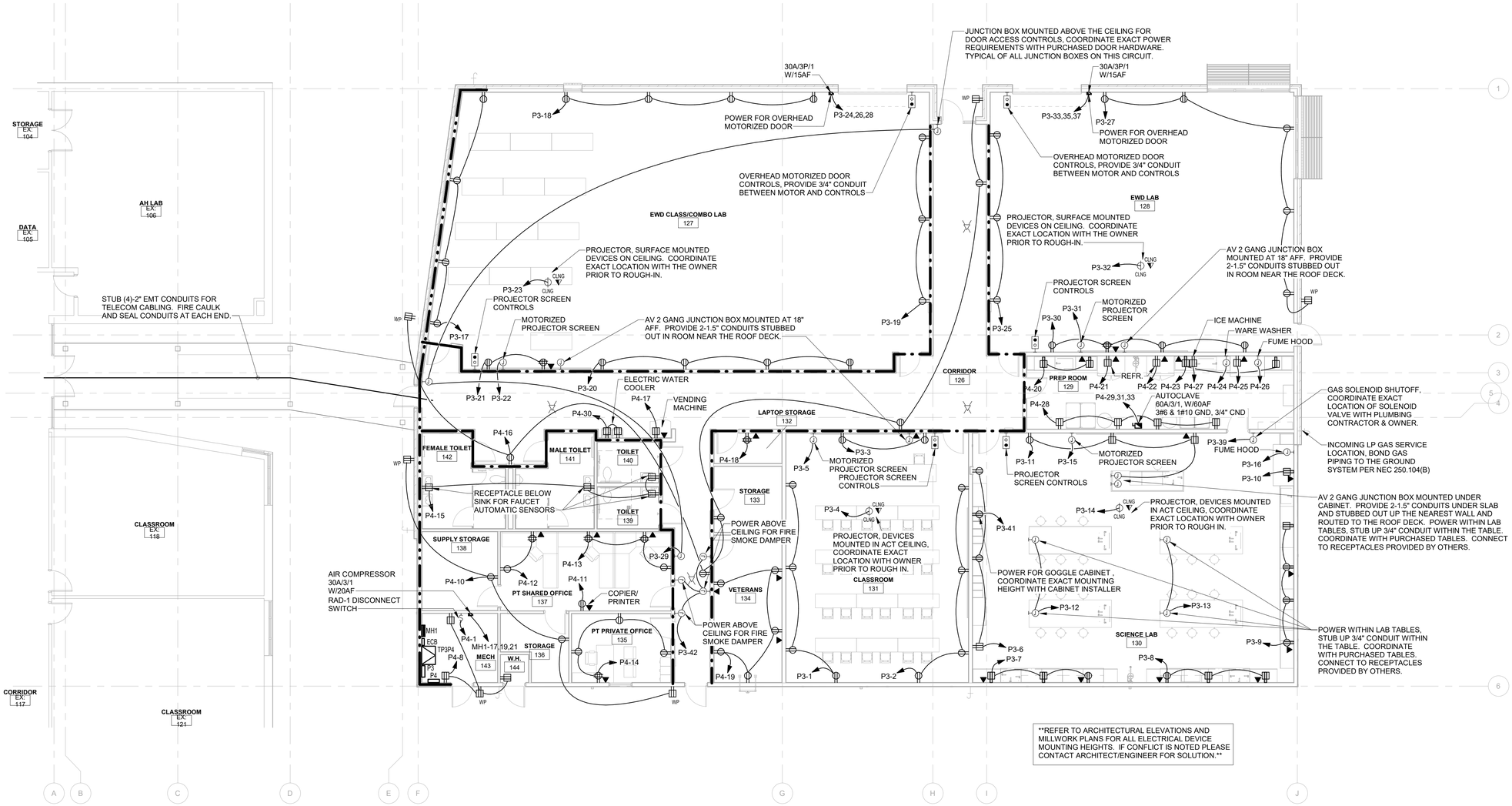
TRUE-NORTH

PLAN-NORTH

CONSTRUCTION LEGEND

1-HR FIRE PARTITION AND 1-HR FIRE BARRIER

2-HR FIRE WALL



REFER TO ARCHITECTURAL ELEVATIONS AND MILLWORK PLANS FOR ALL ELECTRICAL DEVICE MOUNTING HEIGHTS. IF CONFLICT IS NOTED PLEASE CONTACT ARCHITECT/ENGINEER FOR SOLUTION.

1 FIRST FLOOR PLAN - POWER

SCALE: 1/8" = 1'-0"

8' 4' 0' 8'

SCALE : 1/8" = 1'-0"

BECKER MORGAN GROUP

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615 South College Street, Suite 8-158
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302.369.3700

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CAPE FEAR COMMUNITY COLLEGE

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230 JASON P. FAMIGLIETTI

02/17/2025

PROJECT TITLE

CFCC Surf City Bldg SA Addition

621 NC HWY 210E,
HAMPSTEAD, NC

SCO ID# 24-28220-01A

SHEET TITLE

FLOOR PLANS - POWER

ISSUE BLOCK

Mark	Date	Description
4	02.12.2025	ISSUED FOR PERMIT
3	02.12.2025	SCO CD COMMENTS
2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	11.11.2024	GMP PRICING

PROJECT NO:	2024077.00
DATE:	02.12.2025
SCALE:	As indicated
DRAWN BY: RRD	PROJ MGR: JPF

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PLAN-ORIENTATION

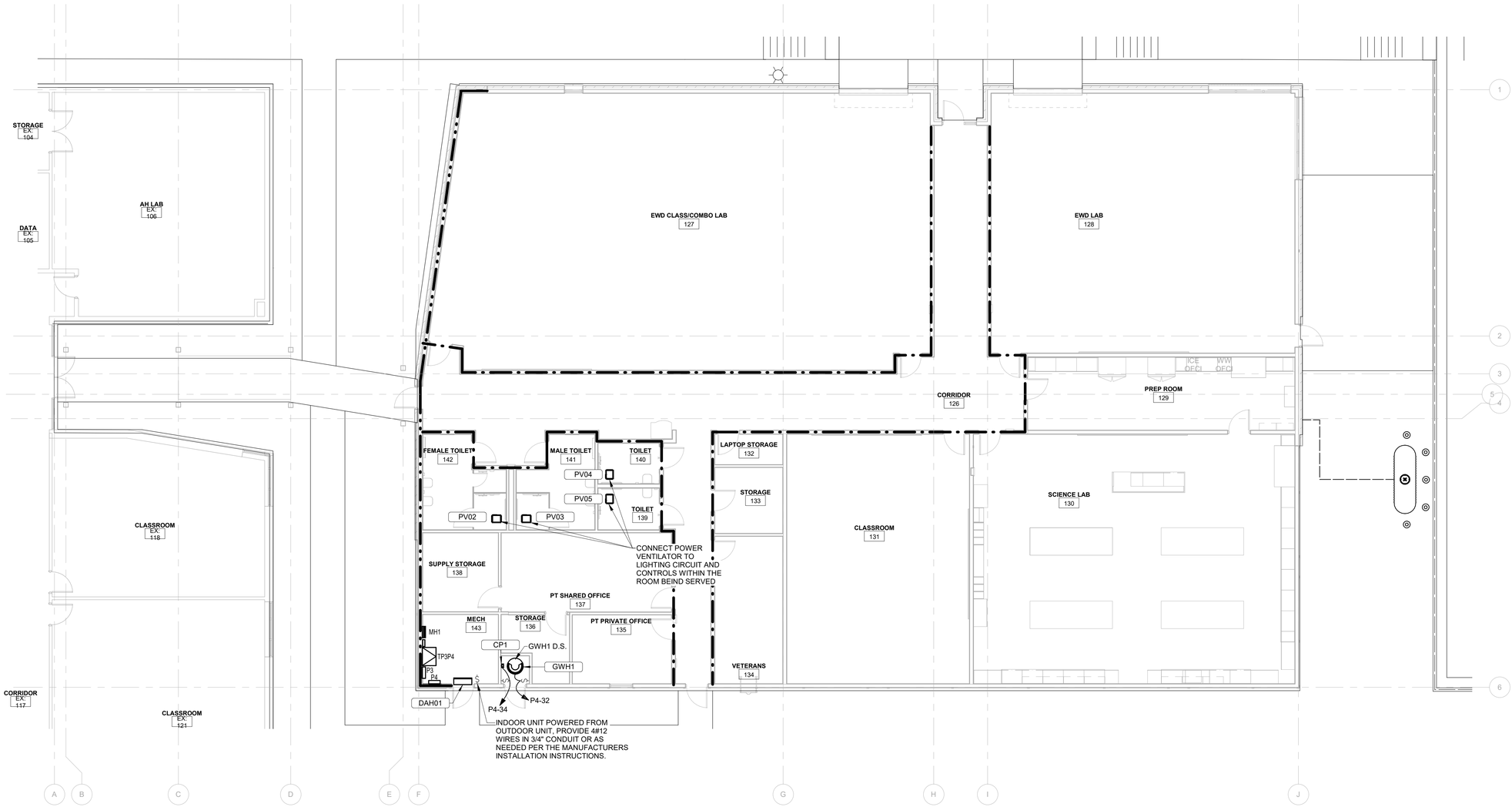
TRUE-NORTH

PLAN-NORTH

CONSTRUCTION LEGEND

1-HR FIRE PARTITION AND 1-HR FIRE BARRIER

2-HR FIRE WALL



1 FIRST FLOOR PLAN - HVAC POWER

SCALE: 1/8" = 1'-0"

8' 4' 0' 8'

SCALE : 1/8" = 1'-0"

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NORTH CAROLINA PROFESSIONAL ENGINEER JASON P. FAMIGLIETTI SEAL 35230

02/17/2025

PROJECT TITLE

CFCC Surf City Bldg SA Addition

621 NC HWY 210E,
HAMPSTEAD, NC

SCO ID# 24-28220-01A

SHEET TITLE

FLOOR PLANS - HVAC POWER PLAN

ISSUE BLOCK

Mark	Date	Description
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PLAN-ORIENTATION

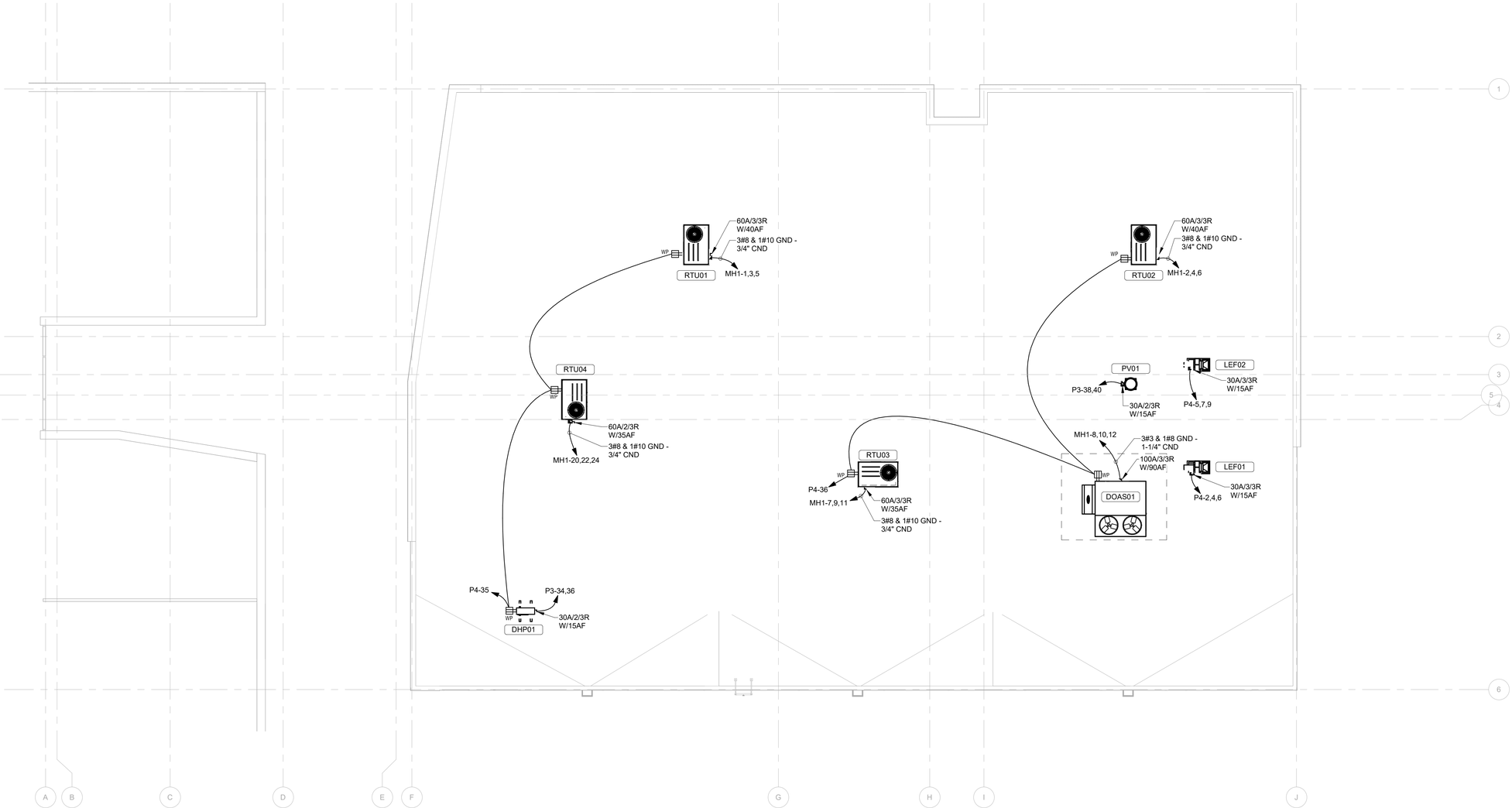
TRUE-NORTH

PLAN-NORTH

CONSTRUCTION LEGEND

1-HR FIRE PARTITION AND 1-HR FIRE BARRIER

2-HR FIRE WALL



1 ROOF PLAN - HVAC POWER

SCALE: 1/8" = 1'-0"

8' 4' 0' 8'

SCALE : 1/8" = 1'-0"

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02/17/2025

PROJECT TITLE

CFCC Surf City Bldg SA Addition

621 NC HWY 210E,
HAMPSTEAD, NC

SCO ID# 24-28220-01A

SHEET TITLE

ELECTRICAL ROOF POWER PLAN

ISSUE BLOCK

Mark	Date	Description
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LIGHTING CALCULATIONS					
DESCRIPTION	Avg	Max	Min	Max/Min	Avg/Min
CLASSROOM 131	37.8 fc	49.6 fc	20.6 fc	2.4:1	1.8:1
CORRIDOR 126	22.6 fc	30.6 fc	7.4 fc	4.1:1	3.1:1
EWD CLASS/COMBO 127	32.5 fc	42.2 fc	14.1 fc	3.0:1	2.3:1
EWD LAB 128	36.6 fc	44.8 fc	22.6 fc	2.0:1	1.6:1
FEMALE TOILET 142	29.9 fc	38.4 fc	21.0 fc	1.8:1	1.4:1
LAPTOP STORAGE 132	32.6 fc	36.8 fc	25.1 fc	1.5:1	1.3:1
MALE TOILET 141	30.8 fc	38.9 fc	22.4 fc	1.7:1	1.4:1
MECH 143	23.5 fc	28.8 fc	17.1 fc	1.7:1	1.4:1
PREP ROOM 129	28.9 fc	34.2 fc	22.0 fc	1.6:1	1.3:1
PT PRIVATE OFFICE 135	26.6 fc	33.5 fc	20.4 fc	1.6:1	1.3:1
PT SHARED OFFICE 152	24.4 fc	30.9 fc	16.6 fc	1.9:1	1.5:1
SCIENCE LAB 130	40.0 fc	54.2 fc	18.4 fc	2.9:1	2.2:1
STORAGE 133	25.4 fc	33.4 fc	20.0 fc	1.7:1	1.3:1
STORAGE 136	27.0 fc	33.2 fc	22.0 fc	1.5:1	1.2:1
SUPPLY STORAGE 151	39.7 fc	50.5 fc	29.3 fc	1.7:1	1.4:1
TOILET 139	19.4 fc	22.1 fc	15.5 fc	1.4:1	1.3:1
TOILET 140	19.4 fc	22.1 fc	15.6 fc	1.4:1	1.2:1
VETERANS 134	28.1 fc	33.5 fc	22.2 fc	1.5:1	1.3:1
BREEZEWAY	9.0 fc	12.5 fc	4.9 fc	2.6:1	1.8:1

PLAN-ORIENTATION

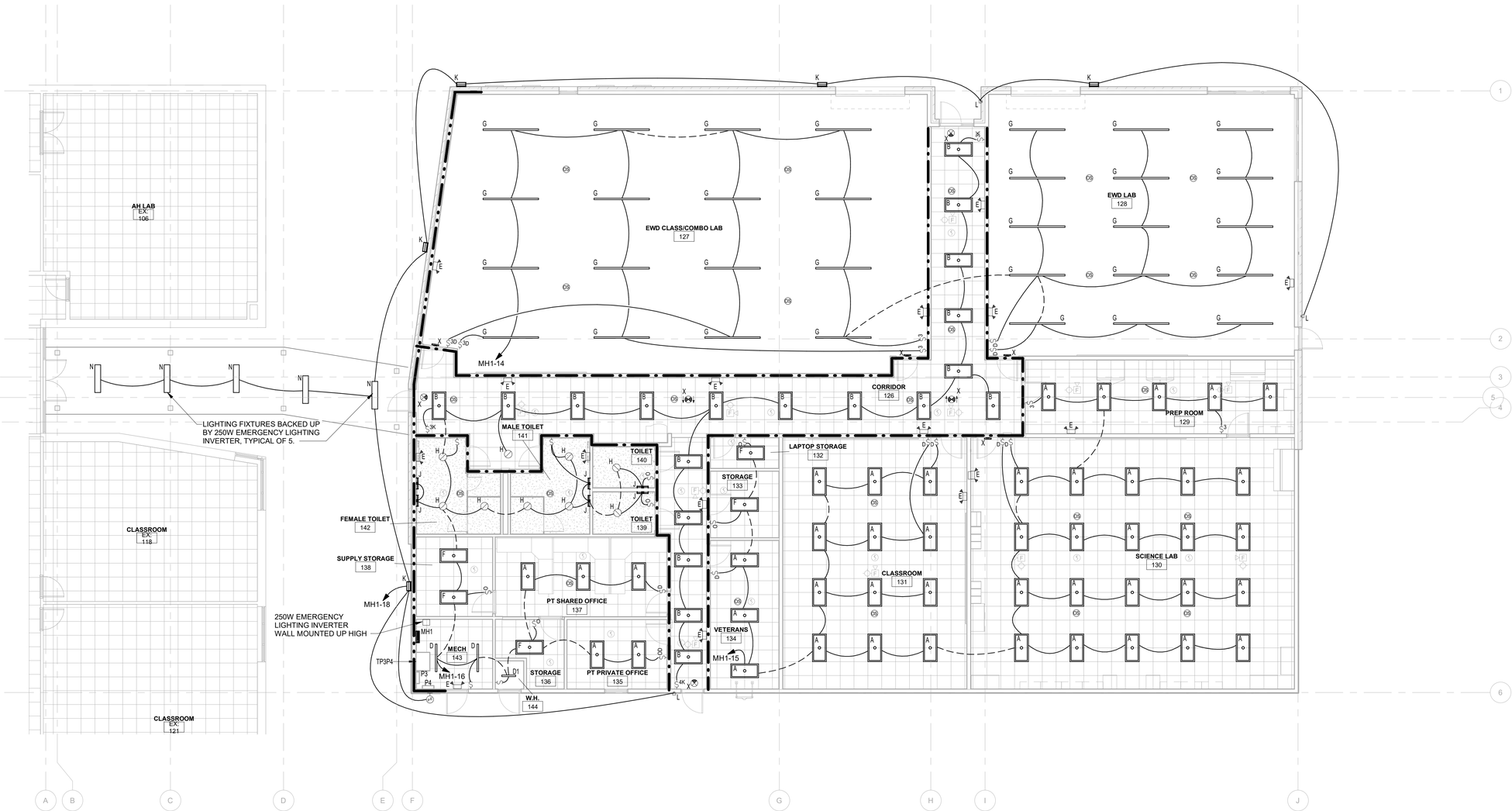
TRUE-NORTH

PLAN-NORTH

CONSTRUCTION LEGEND

1-HR FIRE PARTITION AND 1-HR FIRE BARRIER

2-HR FIRE WALL



1 NEW BUILDING FLOOR PLAN - LIGHTING

SCALE: 1/8" = 1'-0"

8' 4' 0' 8'

SCALE : 1/8" = 1'-0"

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02/17/2025

PROJECT TITLE

CFCC Surf City Bldg SA Addition

621 NC HWY 210E,
HAMPSTEAD, NC

SCO ID# 24-28220-01A

SHEET TITLE

ELECTRICAL LIGHTING PLAN

ISSUE BLOCK

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PLAN-ORIENTATION

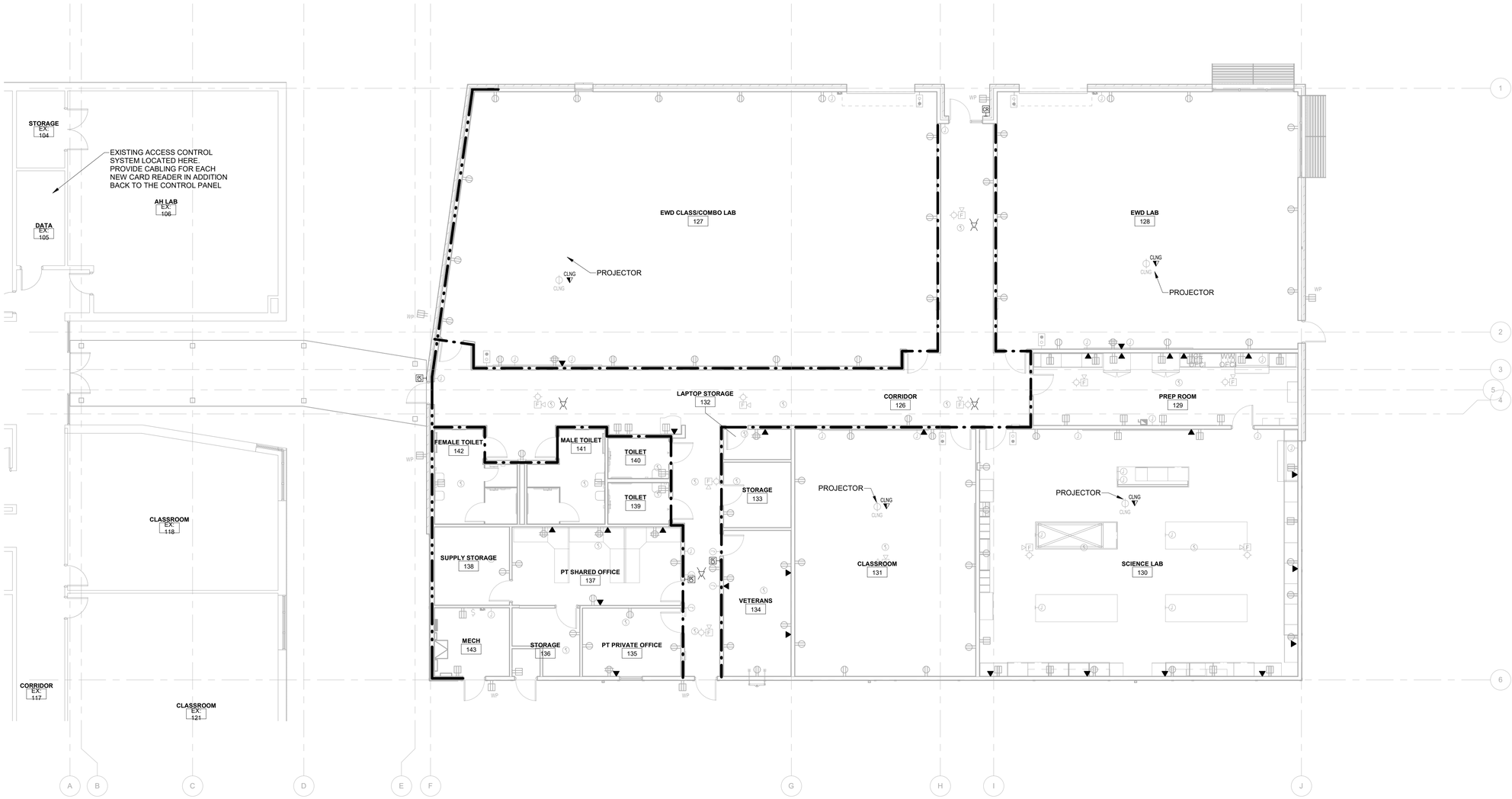
TRUE-NORTH

PLAN-NORTH

CONSTRUCTION LEGEND

1-HR FIRE PARTITION AND 1-HR FIRE BARRIER

2-HR FIRE WALL



1 NEW BUILDING FLOOR PLAN - SYSTEMS

SCALE: 1/8" = 1'-0"

8' 4' 0' 8'

SCALE : 1/8" = 1'-0"

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02/17/2025

PROJECT TITLE

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621 NC HWY 210E,
HAMPSTEAD, NC

SCO ID# 24-28220-01A

SHEET TITLE

ELECTRICAL SYSTEMS PLAN

ISSUE BLOCK

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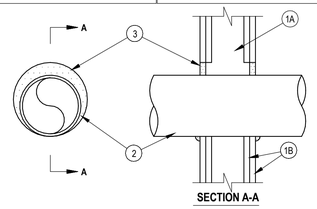
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System No W-L-1054

October 14, 2015

ANSI / UL1479 (ASTM E814)	CAN / ULC S115
F Ratings - 1 and 2 Hr (See Items 1 & 3)	F Ratings - 1 and 2 Hr (See Items 1 & 3)
T Ratings - 0 Hr	FT Ratings - 0 Hr
L Ratings at Ambient - Less Than 1 CFM / sq ft	FH Ratings - 1and 2 HR (See Items 1 and 3)
L Ratings at 400 F - Less Than 1 CFM / sq ft	FTH Ratings - 0 Hr
	FTH Ratings - 0 Hr L Rating at Ambient - Less Than 1 CFM / sq ft
	L Ratings at 400 F - Less Than 1 CFM / sq ft



SECTION A-A

1. WALL ASSEMBLY -- THE 1 OR 2 HR FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300A OR U400 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

   A. STUDS -- WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. LUMBER SPACED 16 IN. OC. STEEL STUDS TO BE MIN 2-1/2 IN. WIDE AND SPACED MAX 24 IN. OC. WHEN STEEL STUDS ARE USED AND THE DIAM OF OPENING EXCEEDS THE WIDTH OF STUD CAVITY, THE OPENING SHALL BE FRAMED ON ALL SIDES USING LENGTHS OF STEEL STUD INSTALLED BETWEEN THE VERTICAL STUDS AND SCREW-ATTACHED TO THE STEEL STUDS AT EACH END. THE FRAMED OPENING IN THE WALL SHALL BE 4 TO 6 IN. WIDER AND 4 TO 6 IN. HIGHER THAN THE DIAM OF THE PENETRATING ITEM SUCH THAT, WHEN THE PENETRATING ITEM IS INSTALLED IN THE OPENING, A 2 TO 3 IN. CLEARANCE IS PRESENT BETWEEN THE PENETRATING ITEM AND THE FRAMING ON ALL FOUR SIDES.

   B. GYPSUM BOARD* -- 5/8 IN. THICK, 4 FT WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM BOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. MAX DIAM OF OPENING IS 32-1/4 IN. FOR STEEL STUD WALLS. MAX DIAM OF OPENING IS 14-1/2 IN. FOR WOOD STUD WALLS.

   THE F RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE FIRE RATING OF THE WALL ASSEMBLY.

2. THROUGH-PENETRANTS -- ONE METALLIC PIPE, CONDUIT OR TUBING TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE SHALL BE MIN 0 IN. TO MAX 2-1/4 IN. PIPE MAY BE INSTALLED WITH CONTINUOUS POINT CONTACT. PIPE, CONDUIT OR TUBING MAY BE INSTALLED AT AN ANGLE NOT GREATER THAN 45 DEGREES FROM PERPENDICULAR. PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:

   A. STEEL PIPE -- NOM 30 IN DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.

   B. IRON PIPE -- NOM 30 IN. DIAM (OR SMALLER) CAST OR DUCTILE IRON PIPE.

   C. CONDUIT -- NOM 4 IN DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR 6 IN. DIAM STEEL CONDUIT.

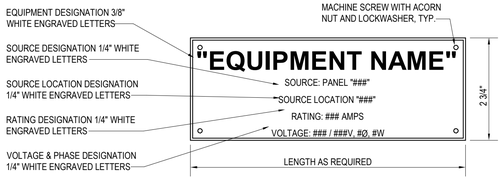
   D. COPPER TUBING -- NOM 6 IN. DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.

   E. COPPER PIPE -- NOM 6 IN. DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

3. FILL, VOID OR CAVITY MATERIAL* -- SEALANT -- MIN 5/8 IN. (16 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTH SURFACES OF WALL. AT THE POINT OR CONTINUOUS CONTACT LOCATIONS BETWEEN PIPE AND WALL, A MIN 1/2 IN. (13 MM) DIAM BEAD OF FILL MATERIAL SHALL BE APPLIED AT THE PIPE WALL INTERFACE ON BOTH SURFACES OF WALL.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC -- FS-ONE SEALANT

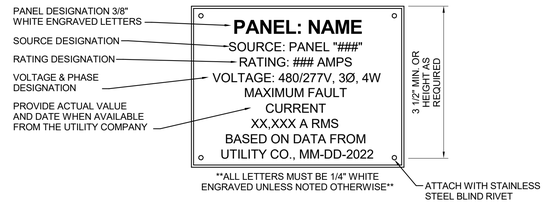
*INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

9 U.L. WL1054
NO SCALE



NOTE: SEE SPECS. SECTION 260553 FOR NAMEPLATE MATERIAL AND ENGRAVING COLORS.

8 NAME PLATE - EQUIPMENT
NO SCALE



NOTE: SEE SPECS. SECTION 260553 FOR NAMEPLATE MATERIAL AND ENGRAVING COLORS.

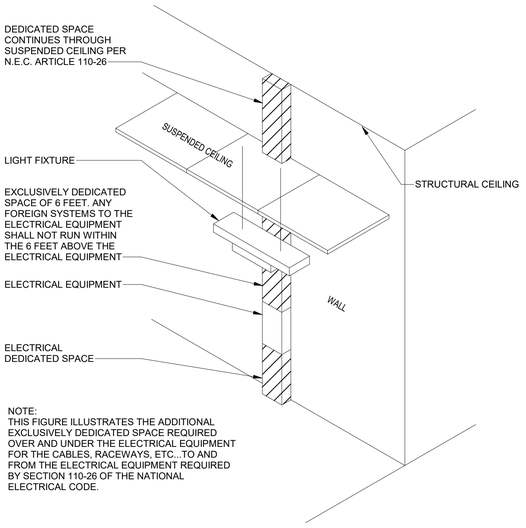
7 NAME PLATE - PANELBOARD
NO SCALE



NOTES:
1. LABEL SHOWN CAN BE SOURCED FROM SAFETYSIGN.COM, OTHER SUPPLIERS ARE COMPLIANTSIGNS.COM & SETON.COM

2. THIS WARNING LABEL MINIMALLY COMPLIES WITH NEC, HOWEVER IF ELECTRICAL EQUIPMENT IS LIKELY TO REQUIRE EXAMINATION OR MAINTENANCE WHILE ENERGIZED A DETAILED SHORT CIRCUIT AND ARC FLASH HAZARD ANALYSIS IS RECOMMENDED.

6 NAME PLATE - WARNING
NO SCALE



5 DEDICATED SPACE FOR ELECTRICAL EQUIPMENT N.E.C. ARTICAL 1101
NO SCALE

TABLE 110.26(A)(1) - WORKING SPACES

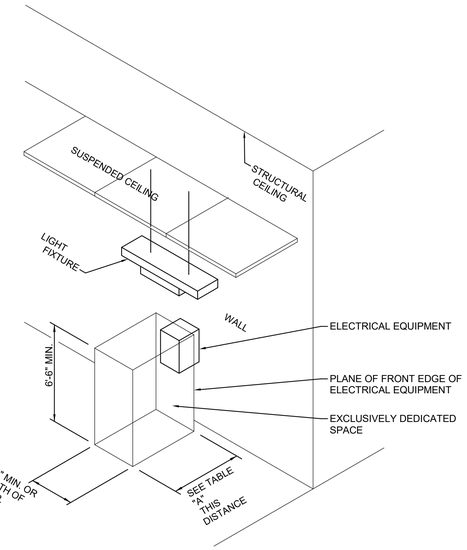
NOMINAL VOLTAGE TO GROUND	MINIMUM CLEAR DISTANCE (FEET)		
	CONDITION 1	CONDITION 2	CONDITION 3
0 - 150	900mm (3 ft)	900mm (3 ft)	900mm (3 ft)
151 - 600	900mm (3 ft)	1.0m (3 ft 6 in.)	1.2 m (4 ft.)
601 - 1000	900mm (3 ft)	1.2 m (4 ft.)	1.5 m (5 ft.)

NOTE: WHERE THE "CONDITIONS" ARE AS FOLLOWS:

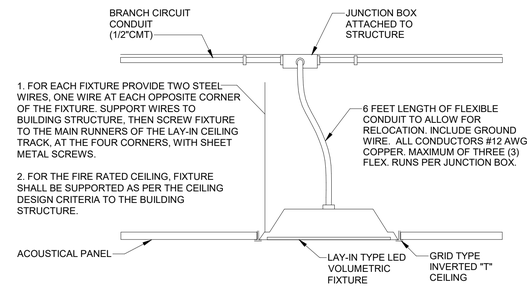
CONDITION 1 - EXPOSED LIVE PARTS ON ONE SIDE OF WORKING SPACE AND NO LIVE OR GROUNDED PARTS ON THE OTHER SIDE OF THE WORKING SPACE, OR EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORKING SPACE THAT ARE EFFECTIVELY GUARDED BY INSULATING MATERIALS.

CONDITION 2 - EXPOSED LIVE PARTS ON ONE SIDE OF THE WORKING SPACE AND GROUNDED PARTS ON THE OTHER SIDE OF WORKING SPACE. CONCRETE BRICK, OR TILE WALLS SHALL BE CONSIDERED GROUNDED.

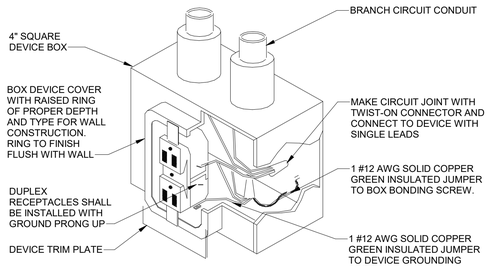
CONDITION 3 - EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORK SPACE



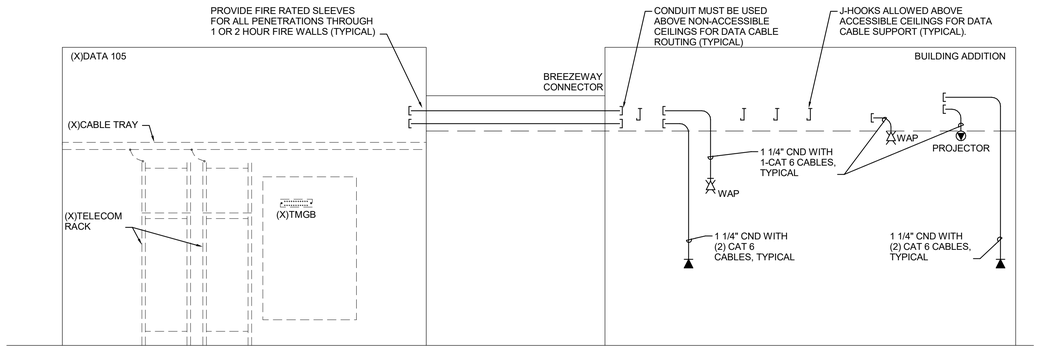
4 WORKING CLEARANCE FOR ELECTRICAL EQUIPMENT
NO SCALE



3 LIGHTING FIXTURE MOUNTING DETAIL
NO SCALE



2 RECEPTACLE GROUNDING DETAIL
NO SCALE



1 TELECOM RISER
NO SCALE

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02/17/2025

PROJECT TITLE

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621 NC HWY 210E,
HAMPSTEAD, NC

SCO ID# 24-28220-01A

SHEET TITLE

ELECTRICAL DETAILS

ISSUE BLOCK

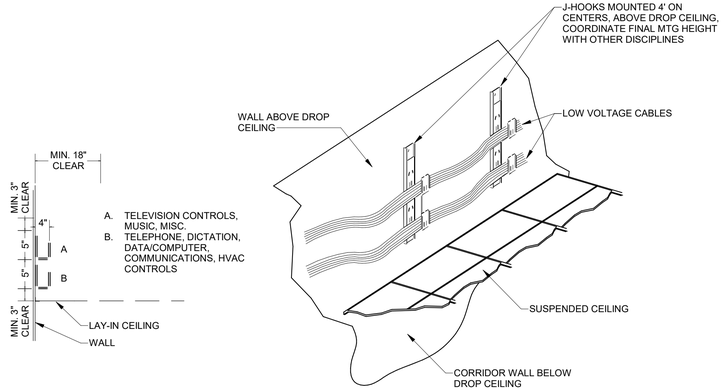
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3	02.12.2025	SCO CD COMMENTS
2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	11.11.2024	GMP PRICING

PROJECT NO: 2024077.00
DATE: 02.12.2025
SCALE: 12" = 1'-0"
DRAWN BY: RRD PROJ MGR: JPF

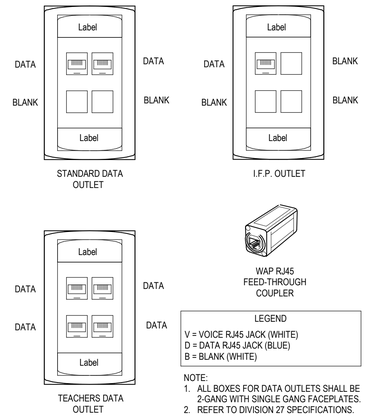
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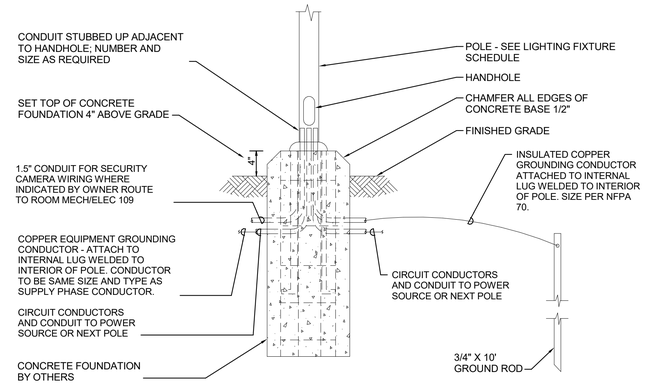
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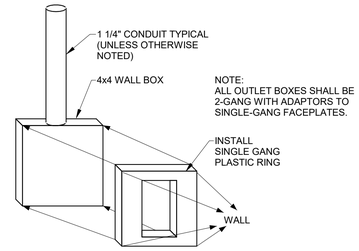
6 J-HOOK DETAIL
NO SCALE



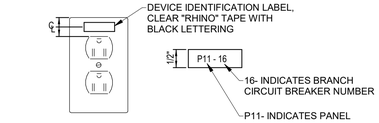
4 DATA FACE PLATE DETAIL
NO SCALE



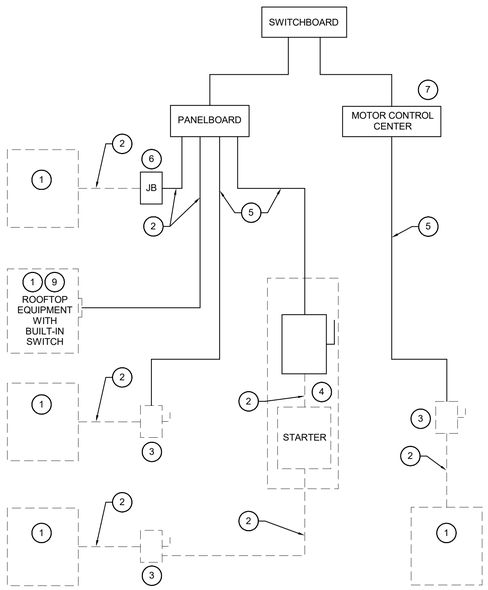
7 LIGHTING POLE BASE DETAIL
NO SCALE



5 OUTLET PATHWAY DETAIL
NO SCALE



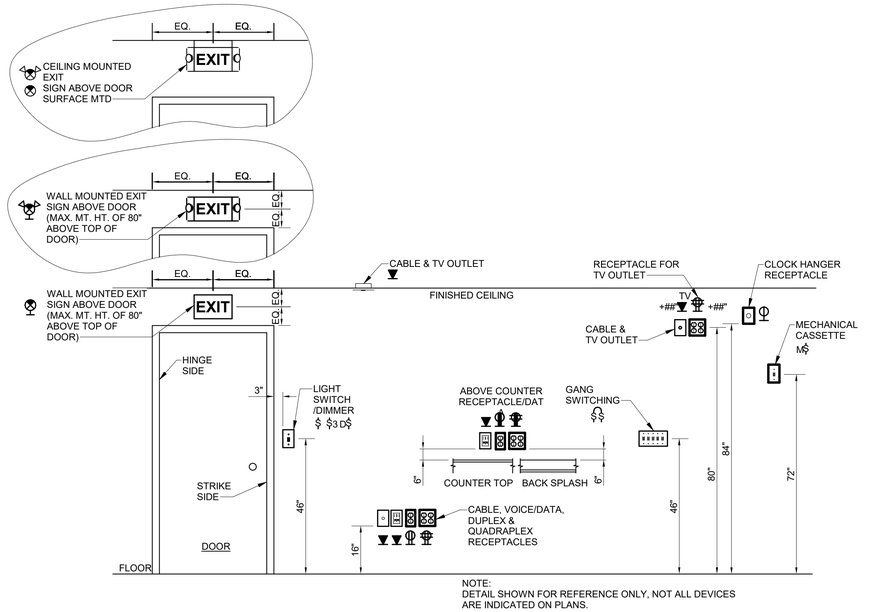
3 LABELING DETAIL
NO SCALE



2 EQUIPMENT CONNECTION DETAIL
NO SCALE

ELECTRICAL NOTES

1. EQUIPMENT OF TRADES OTHER THAN ELECTRICAL.
2. CONDUIT AND WIRING BY HVAC, PLUMBING CONTRACTOR OR OTHER TRADES.
3. IF AN ADDITIONAL DISCONNECT IS REQUIRED BY NEC, IT SHALL BE PROVIDED AND INSTALLED BY THE EQUIPMENT CONTRACTOR.
4. A COMBINATION STARTER OR VFD MAY BE USED IN LIEU OF A SEPARATE DISCONNECT SWITCH AND STARTER. LOCATE ADJACENT TO EQUIPMENT.
5. FEEDER CIRCUIT WIRING AND CONDUIT IN ELECTRICAL WORK. SEE PANELBOARD SCHEDULES FOR WIRE AND BREAKER SIZES.
6. JUNCTION BOX MAY BE SHOWN ON ELECTRICAL PLANS FOR SOME EQUIPMENT. IF NO STARTER OR DISCONNECT IS SUPPLIED, A JUNCTION BOX SHALL BE INSTALLED ADJACENT TO EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL PROVIDE LINE SIDE WIRING TO THE JUNCTION BOX. LOAD SIDE WIRING WILL BE PROVIDED BY MECHANICAL CONTRACTOR OR OTHER TRADES.
7. PROJECTS UTILIZING AN MCC, THE STARTER CB, OR VFD IN THE MCC ARE PROVIDED BY THE ELECTRICAL CONTRACTOR.
8. IN ALL CASES THE EQUIPMENT CONTRACTOR SHALL MAKE FINAL CONNECTIONS, START UP AND TEST EQUIPMENT.
9. IF THE ROOF TOP FAN IS NOT PROVIDED WITH BUILT IN SWITCH, THE ELECTRICAL CONTRACTOR SHALL PROVIDE A DISCONNECT SWITCH.
10. IN A SINGLE PRIME CONTRACT, IT IS THE RESPONSIBILITY OF THE PRIMARY CONTRACTOR TO COORDINATE BETWEEN THE ELECTRICAL AND OTHER TRADES.



1 ELECTRICAL DEVICES MOUNTING DETAIL
NO SCALE

BECKER MORGAN GROUP

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CAPE FEAR COMMUNITY COLLEGE

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230 JASON P. FAMIGLIETTI
02/17/2025

PROJECT TITLE

CFCC Surf City Bldg SA Addition

621 NC HWY 210E,
HAMPSTEAD, NC

SCO ID# 24-28220-01A

SHEET TITLE

ELECTRICAL DETAILS

ISSUE BLOCK

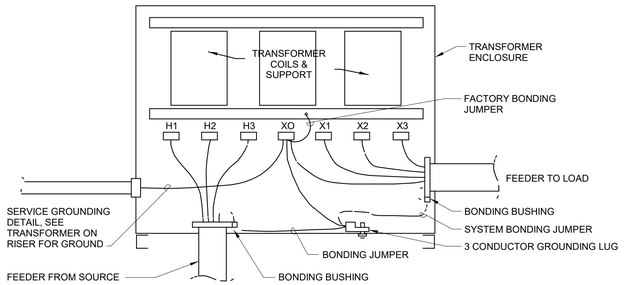
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1	11.11.2024	GMP PRICING

PROJECT NO:	2024077.00
DATE:	02.12.2025
SCALE:	12" = 1'-0"
DRAWN BY: RRD	PROJ MGR: JPF

E-502

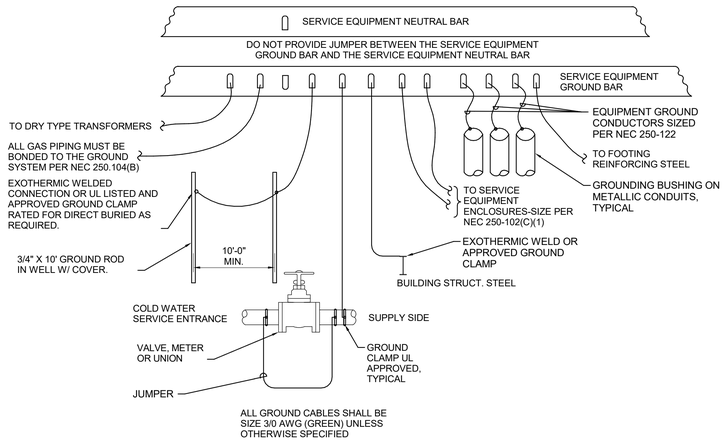
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2 TRANSFORMER GROUNDING DETAIL

NO SCALE



1 GROUNDING REMOTE BUILDING

NO SCALE

BECKER MORGAN GROUP

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CAPE FEAR COMMUNITY COLLEGE

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230 JASON P. FAMIGLIETTI

02/17/2025

PROJECT TITLE

CFCC Surf City Bldg SA Addition

621 NC HWY 210E,
HAMPSTEAD, NC

SCO ID# 24-28220-01A

SHEET TITLE

ELECTRICAL DETAILS

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LOAD SUMMARY

VOLTAGE	PHASE
480	3

EXISTING DEMAND LOAD (DETERMINED BY 1 YEAR POWER BILLS)	91,520	WATTS
ASSUMED POWER FACTOR OF .8	114,400	VA
EXISTING DEMAND AMPS	138	AMPS
x 125% (PER NEC 220.87)	172	AMPS
LOAD ADDED THIS PROJECT		
LARGEST MOTOR APPROX. AMPS	51	AMPS
LARGEST MOTOR APPROX. AMPS X .25	13	AMPS
HVAC		
RTU01-04	73,838	VA
DOAS1	15,442	VA
DAH/DHP 01-04	6,822	VA
SUB-TOTAL HVAC DEMAND	96,102	VA
SUB-TOTAL HVAC DEMAND	116	AMPS
EQUIPMENT		
GWH1	200	VA
AIR COMPRESSOR	3,500	VA
MOTORIZED DOORS	3,000	VA
PV01	166	VA
SUB-TOTAL EQUIPMENT DEMAND	6,866	VA
SUB-TOTAL EQUIPMENT DEMAND	8	AMPS
ADD FOR LARGEST MOTOR	13	AMPS
TOTAL EQUIPMENT DEMAND	21	AMPS
LIGHTING		
LIGHTS (INTERIOR)	9,973	VA
LIGHTS (EXTERIOR)	750	VA
TOTAL LIGHTING LOAD	10,723	VA
LIGHTING LOAD x 1.25	13,404	VA
TOTAL DEMAND FOR LIGHTING	16	AMPS
RECEPTACLES	21,600	VA
FIRST 10000VA	10,000	VA
REMAINDER @ 50%	5,800	VA
TOTAL DEMAND FOR RECEPTACLE	15,800	VA
TOTAL DEMAND FOR RECEPTACLE	19	AMPS
TOTAL LOAD ADDED THIS PROJECT	172	AMPS
TOTAL LOAD ADDED THIS PROJECT	142,772	VA
TOTAL DEMAND BUILDING AMPS	344	AMPS
TOTAL DEMAND BUILDING VA	285,772	VA

EXISTING 800AMP SERVICE IS ADEQUATE TO HANDLE ADDITION

Branch Panel: (X)MDP

Location: MECH/ELEC. EX: 115
Supply From:
Mounting:
Enclosure: Type 1

Volts: 480Y/277
Phases: 3
Wires: 4

A.I.C. Rating: 14,000 AMPS SYMMETRICAL
Mains Type: MAIN CB
Mains Rating: 800.0 A
MCB Rating: 800.0 A

Notes: MANUFACTURER EATON, SERIES POW-R-LINE

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	*(X)SPACE*	--	1	-- 0 VA			1	*20.0 A*	*(X)LTG: INTERIOR*	2
3	*(X) LTG: PARKING LOT*	*20.0 A*	1		0 VA 0 VA		1	*20.0 A*	*(X)LTG: INTERIOR*	4
5	*(X)LTG: INTERIOR*	*20.0 A*	1			0 VA 0 VA	1	*20.0 A*	*(X)LTG: INTERIOR*	6
7				-- 0 VA						8
9	*(X)SPACE*	--	3		-- 0 VA		3	*20.0 A*	*(X)WATER HEATER*	10
11						-- 0 VA				12
13				0 VA --						14
15	*(X)PHP-1*	*60.0 A*	3		0 VA --		3	--	*(X)SPACE*	16
17						0 VA --				18
19				-- 0 VA						20
21	*N/A*	--	3		-- 0 VA		3	*500.0 A*	*(X)PANEL MH*	22
23						-- 0 VA				24
25				53794 VA 0 VA						26
27	**PANEL MH1 (NOTE 1)**	**250.0 A**	3		55297 VA 0 VA		3	**125.0 A**	**TP3P4 (NOTE 1)**	28
29						53151 VA 0 VA				30
31				-- --						32
33	*(X)SPACE*	--	3		-- --		3	--	*(X)SPACE*	34
35						-- --				36
37				0 VA 0 VA						38
39	*(X)SPD*	*60.0 A*	3		0 VA 0 VA		3	*175.0 A*	*(X)XFMR TP1P2*	40
41						0 VA 0 VA				42
		Total Load:		53794 VA	55297 VA	53151 VA				
		Total Amps:		194.6 A	200.0 A	191.9 A				

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
HVAC	150251 VA	100.00%	150251 VA		
Power	8765 VA	100.00%	8765 VA	**Total Conn. Load:**	162181 VA
Lighting	4767 VA	125.00%	5959 VA	**Total Est. Demand:**	162984 VA
				Total Conn.:	195.1 A
				Total Est. Demand:	196.0 A

Notes:
1. NEW CIRCUIT BREAKER ADDED TO EXISTING PANELBOARD.

Branch Panel: MH1

Location: MECH 143
Supply From: (X)MDP
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 480Y/277
Phases: 3
Wires: 4

A.I.C. Rating: 14,000 AMPS SYMMETRICAL
Mains Type: MAIN CB
Mains Rating: 250.0 A
MCB Rating: 250.0 A

Notes:

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1				8403 VA 8403 VA						2
3	RTU01 (ON ROOF)	40.0 A	3		8403 VA 8403 VA		3	40.0 A	RTU02 (ON ROOF)	4
5						8403 VA 8403 VA				6
7				7627 VA 18025 VA						8
9	RTU03 (ON ROOF)	35.0 A	3		7627 VA 18025 VA		3	90.0 A	DOAS1 (ON ROOF)	10
11						7627 VA 18025 VA				12
13	LTG: POLE MOUNTED PARKING LOT	20.0 A	1	688 VA 3286 VA			1	20.0 A	LTG: EWD CLASS 127 & EWD LAB 128	14
15	LTG: ROOMS 129,130,131,132,133,134	20.0 A	1		1268 VA 1033 VA		1	20.0 A	LTG: 126,135,136,139,140,141,142,143,151,152	16
17						2922 VA 223 VA	1	20.0 A	LTG: EXTERIOR	18
19	AIR COMPRESSOR MECH 143	20.0 A	3	2922 VA 7627 VA						20
21					2922 VA 7627 VA		3	35.0 A	RTU04 (ON ROOF)	22
23						7627 VA				24
25										26
27										28
29										30
31										32
33										34
35										36
37				0 VA						38
39					0 VA		3	30.0 A	SPD	40
41						0 VA				42
	Total Load:			53794 VA	55297 VA	53151 VA				
	Total Amps:			194.6 A	200.0 A	191.9 A				

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
HVAC	150251 VA	100.00%	150251 VA		
Power	8765 VA	100.00%	8765 VA	**Total Conn. Load:**	162181 VA
Lighting	4767 VA	125.00%	5959 VA	**Total Est. Demand:**	162984 VA
				Total Conn.:	195.1 A
				Total Est. Demand:	196.0 A

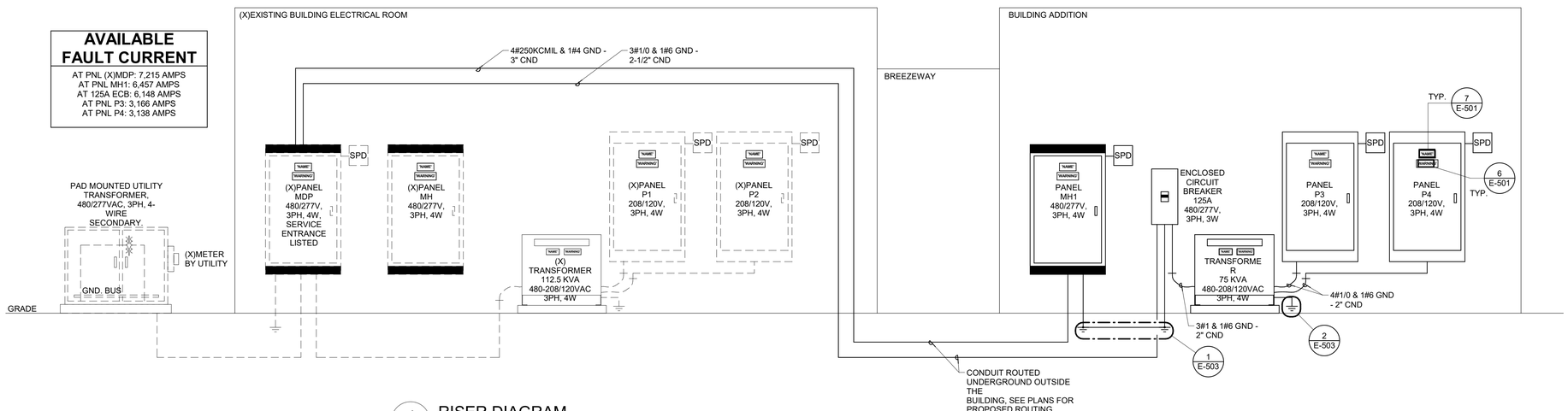
Notes:

NOTE:
1. SHORT CIRCUIT CALCULATION COMPLETED ON 08/22/2024. BASED ON A 300KVA PAD MOUNTED TRANSFORMER @ 5.0% IMPEDANCE, AND 4.15 X/R.
2. SERVICE EQUIPMENT SHALL BE LEGIBLY MARKED WITH MAX. AVAILABLE FAULT CURRENT, INCLUDING THE DATE THE FAULT CURRENT CALCULATIONS WERE PERFORMED, PER NEC 110.24

SPD NOTE:
1. SURGE PROTECTION DEVICE (SPD) MUST BE MOUNTED TO KEEP LEADS AS SHORT AS POSSIBLE.
2. SPD's MUST BE INSTALLED ON A 30A, 3 POLE BREAKER IN PANELBOARD BEING PROTECTED. MAKE CONNECTIONS WITH 10 AWG CONDUCTORS AS PROVIDED BY SPD MANUFACTURER. IF SPD MANUFACTURER PROVIDES TERMINAL BLOCK ONLY (NO CONDUCTORS, OR CONDUCTORS OTHER THAN 10 AWG, THEN REFERENCE NEC TO DETERMINE BREAKER SIZE REQUIRED AND/OR REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR REQUIRED BREAKERS SIZE; NEC REQUIRED BREAKER SIZE IS BASED ON CONDUCTOR AWG. IF BREAKER REQUIRED IS OTHER THAN 30 A (10 AWG CONDUCTORS), PROVIDE NEC REQUIRED BREAKER AT NO ADDITIONAL COST TO OWNER

AVAILABLE FAULT CURRENT

AT PNL (X)MDP: 7,215 AMPS
AT PNL MH1: 6,457 AMPS
AT 125A ECB: 6,148 AMPS
AT PNL P3: 3,166 AMPS
AT PNL P4: 3,138 AMPS



1 RISER DIAGRAM
NO SCALE

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CAPE FEAR COMMUNITY COLLEGE

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230 JASON P. FAMIGLIETTI
02/17/2025

PROJECT TITLE

CFCC Surf City Bldg SA Addition

621 NC HWY 210E,
HAMPSTEAD, NC

SCO ID# 24-28220-01A

SHEET TITLE

ELECTRICAL RISER DIAGRAM AND SCHEDULES

ISSUE BLOCK

Mark	Date	Description
4	02.12.2025	ISSUED FOR PERMIT
3	02.12.2025	SCO CD COMMENTS
2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	11.11.2024	GMP PRICING

PROJECT NO: 2024077.00
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DRAWN BY: RRD PROJ MGR: JPF

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Branch Panel: P3

Location: MECH 143 | **Volts:** 208Y/120 | **A.I.C. Rating:** 14,000 AMPS SYMMETRICAL
Supply From: | **Phases:** 3 | **Mains Type:** MAIN CB
Mounting: RECESSED | **Wires:** 4 | **Mains Rating:** 150.0 A
Enclosure: NEMA 1 | **MCB Rating:** 150.0 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	RECS: RH SIDE CLASSROOM 131	20.0 A	1	720 VA	720 VA					1	20.0 A	RECS: LH SIDE CLASSROOM 131	2
3	RECS: FRONT CLASSROOM 131	20.0 A	1			360 VA	1200 VA			1	20.0 A	PROJECTOR CLASSROOM 131	4
5	PROJECTOR SCREEN POWER CLASSROOM 131	20.0 A	1					360 VA	540 VA	1	20.0 A	RECS: RH SIDE SCIENCE LAB 130	6
7	RECS: BACK WALL SCIENCE LAB 130	20.0 A	1	180 VA	180 VA					1	20.0 A	RECS: BACK WALL SCIENCE LAB 130	8
9	RECS: LH SIDE SCIENCE LAB 130	20.0 A	1			540 VA	0 VA			1	20.0 A	REC: FUME HOOD SCIENCE LAB 130	10
11	RECS: FRONT WALL SCIENCE LAB 130	20.0 A	1					900 VA	1440 VA	1	20.0 A	RECS: DESKS SCIENCE LAB 130 (NOTE 1)	12
13	RECS: DESKS SCIENCE LAB 130 (NOTE 1)	20.0 A	1	1440 VA	1200 VA					1	20.0 A	PROJECTOR SCIENCE LAB 130	14
15	PROJECTOR SCREEN SCIENCE LAB 130	20.0 A	1			360 VA	400 VA			1	20.0 A	FUME HOOD SCIENCE LAB 130	16
17	RECS: LH WALL EWD CLASS 127	20.0 A	1					720 VA	720 VA	1	20.0 A	RECS: BACK WALL EWD CLASS 127	18
19	RECS: RH WALL EWD CLASS 127	20.0 A	1	540 VA	720 VA					1	20.0 A	RECS: FRONT WALL EWD CLASS 127	20
21	RECS: FRONT WALL EWD CLASS 127	20.0 A	1			540 VA	360 VA			1	20.0 A	MOTORIZED PROJECTOR SCREEN EWD CLASS 127	22
23	PROJECTOR EWD CLASS 127	20.0 A	1					1200 VA	292 VA	3	15.0 A	OVERHEAD DOOR EWD CLASS 127	24
25	RECS: RH WALL EWD LAB 128	20.0 A	1	540 VA	292 VA								26
27	RECS: BACK& RH WALL EWD LAB 128	20.0 A	1			1080 VA	292 VA						28
29	ACCESS CONTROL	20.0 A	1					559 VA	900 VA	1	20.0 A	RECS: FRONT WALL EWD LAB 128	30
31	PROJECTOR SCREEN EWD LAB 126	20.0 A	1	360 VA	1200 VA					1	20.0 A	PROJECTOR EWD LAB	32
33	OVERHEAD DOOR EWD LAB 128	15.0 A	3			292 VA	774 VA			2	15.0 A	DHP01 ON ROOF	34
35								292 VA	774 VA				36
37				292 VA	135 VA					2	15.0 A	PV01 (ON ROOF)	38
39	GAS SOLENOID SHUTOFF VALVE SCIENCE LAB 130	20.0 A	1			360 VA	135 VA						40
41	RCPT	20.0 A	1					400 VA	398 VA	1	20.0 A	FIRE SMOKE DAMPER POWER	42
43	SPARE	20.0 A	1	0 VA	0 VA					1	20.0 A	SPARE	44
45	SPARE	20.0 A	1			0 VA	0 VA			1	20.0 A	SPARE	46
47	SPARE	20.0 A	1					0 VA	0 VA	1	20.0 A	SPARE	48
49	SPARE	20.0 A	1	0 VA	0 VA								50
51	SPARE	20.0 A	1			0 VA	0 VA			3	30.0 A	SPD	52
53	SPARE	20.0 A	1					0 VA	0 VA				54
		Total Load:		8344 VA		6593 VA		9389 VA					
		Total Amps:		71.8 A		54.9 A		80.5 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
HVAC	1818 VA	100.00%	1818 VA		
Other	360 VA	100.00%	360 VA	**Total Conn. Load:**	24315 VA
Power	7787 VA	100.00%	7787 VA	**Total Est. Demand:**	22114 VA
RCPT	14412 VA	84.69%	12206 VA	**Total Conn.:**	67.5 A
				Total Est. Demand:	61.4 A

Notes:
1. PROVIDE GFI CIRCUIT BREAKER.

Branch Panel: P4

Location: MECH 143 | **Volts:** 208Y/120 | **A.I.C. Rating:** 14,000 AMPS SYMMETRICAL
Supply From: | **Phases:** 3 | **Mains Type:** MAIN CB
Mounting: RECESSED | **Wires:** 4 | **Mains Rating:** 150.0 A
Enclosure: NEMA 1 | **MCB Rating:** 150.0 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	RAD-1	20.0 A	1	800 VA	420 VA								2
3							420 VA			3	15.0 A	LEF01	4
5								0 VA	420 VA				6
7	LEF02	15.0 A	3	0 VA	720 VA					1	20.0 A	RECS: MECH 143 AND EXTREIOR	8
9						0 VA	720 VA			1	20.0 A	RECS: 136 & 151 AND EXTERIOR	10
11	RECS: COPIER/PRINTER OFFICE 152	20.0 A	1					1500 VA	540 VA	1	20.0 A	RECS: OFFICE 152	12
13	RECS: OFFICE 152	20.0 A	1	900 VA	900 VA					1	20.0 A	RECS: OFFICE 135	14
15	RECS: TOILETS 139,140,141,142	20.0 A	1			720 VA	1260 VA			1	20.0 A	RECS: STORAGE 133, CORRIDOR 126, AND EXTERIOR	16
17	VENDING MACHINE CORRIDOR 126 (NOTE 1)	20.0 A	1					1500 VA	360 VA	1	20.0 A	RECS: LAPTOP STORAGE 132	18
19	RECS: VETERANS 134	20.0 A	1	900 VA	360 VA					1	20.0 A	RECS: COUNTER PREP ROOM 129	20
21	RECS: REFRIGERATOR PREP ROOM 129	20.0 A	1			180 VA	180 VA			1	20.0 A	REFRIGERATOR PREP ROOM 129	22
23	RECS: COUNTER PREP ROOM 129	20.0 A	1					0 VA	1500 VA	1	20.0 A	WARE WASHER PREP ROOM 129	24
25	REC: FUME HOOD PREP ROOM 129	20.0 A	1	360 VA	400 VA					1	20.0 A	FUME HOOD PREP ROOM 129	26
27	ICE AMCHINE PREP ROOM 129	20.0 A	1			1500 VA	720 VA			1	20.0 A	RECS: PREP ROOM 129	28
29								3120 VA	360 VA	1	20.0 A	ELECTRIC WATER COOLER CORRIDOR 126 (NOTE 1)	30
31	AUTOCLAVE PREP ROOM 129	60.0 A	3	3120 VA	600 VA					1	20.0 A	GWH1	32
33						3120 VA	60 VA			1	20.0 A	CP1	34
35	RECS: ROOF	20.0 A	1					540 VA	540 VA	1	20.0 A	RECS: ROOF	36
37	SPARE	20.0 A	1	0 VA	0 VA					1	20.0 A	SPARE	38
39	SPARE	20.0 A	1			0 VA	0 VA			1	20.0 A	SPARE	40
41	SPARE	20.0 A	1					0 VA	0 VA	1	20.0 A	SPARE	42
43	SPARE	20.0 A	1	0 VA	0 VA					1	20.0 A	SPARE	44
45	SPARE	20.0 A	1			0 VA	0 VA			1	20.0 A	SPARE	46
47	SPARE	20.0 A	1					0 VA	0 VA	1	20.0 A	SPARE	48
49	SPARE	20.0 A	1	0 VA	0 VA								50
51	SPARE	20.0 A	1			0 VA	0 VA			3	30.0 A	SPD	52
53	SPARE	20.0 A	1					0 VA	0 VA				54
		Total Load:		9480 VA		8880 VA		10380 VA					
		Total Amps:		79.8 A		74.0 A		87.3 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
HVAC	1261 VA	100.00%	1261 VA		
Motor	60 VA	125.00%	75 VA	**Total Conn. Load:**	28741 VA
Power	12060 VA	100.00%	12060 VA	**Total Est. Demand:**	26376 VA
RCPT	14760 VA	83.88%	12380 VA	**Total Conn.:**	79.8 A
PLUMBING	600 VA	100.00%	600 VA	**Total Est. Demand:**	73.2 A

Notes:
1. GFI CIRCUIT BREAKER.

LIGHTING FIXTURE SCHEDULE

MARK	DESCRIPTION	MANUFACTURER/SERIES	NOM. SIZE	SOURCE / TEMP(oK) / DELIVERED LUMENS	VOLTS	WATTS	LENS	COLOR/ MATERIAL	MOUNTING HEIGHT	DRIVER/ DIMMING	REMARKS
A	LAY-IN VOLUMETRIC FIXTURE	DAY-BRITE FLUXGRID SERIES LITHONIA LIGHTING STAKS AL06 SERIES METALUX CRUZE ST 24CZ2 SERIES	2'x4'x4"	LEDs / 3500K / 4200 LUMENS	277	30	ACRYLIC	WHITE/ STEEL	RECESSED	LED DRIVER 0-10V DIMMING	
B	LAY-IN VOLUMETRIC FIXTURE	DAY-BRITE FLUXGRID SERIES LITHONIA LIGHTING STAKS AL06 SERIES METALUX CRUZE ST 24CZ2 SERIES	2'x4'x4"	LEDs / 3500K / 3200 LUMENS	277	30	ACRYLIC	WHITE/ STEEL	RECESSED	LED DRIVER 0-10V DIMMING	
C	RECESSED LENSED DOWNLIGHT WITH 90 MINUTE EMERGENCY BATTERY BACKUP	LIGHTOLIER Z6RDL LITHONIA LIGHTING COOPER LIGHTING	6" DIA.	LEDs / 3500K / 2000 LUMENS	277	20	ACRYLIC	CLEAR/ STEEL	RECESSED	LED DRIVER	
D	LENSED STRIP FIXTURE	DAY-BRITE FLUXSTREAM LED SERIES LITHONIA LIGHTING CSS SERIES METALUX SNLED SERIES	2"x2"x4'	LEDs / 3500K / 3000 LUMENS	277	25	ACRYLIC	WHITE/ STEEL	SURFACE	LED DRIVER	
D1	LENSED STRIP FIXTURE	DAY-BRITE FLUXSTREAM LED SERIES LITHONIA LIGHTING CSS SERIES METALUX SNLED SERIES	2"x2"x2'	LEDs / 3500K / 2000 LUMENS	277	25	ACRYLIC	WHITE/ STEEL	SURFACE	LED DRIVER	
E	DUAL HEAD LIGHTING UNIT WITH 90 MINUTE EMERGENCY BATTERY BACKUP	MULE LIGHTING SSL-HO SERIES EELP EM23-E SERIES SURE-LITES SEL SERIES	7.5"x 4.25"x 2.25	LEDs /	277	3	N/A	WHITE/ PLASTIC	WALL MTD	LED DRIVER	
F	FLAT PANEL FIXTURE	DAY-BRITE SBP SERIES LITHONIA LIGHTING CPX LED SERIES METALUX FPS LED SERIES	2'x4'x1"	LEDs / 3500K / 4138 LUMENS	277	34	ACRYLIC	WHITE/ STEEL	RECESSED	LED DRIVER	
G	LINEAR EDGE LIT STRIP DOWN/UP LIGHT WITH FROSTED LENS	DAY-BRITE LBX LED SERIES LITHONIA LIGHTING UFIT METALUX ILED SERIES	8'	LEDs / 3500K / 8000 LUMENS	277	106	ACRYLIC	WHITE/ STEEL	SUSPENDED 14'-6" AFF	LED DRIVER 0-10V DIMMING	
H	RECESSED DOWNLIGHT MEDIUM BEAM ANGLE, SPECULAR CLEAR, POLISHED FLANGE	LIGHTOLIER Z6RDL LITHONIA LIGHTING LBR6 NCH SERIES HALO HC6 SERIES	6" DIA	LEDs / 3500K / 2000 LUMENS	277	20	N/A	CLEAR/ STEEL	RECESSED	LED DRIVER	
J	ABOVE MIRROR LINEAR VANITY FIXTURE	SCOTT ARCH S3ABX SERIES LITHONIA LIGHTING FMVCSLS SERIES DALS LIGHTING LEDVAN002 SERIES	22"	LEDs / 3500K / 1472 LUMENS	277	16	POLYCARB.	CLEAR/ ALUMINUM	WALL MTD. 6" ABOVE MIRROR	LED DRIVER	
K	FULL CUTOFF WALLPACK TYPE 2 DISTRIBUTION	GARDCO 101L LED SERIES LITHONIA LIGHTING WDGE2 LED SERIES MCGRAW EDISON IMPACT ELITE LED SERIES	16"x 7"x 9"	LEDs / 4000K / 2840 LUMENS	277	22	POLYCARB.	BLACK/ ALUMINUM	9'-0" AFF	LED DRIVER	3
L	FULL CUTOFF WALLPACK WITH 90 MINUTE EMERGENCY BATTERY BACKUP	MULE LIGHTING EDGE ACEM SERIES EELP OWEL SERIES SPITZER LIGHTING EWA SERIES	5"x5"x2"	LEDs / 4000K / 2000 LUMENS	277	9	POLYCARB.	BLACK/ ALUMINUM	9'-0" AFF	LED DRIVER	3
M	FULL CUTOFF POLE MOUNTED TYPE 4 FIXTURE MOUNTED TO 25FT SQUARE ALUMINUM POLE	VISIONAIRE VMX-II SERIES LITHONIA LIGHTING RSX2 SERIES LUMARK PREVAIL DISCRETE LED SERIES	28.5"x 4.75"x 15.25"	LEDs / 3500K / 22,750 LUMENS	277	172	POLYCARB.	BLACK/ ALUMINUM	25'-0" AFF	LED DRIVER	3,5
N	LINEAR NON METALLIC VAPORTIGHT FIXTURE	DAY-BRITE VAPORLUME V3W LITHONIA LIGHTING CSVT SERIES METALUX VAPORTITE LED SERIES	4'x 6"x 3"	LEDs / 4000K / 4300 LUMENS	277	29	POLYCARB.	SILVER/ PLASTIC	SURFACE	LED DRIVER	3
X	EXIT SIGN RED LETTERS 90 MINUTE BATTERY BATTERY BACKUP	MULE LIGHTING RMX SERIES EELP XES SERIES SURE-LITES APX SERIES	12"x 8"x 2"	LEDs /	277	4	N/A	WHITE/ PLASTIC	WALL OR CEILING	LED DRIVER	

REMARKS:
1. BI-LEVEL SWITCHING
2. DAMP LOCATION
3. WET LOCATION
4. WIREGUARD
5. LED REQUIRED SURGE PROTECTION
6. VERIFY FINAL MOUNTING HEIGHT WITH ARCHITECT
7. FINAL COLOR SELECTION BY ARCHITECT

GENERAL NOTES:
A. THE CONTRACTOR SHALL VERIFY THE LEAD TIME OF ALL PRODUCTS SPECIFIED IN THIS SCHEDULE AT THE TIME OF PACKAGE QUOTE.
B. DURING THE BID PROCESS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER OF ANY DELIVERY/SCHEDULING ISSUES.
C. NO SUBSTITUTIONS WILL BE ALLOWED DUE TO THE LACK OF COORDINATION OF DELIVERY DATES AND CONSTRUCTION SCHEDULE AFTER BID.
D. ALL EXPEDITED EXPENSES SHALL BE THE RESPONSIBILITY OF THE CONTRACTORS.
E. THE ELECTRICAL CONTRACTOR SHALL RECEIVE APPROVAL FOR ALL LIGHTING FIXTURES FROM THE ARCHITECT/OWNER PRIOR TO PURCHASE AND ROUGH-IN.
F. FIXTURES INSTALLED IN CEILINGS INDICATED ON THE ARCHITECTURAL PLANS AS HAVING INSULATION IN CONTACT WITH THE CEILING SURFACE SHALL BE MANUFACTURER RATED "IC"..
G. ALL LIGHTING FIXTURES PENETRATING RATED FLOOR/CEILING ASSEMBLY SHALL BE PROVIDED WITH ACCESSORIES TO MAINTAIN ASSEMBLY FIRE RATING. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL RATINGS.
H. "NL" ADJACENT TO FIXTURE INDICATES AN UNSWITCHED 24 HOUR NIGHT LIGHT. THE FIXTURE SHALL BE CONNECTED TO THE UNSWITCHED INDICATED CIRCUIT.
I. LED MODULES SHALL BE REPLACEABLE.
J. ALL EXIT AND EMERGENCY FIXTURES SHALL COMPLY WITH NCSBC STANDARDS AND HAVE AUTOMATIC TESTING DEVICES.
K. LED EMERGENCY BATTERY SHALL PROVIDE FULL RATED FIXTURE OUTPUT FOR 90 MINUTES MINIMUM.
L. SEE SPECIFICATIONS SECTIONS 265100 AND 265200 FOR ADDITIONAL REQUIREMENTS.
M. THE FIRST FIXTURE NAMED IN THE MANUFACTURER COLUMN IS THE BASIS OF DESIGN. OTHER FIXTURES ARE SIMILAR IN THE OPINION OF THE ARCHITECT AND ENGINEER. IF THE CONTRACTOR ELECTS TO SUBMIT A FIXTURE OTHER THAN THE BASIS OF DESIGN FIXTURE, INCLUDING ONE OF THE TWO SIMILAR FIXTURES, REQUIREMENTS OF NOTES O. AND P. APPLY.
N. LIGHTING FIXTURES HAVE BEEN SELECTED AND SPECIFIED TO ACHIEVE REQUIRED/DESIRED ILLUMINATION LEVELS AND OTHER CHARACTERISTICS IN THEIR RESPECTIVE AREAS. SPECIFIED FIXTURES HAVE SPECIFIC CHARACTERISTICS WHICH MAY CREATE UNIQUE ILLUMINATION RESULTS ESSENTIAL TO THE PROJECT. LIGHTING FIXTURES PROVIDED SHALL MEET THE ASTHETICS, DETAILS, AND SPECIFICATIONS STATED ABOVE AND IN THE DIVISION 26 SPECIFICATIONS, AND MOUNTING HEIGHTS AND SPACINGS SHOWN ON THE DRAWINGS. ANY DEVIATIONS FROM THE SPECIFIED FIXTURES SHALL DEEM ALL PARTIES IN THE SUPPLY CHAIN AND CONTRACTOR RESPONSIBLE FOR PROVIDING DETAILED COMPARISONS OF THE SPECIFIED FIXTURE AND THE PROPOSED FIXTURE FOR ARCHITECT AND ENGINEER REVIEW IN DETERMINING EQUALITY. PROVIDE COMPLETE POINT BY POINT ILLUMINATION STUDIES FOR ALL SUBSTITUTIONS.
O. SUBSTITUTIONS MAY BE APPROVED BY THE ARCHITECT AND ENGINEER IF THEY ARE JUDGED TO BE EQUAL TO THE SPECIFIED FIXTURES. "EQUAL" MAY INCLUDE, AT THE SOLE DISCRETION OF THE ARCHITECT AND ENGINEER, LENS MATERIAL AND CHARACTERISTICS, COLORS, REFLECTORS, HOUSING MATERIAL AND CONFIGURATION, FINISHES, PHOTOMETRICS, EFFICIENCY, OPTIONS, FUNCTIONALITY, ETC.

2018 APPENDIX B BUILDING CODE SUMMARY
ELECTRICAL SUMMARY
ELECTRICAL SYSTEMS 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: SEE FIXTURE SCHEDULE
BALLAST TYPE USED IN THE FIXTURE: SEE FIXTURE SCHEDULE
NUMBER OF BALLASTS IN FIXTURE: SEE FIXTURE SCHEDULE
TOTAL WATTAGE PER FIXTURE: SEE FIXTURE SCHEDULE

TOTAL INTERIOR WATTAGE: (WHOLE BUILDING OR SPACE BY SPACE)
ALLOWED (.87/sf) = 9,651 WATTS
ADDITIONAL 10% = 8,686 WATTS
SPECIFIED = 5,267 WATTS

EXTERIOR ALLOWANCE: 600 WATTS
(TRADEABLE SURFACES)
ALLOWED = 1,396 WATTS
SPECIFIED = 911 WATTS

(NON-TRADEABLE SURFACES:)
ALLOWED = N/A WATTS
SPECIFIED = N/A WATTS

ADDITIO...
C406.2 MORE EFFICIENT HVAC EQUIPMENT PERFORMANCE
✓ **C406.3 REDUCED LIGHTING POWER DENSITY**
C406.4 ENHANCED DIGITAL LIGHTING CONTROLS
C406.5 ON-SITE RENEWABLE ENERGY
C406.6 DEDICATED OUTSIDE AIR SYSTEM
C406.7 REDUCED ENERGY USE IN SERVICE WATER HEATING

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CAPE FEAR COMMUNITY COLLEGE

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230 JASON P. FAMIGLIETTI
02/17/2025

PROJECT TITLE

CFCC Surf City Bldg SA Addition

621 NC HWY 210E,
HAMPSTEAD, NC

SCO ID# 24-28220-01A

SHEET TITLE

ELECTRICAL SCHEDULES

ISSUE BLOCK

Mark	Date	Description
4	02.12.2025	ISSUED FOR PERMIT
3	02.12.2025	SCO CD COMMENTS
2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	11.11.2024	GMP PRICING

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DATE: 02.12.2025
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PLAN-ORIENTATION

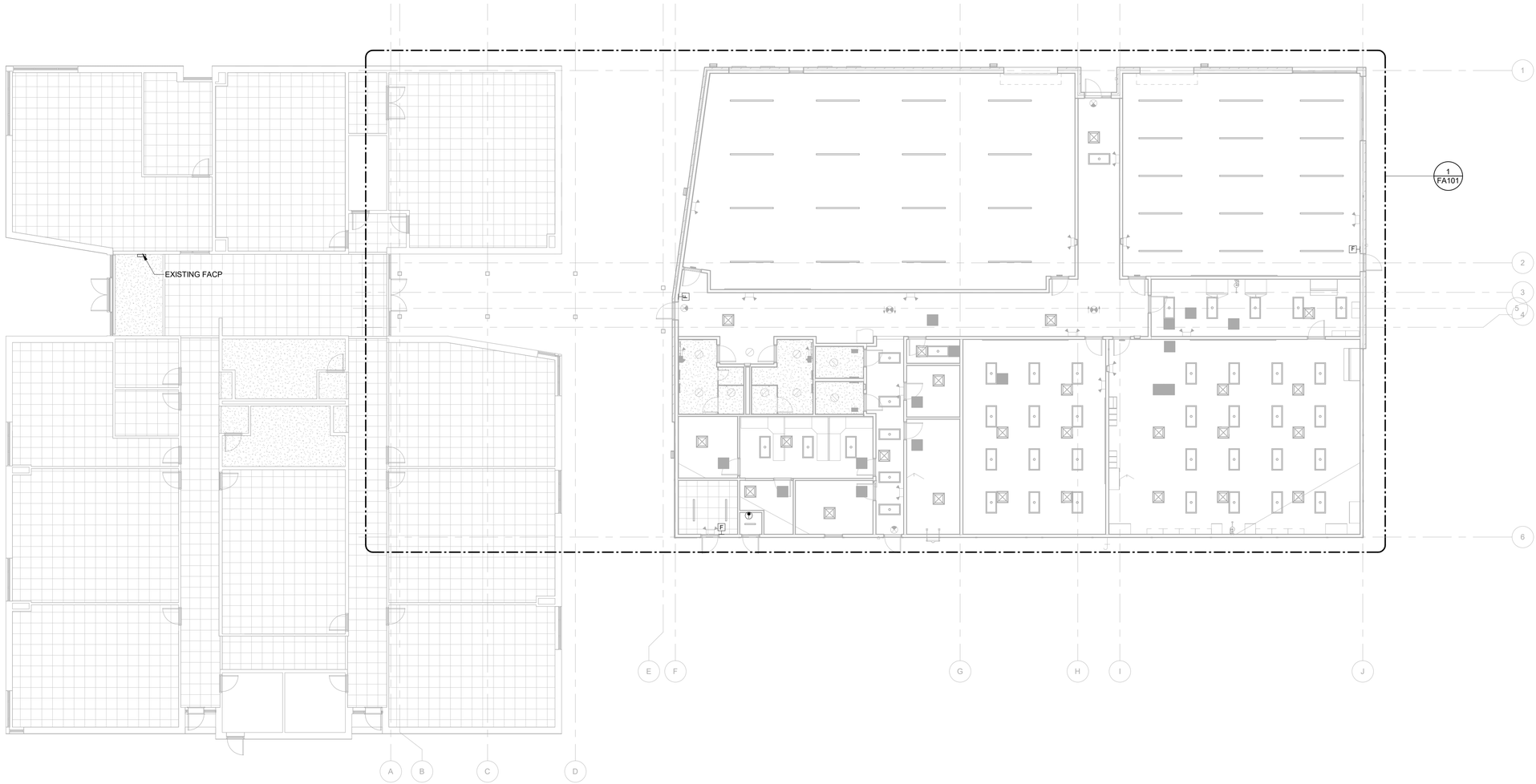
TRUE-NORTH

PLAN-NORTH

CONSTRUCTION LEGEND

1-HR FIRE PARTITION AND 1-HR FIRE BARRIER

2-HR FIRE WALL



1 FIRST FLOOR PLAN OVERALL
BUILDING - FIRE ALARM

SCALE: 3/32" = 1'-0"

8' 4' 2' 0' 8'

SCALE : 3/32" = 1'-0"

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02/17/2025

PROJECT TITLE

CFCC Surf City Bldg SA Addition

621 NC HWY 210E,
HAMPSTEAD, NC

SCO ID# 24-28220-01A

SHEET TITLE

FIRE ALARM OVERALL PLAN

ISSUE BLOCK

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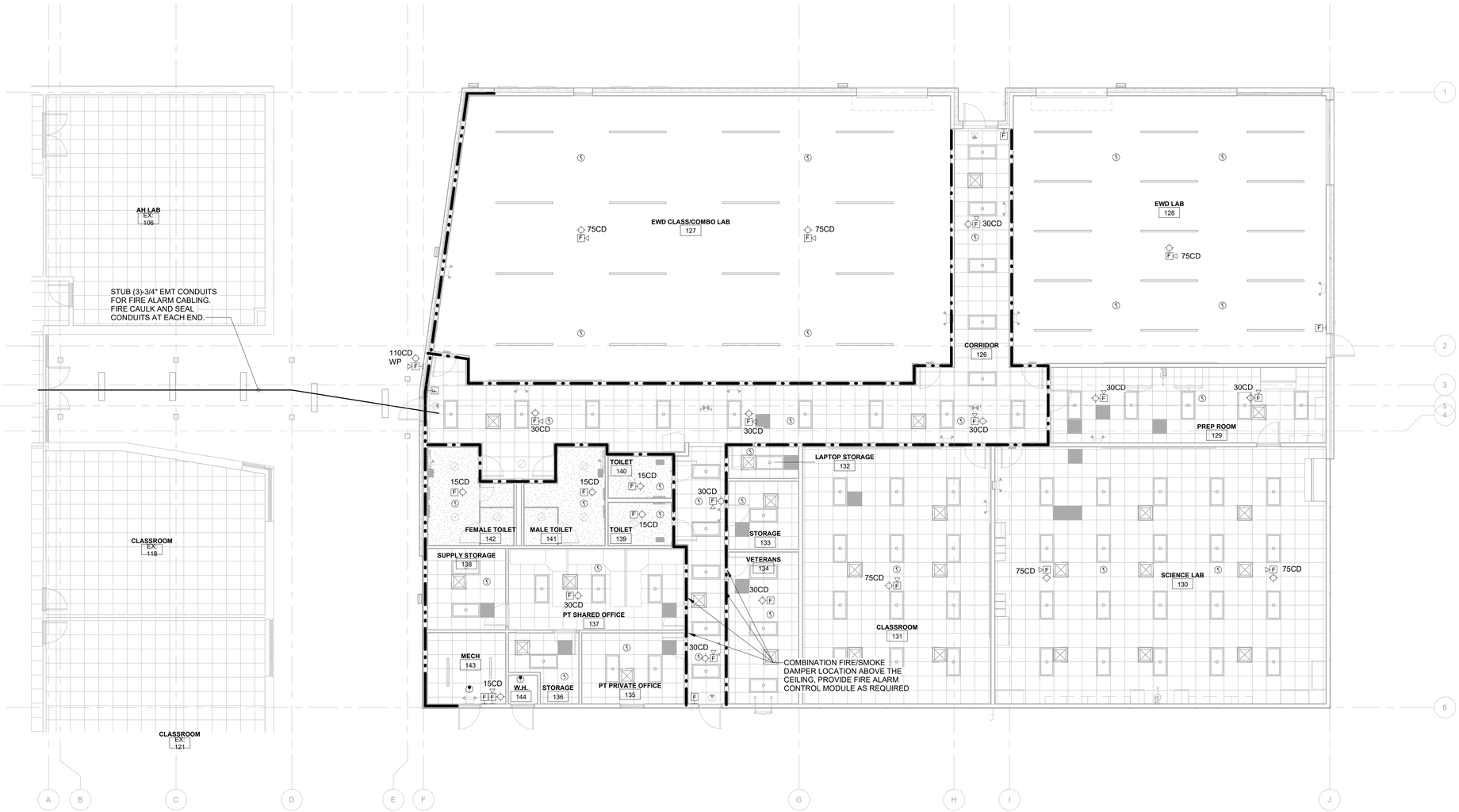
TRUE-NORTH

PLAN-NORTH

CONSTRUCTION LEGEND

1-HR FIRE PARTITION AND 1-HR FIRE BARRIER

2-HR FIRE WALL



1 FIRST FLOOR PLAN - FIRE ALARM

SCALE: 1/8" = 1'-0"

8' 4' 0' 8'

SCALE : 1/8" = 1'-0"

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HAMPSTEAD, NC

SCO ID# 24-28220-01A

SHEET TITLE

FIRE ALARM NEW BUILDING PLAN

ISSUE BLOCK

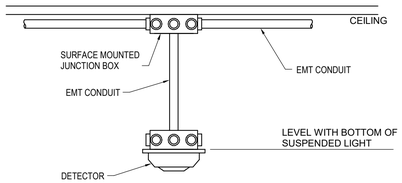
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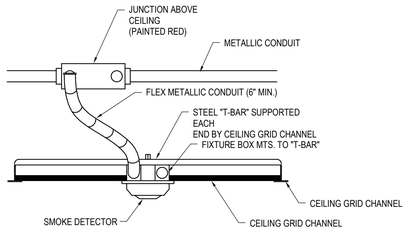
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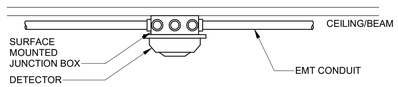
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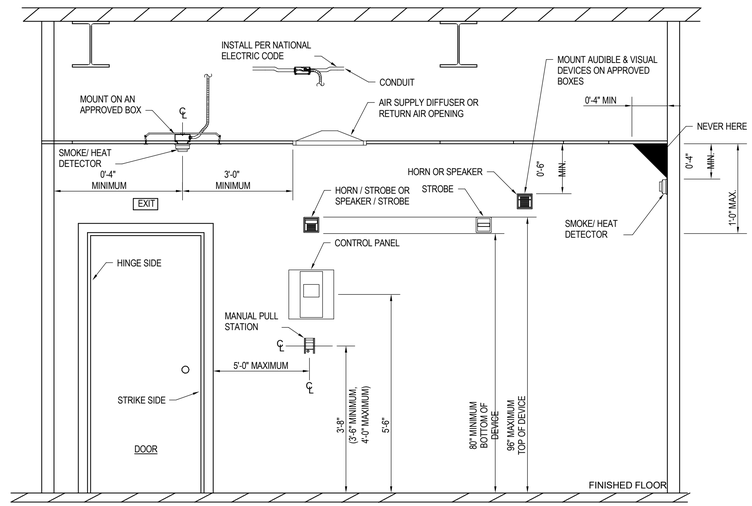
4 TYPICAL SYSPENDED DEVICE DETAIL
NO SCALE



3 TYPICAL CEILING MOUNTED DETECTOR MOUNTING DETAIL
NO SCALE



2 TYPICAL SURFACE MOUNTED DETECTOR DETAIL
NO SCALE



NOTE:
DETAIL SHOWN FOR REFERENCE ONLY, NOT ALL DEVICES ARE INDICATED ON PLANS.

1 FIRE ALARM DEVICES MOUNTING HEIGHTS
NO SCALE

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NORTH CAROLINA PROFESSIONAL SEAL 35230 ENGINEER JASON P. FAMIGLIETTI
02/17/2025

PROJECT TITLE

CFCC Surf City Bldg SA Addition

621 NC HWY 210E,
HAMPSTEAD, NC

SCO ID# 24-28220-01A

SHEET TITLE

FIRE ALARM DETAILS

ISSUE BLOCK

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FIRE ALARM SYSTEM CONTROL MATRIX

SYSTEM INPUTS	SYSTEM OUTPUTS: ACTUATE COMMON ALARM SIGNAL INDICATOR	ACTUATE AUDIBLE ALARM SIGNAL	ACTUATE COMMON SUPERVISORY SIGNAL INDICATOR	ACTUATE AUDIBLE SUPERVISORY SIGNAL	ACTUATE COMMON TROUBLE SIGNAL INDICATOR	ACTUATE AUDIBLE COMMON TROUBLE SIGNAL	DISPLAY / PRINT CHANGE OF STATUS	DISPLAY/PRINT CHANGE OF STATUS	TRANSMIT FIRE ALARM TO SUPERVISION STATION	TRANSMIT TROUBLE SIGNAL TO SUPERVISING STATION	ACTUATE AHU SHUTDOWN	ACTUATE SMOKE DAMPER CLOSE	RELEASE SMOKE DOORS
MANUAL FIRE ALARM BOXES	X	X						X	X		X		X
SMOKE DETECTORS	X	X									X	X	X
HEAT DETECTOR	X	X						X	X		X		X
FIRE ALARM AC POWER FAILURE (AFTER 8HRS)					X	X				X			
FIRE ALARM SYSTEM LOW BATTERY					X	X				X			
OPEN CIRCUIT					X	X				X			
GROUND FAULT					X	X				X			
NOTIFICATION APPLIANCE CIRCUIT SHORT					X	X				X			
AHU SHUTDOWN AND SMOKE DAMPER OVERRIDE SWITCH			X	X	X	X		X		X			

NOTES:
1. TYPICAL, QUANTITIES OF DEVICES ARE NOT SHOWN, SEE FIRE PROTECTION DRAWINGS FOR QUANTITIES AND LOCATIONS.

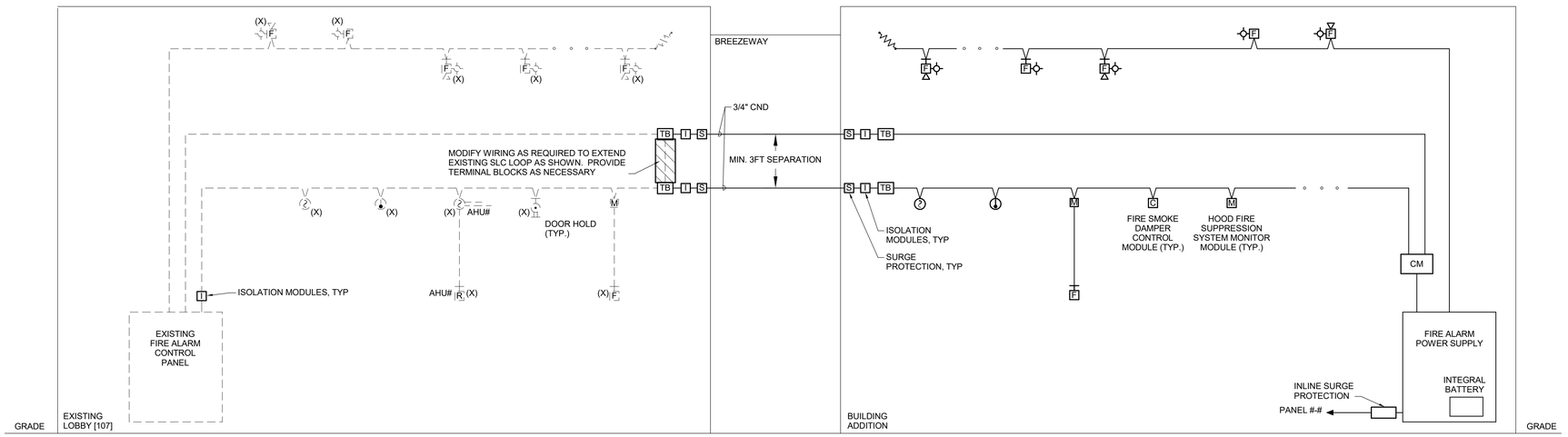
FIRE ALARM LEGEND

SYMBOL	DESCRIPTION
F	FIRE ALARM MANUAL STATION, 48" AFF
F 15cd	FIRE ALARM HORN/STROBE DEVICE, CEILING MOUNTED, "15cd" INDICATES CANDELA RATING
F 15cd	FIRE ALARM VISUAL (ONLY) CEILING MOUNTED "15cd" INDICATES CANDELA RATING
	HEAT DETECTOR, CEILING MOUNTED
?	SMOKE DETECTOR, CEILING MOUNTED
?	DUCT MOUNTED SMOKE DETECTOR
	DOOR HOLD OPEN DEVICE BY G.C.
C	FIRE ALARM SYSTEM CONTROL MODULE
R	REMOTE INDICATING DEVICE (RAIL), WALL MOUNTED
M	MONITOR MODULE
I	ISOLATION MODULE
C	CONTROL MODULE
C	CONTROL MODULE, WALL MOUNTED
FACP	FIRE ALARM CONTROL PANEL (FACP)
	END OF LINE RESISTER (EOR)

(SYMBOLS SHOWN FOR REFERENCE ONLY AND MAY NOT IMPLY CONTRACTUAL REQUIREMENTS)

MANUAL FIRE ALARM SYSTEM NOTES

1. AS A MINIMUM THE FIRE ALARM SYSTEM SHALL INCLUDE SPEAKER/STROBES AND STROBES WITH FIRE RATED CABLE. THE FIRE ALARM SYSTEM SHALL MEET NFPA REQUIREMENTS, THE NATIONAL ELECTRICAL CODE, THE STATE CODES, AND THE LOCAL BUILDING CODES.
2. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL CABLE, MATERIALS AND EQUIPMENT AS SHOWN ON THE DRAWINGS/OR HEREIN SPECIFIED. ALL SYSTEM COMPONENTS SPECIFIED HEREIN, AS WELL AS THEIR INSTALLATION, SHALL COMPLY WITH APPLICABLE STANDARDS OF THE NATIONAL ELECTRICAL CODE, NATIONAL FIRE PROTECTION ASSOCIATION, AND LOCAL CODES HAVING AUTHORITY. ALL EQUIPMENT SHALL BE UL LISTED FOR FIRE ALARM SYSTEM USE.
3. THE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND SHALL BE INSTALLED AND CONNECTED UNDER THE DIRECTION AND SUPERVISION OF A MANUFACTURER'S REPRESENTATIVE. UPON COMPLETION OF INSTALLATION, THE MANUFACTURER'S REPRESENTATIVE SHALL PERFORM ALL OPERATIONAL TESTS AND ADJUSTMENTS AND CERTIFY IN WRITING THAT THE SYSTEM IS PROPERLY INSTALLED AND FUNCTIONS AS SPECIFIED.
4. ALL WIRING SHALL BE SYSTEM OR UL LISTED FIRE RATED CABLE AND COLOR CODED TO ALLOW EASE OF IDENTIFICATION OF THE DIFFERENT CIRCUITRY REQUIRED FOR THE SYSTEM. NO CIRCUIT SHALL CHANGE COLOR AT ANY POINT END TO END.
5. THE. MANUFACTURER'S AUTHORIZED REPRESENTATIVE SHALL PROVIDE SUPERVISION OF FINAL SYSTEM PANEL CONNECTIONS, PERFORM A COMPLETE FUNCTIONAL TEST OF THE SYSTEM, AND A WRITTEN REPORT TO THE CONTRACTOR ATTESTING THE PROPER OPERATION OF THE COMPLETED SYSTEM.
6. THE CONTRACTOR SHALL PROVIDE A ONE YEAR WARRANTY FOR THE ALARM SYSTEM, ALONG WITH OTHER FORMS OR CERTIFICATE REQUIRED BY THE LOCAL JURISDICTION.
7. SYSTEM OPERATION
   a) THE OPERATION OF ANY MANUAL PULL STATION, OR ANY OTHER SYSTEM ALARM INDICATOR, SHALL CAUSE ALL ALARM SIGNALS, BOTH AUDIBLE AND VISUAL TO ENERGIZE.
   b) THE DEVICE FROM WHICH THE ALARM ORIGINATED SHALL BE INDICATED AT THE CONTROL PANEL, BOTH AUDIBLY AND VISUALLY. THE APPROPRIATE ALARM LED SHALL PULSE AND SHALL BE ILLUMINATED CONTINUOUSLY AFTER IT HAS BE ACKNOWLEDGED AT THE CONTROL PANEL.
   c) ALL DEVICES SHALL BE COMPATIBLE WITH THE EXISTING FIRE ALARM SYSTEM.
8. EQUIPMENT SHALL CONSIST OF THE FOLLOWING:
   a) COMBINATION AUDIO AND VISUAL SIGNAL: AUDIO VISUAL FIRE ALARM SIGNAL SHALL BE SURFACE MOUNTED WITH FLASHER. UNITS SHALL BE RED IN COLOR ON WALLS AND WHITE ON CEILINGS. THE LEXAN LENS SHALL BE TRIANGULAR IN SHAPE TO SIGNIFICANTLY IMPROVE SIDE VIEWING VISIBILITY. THE UNIT SHALL MOUNT ON A STANDARD FOUR INCH ELECTRICAL BOX. A MATCHING TRIM PLATE SHALL BE SUPPLIED. THE LENS SHALL BE LETTERED RED "FIRE". THE AUDIO VISUAL SIGNALS SHALL MEET REQUIREMENTS OF ADA.
9. ALL WIRING SHALL BE INSTALLED IN COMPLIANCE WITH N.E.C., NFPA 72, ALL STATE AND LOCAL REQUIREMENTS AND IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
10. SLEEVE AND SEAL ALL PENETRATIONS THROUGH FIRE WALLS.
11. WIRING SHALL BE A MINIMUM OF NO. 14 AWG UNLESS OTHERWISE NOTED.
12. ALL WORK PERFORMED AND ALL MATERIAL FURNISHED UNDER THIS CONTRACT SHALL BE FREE FROM DEFECTS AND SHALL REMAIN SO FOR A PERIOD OF AT LEAST ONE YEAR FROM THE DATE OF ACCEPTANCE.
13. SHOP DRAWINGS MUST BE SUBMITTED BY THE FIRE ALARM CONTRACTOR COMPLYING WITH THE FIRE ALARM PLAN REVIEW REQUIREMENTS POLICY - BEFORE PERMITTING BY THE FIRE DEPT. HAVING JURISDICTION THESE DRAWINGS DO NOT CONSTITUTE APPROVAL AND MAY CHANGE AFTER A FULL REVIEW BY THE FIRE DEPT. HAVING JURISDICTION. A SEPARATE PERMIT MUST BE OBTAINED PRIOR TO INSTALLATION.
14. IN CORRIDORS WHERE MORE THAN TWO VISIBLE NOTIFICATION APPLIANCES ARE IN ANY FIELD OF VIEW, THEY SHALL FLASH IN SYNCHRONIZATION.
15. ALL FIRE ALARM WORK AND DEVICES SHALL BE INSTALLED AND TERMINATED BY A NICET LEVEL 2 FIRE ALARM TECHNICIAN.



1 FIRE ALARM RISER
NO SCALE

NOTE:
RISER DIAGRAM IS DEPICTIVE (FUNCTIONAL) ONLY. ALL DEVICES ARE NOT SHOWN

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230 JASON P. FAMIGLIETTI
02/17/2025

PROJECT TITLE

CFCC Surf City Bldg SA Addition

621 NC HWY 210E,
HAMPSTEAD, NC

SCO ID# 24-28220-01A

SHEET TITLE

FIRE ALARM RISER, NOTES AND DETAILS

ISSUE BLOCK

Mark	Date	Description
4	02.12.2025	ISSUED FOR PERMIT
3	02.12.2025	SCO CD COMMENTS
2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	11.11.2024	GMP PRICING

PROJECT NO: 2024077.00
DATE: 02.12.2025
SCALE: 12" = 1'-0"
DRAWN BY Author | PROJ MGR Checker

FA601

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