New Hanover County Schools

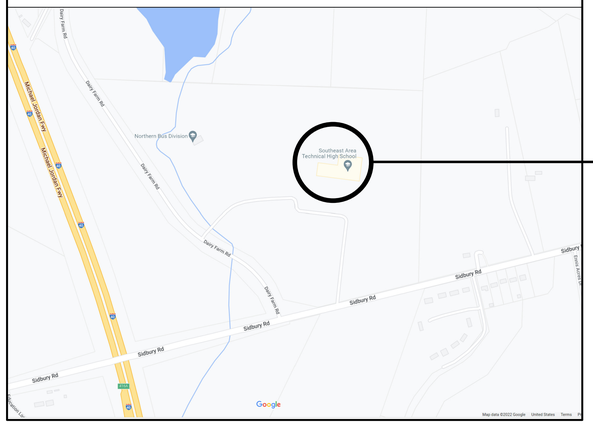
Project No. 22-90458

Southeast Area Technical High School
SCIF Grant Addition & Renovations

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings
May 16, 2023

SITE LOCATION MAP



Abbreviations

A.C.T. - ACOUSTICAL CEILING TILE
ADJ. - ADJUSTABLE
A.F.F. - ABOVE FINISHED FLOOR
ALUM. - ALUMINUM
AHU - AIR HANDLING UNIT
BLDG. - BUILDING
B.O.S.-BOTTOM OF STEEL
B.R.-BACKER ROD
C.J. - CONTROL JOINT
C.M.U. - CONCRETE MASONRY UNIT
CONC. - CONCRETE
C.O. - CLEAN OUT
CONT. - CONTINUOUS
CP - CONCRETE PIPE
C.L. - CENTER LINE
DIA. - DIAMETER
DIM. - DIMENSION
D.S. - DOWN SPOUT
E.C.- ELECTRICAL CONTRACTOR
E.J.- EXPANSION JOINT
ELEV. - ELEVATION
EQ. - EQUAL
EQUIP. - EQUIPMENT
EXIST. - EXISTING
EXP. JT. - EXPANSION JOINT
F.F.E.-FINISH FLOOR ELEVATION
GALV. - GALVANIZED
GA. - GAUGE
G.C. - GENERAL CONTRACTOR
GWB-GYPSUM WALL BOARD
HT. - HEIGHT
INSUL. - INSULATION
INV. - INVERT
JT - JOINT
MAS.-MASONRY
MAX. - MAXIMUM
MECH. - MECHANICAL
MFG. - MANUFACTURER
MIN. - MINIMUM
NOM. - NOMINAL
O.C. - ON CENTER
PERF. - PERFORATED
HPL.-HIGH PRESSURE LAMINATE
PLYWD.-PLYWOOD
P.S.I. - POUNDS PER SQUARE INCH
R - RADIUS
R/A - RETURN AIR
R.A.G. - RETURN AIR GRILL
R.C.P. - REINFORCED CONCRETE PIPE
RD. - ROOF DRAIN
REINF. - REINFORCEMENT
REQ'D. - REQUIRED
R.O. - ROUGH OPENING
S/A - SUPPLY AIR
S.S. - STAINLESS STEEL
T.O.M.-TOP OF MASONRY
STRUCT.-STRUCTURAL
T.O.S.-TOP OF STEEL
TRTD-TREATED
TYP. - TYPICAL
V.B.-VAPOR BARRIER
V.C.T.-VINYL COMPOSITE TILE
VERT. - VERTICAL
W/ - WITH
@ - AT, AROUND, REGARDING

Symbols Legend

DRAWING TITLE
INDICATES DRAWING #
2 / A1 — Drawing Title — Scale
INDICATES SHEET WHERE DRAWING IS SHOWN

BUILDING SECTION REFERENCE
INDICATES SECTION #
1 / A1.0
INDICATES SHEET WHERE DRAWING IS SHOWN

WALL SECTION REFERENCE
INDICATES SHEET WHERE SECTION IS SHOWN
3-A4.0
INDICATES SECTION #

ELEVATION REFERENCE
2-A1.4
INDICATES SHEET WHERE ELEVATION IS SHOWN
INDICATES ELEVATION #

PLAN DETAIL REFERENCE
1 / A5.0-A
INDICATES ENLARGED DETAIL

100 DOOR # 100 ROOM #
A WINDOW TYPE
VERTICAL ELEVATION ABOVE REFERENCE POINT

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G1.1 Phasing Plan

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C2.0-A Overall Site Plan
C2.1-A Site Plan and Utility Plan
C2.2-A Demolition Plan
C3.0-A Grading & Drainage Plan
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A1.2-A Construction Trades Addition Roof Plan
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124 Market Street
Wilmington, NC 28401
910 762-0892
S2a3.com

PARAMOUNTE ENGINEERING, INC.
WOODS ENGINEERING Creative Solutions
CBHF Engineers, PLLC
PERFORMANCE BASED FIRE PROTECTION ENGINEERING PLLC
STATE OF NC ENGINEERING FIRM LICENSE NO. P-1042
FOODESIGN The Foodservice Design Agency

SAWYER SHERWOOD & ASSOCIATE P.A. 52349 NORTH CAROLINA WILMINGTON, NC

DOUGLAS K. SHERWOOD Registered Architect 10078 NORTH CAROLINA WILMINGTON, NC
5-16-23

NHCS Project No. 22-90458

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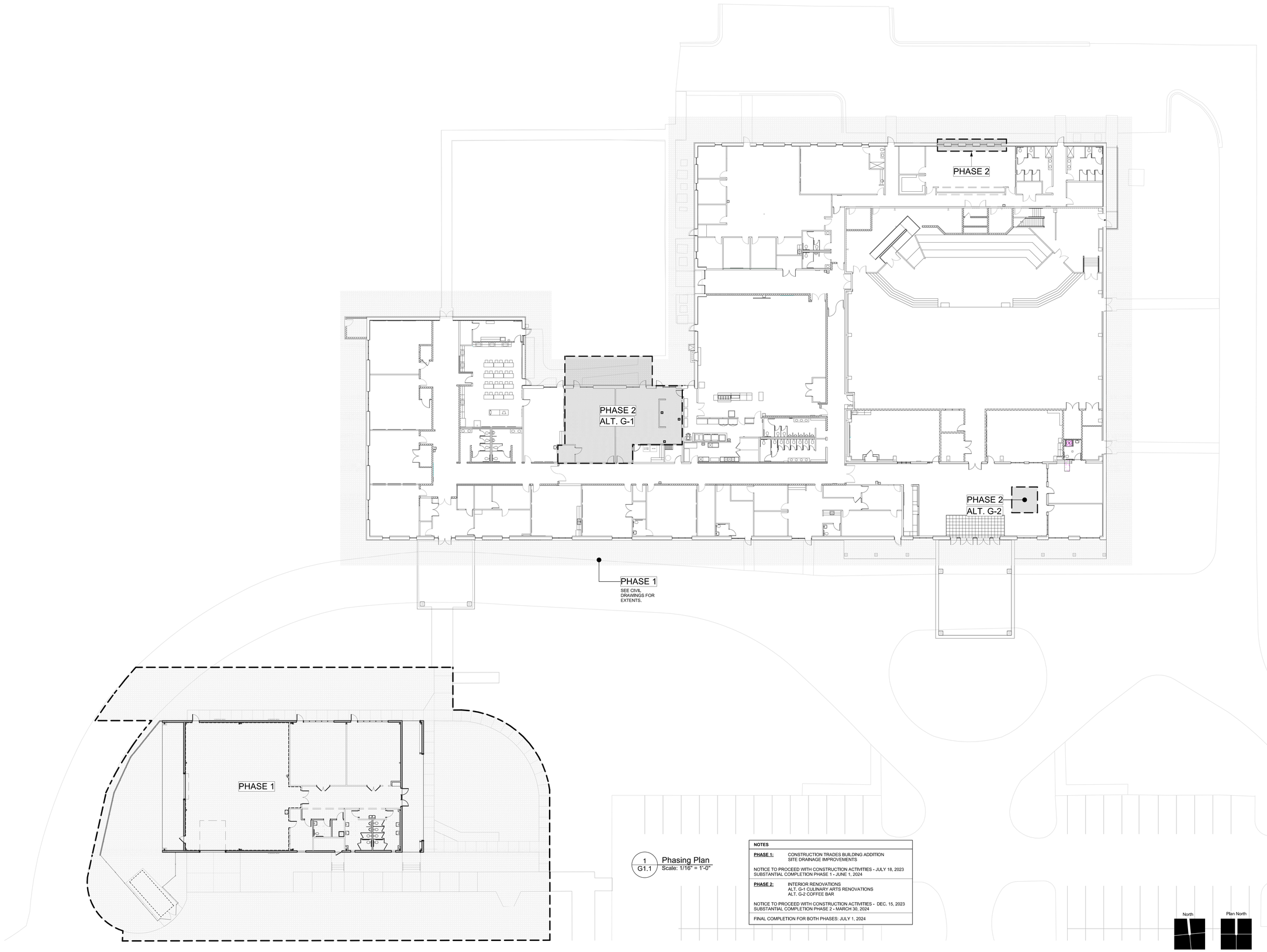
Issue Date: May 16, 2023

Index, Legend, and Abbreviations

Rev.	Date	Notes

G1.0

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1 G1.1 Phasing Plan
Scale: 1/16" = 1'-0"

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FINAL COMPLETION FOR BOTH PHASES: JULY 1, 2024	

North

Plan North

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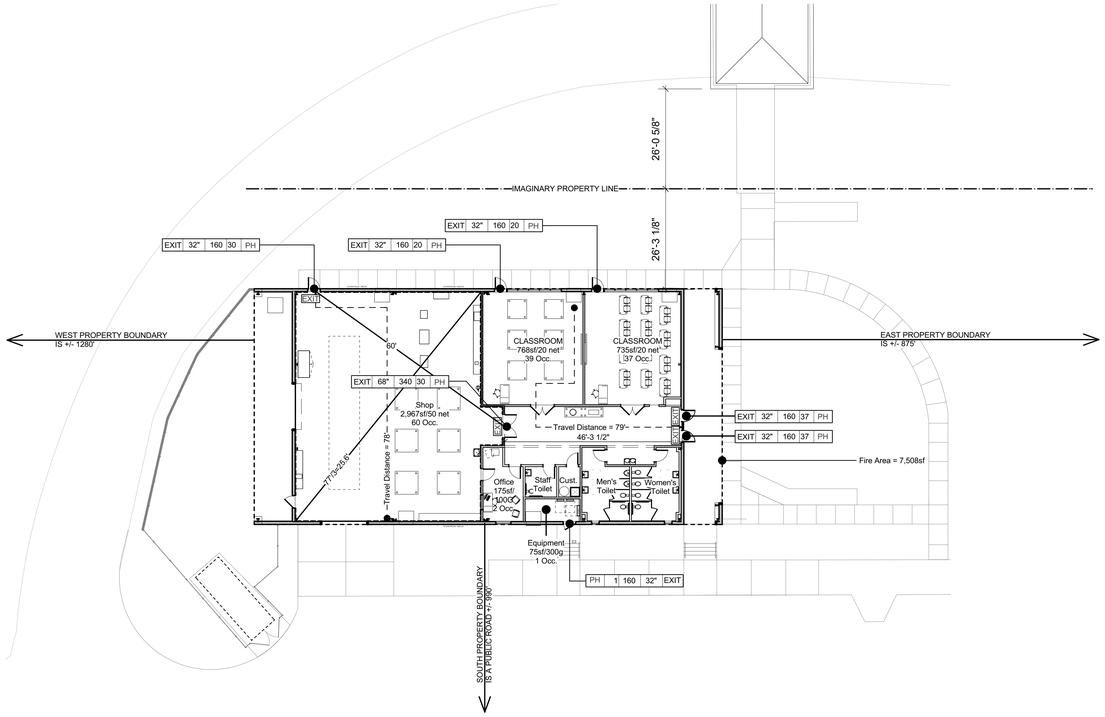
Issue Date: May 16, 2023

Phasing Plan

Rev.	Date	Notes

G1.1

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GENERAL NOTES AND LEDGEND

EMERGENCY EGRESS BATTERY BACKUP

EMERGENCY EGRESS BATTERY BACKUP TROFFER (EXISTING)

EXIT EXIT SIGN BATTERY BACKUP

* SPACES WITH MORE THAN 49 PEOPLE REQUIRE 2 MEANS OF EGRESS
* EXIT ACCESS CANNOT EXCEED 250'
* COMMON PATH CANNOT EXCEED 75'
* DEAD END LENGTHS AND DEAD END CORRIDORS 50'
* SPRINKLER SYSTEM IS PROVIDED

EXIT DOOR | MAX OCCUPANCY

EXIT 32" 160 x

CLEAR WIDTH | ACTUAL OCCUPANCY

DOOR DEVICES
PH-PANIC HARDWARE
DE-DELAYED EGRESS
EE-ELECTROMAGNETIC EGRESS
HO-HOLD OPEN

1 G2.0-A **Construction Trades Building Life Safety Plan**
Scale: 1/16" = 1'-0"

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
STRUCTURAL DESIGN
(PROVIDE ON THE STRUCTURAL SHEETS IF APPLICABLE)

DESIGN LOADS:

See Structural Drawings

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
MECHANICAL DESIGN
(PROVIDE ON THE MECHANICAL SHEETS IF APPLICABLE)

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

See Mechanical Drawings

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
ELECTRICAL DESIGN
(PROVIDE ON THE ELECTRICAL SHEETS IF APPLICABLE)

ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT

See Electrical Drawings

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
(EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES)
(Reproduce the following data on the building plans sheet 1 or 2)

Name of Project: Southeast Area Technical High School SCIF Grant Addition & Renovations
Address: 5301 Sidbury Rd, Castle Hayne, NC Zip Code 28429
Owner/Authorized Agent: Sawyer Sherwood & Associate, P.C. Phone # (910)762-0892 E-Mail doug@s2a3.com
Owned By: County
Code Enforcement Jurisdiction: County

CONTACT:

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #	E-MAIL
Architectural	Sawyer Sherwood & Associate	Doug Sherwood	10075	(910) 762-0892	doug@s2a3.com
Civil	Paramounte Engineering	Robert Balland	31591	(910) 791-6707	rballand@paramounte-eng.com
Electrical	CBHF Engineers	Jason R. Famiglietti	35230	(910) 791-4000	jfami@cbhfengineers.com
Fire Alarm	CBHF Engineers	Jason R. Famiglietti	35230	(910) 791-4000	jfami@cbhfengineers.com
Plumbing	CBHF Engineers	Troy O. Grady	043801	(910) 791-4000	tgrady@cbhfengineers.com
Mechanical	CBHF Engineers	Troy O. Grady	043801	(910) 791-4000	tgrady@cbhfengineers.com
Sprinkler-Standpipe	Performance Based Fire Protection Engineering	David F. Stacy	046319	(919) 600-7780	dstacy@pbfpe.com
Structural	Woods Engineering	Don Woods	19475	(910) 343-8007	don@woodseng.com
Ret. Walls	N/A				
Other	N/A				

("Other" should include firms and individuals such as truss, precast, pre-engineered, interior designers, etc.)

2018 NC BUILDING CODE: New Building

2018 NC EXISTING BUILDING CODE: N/A N/A N/A
CONSTRUCTED: (date) N/A **CURRENT OCCUPANCY(S)** (Ch. 3): N/A
RENOVATED: (date) N/A **PROPOSED OCCUPANCY(S)** (Ch. 3): Education

RISK CATEGORY (Table 1604.5): **Current:** N/A **Proposed:** II

BASIC BUILDING DATA
Construction Type: II-B
Sprinklers: Yes NFPA 13
Standpipes: N/A
Primary Fire District: No **Flood Hazard Area:** Yes
Special Inspections Required: No

Gross Building Area Table
*Fire Area: includes ground level covered by second story

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL
3rd Floor			
2nd Floor			
Mezzanine			
1st Floor		7,508	
Basement			
TOTAL			7,508

ALLOWABLE AREA

Primary Occupancy Classification(s): Educational N/A N/A N/A N/A N/A
Accessory Occupancy Classification(s): _____
Incidental Uses (Table 509): Vocational Shops
Special Uses (Chapter 4 – List Code Sections): _____
Special Provisions: (Chapter 5 – List Code Sections): _____
Mixed Occupancy: No Separation: Select one Exception: _____

Select one

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

$$\frac{\quad}{\quad} + \frac{\quad}{\quad} + \ldots\ldots = \frac{\quad}{\quad} \leq 1.00$$

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.2[4] AREA	(C) AREA FOR FRONTAGE INCREASE[1,5]	(D) ALLOWABLE AREA PER STORY OR UNLIMITED[2,3]
1	Education	7,508	58,000	N/A	58,000

[1] Frontage area increases from Section 506.3 are computed thus:
a. Perimeter which fronts a public way or open space having 20 feet minimum width = ÷ (F)
b. Total Building Perimeter = ÷ (P)
c. Ratio (F/P) = ÷ (F/P)
d. W = Minimum width of public way = ÷ (W)
e. Percent of frontage increase $I_f = 100[F/P - 0.25]$ x $W/30$ = - (%)
[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 Table 406.5.4.
[5] Frontage increase is based on the unsprinklered area value in Table 506.2.

ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE [1]
Building Height in Feet (Table 504.3) [2]	75'-0"	20'-0"	
Building Height in Stories (Table 504.4) [3]	3	1	

[1] Provide code reference if the "Shown on Plans" quantity is not based on Table 504.3 or 504.4.
[2] The maximum height of air traffic control towers must comply with Table 412.3.1.
[3] The maximum height of open parking garages must comply with Table 406.5.4.

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D	RATING PROVIDED (W/_____* REDUCTION)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	SHEET # FOR RATED PENETRATION	SHEET # FOR RATED JOINTS
Structural Frame, including columns, girders, trusses		0hr					
Bearing Walls							
Exterior							
North	>25'	0hr					
East	>30'	0hr					
West	>30'	0hr					
South	>30'	0hr					
Interior		0hr					
Nonbearing Walls and Partitions Exterior walls		0hr					
North	>25'	0hr					
East	>30'	0hr					
West	>30'	0hr					
South	>30'	0hr					
Interior walls and partitions		0hr					
Floor Construction Including supporting beams and joists		0hr					
Floor Ceiling Assembly		N/A					
Columns Supporting Floors		N/A					
Roof Construction, including supporting beams and joists		0hr					
Roof Ceiling Assembly		0hr					
Columns Supporting Roof		0hr					
Shaft Enclosures - Exit		N/A					
Shaft Enclosures - Other		N/A					
Corridor Separation		1hr	1020.1-Sprinkled				
Occupancy/Fire Barrier Separation		N/A					
Party/Fire Wall Separation		N/A					
Smoke Barrier Separation		0hr					
Smoke Partition		0hr					
Tenant/Dwelling Unit/ Sleeping Unit Separation		N/A	N/A				
Incidental Use Separation		1hr	Table 509 - Sprinkled				

* 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 (%)
25' >30'	0hr	Unlimited	N/A
>30'	0hr	Unlimited	N/A

LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting: Yes
Exit Signs: Yes
Fire Alarm: Yes
Smoke Detection Systems: Yes
Carbon Monoxide Detection: Yes

LIFE SAFETY PLAN REQUIREMENTS

Life Safety Plan Sheet #: G-2.0-A

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

ACCESSIBLE DWELLING UNITS
(SECTION 1107)

NOT APPLICABLE

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	
173 spaces	7	7	6		1	7
TOTAL	7	7 Existing	6		1	7

PLUMBING FIXTURE REQUIREMENTS
(TABLE 2902.1)

USE		WATERCLOSETS			URINALS	LAVATORIES			SHOWERS / TUBS	DRINKING FOUNTAINS	
		MALE	FEMALE	UNISEX		MALE	FEMALE	UNISEX		REGULAR	ACCESSIBLE
SPACE	EXIST'G										
	NEW	2	4	1	2	2	2	1	0	1	1
	REQ'D	2	4	1	2	2	2	1	0	1	1

SPECIAL APPROVALS

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

Plumbing count only requires 2 fixtures for boys and 2 fixtures for girls. 403.8.5.2 student group facilities require group toilet rooms to have a minimum of 4 flushing fixtures.

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: Select one

Exempt Building: Select one Provide code or statutory reference:

Climate Zone: 3A

Method of Compliance: Energy Code - Prescriptive
(If "Other" specify source here)_____

THERMAL ENVELOPE (Prescriptive method only)

Roof/ceiling Assembly (each assembly)
Description of assembly: Metal building system
U-Value of total assembly: N/A
R-Value of insulation: R-10 + R-19FC
Skylights in each assembly: Yes
U-Value of skylight: 0.60
total square footage of skylights in each assembly: 24sf

Exterior Walls (each assembly)
Description of assembly: Metal building system
U-Value of total assembly: N/A
R-Value of insulation: Thermal tape + R-30
Openings (windows or doors with glazing)
Description of assembly: (Vitro Solarban 70/Vitro Solargray)
U-Value of assembly: 0.24
Solar heat gain coefficient: 0.24
Projection factor: 0

Description of glazing: (Vitro Solarban 70/Vitro Solargray)
Door U-Values: 0.69 (0.77)

Walls below grade (each assembly)
Description of assembly: N/A
U-Value of total assembly: N/A
R-Value of insulation: N/A

Floors over unconditioned space (each assembly)
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: N/R
U-Value of total assembly: N/A
R-Value of insulation: N/A
Horizontal/vertical requirement: N/A
slab heated: N/A

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PERFORMANCE BASED FIRE PROTECTION ENGINEERING, PLLC — STATE OF NC ENGINEERING FIRM LICENSE NO. P-1642 — PO BOX 1567 WILMINGTON, NC 910.662.7750
FOODESIGN The Foodservice Design Agency
SAWYER SHERWOOD & ASSOCIATES, P.C. — REGISTERED ARCHITECTURAL CORPORATION — 52349 — NORTH CAROLINA — WILMINGTON, NC
DOUGLAS K. SHERWOOD — Registered Architect — 10075 — NORTH CAROLINA — WILMINGTON, NC — 5-16-23

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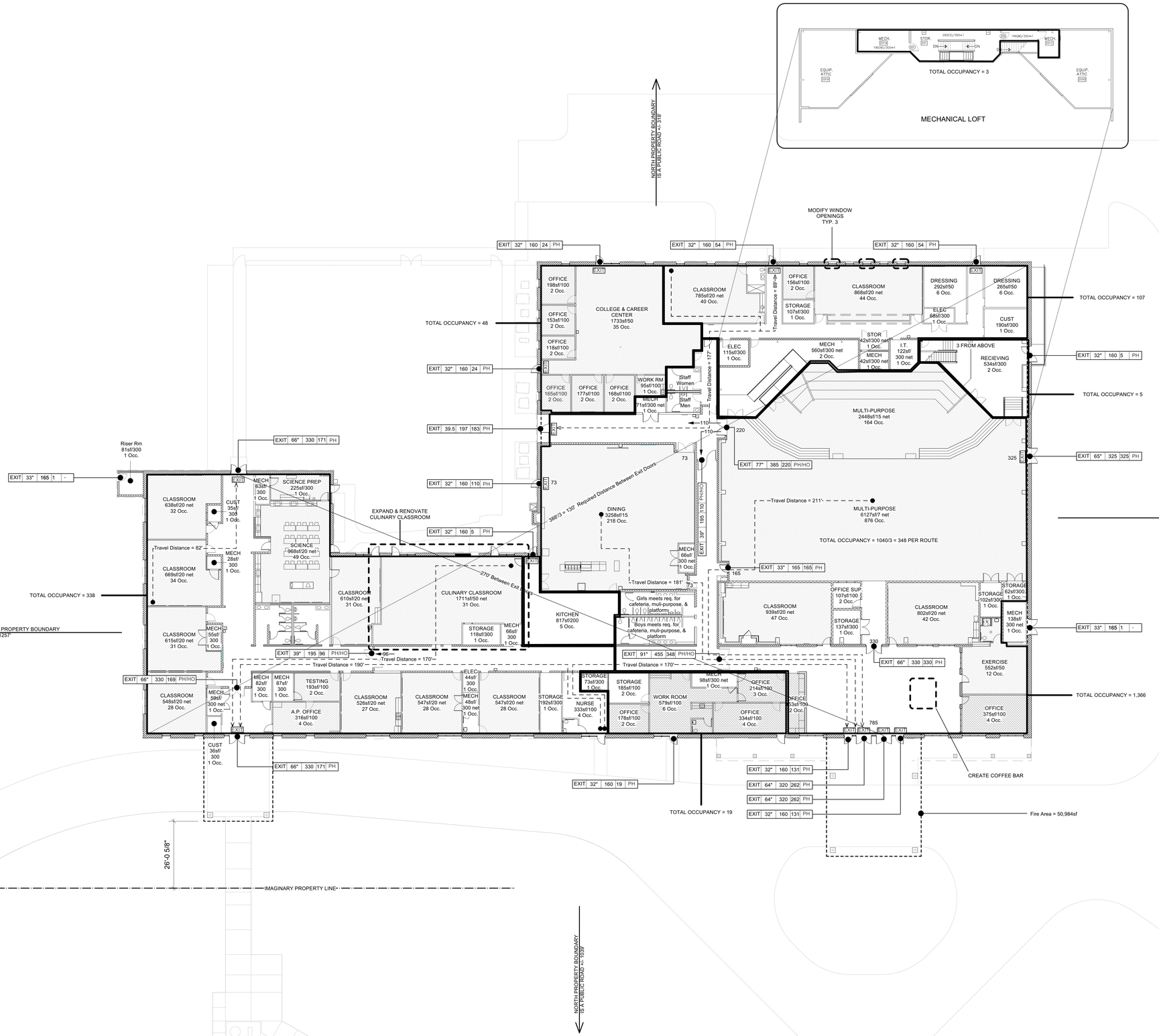
Issue Date: May 16, 2023

Construction Trades Addition Appendix B & Life Safety Plan

Rev.	Date	Notes

G2.0-A

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GENERAL NOTES AND LEDGEND

EMERGENCY EGRESS BATTERY BACKUP

EMERGENCY EGRESS BATTERY BACKUP TROFFER (EXISTING)

EXIT EXIT SIGN BATTERY BACKUP

* SPACES WITH MORE THAN 49 PEOPLE REQUIRE 2 MEANS OF EGRESS
* EXIT ACCESS CANNOT EXCEED 250'
* COMMON PATH CANNOT EXCEED 75'
* DEAD END LENGTHS AND DEAD END CORRIDORS 50'
* SPRINKLER SYSTEM IS PROVIDED

EXIT DOOR | MAX OCCUPANCY | EXIT 32" 160 x | CLEAR WIDTH | ACTUAL OCCUPANCY

DOOR DEVICES
PH-PANIC HARDWARE
DE-DELAYED EGRESS
EE-ELECTROMAGNETIC EGRESS
HO-HOLD OPEN

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124 Market Street
Wilmington, NC 28401
910 762-0892
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PARAMOUNTE ENGINEERING, INC.
WOODS ENGINEERING Creative Solutions
CBHF Engineers, PLLC
PERFORMANCE BASED FIRE PROTECTION ENGINEERING PLLC
FOODESIGN The Foodservice Design Agency

SAWYER SHERWOOD & ASSOCIATE ARCHITECTURAL CORPORATION P.C. 52349 NORTH CAROLINA WILMINGTON, NC

DOUGLAS K. SHERWOOD Registered Architect 10075 North Carolina WILMINGTON, NC
51623

NHCS Project No.
22-90458

Southeast Area Technical High School
SCIF Grant Renovations

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

Issue Date: May 16, 2023

Existing Building Life Safety Plan

Rev.	Date	Notes

G2.0-B

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2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
(EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES)
(Reproduce the following data on the building plans sheet 1 or 2)

Name of Project: Southeast Area Technical High School SCIF Grant Addition & Renovations
Address: 5301 Sidbury Rd, Castle Hayne, NC Zip Code 28429
Owner/Authorized Agent: Sawyer Sherwood & Associate, P.C. Phone # (910)762-0892 E-Mail doug@s2a3.com
Owned By: County
Code Enforcement Jurisdiction: County

CONTACT:

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #	E-MAIL
Architectural	Sawyer Sherwood & Associate	Doug Sherwood	10075	(910) 762-0892	doug@s2a3.com
Civil	Paramounte Engineering	Robert Balland	31591	(910) 791-6707	rballand@paramounte-eng.com
Electrical	CBHF Engineers	Jason R. Famiglietti	35230	(910) 791-4000	jfam@cbhfengineers.com
Fire Alarm	CBHF Engineers	Jason R. Famiglietti	35230	(910) 791-4000	jfam@cbhfengineers.com
Plumbing	CBHF Engineers	Troy O. Grady	043801	(910) 791-4000	tgrady@cbhfengineers.com
Mechanical	CBHF Engineers	Troy O. Grady	043801	(910) 791-4000	tgrady@cbhfengineers.com
Sprinkler-Standpipe	Performance Based Fire Protection Engineering	David F. Stacy	046319	(919) 600-7780	dstacy@pbfpe.com
Structural	Woods Engineering	Don Woods	19475	(910) 343-8007	don@woodseng.com
Ret. Walls	N/A				
Other	N/A				

("Other" should include firms and individuals such as truss, precast, pre-engineered, interior designers, etc.)

2018 NC BUILDING CODE: Renovation

2018 NC EXISTING BUILDING CODE: Alteration Level II N/A N/A
CONSTRUCTED: (date) 4/18/2002 **CURRENT OCCUPANCY(S)** (Ch. 3): Education
RENOVATED: (date) 01/16/2020 **PROPOSED OCCUPANCY(S)** (Ch. 3): Education

RISK CATEGORY (Table 1604.5): **Current:** III **Proposed:** III

BASIC BUILDING DATA
Construction Type: II-B
Sprinklers: Yes NFPA 13
Standpipes: No
Primary Fire District: No **Flood Hazard Area:** No
Special Inspections Required: Yes (Contact the local inspection jurisdiction for additional procedures and requirements.)

Gross Building Area Table
*Fire Area: includes ground level covered by second story

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL
3rd Floor			
2nd Floor			
Mezzanine			
1st Floor	50,984	0	50,984
Basement			
TOTAL			50,984

ALLOWABLE AREA

Primary Occupancy Classification(s): Educational N/A N/A N/A N/A N/A
Accessory Occupancy Classification(s): _____
Incidental Uses (Table 509): Vocational Shop – Culinary Arts
Special Uses (Chapter 4 – List Code Sections): _____
Special Provisions: (Chapter 5 – List Code Sections): _____
Mixed Occupancy: No Separation: Select one Exception: _____
Select one

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

$$\frac{\quad}{\quad} + \frac{\quad}{\quad} + \ldots = \frac{\quad}{\quad} \leq 1.00$$

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.2[4] AREA	(C) AREA FOR FRONTAGE INCREASE[1,5]	(D) ALLOWABLE AREA PER STORY OR UNLIMITED[2,3]
1	Education	50,984	58,000	N/A	58,000

[1] Frontage area increases from Section 506.3 are computed thus:
a. Perimeter which fronts a public way or open space having 20 feet minimum width = ÷ (F)
b. Total Building Perimeter = ÷ (P)
c. Ratio (F/P) = ÷ (F/P)
d. W = Minimum width of public way = ÷ (W)
e. Percent of frontage increase $I_f = 100[F/P - 0.25] \times W/30 =$ - (%)
[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 Table 406.5.4.
[5] Frontage increase is based on the unsprinklered area value in Table 506.2.

ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE [1]
Building Height in Feet (Table 504.3) [2]	75'-0"	27'-0"	
Building Height in Stories (Table 504.4) [3]	3	1	

[1] Provide code reference if the "Shown on Plans" quantity is not based on Table 504.3 or 504.4.
[2] The maximum height of air traffic control towers must comply with Table 412.3.1.
[3] The maximum height of open parking garages must comply with Table 406.5.4.

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D	RATING PROVIDED (W/ _____ * REDUCTION)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	SHEET # FOR RATED PENETRATION	SHEET # FOR RATED JOINTS
Structural Frame, including columns, girders, trusses							
Bearing Walls							
Exterior							
North	>30'	0hr					
East	>30'	0hr					
West	>30'	0hr					
South	>25'	0hr					
Interior		0hr					
Nonbearing Walls and Partitions		0hr					
Exterior walls							
North	>30'	0hr					
East	>30'	0hr					
West	>30'	0hr					
South	>25'	0hr					
Interior walls and partitions		0hr					
Floor Construction Including supporting beams and joists		0hr					
Floor Ceiling Assembly		N/A					
Columns Supporting Floors		N/A					
Roof Construction, including supporting beams and joists		0hr					
Roof Ceiling Assembly		0hr					
Columns Supporting Roof		0hr					
Shaft Enclosures - Exit		0hr					
Shaft Enclosures - Other		0hr					
Corridor Separation		1hr	1020.1-Sprinkled				
Occupancy/Fire Barrier Separation		0hr					
Party/Fire Wall Separation		0hr					
Smoke Barrier Separation		0hr					
Smoke Partition		0hr					
Tenant/Dwelling Unit/ Sleeping Unit Separation		0hr					
Incidental Use Separation		1hr	Table 509-Sprinkled				

* 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 (%)
25' >30'	0hr	Unlimited	N/A
>30'	0hr	Unlimited	N/A

LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting: Yes
Exit Signs: Yes
Fire Alarm: Yes
Smoke Detection Systems: Yes
Carbon Monoxide Detection: Yes

LIFE SAFETY PLAN REQUIREMENTS

Life Safety Plan Sheet #: G-2.0-B

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

ACCESSIBLE DWELLING UNITS
(SECTION 1107)

NOT APPLICABLE

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	
173 spaces	7	7	6		1	7
TOTAL	7	7 Existing	6		1	7

PLUMBING FIXTURE REQUIREMENTS
(TABLE 2902.1)

Student Fixtures:

USE		WATERCLOSETS			URINALS	LAVATORIES			SHOWERS /TUBS	DRINKING FOUNTAINS	
		MALE	FEMALE	UNISEX		MALE	FEMALE	UNISEX		REGULAR	ACCESSIBLE
SPACE	EXIST'G	5	12	0	7	5	6	0	0	3	3
	NEW	0	0	0	0	0	0	0	0	0	0
	REQ'D	3	10	0	6	3	3	0	0	3	3

*Restrooms near the Multi-Purpose Room meet the need for Cafeteria, Multi-Purpose, & Platform

Staff:

USE		WATERCLOSETS			URINALS	LAVATORIES			SHOWERS /TUBS	DRINKING FOUNTAINS	
		MALE	FEMALE	UNISEX		MALE	FEMALE	UNISEX		REGULAR	ACCESSIBLE
SPACE	EXIST'G	1	2	0	1	1	1	0	0	1	1
	NEW	0	0	0	0	0	0	0	0	0	0
	REQ'D	1	1	0	0	1	1	0	0	-	-

*Drinking fountains provide for students meet the need for staff.

SPECIAL APPROVALS

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

ENERGY SUMMARY

ENERGY REQUIREMENTS:
The following data shall be considered minimum and any special attribute required to meet the energy code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If 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: Select one

Exempt Building: Select one Provide code or statutory reference:

Climate Zone: 3A

Method of Compliance: Energy Code - Prescriptive
(If "Other" specify source here)

THERMAL ENVELOPE (Prescriptive method only)

Roof/ceiling Assembly (each assembly)
Description of assembly: N/A
U-Value of total assembly: N/A
R-Value of insulation: N/A
Skylights in each assembly: N/A
U-Value of skylight: N/A
total square footage of skylights in each assembly: N/A

Exterior Walls (each assembly)
Description of assembly: 8" CMU w/2 rigid insulation & 4" CMU veneer
U-Value of total assembly: N/A
R-Value of insulation: R-7.6ci
Openings (windows or doors with glazing)
Description of assembly: (Vitro Solarban 70/Vitro Solargray)
U-Value of assembly: 0.24
Solar heat gain coefficient: 0.24
Projection factor: 0
Description of glazing: N/A
Door U-Values: N/A

Walls below grade (each assembly)
Description of assembly: N/A
U-Value of total assembly: N/A
R-Value of insulation: N/A

Floors over unconditioned space (each assembly)
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: N/A
U-Value of total assembly: N/A
R-Value of insulation: N/A
Horizontal/vertical requirement: N/A
slab heated: N/A

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
STRUCTURAL DESIGN
(PROVIDE ON THE STRUCTURAL SHEETS IF APPLICABLE)

DESIGN LOADS:

See Structural

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
MECHANICAL DESIGN
(PROVIDE ON THE MECHANICAL SHEETS IF APPLICABLE)

MECHANICAL SUMMARY

See Mechanical Drawings

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
ELECTRICAL DESIGN
(PROVIDE ON THE ELECTRICAL SHEETS IF APPLICABLE)

ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT

See Electrical Drawings

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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.

SECTION E: GROUND STABILIZATION

Site Area Description	Required Ground Stabilization Timeframes: 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' 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

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, coulants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

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.

PAINT AND OTHER LIQUID WASTE

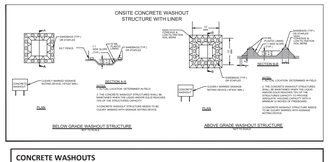
1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled,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

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.

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.



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.

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.

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.

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING | EFFECTIVE: 04/01/19

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.

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 or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those un-attended days (and 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 persons 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 of 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 a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 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 a stream 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, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit 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 an assurance that they will be provided as soon as possible.

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

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

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 documented in the manner described:

Item to Document	Documentation 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 or if 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.

2. Additional Documentation

In addition to the E&SC Plan documents above, the following items shall be kept on the site

and available for agency 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 30 days. 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.

(c) All data used to complete the Notice of Intent and older 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).

(a) 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.

(b) Anticipated bypasses and unanticipated bypasses.

(c) 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 Division's Emergency Response personnel at (800) 662-7956, (800) 858-0368 or (919) 733-3300.

Occurrence	Reporting Timeframes (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 causes, 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.

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PERMANENT SEEDING			
GRASS TYPE	LBS/ ACRE	TIME OF SEEDING	FERTILIZER LIMESTONE
BERMUDA, HULLED BERMUDA, UNHULLED	10-20 35	MARCH - AUGUST SEPT. - FEB.	BY SOIL TEST
CENTIPEDE	10	MARCH - AUGUST	BY SOIL TEST (NO HIGH PH)
TALL FESCUE (COASTAL CULTIVAR RECOMMENDED)	50	MARCH - AUGUST	300 LB/AC 10-20-20 OR BY SOIL TEST
SLOPES >= 2:1 CENTIPEDE SERICEA LESPEDEZA	5 20	JAN - DEC	BY SOIL TEST

TEMPORARY SEEDING			
GRASS TYPE	LBS/ ACRE	TIME OF SEEDING	FERTILIZER LIMESTONE
RYE GRAIN	50	OCT. - APR.	400 LBS/AC. 10-20-20
SWEET SUDAN GRASS	50	JUNE - AUGUST	400 LBS/AC. 10-20-20
GERMAN or BROWNTOP MILLET	50	JUNE - AUGUST	400 LBS/AC. 10-20-20
STRAW MULCH AS NEEDED	4,000		

811 Know what's below. Call before you dig.

EXISTING UTILITY NOTES:

1. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO VERIFY THE ACTUAL LOCATION AND AVAILABILITY OF ALL EXISTING AND PROPOSED UTILITIES IN THE FIELD PRIOR TO GROUND BREAKING.
2. EXISTING UTILITIES AND STRUCTURES SHOWN, BOTH UNDERGROUND AND ABOVE GROUND, ARE BASED ON A FIELD SURVEY AND THE BEST AVAILABLE RECORD DRAWINGS. THE CONTRACTOR SHALL FIELD VERIFY FIELD CONDITIONS PRIOR TO BEGINNING RELATED CONSTRUCTION. ANY DISCREPANCIES SHALL BE REPORTED TO THE OWNER'S REPRESENTATIVE IMMEDIATELY. THE CONTRACTOR SHALL RAISE OR LOWER EXISTING MANHOLES AND STRUCTURES TO MATCH FINAL GRADES.

COORDINATION NOTES:

1. THE CONTRACTOR IS REQUIRED TO OBTAIN ANY/ALL PERMITS REQUIRED FOR CONSTRUCTION OF THESE PLANS.
2. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH PERMITS ISSUED AND WITH THE CITY OF WILMINGTON, NEW HANOVER COUNTY, CAPE FEAR PUBLIC UTILITY AUTHORITY (CFPUA), AND THE STATE OF NORTH CAROLINA.
3. THE CONTRACTOR IS TO ESTABLISH AND CHECK ALL HORIZONTAL AND VERTICAL CONTROLS TO BE USED WITH THE PROJECT. IN ADDITION, THE CONTRACTOR IS TO COMPUTE THE LAYOUT OF THE ENTIRE SITE PLAN IN ADVANCE OF BEGINNING ANY WORK ASSOCIATED WITH THE SUBJECT PLANS. CONTRACTOR SHALL EMPLOY A PROFESSIONAL SURVEYOR TO PERFORM SITE IMPROVEMENT STAKEOUT(S).
4. ANYTIME WORK IS PERFORMED OFF-SITE OR WITHIN AN EXISTING EASEMENT, THE CONTRACTOR IS TO NOTIFY THE HOLDER OF SAID EASEMENT AS TO THE NATURE OF PROPOSED WORK, AND TO FOLLOW ANY GUIDELINES OR STANDARDS WHICH ARE ASSOCIATED WITH OR REFERENCED IN THE RECORDED EASEMENT.
5. CONTRACTOR SHALL REFER TO ARCHITECTURAL DRAWINGS BY OTHERS FOR ALL BUILDING DIMENSIONS AND DETAILS.

GENERAL NOTES:

1. TREE INVENTORY, BOUNDARY, AND TOPOGRAPHIC SURVEY COMPLETED BY PARAMOUNTE ENGINEERING, INC. THE SURVEY SHALL BE FIELD VERIFIED BY CONTRACTOR AND ANY DISCREPANCIES REPORTED TO THE OWNER AND ENGINEER.
2. REASONABLE CARE HAS BEEN EXERCISED IN SHOWING THE LOCATION OF EXISTING UTILITIES ON THE PLANS. THE EXACT LOCATION OF ALL EXISTING UTILITIES IS NOT KNOWN IN ALL CASES. THE CONTRACTOR SHALL EXPLORE THE AREA AHEAD OF DITCHING OPERATIONS BY OBSERVATIONS, ELECTRONIC DEVICES, HAND DIGGING AND BY PERSONAL CONTACT WITH THE UTILITY COMPANIES. IN ORDER TO LOCATE EXISTING UTILITIES IN ADVANCE OF TRENCHING OPERATIONS SO AS TO ELIMINATE OR MINIMIZE DAMAGE TO EXISTING UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS RESULTING FROM ANY DAMAGE TO THE EXISTING UTILITY LINES INCLUDING LOSS OF UTILITY REVENUES. CONTRACTOR SHALL ARRANGE FOR TEMPORARY SUPPORT OF EXISTING UTILITIES, SUCH AS POLES, CONDUITS, FIBER OPTIC CABLES, TELEPHONE CABLES, WATER LINES, ETC.
3. CONTRACTOR SHALL COMPLY WITH THE LATEST REVISIONS AND INTERPRETATIONS OF THE DEPARTMENT OF LABOR SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION PROMULGATED UNDER THE OCCUPATIONAL SAFETY AND HEALTH ACT.
4. CONTRACTOR SHALL PLAN AND CONSTRUCT WORK SO AS TO CAUSE MINIMUM INCONVENIENCE TO THE OWNER AND THE PUBLIC. THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN AT ALL TIMES DURING THE PROGRESS OR TEMPORARY SUSPENSION OF WORK, SUITABLE BARRIERS, FENCES, SIGNS OR OTHER ADEQUATE PROTECTION, INCLUDING FLAGMEN AND WATCHMEN AS NECESSARY TO INSURE THE SAFETY OF THE PUBLIC AS WELL AS THOSE ENGAGED IN THE CONSTRUCTION WORK. CONSTRUCTION SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF "CONSTRUCTION AND MAINTENANCE OPERATIONS SUPPLEMENT TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" BY THE USDOT.
5. ALL MATERIAL CLEARED OR DEMOLISHED BY THE CONTRACTOR IN ORDER TO CONSTRUCT THE WORK SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROPERLY DISPOSED OF OFF-SITE.
6. ALL WORK BY THE CONTRACTOR SHALL BE WARRANTED BY THE CONTRACTOR FOR A PERIOD OF ONE YEAR AFTER THE OWNER ACCEPTS THE WORK.
7. CONTRACTOR SHALL CALL THE NORTH CAROLINA ONE-CALL CENTER AT 811 AN ALLOW THE CENTER TO LOCATE EXISTING UTILITIES BEFORE DIGGING.
8. ANY DISCREPANCY IN THIS PLAN AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE OWNER PRIOR TO START OF CONSTRUCTION. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL SETBACKS, EASEMENTS AND DIMENSIONS SHOWN HEREON BEFORE BEGINNING CONSTRUCTION.
9. CONTRACTOR SHALL MAINTAIN THE SITE IN A MANNER SO THAT WORKMEN AND PUBLIC SHALL BE PROTECTED FROM INJURY, AND ADJOINING PROPERTY PROTECTED FROM DAMAGE.
10. ACCESS TO UTILITIES, FIRE HYDRANTS, STREET LIGHTING, ETC., SHALL REMAIN UNDISTURBED, UNLESS COORDINATED WITH THE RESPECTIVE UTILITY.
11. DO NOT SCALE THIS DRAWING AS IT IS A REPRODUCTION AND SUBJECT TO DISTORTION.
12. THE GENERAL CONTRACTOR SHALL REMOVE ALL DEBRIS FROM THE SITE UPON COMPLETION OF THE PROJECT AND AT LEAST ONCE A WEEK DURING CONSTRUCTION.
13. THE GENERAL CONTRACTOR SHALL KEEP THE AREA OUTSIDE THE "CONSTRUCTION LIMITS" BROOM CLEAN AT ALL TIMES.
14. ALL STREET SURFACES, DRIVEWAYS, CULVERTS, CURB AND GUTTERS, ROADSIDE DRAINAGE DITCHES AND OTHER STRUCTURES THAT ARE DISTURBED OR DAMAGED IN ANY MANNER AS A RESULT OF CONSTRUCTION SHALL BE REPLACED OR REPAIRED IN ACCORDANCE WITH THE SPECIFICATIONS.
15. CONTRACTOR SHALL MAINTAIN AN "AS-BUILT" SET OF DRAWINGS TO RECORD THE EXACT LOCATION OF ALL PIPING PRIOR TO CONCEALMENT. DRAWINGS SHALL BE GIVEN TO THE OWNER UPON COMPLETION OF THE PROJECT WITH A COPY OF THE TRANSMITTAL LETTER TO THE ENGINEER.
16. IF DEPARTURES FROM THE SPECIFICATIONS OR DRAWINGS ARE DEEMED NECESSARY BY THE CONTRACTOR, DETAILS OF SUCH DEPARTURES AND REASONS THEREOF SHALL BE GIVEN TO THE OWNER FOR REVIEW. NO DEPARTURES FROM THE CONTRACT DOCUMENTS SHALL BE MADE WITHOUT THE PERMISSION OF THE OWNER AND ENGINEER.
17. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES. THE LOCATION OF ALL EXISTING UTILITIES ARE NOT NECESSARILY SHOWN ON PLANS AND WHERE SHOWN ARE ONLY APPROXIMATE. THE CONTRACTOR SHALL ON HIS INITIATIVE AND AT NO EXTRA COST HAVE LOCATED ALL UNDERGROUND LINES AND STRUCTURES AS NECESSARY. NO CLAIMS FOR DAMAGES OR EXTRA COMPENSATION SHALL ACCRUE TO THE CONTRACTOR FROM THE PRESENCE OF SUCH PIPE OTHER OBSTRUCTIONS OR FROM DELAY DUE TO REMOVAL OR REARRANGEMENT OF THE SAME. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO UNDERGROUND STRUCTURES. CONTACT NORTH CAROLINA ONE CALL" TOLL FREE 1-800-632-4949 AT LEAST 48 HOURS PRIOR TO CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL NON-SUBSCRIBING UTILITIES.
18. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL INSPECTIONS, CERTIFICATIONS, EQUIPMENT, ETC., THAT MAY BE REQUIRED.
19. THE ENGINEER AND/OR OWNER DISCLAIM ANY ROLE IN THE CONSTRUCTION MEANS AND METHODS ASSOCIATED WITH THE PROJECT AS SET FORTH IN THESE PLANS.
20. ALL LOT STRIPING AND DIRECTIONAL ARROWS TO BE REFLECTIVE MARKINGS AND SHALL CONFORM TO MUTCD. ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.
21. LANDSCAPE PLANTINGS AT ENTRANCE/ EXITS WILL BE INSTALLED AND MAINTAINED SO AS NOT TO INTERFERE WITH SIGHT DISTANCE NEEDS OF DRIVERS IN THE PARKING AREA AND AT ENTRANCE/EXIT LOCATIONS PER LOCAL STANDARDS.
22. ALL DIMENSIONS AND RADII ARE TO OUTSIDE FACE OF BUILDING OR TO FACE OF CURB UNLESS OTHERWISE NOTED.

GENERAL EROSION AND SEDIMENT CONTROL NOTES:

1. THIS PROPERTY IS NOT SUBJECT TO THE NC SEDIMENTATION CONTROL ACT IN REGARDS TO OBTAINING AN EROSION CONTROL PERMIT SINCE THE LAND DISTURBANCE IS UNDER 1.0 ACRE. HOWEVER, ONSITE SEDIMENTATION CONTROL WILL BE A REQUIREMENT OF THE CONTRACTOR DURING ANY DISTURBANCE AND CONSTRUCTION.
2. ALL AREAS DISTURBED BY CONSTRUCTION UNLESS OTHERWISE IMPROVED SHALL BE SODDED OR SEEDED AS INDICATED AND STABILIZED.
3. DURING DEWATERING OPERATIONS, WATER SHALL BE PUMPED INTO AN APPROVED FILTERING DEVICE PRIOR TO DISCHARGE TO RECEIVING OUTLET.

DEMOLITION NOTES:

1. CONTRACTOR TO COORDINATE WITH THE OWNER TO PROPERLY MAINTAIN OR RELOCATE EXISTING SERVICE CONNECTIONS WHEN NECESSARY.
2. CONTRACTOR IS TO WALK THE SITE AND BECOME FAMILIAR WITH THE SCOPE OF DEMOLITION REQUIRED. ALL DEMOLITION WORK REQUIRED TO CONSTRUCT NEW SITE IMPROVEMENTS WILL BE PERFORMED BY THE CONTRACTOR AND WILL BE CONSIDERED UNCLASSIFIED EXCAVATION.
3. DEMOLITION SHALL INCLUDE BUT IS NOT LIMITED TO THE EXCAVATION, HAULING AND OFFSITE DISPOSAL OF CONCRETE PADS, CONCRETE DITCHES, FOUNDATIONS, SLABS, STEPS, AND STRUCTURES; ABANDONED UTILITIES, BUILDINGS, PAVEMENTS AND ALL MATERIALS CLEARED AND STRIPPED TO THE EXTENT NECESSARY AS DIRECTED BY THE GEOTECHNICAL ENGINEER FOR THE INSTALLATION OF THE NEW IMPROVEMENTS AND WITHIN THE LIMITS OF CLEARING AND GRADING AND AS SHOWN ON THESE PLANS.
4. THE CONTRACTOR SHALL PROTECT ALL ADJACENT PROPERTY, STRUCTURES AND UTILITIES ON THE PROPERTY NOT TO BE DEMOLISHED. DAMAGE TO PROPERTIES OF OTHERS DUE TO THE CONTRACTOR'S ACTIVITIES SHALL BE REPLACED IN KIND BY THE CONTRACTOR AT NO COST TO OWNER.
5. ELECTRIC, TELEPHONE, SANITARY SEWER, WATER AND STORM SEWER UTILITIES THAT SERVICE OFF-SITE PROPERTIES SHALL BE MAINTAINED DURING THE CONSTRUCTION PROCESS BY THE CONTRACTOR.
6. THE CONTRACTOR SHALL PRODUCE A PHOTOGRAPHIC RECORD (DIGITAL) OF DEVELOPMENT COMMENCING WITH A RECORD OF THE SITE AS IT APPEARS BEFORE DEMOLITION HAS BEGUN. AFTERWARDS, A PHOTOGRAPHIC RECORD SHALL BE MAINTAINED WEEKLY DURING CONSTRUCTION AND ENDING WITH A PHOTOGRAPHIC RECORD OF THE DEVELOPMENT AS IT APPEARS AFTER DEMOLITION. THIS RECORD SHALL BE DELIVERED TO THE OWNER.
7. EXISTING CURB AND GUTTER, LIGHTS, SIDEWALK, AND UTILITIES NOT INTENDED FOR DEMOLITION SHALL BE MAINTAINED, PROTECTED AND UNDISTURBED DURING DEMOLITION.
8. ALL EXISTING IMPROVEMENTS INDICATED OR REQUIRED TO BE DEMOLISHED SHALL INCLUDE REMOVAL FROM THE PROPERTY AND PROPER DISPOSAL.
9. CONTRACTOR SHALL COORDINATE RELOCATION OF ALL EXISTING OVERHEAD AND UNDERGROUND UTILITIES INCLUDING CABLE, GAS, TELEPHONE AND ELECTRIC AND ANY OTHER UTILITIES THROUGH THE SITE WITH THE RESPECTIVE COMPANIES.
10. CONTRACTOR SHALL MAINTAIN REQUIRED DISTANCES FROM HIGH VOLTAGE OVERHEAD LINES AND ONE YEAR AFTER THE OWNER ACCEPTS THE WORK.
11. PROVIDE SMOOTH SAW CUT OF EXISTING PAVEMENTS, CURBS AND GUTTERS AND SIDEWALKS TO BE DEMOLISHED.
12. ALL DEMOLITION WORK SHALL BE DONE IN STRICT ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS AS WELL AS OSHA REGULATIONS.
13. EXISTING FIRE HYDRANTS ON OR NEAR THE SITE ARE TO REMAIN IN SERVICE.
14. INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS, BUT THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATIONS BY DIGGING TEST PITS.

EROSION CONTROL AND SEQUENCE OF CONSTRUCTION NOTES:

NOTE: THESE EROSION CONTROL AND SEQUENCE OF CONSTRUCTION NOTES ARE INTENDED FOR EACH "PHASE" OF CONSTRUCTION. THE ORDER AND STEPS TAKEN MUST BE IMPLEMENTED AS EACH PART OF THE PROJECT IS DEVELOPED; WHETHER AS A WHOLE OR IN PHASES. ANY EROSION CONTROL DEVICES/MEASURES MUST REMAIN IN PLACE UNTIL THE ENTIRE DISTURBANCE IS STABILIZED AND ALL IMPROVEMENTS WITHIN THE DISTURBANCE LIMITS ARE COMPLETE.

1. CONSTRUCT TEMPORARY GRAVEL CONSTRUCTION ENTRANCE(S), ESTABLISH THE LIMITS OF DISTURBANCE, TREE PROTECTION FENCING, AND TEMPORARY SILT FENCE.
2. CLEAR AND REMOVE FROM SITE TREES AS DESIGNATED, ROOTS, ROOT MAT, ETC. FROM THE AREA WITHIN THE DESIGNATED CLEARING LIMITS.
3. CONSTRUCT TEMPORARY SEDIMENT BASIN(S) AND ASSOCIATED SKIMMER, OUTLET PIPE, SPILLWAY, ETC.
4. INSTALL REMAINING EROSION CONTROL MEASURES AS SHOWN ON THE PLANS WITHIN THE AREA DISTURBED. ALL EROSION CONTROL MEASURES MUST BE INSTALLED BEFORE COMMENCING CONSTRUCTION.
5. PLANT GRASS OVER ALL GRADED AREAS WITHIN 14 WORKING DAYS OF CEASE OF ANY GRADING ACTIVITY.
6. IMMEDIATELY UPON THE INSTALLATION OF ANY STORM DRAINAGE CATCH BASIN, DROP INLET, ETC., THE CONTRACTOR SHALL INSTALL INLET PROTECTION TO PREVENT SEDIMENT FROM ENTERING THE DRAINAGE SYSTEM.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING AND RESTORING TO PRE-CONSTRUCTION CONDITIONS ANY AREAS OUTSIDE THE PROJECT LIMITS THAT MAY INADVERTENTLY BE DAMAGED DUE TO THE FAILURE OF THE EROSION CONTROL MEASURES.
8. DURING GRADING AND AFTER GRADING HAS BEEN COMPLETE, THE CONTRACTOR SHALL CONTINUE TO MAINTAIN PERMANENT AND TEMPORARY EROSION CONTROL MEASURES UNTIL FINAL APPROVAL BY ENGINEER OR EROSION CONTROL INSPECTOR.
9. UPON RECEIVING FINAL APPROVAL, THE CONTRACTOR CAN REMOVE TEMPORARY EROSION CONTROL MEASURES.
10. THE CONTRACTOR SHALL CONTINUE

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.

SECTION E: GROUND STABILIZATION

Site Area Description	Required Ground Stabilization Timeframes: 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' 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

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 tools, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

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.

PAINT AND OTHER LIQUID WASTE

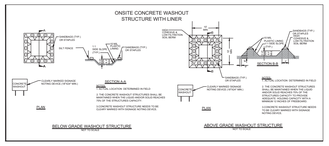
1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
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.

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.

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.



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.

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.

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.

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

EFFECTIVE: 04/01/19

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 0.1 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.

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 or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those un-attended days (and 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 persons 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 of 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 a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 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 a stream 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, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit 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 an assurance that: they will be provided as soon as possible.

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

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

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 documented in the manner described:

Item to Document	Documentation 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 or if 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.

2. Additional Documentation

In addition to the E&SC Plan documents above, the following items shall be kept on the site

and available for agency 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 30 days. 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.

(c) All data used to complete the Notice of Intent and older 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).

(a) 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.

(b) Anticipated bypasses and unanticipated bypasses.

(c) 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 Division's Emergency Response personnel at (800) 662-7956, (800) 858-0368 or (919) 733-3300.

Occurrence	Reporting Timeframes (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 causes, 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.

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 04/01/19

PERMANENT SEEDING			
GRASS TYPE	LBS/ ACRE	TIME OF SEEDING	FERTILIZER LIMESTONE
BERMUDA, HULLED BERMUDA, UNHULLED	10-20 35	MARCH - AUGUST SEPT. - FEB.	BY SOIL TEST
CENTIPEDE	10	MARCH - AUGUST	BY SOIL TEST (NO HIGH PH)
TALL FESCUE (COASTAL CULTIVAR RECOMMENDED)	50	MARCH - AUGUST	300 LB/AC 10-20-20 OR BY SOIL TEST
SLOPES >= 2:1 CENTIPEDE SERICEA LESPEDEZA	5 20	JAN - DEC	BY SOIL TEST

TEMPORARY SEEDING			
GRASS TYPE	LBS/ ACRE	TIME OF SEEDING	FERTILIZER LIMESTONE
RYE GRAIN	50	OCT. - APR.	400 LBS/AC. 10-20-20
SWEET SUDAN GRASS	50	JUNE - AUGUST	400 LBS/AC. 10-20-20
GERMAN or BROWNTOP MILLET	50	JUNE - AUGUST	400 LBS/AC. 10-20-20
STRAW MULCH AS NEEDED	4,000		

811 Know what's below. Call before you dig.

COORDINATION NOTES:

1. THE CONTRACTOR IS REQUIRED TO OBTAIN ANY/ALL PERMITS REQUIRED FOR CONSTRUCTION OF THESE PLANS.
2. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH PERMITS ISSUED AND WITH THE CITY OF WILMINGTON, NEW HANOVER COUNTY, CAPE FEAR PUBLIC UTILITY AUTHORITY (CFPUA), AND THE STATE OF NORTH CAROLINA.
3. THE CONTRACTOR IS TO ESTABLISH AND CHECK ALL HORIZONTAL AND VERTICAL CONTROLS TO BE USED WITH THE PROJECT. IN ADDITION, THE CONTRACTOR IS TO COMPUTE THE LAYOUT OF THE ENTIRE SITE PLAN IN ADVANCE OF BEGINNING ANY WORK ASSOCIATED WITH THE SUBJECT PLANS. CONTRACTOR SHALL EMPLOY A PROFESSIONAL SURVEYOR TO PERFORM SITE IMPROVEMENT STAKEOUT(S).
4. ANYTIME WORK IS PERFORMED OFF-SITE OR WITHIN AN EXISTING EASEMENT, THE CONTRACTOR IS TO NOTIFY THE HOLDER OF SAID EASEMENT AS TO THE NATURE OF PROPOSED WORK, AND TO FOLLOW ANY GUIDELINES OR STANDARDS WHICH ARE ASSOCIATED WITH OR REFERENCED IN THE RECORDED EASEMENT.
5. CONTRACTOR SHALL REFER TO ARCHITECTURAL DRAWINGS BY OTHERS FOR ALL BUILDING DIMENSIONS AND DETAILS.

GENERAL NOTES:

1. TREE INVENTORY, BOUNDARY, AND TOPOGRAPHIC SURVEY COMPLETED BY PARAMOUNTE ENGINEERING, INC. THE SURVEY SHALL BE FIELD VERIFIED BY CONTRACTOR AND ANY DISCREPANCIES REPORTED TO THE OWNER AND ENGINEER.
2. REASONABLE CARE HAS BEEN EXERCISED IN SHOWING THE LOCATION OF EXISTING UTILITIES ON THE PLANS. THE EXACT LOCATION OF ALL EXISTING UTILITIES IS NOT KNOWN IN ALL CASES. THE CONTRACTOR SHALL EXPLORE THE AREA AHEAD OF DITCHING OPERATIONS BY OBSERVATIONS, ELECTRONIC DEVICES, HAND DIGGING AND BY PERSONAL CONTACT WITH THE UTILITY COMPANIES. IN ORDER TO LOCATE EXISTING UTILITIES IN ADVANCE OF TRENCHING OPERATIONS SO AS TO ELIMINATE OR MINIMIZE DAMAGE TO EXISTING UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS RESULTING FROM ANY DAMAGE TO THE EXISTING UTILITY LINES INCLUDING LOSS OF UTILITY REVENUES. CONTRACTOR SHALL ARRANGE FOR TEMPORARY SUPPORT OF EXISTING UTILITIES, SUCH AS POLES, CONDUITS, FIBER OPTIC CABLES, TELEPHONE CABLES, WATER LINES, ETC.
3. CONTRACTOR SHALL COMPLY WITH THE LATEST REVISIONS AND INTERPRETATIONS OF THE DEPARTMENT OF LABOR SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION PROMULGATED UNDER THE OCCUPATIONAL SAFETY AND HEALTH ACT.
4. CONTRACTOR SHALL PLAN AND CONSTRUCT WORK SO AS TO CAUSE MINIMUM INCONVENIENCE TO THE OWNER AND THE PUBLIC. THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN AT ALL TIMES DURING THE PROGRESS OR TEMPORARY SUSPENSION OF WORK, SUITABLE BARRIERS, FENCES, SIGNS OR OTHER ADEQUATE PROTECTION, INCLUDING FLAGMEN AND WATCHMEN AS NECESSARY TO INSURE THE SAFETY OF THE PUBLIC AS WELL AS THOSE ENGAGED IN THE CONSTRUCTION WORK. CONSTRUCTION SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF "CONSTRUCTION AND MAINTENANCE OPERATIONS SUPPLEMENT TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" BY THE USDOT.
5. ALL MATERIAL CLEARED OR DEMOLISHED BY THE CONTRACTOR IN ORDER TO CONSTRUCT THE WORK SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROPERLY DISPOSED OF OFF-SITE.
6. ALL WORK BY THE CONTRACTOR SHALL BE WARRANTED BY THE CONTRACTOR FOR A PERIOD OF ONE YEAR AFTER THE OWNER ACCEPTS THE WORK.
7. CONTRACTOR SHALL CALL THE NORTH CAROLINA ONE-CALL CENTER AT 811 AN ALLOW THE CENTER TO LOCATE EXISTING UTILITIES BEFORE DIGGING.
8. ANY DISCREPANCY IN THIS PLAN AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE OWNER PRIOR TO START OF CONSTRUCTION. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL SETBACKS, EASEMENTS AND DIMENSIONS SHOWN HEREON BEFORE BEGINNING CONSTRUCTION.
9. CONTRACTOR SHALL MAINTAIN THE SITE IN A MANNER SO THAT WORKMEN AND PUBLIC SHALL BE PROTECTED FROM INJURY, AND ADJOINING PROPERTY PROTECTED FROM DAMAGE.
10. ACCESS TO UTILITIES, FIRE HYDRANTS, STREET LIGHTING, ETC., SHALL REMAIN UNDISTURBED, UNLESS COORDINATED WITH THE RESPECTIVE UTILITY.
11. DO NOT SCALE THIS DRAWING AS IT IS A REPRODUCTION AND SUBJECT TO DISTORTION.
12. THE GENERAL CONTRACTOR SHALL REMOVE ALL DEBRIS FROM THE SITE UPON COMPLETION OF THE PROJECT AND AT LEAST ONCE A WEEK DURING CONSTRUCTION.
13. THE GENERAL CONTRACTOR SHALL KEEP THE AREA OUTSIDE THE "CONSTRUCTION LIMITS" BROOM CLEAN AT ALL TIMES.
14. ALL STREET SURFACES, DRIVEWAYS, CULVERTS, CURB AND GUTTERS, ROADSIDE DRAINAGE DITCHES AND OTHER STRUCTURES THAT ARE DISTURBED OR DAMAGED IN ANY MANNER AS A RESULT OF CONSTRUCTION SHALL BE REPLACED OR REPAIRED IN ACCORDANCE WITH THE SPECIFICATIONS.
15. CONTRACTOR SHALL MAINTAIN AN "AS-BUILT" SET OF DRAWINGS TO RECORD THE EXACT LOCATION OF ALL PIPING PRIOR TO CONCEALMENT. DRAWINGS SHALL BE GIVEN TO THE OWNER UPON COMPLETION OF THE PROJECT WITH A COPY OF THE TRANSMITTAL LETTER TO THE ENGINEER.
16. IF DEPARTURES FROM THE SPECIFICATIONS OR DRAWINGS ARE DEEMED NECESSARY BY THE CONTRACTOR, DETAILS OF SUCH DEPARTURES AND REASONS THEREOF SHALL BE GIVEN TO THE OWNER FOR REVIEW, NO DEPARTURES FROM THE CONTRACT DOCUMENTS SHALL BE MADE WITHOUT THE PERMISSION OF THE OWNER AND ENGINEER.
17. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES. THE LOCATION OF ALL EXISTING UTILITIES ARE NOT NECESSARILY SHOWN ON PLANS AND WHERE SHOWN ARE ONLY APPROXIMATE. THE CONTRACTOR SHALL ON HIS INITIATIVE AND AT NO EXTRA COST HAVE LOCATED ALL UNDERGROUND LINES AND STRUCTURES AS NECESSARY. NO CLAIMS FOR DAMAGES OR EXTRA COMPENSATION SHALL ACCRUE TO THE CONTRACTOR FROM THE PRESENCE OF SUCH PIPE OTHER OBSTRUCTIONS OR FROM DELAY DUE TO REMOVAL OR REARRANGEMENT OF THE SAME. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO UNDERGROUND STRUCTURES. CONTACT NORTH CAROLINA ONE CALL* TOLL FREE 1-800-632-4949 AT LEAST 48 HOURS PRIOR TO CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL NON-SUBSCRIBING UTILITIES.
18. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL INSPECTIONS, CERTIFICATIONS, EQUIPMENT, ETC., THAT MAY BE REQUIRED.
19. THE ENGINEER AND/OR OWNER DISCLAIM ANY ROLE IN THE CONSTRUCTION MEANS AND METHODS ASSOCIATED WITH THE PROJECT AS SET FORTH IN THESE PLANS.
20. ALL LOT STRIPING AND DIRECTIONAL ARROWS TO BE REFLECTIVE MARKINGS AND SHALL CONFORM TO MUTCD. ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.
21. LANDSCAPE PLANTINGS AT ENTRANCE/ EXITS WILL BE INSTALLED AND MAINTAINED SO AS NOT TO INTERFERE WITH SIGHT DISTANCE NEEDS OF DRIVERS IN THE PARKING AREA AND AT ENTRANCE/EXIT LOCATIONS PER LOCAL STANDARDS.
22. ALL DIMENSIONS AND RADII ARE TO OUTSIDE FACE OF BUILDING OR TO FACE OF CURB UNLESS OTHERWISE NOTED.

GENERAL EROSION AND SEDIMENT CONTROL NOTES:

1. THIS PROPERTY IS NOT SUBJECT TO THE NC SEDIMENTATION CONTROL ACT IN REGARDS TO OBTAINING AN EROSION CONTROL PERMIT SINCE THE LAND DISTURBANCE IS UNDER 1.0 ACRE. HOWEVER, ONSITE SEDIMENTATION CONTROL WILL BE A REQUIREMENT OF THE CONTRACTOR DURING ANY DISTURBANCE AND CONSTRUCTION.
2. ALL AREAS DISTURBED BY CONSTRUCTION UNLESS OTHERWISE IMPROVED SHALL BE SODDED OR SEEDED AS INDICATED AND STABILIZED.
3. DURING DEWATERING OPERATIONS, WATER SHALL BE PUMPED INTO AN APPROVED FILTERING DEVICE PRIOR TO DISCHARGE TO RECEIVING OUTLET.

DEMOLITION NOTES:

1. CONTRACTOR TO COORDINATE WITH THE OWNER TO PROPERLY MAINTAIN OR RELOCATE EXISTING SERVICE CONNECTIONS WHEN NECESSARY.
2. CONTRACTOR IS TO WALK THE SITE AND BECOME FAMILIAR WITH THE SCOPE OF DEMOLITION REQUIRED. ALL DEMOLITION WORK REQUIRED TO CONSTRUCT NEW SITE IMPROVEMENTS WILL BE PERFORMED BY THE CONTRACTOR AND WILL BE CONSIDERED UNCLASSIFIED EXCAVATION.
3. DEMOLITION SHALL INCLUDE BUT IS NOT LIMITED TO THE EXCAVATION, HAULING AND OFFSITE DISPOSAL OF CONCRETE PADS, CONCRETE DITCHES, FOUNDATIONS, SLABS, STEPS, AND STRUCTURES; ABANDONED UTILITIES, BUILDINGS, PAVEMENTS AND ALL MATERIALS CLEARED AND STRIPPED TO THE EXTENT NECESSARY AS DIRECTED BY THE GEOTECHNICAL ENGINEER FOR THE INSTALLATION OF THE NEW IMPROVEMENTS AND WITHIN THE LIMITS OF CLEARING AND GRADING AND AS SHOWN ON THESE PLANS.
4. THE CONTRACTOR SHALL PROTECT ALL ADJACENT PROPERTY, STRUCTURES AND UTILITIES ON THE PROPERTY NOT TO BE DEMOLISHED. DAMAGE TO PROPERTIES OF OTHERS DUE TO THE CONTRACTOR'S ACTIVITIES SHALL BE REPLACED IN KIND BY THE CONTRACTOR AT NO COST TO OWNER.
5. ELECTRIC, TELEPHONE, SANITARY SEWER, WATER AND STORM SEWER UTILITIES THAT SERVICE OFF-SITE PROPERTIES SHALL BE MAINTAINED DURING THE CONSTRUCTION PROCESS BY THE CONTRACTOR.
6. THE CONTRACTOR SHALL PRODUCE A PHOTOGRAPHIC RECORD (DIGITAL) OF DEVELOPMENT COMMENCING WITH A RECORD OF THE SITE AS IT APPEARS BEFORE DEMOLITION HAS BEGUN. AFTERWARDS, A PHOTOGRAPHIC RECORD SHALL BE MAINTAINED WEEKLY DURING CONSTRUCTION AND ENDING WITH A PHOTOGRAPHIC RECORD OF THE DEVELOPMENT AS IT APPEARS AFTER DEMOLITION. THIS RECORD SHALL BE DELIVERED TO THE OWNER.
7. EXISTING CURB AND GUTTER, LIGHTS, SIDEWALK, AND UTILITIES NOT INTENDED FOR DEMOLITION SHALL BE MAINTAINED, PROTECTED AND UNDISTURBED DURING DEMOLITION.
8. ALL EXISTING IMPROVEMENTS INDICATED OR REQUIRED TO BE DEMOLISHED SHALL INCLUDE REMOVAL FROM THE PROPERTY AND PROPER DISPOSAL.
9. CONTRACTOR SHALL COORDINATE RELOCATION OF ALL EXISTING OVERHEAD AND UNDERGROUND UTILITIES INCLUDING CABLE, GAS, TELEPHONE AND ELECTRIC AND ANY OTHER UTILITIES THROUGH THE SITE WITH THE RESPECTIVE COMPANIES.
10. CONTRACTOR SHALL MAINTAIN REQUIRED DISTANCES FROM HIGH VOLTAGE OVERHEAD LINES AND REMOVE TREES SO THEY DO NOT FALL TOWARDS OVERHEAD ELECTRICITY.
11. PROVIDE SMOOTH SAW CUT OF EXISTING PAVEMENTS, CURBS AND GUTTERS AND SIDEWALKS TO BE DEMOLISHED.
12. ALL DEMOLITION WORK SHALL BE DONE IN STRICT ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS AS WELL AS OSHA REGULATIONS.
13. EXISTING FIRE HYDRANTS ON OR NEAR THE SITE ARE TO REMAIN IN SERVICE.
14. INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS, BUT THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATIONS BY DIGGING TEST PITS.

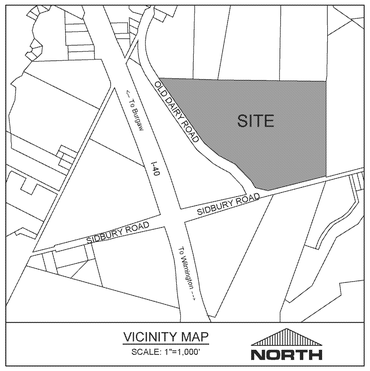
EROSION CONTROL AND SEQUENCE OF CONSTRUCTION NOTES:

NOTE: THESE EROSION CONTROL AND SEQUENCE OF CONSTRUCTION NOTES ARE INTENDED FOR EACH "PHASE" OF CONSTRUCTION. THE ORDER AND STEPS TAKEN MUST BE IMPLEMENTED AS EACH PART OF THE PROJECT IS DEVELOPED; WHETHER AS A WHOLE OR IN PHASES. ANY EROSION CONTROL DEVICES/MEASURES MUST REMAIN IN PLACE UNTIL THE ENTIRE DISTURBANCE IS STABILIZED AND ALL IMPROVEMENTS WITHIN THE DISTURBANCE LIMITS ARE COMPLETE.

1. CONSTRUCT TEMPORARY GRAVEL CONSTRUCTION ENTRANCE(S), ESTABLISH THE LIMITS OF DISTURBANCE, TREE PROTECTION FENCING, AND TEMPORARY SILT FENCE.
2. CLEAR AND REMOVE FROM SITE TREES AS DESIGNATED, ROOTS, ROOT MAT, ETC. FROM THE AREA WITHIN THE DESIGNATED CLEARING LIMITS.
3. CONSTRUCT TEMPORARY SEDIMENT BASIN(S) AND ASSOCIATED SKIMMER, OUTLET PIPE, SPILLWAY, ETC.
4. INSTALL REMAINING EROSION CONTROL MEASURES AS SHOWN ON THE PLANS WITHIN THE AREA DISTURBED. ALL EROSION CONTROL MEASURES MUST BE INSTALLED BEFORE COMMENCING CONSTRUCTION.
5. PLANT GRASS OVER ALL GRADED AREAS WITHIN 14 WORKING DAYS OF CEASE OF ANY GRADING ACTIVITY.
6. IMMEDIATELY UPON THE INSTALLATION OF ANY STORM DRAINAGE CATCH BASIN, DROP INLET, ETC., THE CONTRACTOR SHALL INSTALL INLET PROTECTION TO PREVENT SEDIMENT FROM ENTERING THE DRAINAGE SYSTEM.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING AND RESTORING TO PRE-CONSTRUCTION CONDITIONS ANY AREAS OUTSIDE THE PROJECT LIMITS THAT MAY INADVERTENTLY BE DAMAGED DUE TO THE FAILURE OF THE EROSION CONTROL MEASURES.
8. DURING GRADING AND AFTER GRADING HAS BEEN COMPLETE, THE CONTRACTOR SHALL CONTINUE TO MAINTAIN PERMANENT AND TEMPORARY EROSION CONTROL MEASURES UNTIL FINAL APPROVAL BY ENGINEER OR EROSION CONTROL INSPECTOR.
9. UPON RECEIVING FINAL APPROVAL, THE CONTRACTOR CAN REMOVE TEMPORARY EROSION CONTROL MEASURES.
10. THE CONTRACTOR SHALL CONTINUE TO WATER, FERTILIZE, MOW AND MAINTAIN GRASS & PLANTED AREAS UNTIL ALL CONSTRUCTION IS COMPLETE.

EROSION CONTROL MAINTENANCE PLAN:

1. ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF- PRODUCING RAINFALL BUT IN NO CASE LESS THAN 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. ANY



SITE INFORMATION

PARCEL ID:	R01800-003-012-000
PARCEL ADDRESS:	5301 SIDBURY ROAD CASTLE HAYNE, NC 28429
CURRENT ZONING:	R-15
EXISTING USE:	HIGH SCHOOL FACILITY
PROPOSED USE:	HIGH SCHOOL EXPANSION
PROJECT SITE AREA:	± 79.31 ACRES (± 3,454,744 SF)
OWNER INFORMATION:	NEW HANOVER COUNTY SCHOOLS 6410 CAROLINA BEACH RD WILMINGTON, NC 28412
FLOOD INFORMATION:	THIS PARCEL CONTAINS AREAS LOCATED IN SPECIAL FLOOD HAZARD ZONE "AE", AS DETERMINED BY FEMA FLOOD PANEL 3720324100K DATED AUGUST 28, 2018
DEED BOOK & PAGE:	DB 5828, PG 1563

BUILDING INFORMATION

CONSTRUCTION TYPE	REF. APPENDIX B (ARCH.)
NUMBER OF EXISTING BUILDINGS	1
NUMBER OF PROPOSED BUILDINGS	1
PROPOSED BUILDING SF	6,190 SF (FOOTPRINT)
PROPOSED HEIGHT	20' MAX.



Know what's below. Call before you dig.

GRAPHIC SCALE
0 50 100 200 400
SCALE: 1" = 100'

NC GRID (NAD83/2011)

SAWYER SHERWOOD & ASSOCIATE ARCHITECTURE
124 Market Street
Wilmington, NC 28401
910 762-0892
S2a3.com

PARAMOUNTE ENGINEERING, INC.
WOODS ENGINEERING Creative Solutions
CBHF Engineers, PLLC
PERFORMANCE BASED FIRE PROTECTION ENGINEERING PLLC
STATE OF NC ENGINEERING FIRM LICENSE NO. P-1842
PO BOX 1647 Pittsboro, NC 919.60.7780

NORTH CAROLINA PROFESSIONAL SEAL 037591 ENGINEER ROBERT P BALLARD
05/16/2023

NHCS Project No. 22-90458

Southeast Area Technical High School
SCIF Grant Addition

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

Issue Date: May 16, 2023

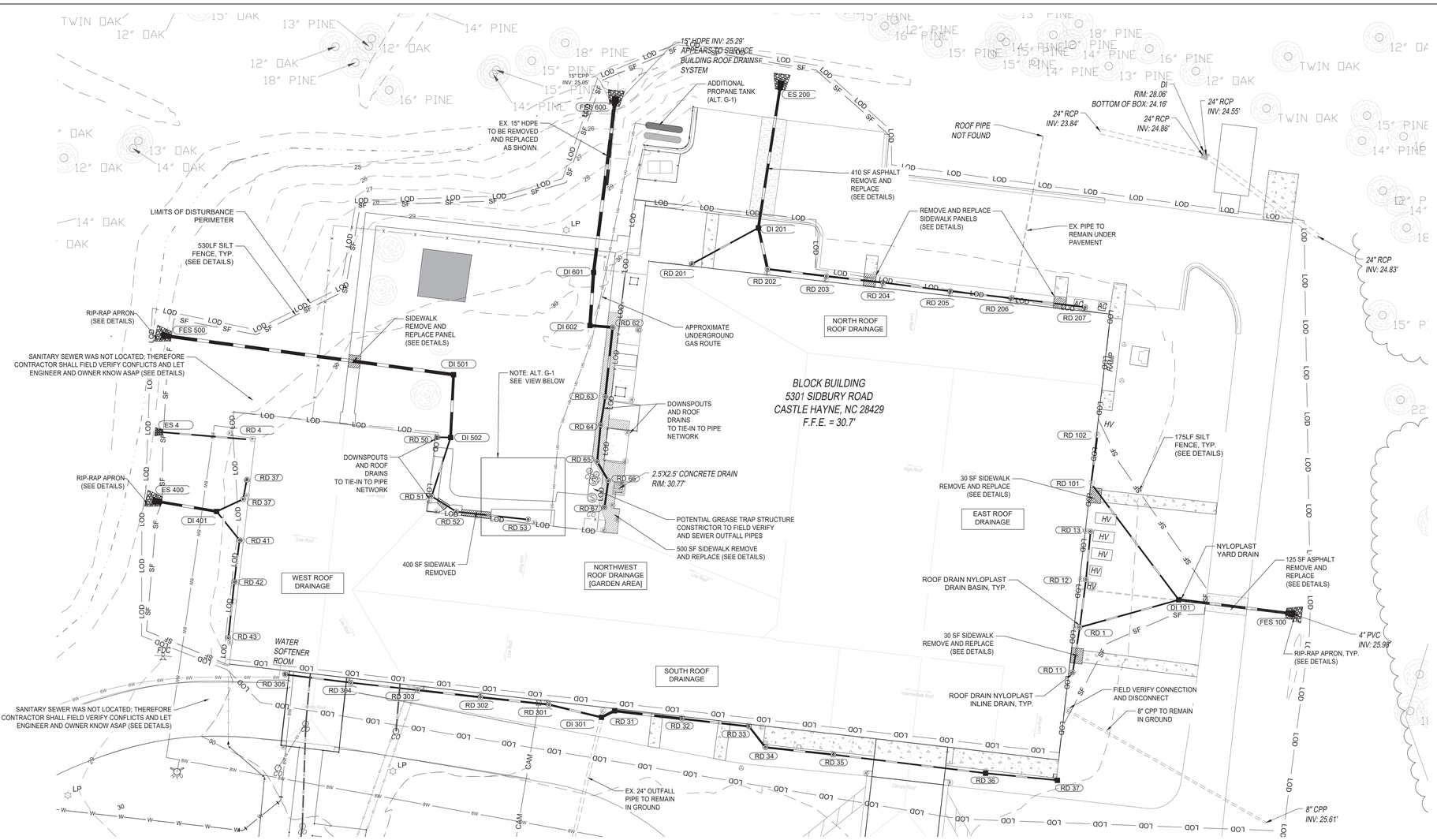
Overall Site Plan

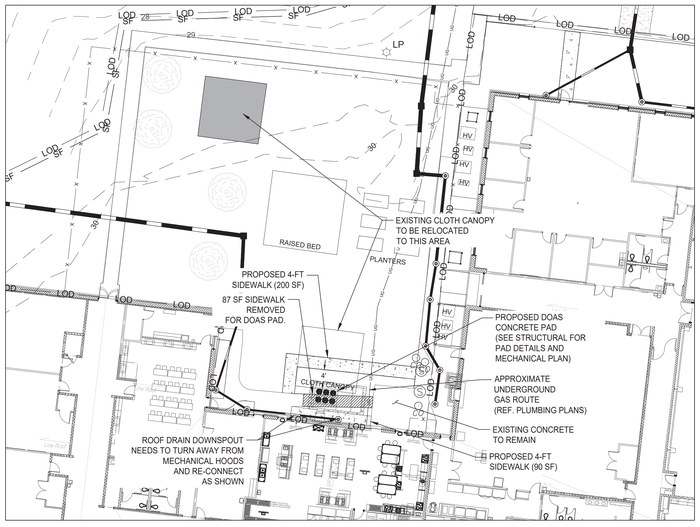
Rev.	Date	Notes

C2.0-A

Final Design - Not Issued for Construction

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ATL. G-1 SITE IMPROVEMENTS

SCALE: 1" = 20'

WEST ROOF DRAINAGE SCHEDULE

Upstream Node	Downstream Node	Upstream Invert	Downstream Invert	Diameter (In)	Pipe Length (ft)	Slope (ft/ft)	Upstream Rim Elev
DI 401	ES 400	27.00	26.50	12	23.0	0.022	29.00
RD 402	DI 401	29.00	28.00	6	12.1	0.083	30.70
RD 403	RD 402	29.20	29.00	6	8.0	0.025	30.70
RD 41	DI 401	28.70	28.00	6	15.2	0.046	30.70
RD 42	RD 41	29.00	28.70	6	17.3	0.017	30.70
RD 43	RD 42	29.20	29.00	6	23.2	0.009	30.70
RD 4	ES 4	29.20	27.00	6	35.0	0.063	30.70

NORTH ROOF DRAINAGE SCHEDULE

Upstream Node	Downstream Node	Upstream Invert	Downstream Invert	Diameter (In)	Pipe Length (ft)	Slope (ft/ft)	Upstream Rim Elev
DI 201	ES 200	27.00	26.00	12	57.6	0.017	30.50
RD 201	DI 201	28.50	28.00	6	31.2	0.016	30.70
RD 202	DI 201	28.00	27.50	12	17.5	0.029	30.70
RD 203	RD 202	28.30	28.00	8	24.5	0.012	30.70
RD 204	RD 203	28.60	28.30	8	23.5	0.013	30.70
RD 205	RD 204	28.80	28.60	6	28.1	0.007	30.70
RD 206	RD 205	29.00	28.80	6	25.4	0.008	30.70
RD 207	RD 206	29.20	29.00	6	30.8	0.007	30.70

SOUTH ROOF DRAINAGE SCHEDULE

Upstream Node	Downstream Node	Upstream Invert	Downstream Invert	Diameter (In)	Pipe Length (ft)	Slope (ft/ft)	Upstream Rim Elev
RD 301	DI 301	26.07	26.00	8	22.3	0.003	30.70
RD 302	RD 301	26.15	26.07	8	28.5	0.003	30.70
RD 303	RD 302	26.23	26.15	8	26.2	0.003	30.70
RD 304	RD 303	26.31	26.23	6	27.8	0.003	30.70
RD 305	RD 304	26.40	26.31	6	27.3	0.003	30.70
RD 31	DI 301	26.10	26.00	12	6.0	0.017	30.70
RD 32	RD 31	26.20	26.10	12	28.2	0.004	30.70
RD 33	RD 32	26.30	26.20	8	27.8	0.004	30.70
RD 34	RD 33	26.40	26.30	8	11.0	0.009	30.70
RD 35	RD 34	26.50	26.40	8	28.3	0.004	30.70
RD 36	RD 35	27.00	26.50	6	63.4	0.008	30.70
RD 37	RD 36	27.50	27.00	6	29.8	0.017	30.70

NORTHWEST ROOF DRAINAGE SCHEDULE - GARDEN CENTER

Upstream Node	Downstream Node	Upstream Invert	Downstream Invert	Diameter (In)	Pipe Length (ft)	Slope (ft/ft)	Upstream Rim Elev
DI 601	ES 600	26.00	25.00	15	69.3	0.014	29.00
DI 602	DI 601	27.00	26.00	15	22.0	0.045	29.00
RD 62	DI 602	27.50	27.00	12	9.4	0.053	29.82
RD 63	RD 62	28.40	27.50	10	28.8	0.031	30.40
RD 64	RD 63	28.60	28.40	8	11.8	0.017	30.43
RD 65	RD 64	28.80	28.60	8	15.2	0.013	30.70
RD 66	RD 65	29.00	28.80	8	9.1	0.022	30.70
RD 67	RD 66	29.20	29.00	8	11.1	0.018	30.58
DI 501	FES 500	25.50	25.00	15	117.9	0.004	28.88
DI 502	DI 501	27.50	27.00	12	26.0	0.019	29.50
RD 50	DI 502	28.00	27.50	6	5.5	0.091	30.70
RD 51	DI 502	28.70	28.00	6	25.5	0.027	30.70
RD 52	RD 51	28.75	28.70	6	12.0	0.004	30.70
RD 53	RD 52	29.20	28.75	6	29.9	0.015	30.70

EAST ROOF DRAINAGE SCHEDULE

Upstream Node	Downstream Node	Upstream Invert	Downstream Invert	Diameter (In)	Pipe Length (ft)	Slope (ft/ft)	Upstream Rim Elev
DI 101	FES 100	26.50	26.00	12	44.5	0.011	29.00
RD 101	DI 101	28.30	27.50	6	60.2	0.013	30.70
RD 102	RD 101	28.50	28.30	6	20.4	0.010	30.70
RD 1	DI 101	28.50	26.50	6	42.5	0.047	30.70
RD 12	RD 1	28.75	28.50	6	19.9	0.013	30.70
RD 13	RD 12	29.00	28.75	6	20.0	0.013	30.70
RD 11	RD 1	29.00	28.50	6	18.9	0.027	30.70

GENERAL DRAINAGE NOTES:

1.) CONTRACTOR SHALL REMOVE ROOT CONNECTIONS THAT ARE DAMAGED, SEPARATED, OR SUBJECT TO LEAKING. REPLACE WITH IN-KIND PRODUCT, UNLESS OTHERWISE SHOWN ON THIS PLAN FOR THE PROPOSED PIPING.

2.) CONTRACTOR SHALL INSPECT INSTALLATION AROUND EXISTING HVAC UNITS TO DETERMINE CONSTRUCT-ABILITY. ALTERNATIVE PIPING AND/OR HAND DIGGING MAY BE NECESSARY.

3.) YARD INLET RIM ELEVATION SHOWN ABOVE IS FLUSH WITH PROPOSED GRADE. CONTRACTOR SHALL PROVIDE 6" CLEARANCE ABOVE PROPOSED GRADE WHEN PLACED IN A GRASS/PERVIOUS AREA; AND A FLUSH CONDITION WITH PROPOSED PAVEMENT OR IMPERVIOUS COVER.

4.) EXISTING ROOF DRAINS HAVE NOT BEEN FULLY SURVEYED, SO IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATIONS AND CONTRACTIBILITY PRIOR TO STARTING WORK.

5.) CONTRACTOR SHALL ADJUST ALL FRAMES OF EX. UTILITY INFRASTRUCTURE TO MATCH FINAL GRADES.

GRAPHIC SCALE

0 10 20 40 80

SCALE: 1" = 20'

NC ONE CALL (811)

811 Know what's below. Call before you dig.

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PERFORMANCE BASED FIRE PROTECTION ENGINEERING, PLLC — STATE OF NC ENGINEERING FIRM LICENSE NO. P-1842 — PO BOX 1547 Pittsboro, NC 919.609.7780
FOODESIGN The Foodservice Design Agency

NORTH CAROLINA PROFESSIONAL SEAL 031581 ENGINEER ROBERT P. BALLARD

05/16/2023

NHCS Project No. 22-90458

Southeast Area Technical High School SCIF Grant Renovations

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

Issue Date: May 16, 2023

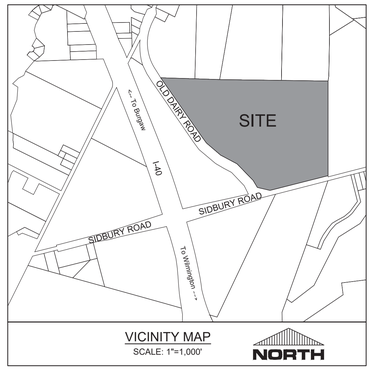
Site Drainage Improvements

Rev.	Date	Notes

C2.0-B

Final Design - Not Issued for Construction

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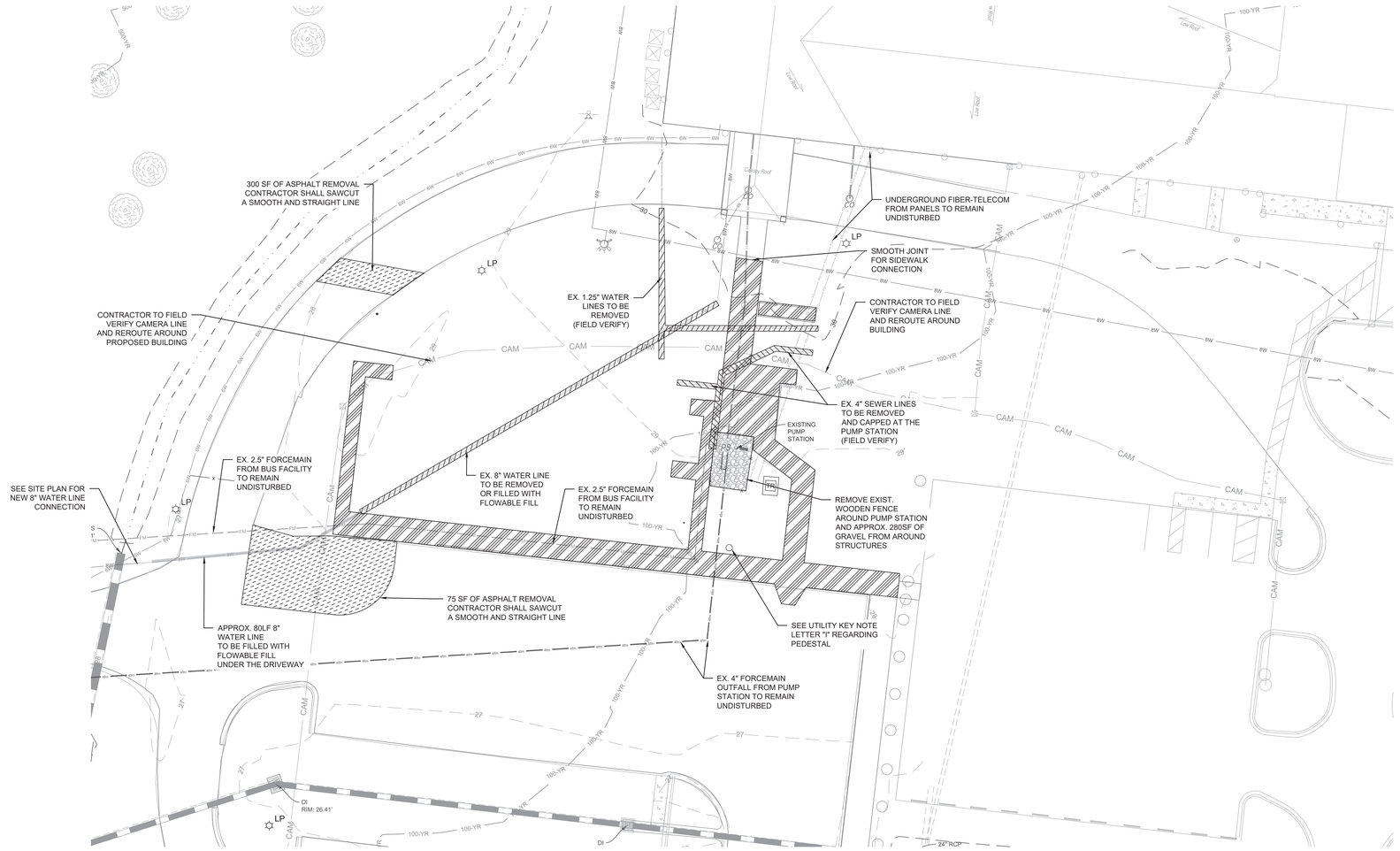


DEMOLITION NOTES:

1. CONTRACTOR TO COORDINATE WITH THE OWNER TO PROPERLY MAINTAIN OR RELOCATE EXISTING SERVICE CONNECTIONS WHEN NECESSARY.
2. CONTRACTOR IS TO WALK THE SITE AND BECOME FAMILIAR WITH THE SCOPE OF DEMOLITION REQUIRED. ALL DEMOLITION WORK REQUIRED TO CONSTRUCT NEW SITE IMPROVEMENTS WILL BE PERFORMED BY THE CONTRACTOR AND WILL BE CONSIDERED UNCLASSIFIED EXCAVATION.
3. DEMOLITION SHALL INCLUDE BUT IS NOT LIMITED TO THE EXCAVATION, HAULING AND OFFSITE DISPOSAL OF CONCRETE PADS, CONCRETE DITCHES, FOUNDATIONS, SLABS, STEPS, AND STRUCTURES; ABANDONED UTILITIES, BUILDINGS, PAVEMENTS AND ALL MATERIALS CLEARED AND STRIPPED TO THE EXTENT NECESSARY AS DIRECTED BY THE GEOTECHNICAL ENGINEER FOR THE INSTALLATION OF THE NEW IMPROVEMENTS AND WITHIN THE LIMITS OF CLEARING AND GRADING AND AS SHOWN ON THESE PLANS.
4. THE CONTRACTOR SHALL PROTECT ALL ADJACENT PROPERTY, STRUCTURES AND UTILITIES ON THE PROPERTY NOT TO BE DEMOLISHED. DAMAGE TO PROPERTIES OF OTHERS DUE TO THE CONTRACTOR'S ACTIVITIES SHALL BE REPLACED IN KIND BY THE CONTRACTOR AT NO COST TO OWNER.
5. ELECTRIC, TELEPHONE, SANITARY SEWER, WATER AND STORM SEWER UTILITIES THAT SERVICE OFF-SITE PROPERTIES SHALL BE MAINTAINED DURING THE CONSTRUCTION PROCESS BY THE CONTRACTOR.
6. THE CONTRACTOR SHALL PRODUCE A PHOTOGRAPHIC RECORD (DIGITAL) OF DEVELOPMENT COMMENCING WITH A RECORD OF THE SITE AS IT APPEARS BEFORE DEMOLITION HAS BEGUN. AFTERWARDS, A PHOTOGRAPHIC RECORD SHALL BE MAINTAINED WEEKLY DURING CONSTRUCTION AND ENDING WITH A PHOTOGRAPHIC RECORD OF THE DEVELOPMENT AS IT APPEARS AFTER DEMOLITION. THIS RECORD SHALL BE DELIVERED TO THE OWNER.
7. EXISTING CURB AND GUTTER, LIGHTS, SIDEWALK, AND UTILITIES NOT INTENDED FOR DEMOLITION SHALL BE MAINTAINED, PROTECTED AND UNDISTURBED DURING DEMOLITION.
8. ALL EXISTING IMPROVEMENTS INDICATED OR REQUIRED TO BE DEMOLISHED SHALL INCLUDE REMOVAL FROM THE PROPERTY AND PROPER DISPOSAL.
9. CONTRACTOR SHALL COORDINATE RELOCATION OF ALL EXISTING OVERHEAD AND UNDERGROUND UTILITIES INCLUDING CABLE, GAS, TELEPHONE AND ELECTRIC AND ANY OTHER UTILITIES THROUGH THE SITE WITH THE RESPECTIVE COMPANIES.
10. CONTRACTOR SHALL MAINTAIN REQUIRED DISTANCES FROM HIGH VOLTAGE OVERHEAD LINES AND REMOVE TREES SO THEY DO NOT FALL TOWARDS OVERHEAD ELECTRICITY.
11. PROVIDE SMOOTH SAW CUT OF EXISTING PAVEMENTS, CURBS AND GUTTERS AND SIDEWALKS TO BE DEMOLISHED.
12. ALL DEMOLITION WORK SHALL BE DONE IN STRICT ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS AS WELL AS OSHA REGULATIONS.
13. EXISTING FIRE HYDRANTS ON OR NEAR THE SITE ARE TO REMAIN IN SERVICE.
14. INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS, BUT THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATIONS BY DIGGING TEST PITS.

EXISTING UTILITY NOTE:

1. CONTRACTOR SHALL ABANDON EXISTING WATER AND SEWER UTILITIES THAT SERVICED THE SUBJECT PROJECT IN ACCORDANCE WITH CFPUA STANDARDS AND/OR SPECIFICATIONS. WATER MAIN SHUTDOWNS SHALL BE COORDINATED WITH THE SCHOOL OPERATIONS STAFF AND FIRE ALARM SYSTEMS.



SYMBOLS LEGEND	
	EXISTING CONCRETE TO BE REMOVED
	EXISTING ASPHALT TO BE REMOVED
	EXISTING UTILITY LINE TO BE REMOVED

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GRAPHIC SCALE
0 10 20 40 80
SCALE: 1" = 20'

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05/16/2023

NHCS Project No.
22-90458

Southeast Area Technical High School
SCIF Grant Addition

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

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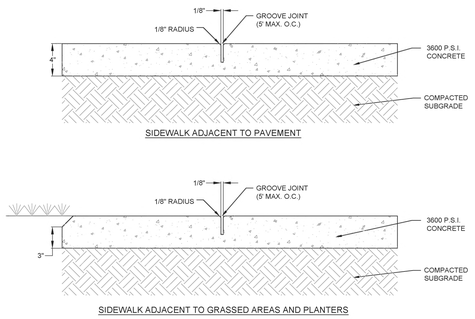
Demolition Plan

Rev.	Date	Notes

C2.1-A

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GENERAL NOTES:

1. A GROOVE JOINT 1" DEEP WITH 1/8" RADII SHALL BE REQUIRED IN THE CONCRETE SIDEWALK AT 5' INTERVALS.
2. ONE 1/2" EXPANSION JOINT WILL BE REQUIRED AT 45' INTERVALS.
3. A 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE THE SIDEWALK ABUTS ANY CURB AND GUTTER AND ANY RIGID STRUCTURES.
4. IN SIDEWALKS AND PLAZA AREAS EXPANSION JOINTS ARE REQUIRED AT NO GREATER THAN 30' INTERVALS.
5. CONCRETE SHALL BE 3600 PSI. IN 28 DAYS.

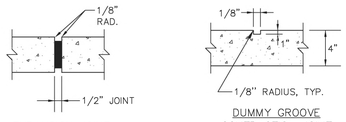
CONCRETE SIDEWALK SECTION

NOT TO SCALE



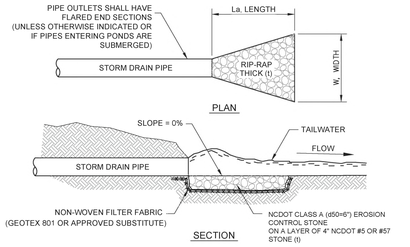
TYPICAL PAVEMENT REPAIR SECTION

NOT TO SCALE



SIDEWALK DETAILS

NOT TO SCALE

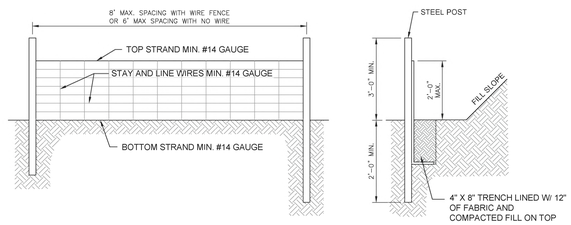


RIP-RAP APRON SCHEDULE					
RIPRAP LOCATIONS	PIPE DIA. (IN.)	LENGTH, La (ft)	PIPE OUTLET WIDTH (FT.)	DOWNSTREAM WIDTH, W (FT.)	STONE THICKNESS t (IN.)
ALL LOCATIONS	12" or 15"	5.0	3.0	4.0	9"

RIP-RAP APRON DETAIL

NOT TO SCALE

RIP-RAP APRON DETAIL
NOT TO SCALE

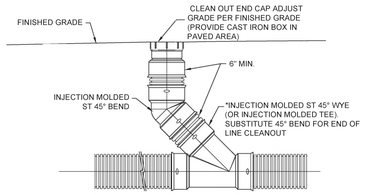


NOTES:

1. WIRE FENCE (IF USED) SHALL BE MINIMUM 14 GAUGE WITH A MAXIMUM MESH OPENING OF 6-INCHES.
2. SYNTHETIC FILTER FABRIC OF AT LEAST 95% BY WEIGHT OF POLYOLEFIN'S OR POLYESTER, WHICH IS CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE REQUIREMENTS IN ASTM D 6461 AND ALSO SHOULD CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS ACCORDING TO ASTM D 4355.
3. SEE THE NC EROSION CONTROL MANUAL FOR SPECIFICATIONS INSTALLING SEDIMENT FENCE USING THE SLICING METHOD MACHINERY.

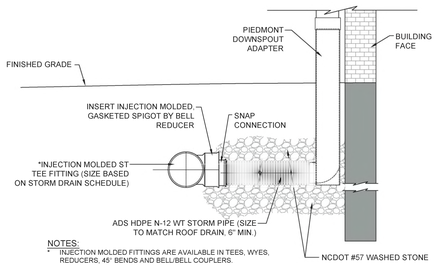
TEMPORARY SILT FENCE

NOT TO SCALE



IN-LINE CLEANOUT

NOT TO SCALE

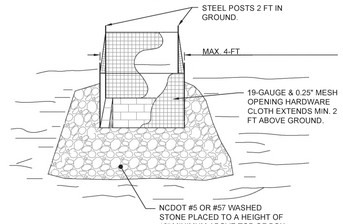


NOTES:

* INJECTION MOLDED FITTINGS ARE AVAILABLE IN TEES, WYES, REDUCERS, 45° BENDS AND BELL/BELL COUPLERS.

ROOF DRAIN DETAIL WITH CLEANOUTS

NOT TO SCALE

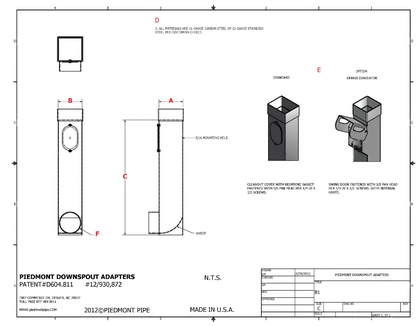


NOTES:

1. DRIVE 5-FOOT STEEL POSTS (1.25 lb/f steel) 2 FEET INTO THE GROUND SURROUNDING THE INLET. SPACE POSTS EVENLY AROUND THE PERIMETER OF THE INLET. A MAXIMUM OF 4 FEET APART.
2. SURROUND THE POSTS WITH AT LEAST 19-GAUGE HARDWARE CLOTH WITH A 1/4-INCH MESH OPENING. SECURE THE WIRE MESH TO THE STEEL POSTS AT THE TOP, MIDDLE, AND BOTTOM FOR A MIN. 2 FEET ABOVE THE GROUND. PLACING A 2-FOOT FLAP OF THE WIRE MESH UNDER THE GRAVEL FOR ANCHORING AND REMOVAL IS RECOMMENDED.
3. UNIFORMLY GRADE A SHALLOW DEPRESSION APPROACHING THE INLET. THE TOP ELEVATION OF THE STRUCTURE MUST BE AT LEAST 12-INCHES LOWER THAN THE SURROUNDING GROUND ELEVATION DOWNSLOPE FROM THE INLET TO ENSURE THAT STORM FLOWS GET INTO THE INTENDED INLET; UNLESS OTHER SEDIMENT-CONTROL DEVICES ARE INSTALLED TO PREVENT OFF-SITE SEDIMENT-RUNOFF.

TEMPORARY INLET PROTECTION

NOT TO SCALE



NOTES:

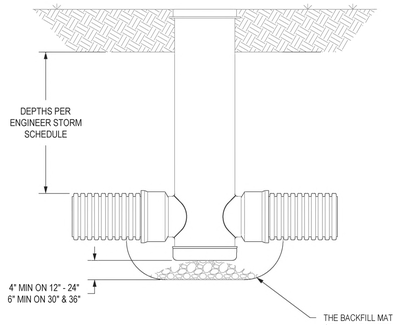
1. BOOTS SHALL BE DIE CAST PAINTED TO MATCH SCHOOL PAINT.
2. BOOTS SHALL INCLUDE DEBRIS EVACUATOR OPTION.

DOWNSPOUT BOOT

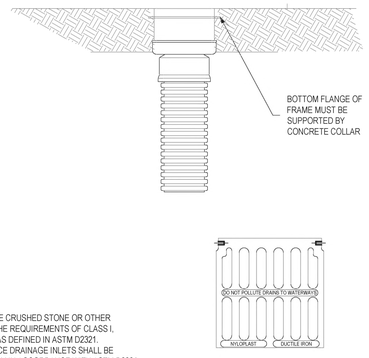
NOT TO SCALE

NYLOPLAST YARD INSTALLATION

[DROP INLET 'DI']
12" - 36" DRAIN BASIN



[ROOF DRAIN 'RD']
12" - 30" INLINE DRAIN



1. GRATES/SOLID COVERS SHALL MEET H-20 LOAD RATING FOR 30" PEDESTRIAN & 12" - 30" STANDARD & SOLID.

CONTRACTOR SHALL USE ADS PRODUCT
OR ENGINEER APPROVED EQUAL PRODUCT(S).

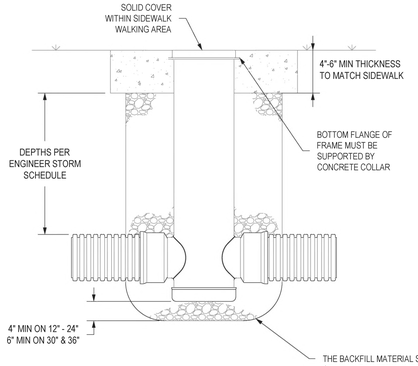
Nyloplast
3130 VERONA AVE
BUFORD, GA 30518
PHN (770) 932-2443
FAX (770) 932-2490
www.nyloplast-us.com

TITLE: DRAIN BASIN & INLINE DRAIN
TURF TRAFFIC INSTALLATION

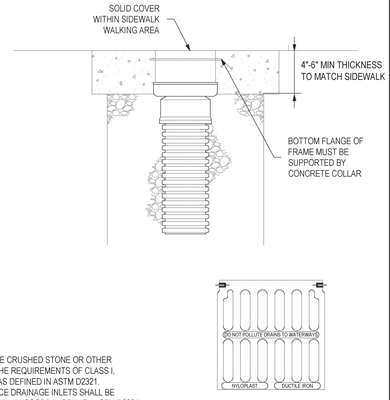
DWG NO. 7001-110-340

NYLOPLAST SIDEWALK INSTALLATION

[ROOF DRAIN 'RD']
12" - 36" DRAIN BASIN



[ROOF DRAIN 'RD']
12" - 30" INLINE DRAIN



1. GRATES/SOLID COVERS SHALL MEET H-20 LOAD RATING FOR 30" PEDESTRIAN & 12" - 30" STANDARD & SOLID.

CONTRACTOR SHALL USE ADS PRODUCT
OR ENGINEER APPROVED EQUAL PRODUCT(S).

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BUFORD, GA 30518
PHN (770) 932-2443
FAX (770) 932-2490
www.nyloplast-us.com

TITLE: DRAIN BASIN & INLINE DRAIN
TURF TRAFFIC INSTALLATION

DWG NO. 7001-110-340

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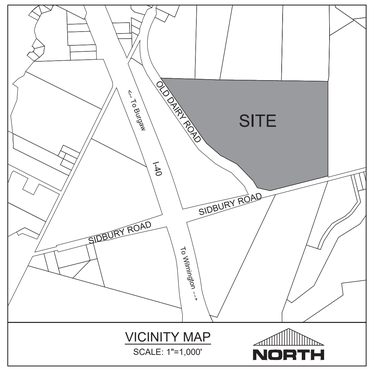
Site Drainage
Details

Rev.	Date	Notes

C2.1-B

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VICINITY MAP
SCALE: 1"=1,000'

NORTH

SITE INFORMATION

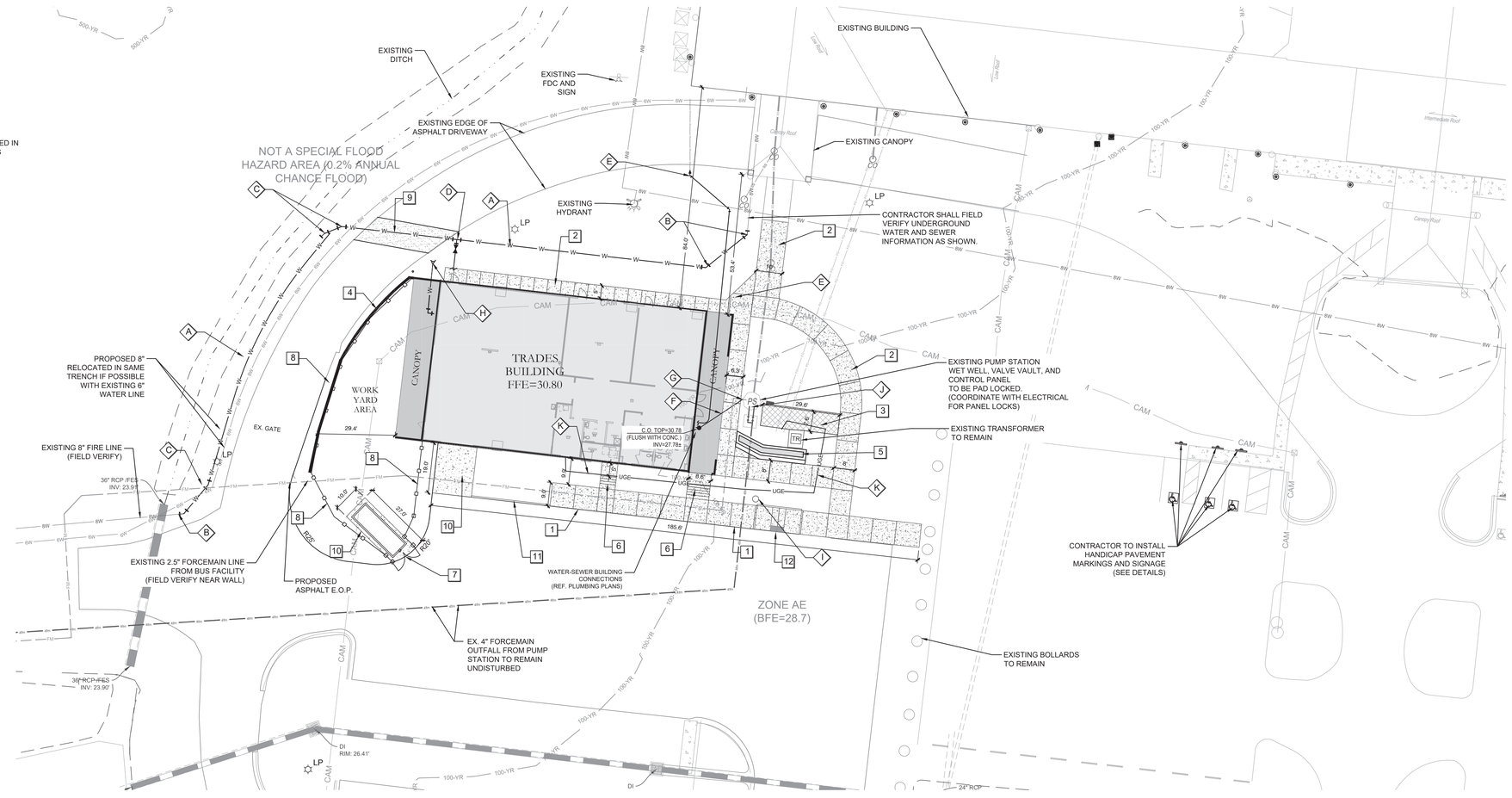
PARCEL ID:	R01800-003-012-000
PARCEL ADDRESS:	5301 SIDBURY ROAD CASTLE HAYNE, NC 28429
CURRENT ZONING:	R-15
EXISTING USE:	HIGH SCHOOL FACILITY
PROPOSED USE:	HIGH SCHOOL EXPANSION
PROJECT SITE AREA:	± 79.31 ACRES (± 3,454,744 SF)
OWNER INFORMATION:	NEW HANOVER COUNTY SCHOOLS 6410 CAROLINA BEACH RD WILMINGTON, NC 28412
FLOOD INFORMATION:	THIS PARCEL CONTAINS AREAS LOCATED IN SPECIAL FLOOD HAZARD ZONE "AE", AS DETERMINED BY FEMA FLOOD PANEL 3720324100K DATED AUGUST 28, 2018
DEED BOOK & PAGE:	DB 5828, PG 1563

BUILDING INFORMATION

CONSTRUCTION TYPE	REF. APPENDIX B (ARCH.)
NUMBER OF EXISTING BUILDINGS	1
NUMBER OF PROPOSED BUILDINGS	1
PROPOSED BUILDING SF	6,190 SF (FOOTPRINT)
PROPOSED HEIGHT	20' MAX.

SITE KEYNOTES:

1. TURN-DOWN CONCRETE SIDEWALK (SEE DETAILS)
2. CONCRETE SIDEWALK (SEE DETAILS)
3. TURFSTONE GRID (SEE DETAILS)
4. RETAINING WALL DESIGN BY OTHERS
5. CONCRETE SEAT WALL (SEE LANDSCAPE PLAN)
6. CONCRETE STAIR AND RAIL SECTION (SEE DETAILS)
7. 20-YARD OPEN DUMPSTER FOR LUMBER MATERIALS WITH FENCE & DOUBLE GATE ACCESS
8. 6-FT BLACK COATED CHAINLINK FENCE WITH SLATS
9. PAVEMENT CUT AND REPAIR (SEE DETAILS)
10. HEAVY DUTY CONCRETE PADS (SEE DETAILS)
11. 6" WIDE HEADER CURB (4" HEIGHT) TO MATCH TURN-DOWN SIDEWALK
12. ACCESSIBLE CURB RAMP TYPE 2 (SEE DETAILS)



FIRE AND LIFE SAFETY NOTES

1. HYDRANTS MUST BE LOCATED WITHIN 8' OF THE CURB AND WITHIN 150-FT OF A FIRE DEPT. CONNECTION AS THE TRUCK DRIVES.
3. CONTRACTOR SHALL MAINTAIN AN ALL WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION.
4. A MINIMUM OF 3-FT SHALL SEPARATE UNDERGROUND FIRE LINES OR PRIVATE WATER MAINS FROM OTHER UNDERGROUND UTILITIES.
5. UNDERGROUND FIRE LINES FROM THE PUBLIC RIGHT-OF-WAY TO THE BUILDING(S) MUST BE PERMITTED & INSPECTED BY THE BUILDING INSPECTIONS / FIRE MARSHALL'S OFFICE (NEW HANOVER COUNTY FIRE, RAY GRISWOLD OR OTHERS @ 910-798-7458).
6. REFERENCE FIRE PROTECTION PLANS FOR SPRINKLER NOTES AND SPECIFICATIONS.
7. FIRE DEPARTMENT CONNECTIONS (FDCs) MUST BE APPROVED BY THE FIRE MARSHALL'S OFFICE AND BE ACCESSIBLE TO A FIRE APPARATUS EQUIPMENT WITHIN 40-FT.
8. LANDSCAPING OR PARKING CANNOT BLOCK OR IMPEDE FDC OR FIRE HYDRANTS. A 3-FOOT CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF HYDRANTS AND FDC.
9. CONTRACTOR SHALL SUBMIT A RADIO STRENGTH STUDY FOR ALL COMMERCIAL BUILDINGS THAT DEMONSTRATES THAT EXISTING EMERGENCY RESPONDER RADIO SIGNAL LEVELS MEET THE REQUIREMENTS OF SECTION 510 OF THE 2018 NC FIRE CODE.

COORDINATION NOTES:

1. THE CONTRACTOR IS REQUIRED TO OBTAIN ANY/ALL PERMITS REQUIRED FOR CONSTRUCTION OF THESE PLANS.
2. THE CONTRACTOR IS TO ESTABLISH AND CHECK ALL HORIZONTAL AND VERTICAL CONTROLS TO BE USED WITH THE PROJECT. IN ADDITION, THE CONTRACTOR IS TO COMPUTE THE LAYOUT OF THE ENTIRE SITE PLAN IN ADVANCE OF BEGINNING ANY WORK ASSOCIATED WITH THE SUBJECT PLANS. CONTRACTOR SHALL EMPLOY A PROFESSIONAL SURVEYOR TO PERFORM SITE IMPROVEMENT STAKEOUT(S).
3. THE CONTRACTOR AND OWNER SHALL BE RESPONSIBLE FOR ANY EROSION CONTROL MEASURES.
4. THE CONTRACTOR SHALL COORDINATE WITH SCHOOL ON ANY UTILITY SHUTDOWNS. PROPOSED 8" FIRE MAIN RELOCATION WILL REQUIRE FIRE LINE SHUTDOWN FOR SCHOOL BUILDING AND BUS FACILITY AT THE TERMINUS ON OLD DAIRY FARM ROAD DRIVEWAY.

UTILITY KEYNOTES:

- A — PROPOSED 8" C900 FIRE MAIN RELOCATED [SHUT-OFF AT MAIN]
- B — 8" MJ 45° BEND WITH THRUST BLOCKING (SEE DETAILS)
- C — 8" MJ 22.5° BEND WITH THRUST BLOCKING (SEE DETAILS)
- D — 8"x6" TEE AND 6" PIV AND 6" C900 FIRE SERVICE TO RISER ROOM (REF. SPRINKLER PLANS)
- E — 2" SDR9 WATER SERVICE CONNECTION WITH 1.25" EXIST. WATER SERVICE AS SHOWN. CONTRACTOR TO FIELD VERIFY CONNECTION POINT.
- F — 4" SCH40 PVC SANITARY SEWER LATERAL WITH CLEANOUT (SEE DETAILS)
- G — UNPLUG EXISTING 4" PVC PIPE PENETRATION AND CONNECT PROPOSED 4" LATERAL FROM NEW BUILDING
- H — 4" C900 REMOTE FDC CONNECTION (SEE DETAILS)
- I — TELEPHONE PEDESTAL TO REMAIN IF IN SERVICE OR REMOVED IF NOT
- J — REPLACE PVC VENT WITH A CARBON FILTER ODOR CAP PRODUCT (COLOR BLACK)
- K — UNDERGROUND ELECTRIC FROM EXISTING CONDUITS TO BE ROUTED AS SHOWN (REF. ELECTRICAL SITE PLAN)

Know what's below. Call before you dig. 811

GRAPHIC SCALE
0 10 20 40 80
SCALE: 1" = 20'

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NORTH CAROLINA PROFESSIONAL SEAL 031591 ENGINEER ROBERT P. BALLARD
05/16/2023

NHCS Project No.
22-90458

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SCIF Grant Addition

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

Issue Date: May 16, 2023

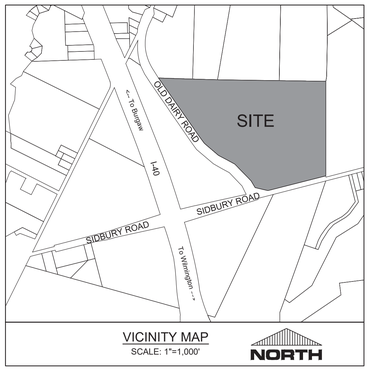
Site and Utility Plan

Rev.	Date	Notes

C2.2-A

Final Design - Not Issued for Construction

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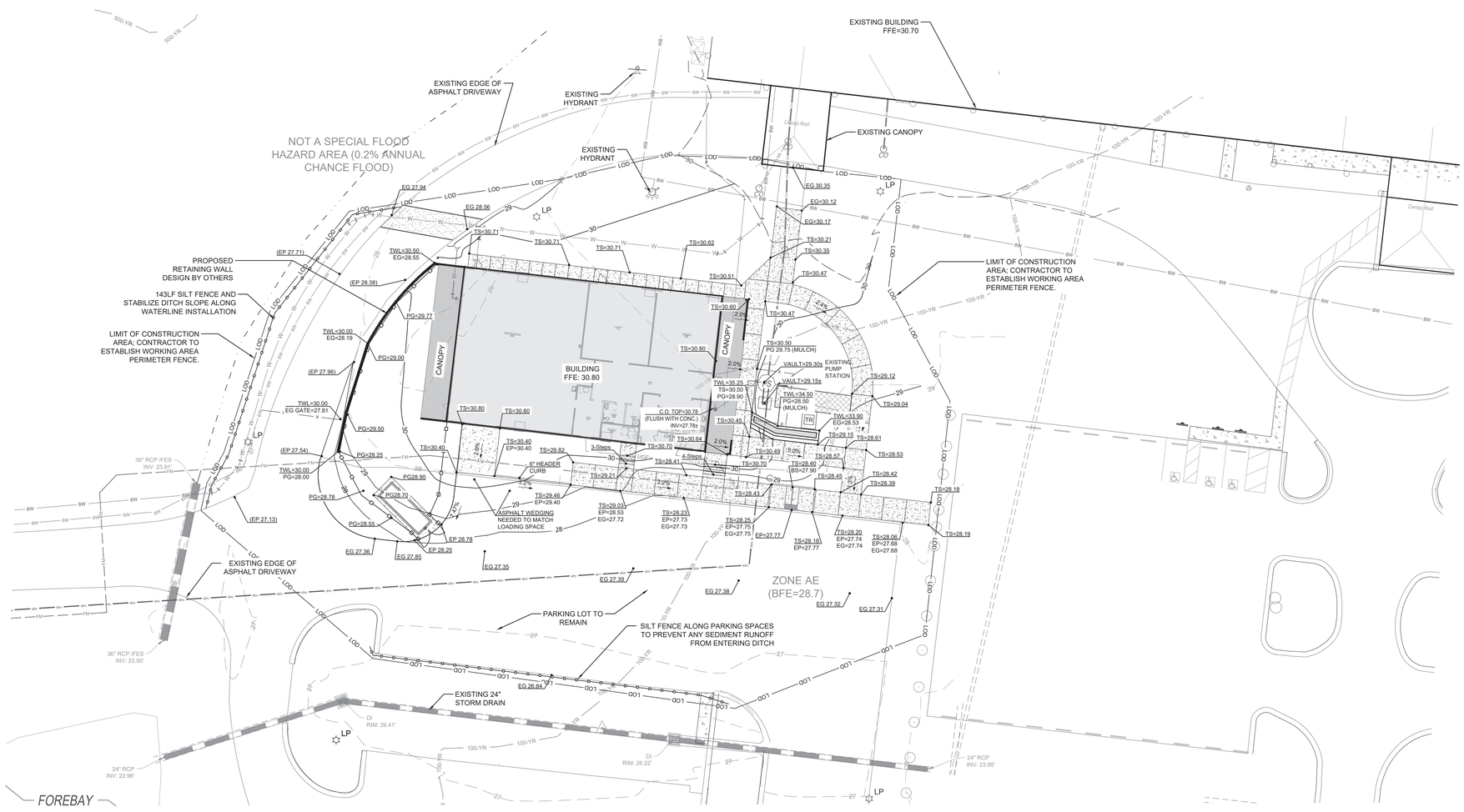


SITE INFORMATION

PARCEL ID:	R01800-003-012-000
PARCEL ADDRESS:	5601 SIDBURY ROAD CASTLE HAYNE, NC 28429
CURRENT ZONING:	R-15
EXISTING USE:	HIGH SCHOOL FACILITY
PROPOSED USE:	HIGH SCHOOL EXPANSION
PROJECT SITE AREA:	± 79.31 ACRES (± 3,454,744 SF)
OWNER INFORMATION:	NEW HANOVER COUNTY SCHOOLS 2814 CAROLINA BEACH RD WILMINGTON, NC 28412
FLOOD INFORMATION:	THIS PARCEL CONTAINS AREAS LOCATED IN SPECIAL FLOOD HAZARD ZONE "AE", AS DETERMINED BY FEMA FLOOD PANEL 3720324100K DATED AUGUST 28, 2018
DEED BOOK & PAGE:	DB 5828, PG 1563

BUILDING INFORMATION

CONSTRUCTION TYPE	REF. APPENDIX B (ARCH.)
NUMBER OF EXISTING BUILDINGS	1
NUMBER OF PROPOSED BUILDINGS	1
PROPOSED BUILDING SF	6,190 SF (FOOTPRINT)
PROPOSED HEIGHT	20' MAX.



DRAINAGE NOTES:

1.) PROPOSED BUILDINGS SHALL DIVERT ROOF DRAINAGE TO STORMWATER COLLECTION SYSTEM VIA SHEET FLOW WITH DOWNSPOUT SPLASH PADS OR NO DOWNSPOUTS (REFERENCE ARCHITECTUAL ROOF PLANS.)

GRADING NOTES:

1.) SEE GENERAL NOTES SHEET (C-1.0) FOR GRADING, DRAINAGE AND EROSION CONTROL NOTES AND DETAILS FOR MORE INFORMATION.

2.) ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH NEW HANOVER COUNTY SCHOOL STANDARDS AND SPECIFICATIONS AND/OR TECHNICAL SPECIFICATIONS SEALED AS PART OF THESE CONSTRUCTION DOCUMENTS.

3.) GEOTECHNICAL TESTING SHALL BE PERFORMED ON-SITE. A GEOTECHNICAL ENGINEER SHALL BE CONSULTED TO CONFIRM SUITABILITY OF SUBGRADE MATERIAL AND PROPER COMPACTION IN FILL AREAS.

ASPHALT AREA NOTE:

1.) SITE CONTRACTOR SHALL STRIP TOPSOIL AND ANY UNSUITALBE MATERIAL AND PROVIDE CUT/FILL OPERATIONS TO PROVIDE A COMPACTED CONTROLLED SUBGRADE, IN ACCORDANCE WITH THE SUBSURFACE GEOTECHNICAL EXPLORATION AND TECHNICAL SPECIFICATIONS.

BUILDING PAD NOTE:

1.) SITE CONTRACTOR SHALL STRIP TOPSOIL AND ANY UNSUITABLE MATERIAL AND PROVIDE CUT/FILL OPERATIONS TO PROVIDE A COMPACTED CONTROLLED BUILDING PAD, IN ACCORDANCE WITH THE SUBSURFACE GEOTECHNICAL EXPLORATION AND TECHNICAL SPECIFICATIONS.

NOTATION:

EP	= PROPOSED EDGE OF PAVEMENT
EC	= EDGE OF CONCRETE
DI	= DROP INLET
PG	= PROPOSED GRADE
CI	= CURB INLET
HP	= HIGH POINT ELEVATION
SW	= SIDEWALK ELEVATION
MH	= STORM MANHOLE
YI	= YARD INLET
RP	= RAMP
PAD	= DUMPSTER PAD ELEVATION
RD	= ROOF DRAIN CONNECTION
BC/TC	= TOP OF CURB ELEVATION
TS	= TOP OF WALK (SIDEWALK) ELEVATION
INV	= INVERT
FES	= FLARED END SECTION
TWL	= TOP OF WALL ELEVATION
BWL	= BOTTOM OF WALL ELEVATION
(EG)	= EXISTING GRADE
(XX)	= EXISTING ELEVATIONS, TYP.

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GRAPHIC SCALE
0 10 20 40 80
SCALE: 1" = 20'

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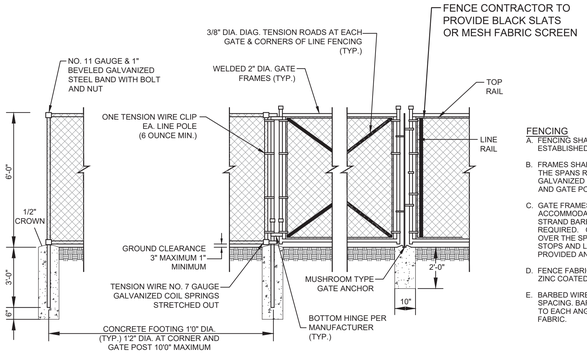
Issue Date: May 16, 2023

GRADING AND DRAINAGE PLAN

Rev.	Date	Notes

C3.0-A

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FENCING

A. FENCING SHALL CONFORM TO DETAIL SHOWN AND THE CURRENT STANDARDS ESTABLISHED BY THE CHAIN LINK FENCE MANUFACTURERS INSTITUTE.

B. FRAMES SHALL CONSIST OF CLFMI TYPE 1 MATERIALS SIZED TO ACCOMMODATE THE SPANS REQUIRED POSTS SHALL BE OF STANDARD WEIGHT, HOT DIPPED GALVANIZED PIPE CONFORMING TO ASTM A-120 SCHEDULE 40 FOR CORNER AND GATE POSTS, AND SCHEDULE 20 FOR LINE AND TOP RAILS.

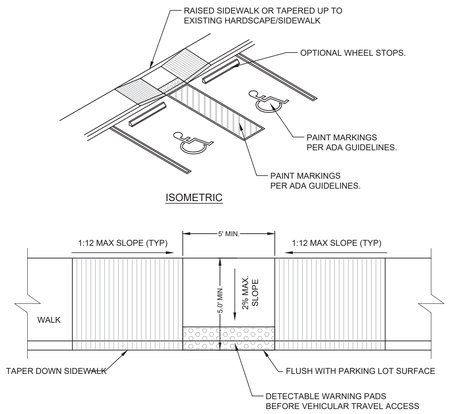
C. GATE FRAMES SHALL BE FABRICATED OF GALVANIZED STEEL AND SIZED TO ACCOMMODATE SPANS REQUIRED. GATES SHALL BE SWING TYPE WITH THREE STRAND BARBED WIRE, SUPPORTED WITH TENSION BARS AND BRACING AS REQUIRED. GATE POSTS SHALL BE SIZED TO ADEQUATELY SUPPORT THE GATE OVER THE SPAN SHOWN ON THE PLANS. GATE POSTS, GATE HINGES, GATE STOPS AND LATCHES SHALL BE OF ADEQUATE STRENGTH FOR THE GATE PROVIDED AND LATCHES SHALL BE SUITABLE FOR SECURING WITH A PADLOCK.

D. FENCE FABRIC SHALL BE 2 INCH MESH, 9-GAUGE CHEMICALLY CLEANED AND ZINC COATED, CONFORMING TO ASTM A-392 FOR CLASS 2 FABRIC.

E. BARBED WIRE SHALL BE 12-1/2 GAUGE GALVANIZED, WITH 4 BARBS AT 5 INCH SPACING. BARBED WIRE SHALL BE STRETCHED TIGHT, ADEQUATELY SECURED TO EACH ANGLE ARM AND COATED CONFORMING TO ASTM A-392 FOR CLASS 2 FABRIC.

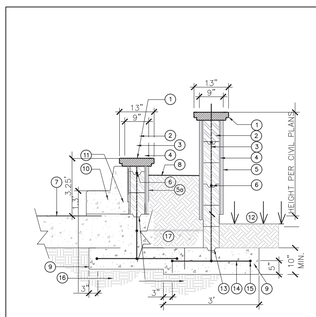
CHAIN LINK FENCE DETAIL

NOT TO SCALE



CURB RAMP DETAIL (TYPE 2)

NOT TO SCALE



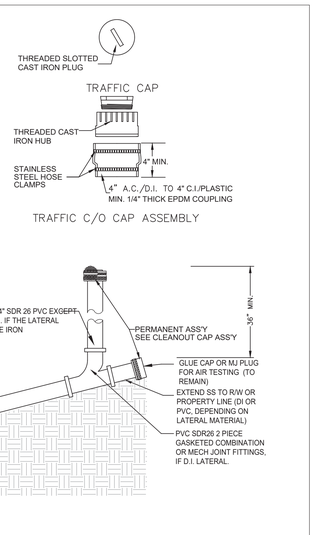
1. SEGMENTAL RETAINING WALL CAP
2. 6X8X16 CMU BLOCK WALL – FILL ALL CELLS WITH GROUT
3. #4 REBAR (VERTICAL) AT 16" O.C. – TIE TO HORIZONTAL
4. 1/2" (MAX.) MORTAR
5. STUCCO; 5 COATS MIN.; COLOR TO BE DETERMINED BY OWNER
5a. WATERPROOF PLANTER WALL
6. #4 REBAR HORIZONTAL IN BOND BEAM – TIE TO VERTICAL
7. SIDEWALK
8. FINISHED GRADE IN PLANTER AREA
9. CONCRETE FOOTING
10. POURED-IN-PLACE CONCRETE OR SEGMENTAL SEAT WALL
11. BACKFILL SPACE THAT MAY OCCUR BETWEEN WALL, TOP OF FOOTING AND BACK CURB WITH 3/4" CRUSHED GRAVEL AND TOP WITH WOOD BARK MULCH (SLOPE TO DRAIN)
12. MULCH – SEE LANDSCAPING PLAN
13. FOOTING KEY
14. #4 REBAR (HORIZONTAL) AT 16" O.C. TIE TO VERTICAL WHERE OCCURS
15. (3) #4 REBAR (HORIZONTAL) CONTINUOUS THOUGH FOOTING – TIE TO VERTICAL
16. COMPACTED SUBGRADE
17. SLOPE TOP OF FOOTING TO DRAIN (TYP)

NOTES:

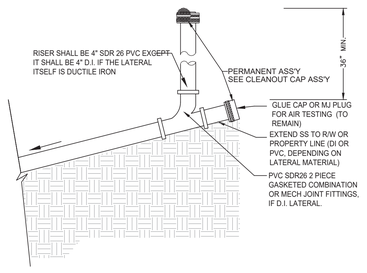
1. REFER TO SPECS FOR MORTAR AND GROUT REQUIREMENTS.
2. CONTRACTOR TO LOCATE UNDERGROUND ELECTRICAL AND REROUTE AS NEEDED TO ACCOMMODATE SEAT WALL LOCATION

PLANTER WALL/LANDSCAPE BENCH DETAIL

NOT TO SCALE



TRAFFIC C/O CAP ASSEMBLY

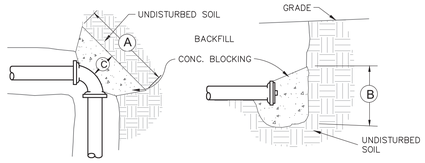


1. LATERAL SHALL CONFORM TO ASTM SPECS. D-3034 SDR-26 UNLESS OTHERWISE INDICATED AS DUCTILE IRON.
2. ALL D.I. PIPE SHALL HAVE AN INTERIOR LINING OF CERAMIC EPOXY OR FUSED CALCIUM ALUMINATE CEMENT WITH FUSED CALCIUM ALLUMINATE AGGREGATES. THE ENTIRE D.I. LATERAL SHALL BE COMPRISED OF D.I. PIPE AND MECHANICAL JOINT FITTINGS.
3. ALL CONNECTIONS SHALL HAVE RUBBER GASKET SEALS INSTALLED.
4. LATERAL SHALL CONFORM TO THE 1/4" PER FOOT MINIMUM SLOPE. MAXIMUM CLEAN OUT SPACING FOR 4" PIPE IS 75 FT. AND 6" PIPE IS 100 FT.
5. PVC COMBINATION SHALL BE 2 PIECE TEE-WYE, GASKETED, SDR26, AS MANUFACTURED BY HARCO, GPK OR APPROVED SUBSTITUTE.

SEWER SERVICE CLEANOUT DETAIL

NOT TO SCALE

BLOCKING DIMENSIONS			
PIPE SIZE	(A)	(B)	(C)
UP TO 10"	4' – 0"	2' – 6"	1' – 6"
12" TO 16"	5' – 0"	4' – 0"	2' – 0"
18" TO 24"	8' – 0"	6' – 0"	3' – 0"

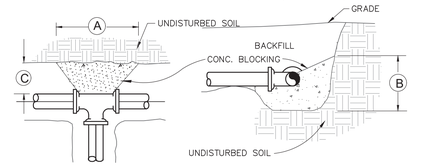


PLAN – BEND
SEE SECTION FOR DEPTH B

SECTION – PLUG
SEE PLAN FOR LENGTH A

NOTES:

1. 2500 P.S.I. CONC.
2. REMOVE LOOSE EARTH AND POUR AGAINST UNDISTURBED SOIL.
3. BACKFILL TO EXISTING/FINISH GRADE AFTER CONCRETE HAS CURED FOR 24 HOURS.
4. CONCRETE SHALL NOT COVER FLANGES, BOLTS, MEGA-LUGS, RODS, ETC.

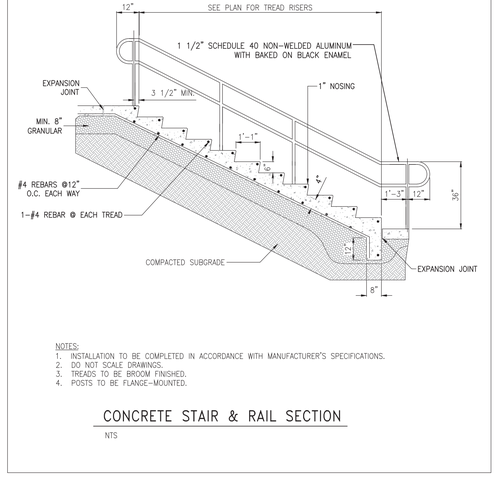


PLAN – TEE
SEE SECTION FOR DEPTH B

SECTION – BEND & TEE
SEE PLAN FOR LENGTH A

THRUST BLOCKS FOR 8" FIRE MAIN

NOT TO SCALE

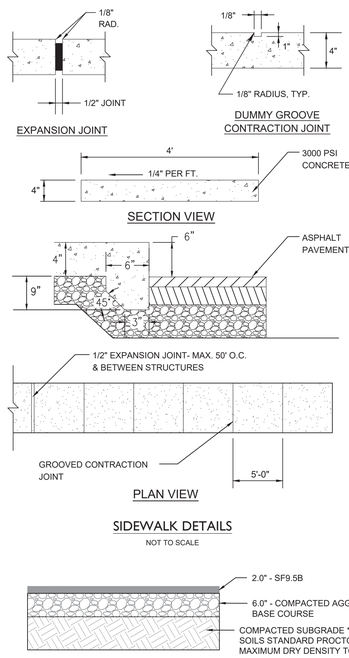


NOTES:

1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DO NOT SCALE DRAWINGS.
3. TREADS TO BE BROOM FINISHED.
4. POSTS TO BE FLANGE-MOUNTED.

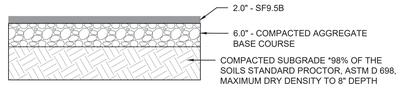
CONCRETE STAIR & RAIL SECTION

NTS



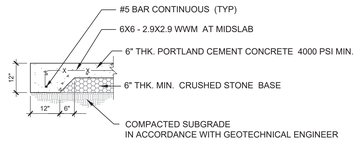
SIDEWALK DETAILS

NOT TO SCALE



TYPICAL PAVEMENT REPAIR SECTION

NOT TO SCALE

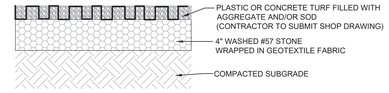


NOTES:

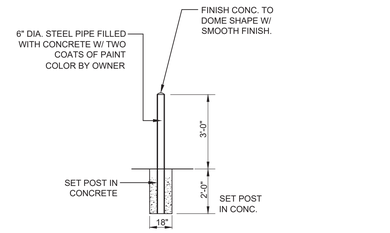
1. CONCRETE AREAS SHALL HAVE TOOLED JOINTS.

HEAVY DUTY CONCRETE PAVEMENT SECTION

NOT TO SCALE

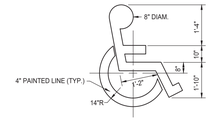


TURF GRID SECTION (PUMP STATION AISLE)



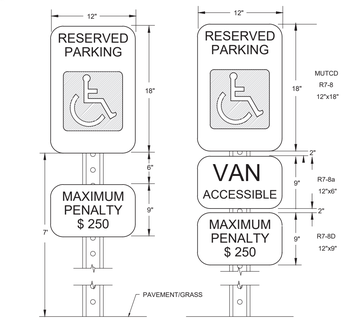
PIPE BOLLARD DETAIL

NOT TO SCALE



ACCESSIBILITY GRAPHIC

NOT TO SCALE

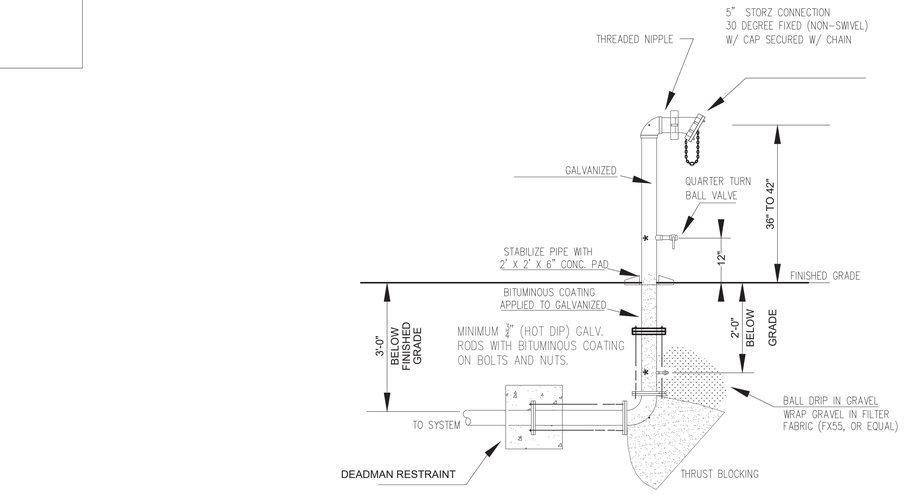


NOTES:

1. METAL POST AND ALL HARDWARE SHALL BE GALVANIZED STEEL, ASTM A307-90.
2. POST HOLES SHALL BE FILLED WITH GRANULAR BACKFILL IN 3-INCH TO 4-INCH LIFTS. THOROUGHLY HAND TAMP EACH LIFT AND CROWN BACKFILL AT TOP TO SHED WATER.
3. CONCRETE FOR FOOTING SHALL BE PORTLAND CEMENT AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI.
4. SIGNS SHALL BE CONSTRUCTED OF ALUMINUM, TYPE 6061-T6 AND IN CONFORMANCE WITH ASTM STD B-209. THICKNESS SHALL BE 0.80 INCHES.
5. TOP EDGE TREATMENT FILM SHALL BE 3" WIDE, CLEAR AND TRANSPARENT WITH A SUB-RESISTANT PRESSURE SENSITIVE NON-YELLOWING ADHESIVE, "SKOTCHCAL" TRANSPARENT FILE #639.
6. REFLECTIVE FACING MATERIAL SHALL BE SCOTCHLITE HIGH INTENSITY, MANUFACTURED BY 3M COMPANY.
7. SIGN LETTERING SHALL BE NPS MODIFIED CLARENDON TYPEFACE. UPPERCASE LETTERS SHALL BE 3.75" HEIGHT AND LOWERCASE LETTERS SHALL BE 2.5" HEIGHT WITH 3.75" SPACING BETWEEN LINES.
8. CORNER RADIUS OF SIGNS SHALL BE 2.5" ARROWS SHALL BE 5.625" LONG BY 3.75" HIGH.
9. MOUNT ON BUILDING OR METAL POST AS DIRECTED.

HANDICAP SIGN DETAIL

NOT TO SCALE



REMOTE FIRE DEPARTMENT CONNECTION

NOT TO SCALE

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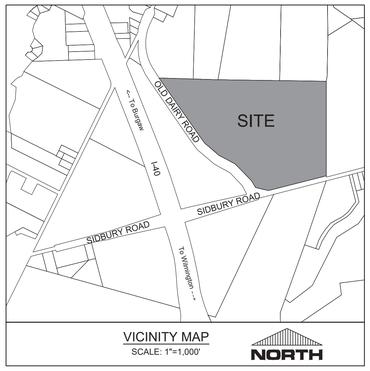
CIVIL DETAILS

Rev.	Date	Notes

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SITE INFORMATION

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DEED BOOK & PAGE:	DB 5828, PG 1563

LANDSCAPING CALCULATIONS

FOUNDATION PLANTINGS

1. FOUNDATION PLANTING AREAS REQUIRED TO BE 12% OF THE BUILDING FACE.
2. PORTIONS OF THE BUILDING USE FOR VEHICULAR ACCESS IS EXEMPT.

REQUIRED AREA: 599 SF = (97 FT X 18.5 FT BUILDING HEIGHT) + (112 FT X 18.5 FT) + (61 FT X 18.5 FT) X 12%

PROVIDED AREA: 684 SF

INTERIOR PARKING LOT LANDSCAPING

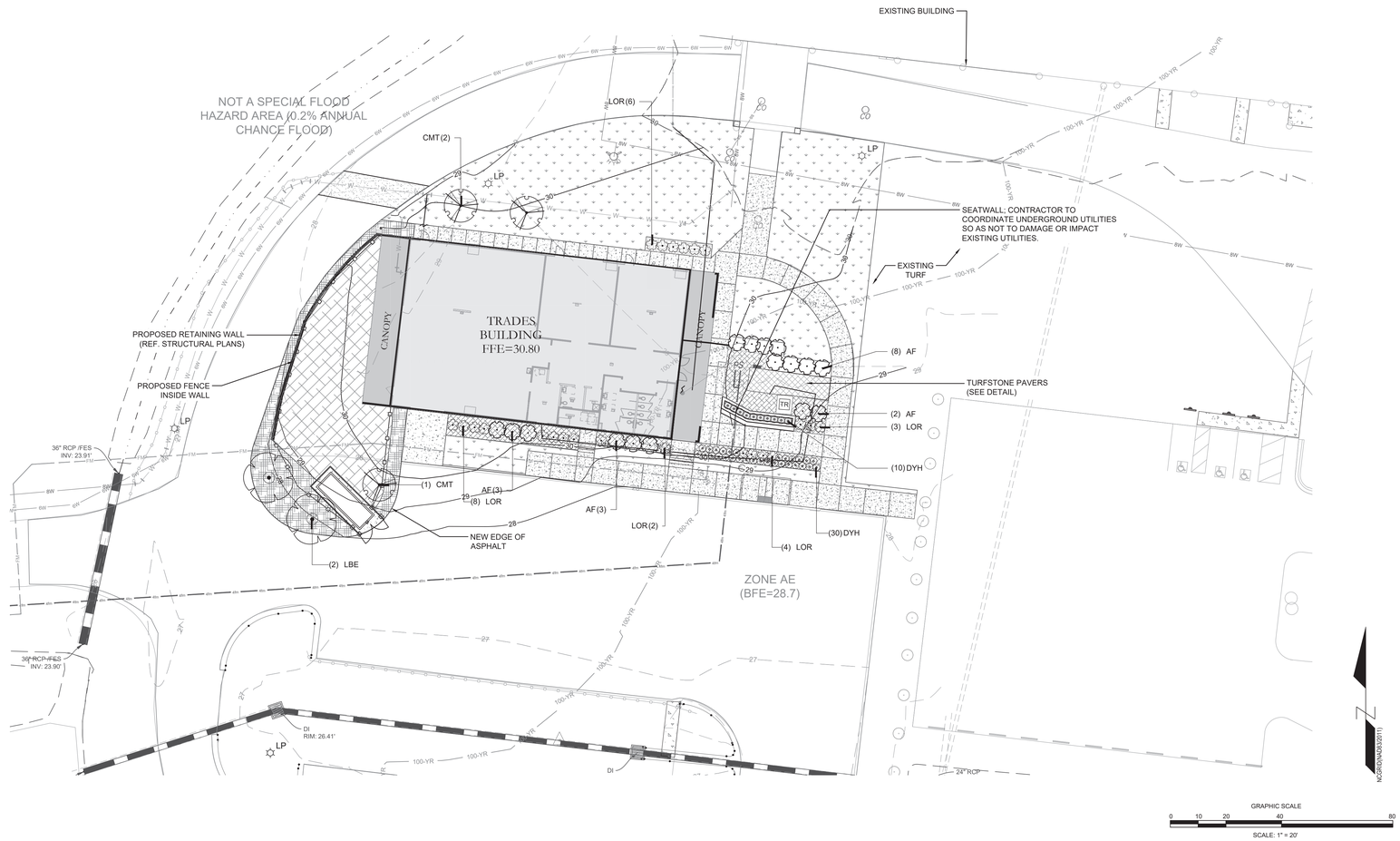
1. ONE LANDSCAPE ISLAND WITH ONE TREE ADDED TO EXISTING PARKING LOT. NO PARKING LOT EXPANSION PROPOSED TO WARRANT ADDITIONAL PLANTINGS.

STREET YARD LANDSCAPING

1. REQUIRED STREET YARD LANDSCAPING PROVIDED BY EXISTING VEGETATION.

PLANT SCHEDULE

CANOPY TREES	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	
	LBE	2	ULMUS PARVIFOLIA `BOSQUE` BOSQUE LACEBARK ELM	2" CAL. (MIN.)	
UNDERSTORY TREE	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	
	CMT	3	LAGERSTROEMIA X `TONTO` TONTO CRAPE MYRTLE	2" CAL. (MIN.)	
SHRUBS	CODE	QTY	BOTANICAL / COMMON NAME	CONTAINER	SPACING
	AF	16	AZALEA INDICA 'FORMOSA' FORMOSA INDICA AZALEA	7 GAL	72" o.c.
	DYH	40	ILEX VOMITORIA `NANA` DWARF YAUPON	3 GAL	30" o.c.
	LOR	23	LOROPETALUM C. `RUBY` RUBY LOROPETALUM	7 GAL	48" o.c.
GROUND COVERS	CODE	QTY	BOTANICAL / COMMON NAME	CONT	SPACING
	JB	141	JUNIPERUS HORIZONTALIS 'BLUE RUG' BLUE RUG JUNIPER	1 GAL 3` O.C.	36" o.c.
SOD/SEED	CODE	QTY	BOTANICAL / COMMON NAME	CONT	SPACING
	SOD	8,066 SF	'TIFWAY' 419 BERMUDA SOD 'TIFWAY 419' BERMUDA SOD	SOD	
	MULCH	3,501 SF	HARDWOOD MULCH MULCH	-	



LANDSCAPE NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING ALL UTILITIES PRIOR TO BEGINNING CONSTRUCTION.
2. TREES SHALL BE LOCATED NO CLOSER THAN 5 FEET FROM SEWER/WATER CONNECTIONS OR AS OTHERWISE DICTATED BY LOCAL REGULATIONS. CONTRACTOR SHALL BE LIABLE FOR DAMAGE TO ANY AND ALL PUBLIC OR PRIVATE UTILITIES.
3. ALL PLANT MATERIAL SHALL MEET THE CURRENT VERSION OF THE AMERICAN ASSOCIATION OF NURSERYMEN'S STANDARDS.
4. NO TREE, OTHER THAN THOSE SHOWN ON APPROVED PLANS FOR REMOVAL WITH THESE PLANS AND/ OR TREE REMOVAL PERMIT PLANS, SHALL BE REMOVED WITHOUT WRITTEN AUTHORIZATION FROM THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE. ALL SHRUB BEDS AND/OR PLANTING AREAS EXCLUDING TURF AREAS SHALL BE MULCHED WITH 3 INCH MINIMUM AND 4 INCH MAXIMUM DEPTH MULCH.
5. ALL PLANTS, 4 FEET OR LESS APART, WILL BE CONNECTED IN ONE PLANTING BED. ALL GROUPS OF PLANTS SHOULD BE WITHIN ONE PLANTING BED WITH THE EDGE OF MULCH EXTENDING 2 FEET BEYOND THE EDGE OF PLANT MASS. ALL SINGLE TREES (INCLUDING BOTH PROPOSED AND EXISTING TREES) SHOULD HAVE A CIRCLE OF MULCH NOT LESS THAN 5 FEET DIAMETER.
6. WEED BARRIER FABRIC SHALL BE INSTALLED BY LANDSCAPE CONTRACTOR IN ACME WAY AND CORPORATE DRIVE BUFFER LOCATIONS.
7. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE OR MAINTAINING THE SITE DURING CONSTRUCTION IN A MANNER THAT PROMOTES HEALTHY, VIABLE LANDSCAPE AND TURF MATERIAL.
8. PLANTING SOIL MIX: MIX EXISTING SOIL WITH THE SOIL AMENDMENTS AND FERTILIZERS FOR HEALTHY,VIABLE PLANT MATERIAL IN THE QUANTITIES RECOMMENDED BY THE SOIL TESTING LABORATORY, THIRD PARTY RECOGNIZED BY THE STATE DEPARTMENT OF AGRICULTURE OR AS OTHERWISE APPROVED BY THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE.
9. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY SOIL AMENDMENTS AS RECOMMENDED BY THE SOIL TESTING LABORATORY.
10. ANY AND ALL SUBSTITUTIONS OF PLANT MATERIAL SHALL BE APPROVED BY LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE. FAILURE IN OBTAINING APPROVAL MAY RESULT IN LIABILITY TO THE CONTRACTOR.
11. LANDSCAPE CONTRACTOR SHALL APPLY PRE AND POST EMERGENT HERBICIDES, FUNGICIDES, OR OTHER WEED CONTROL METHODS TO KEEP THE SITE FREE OF WEEDS FROM BEGINNING OF LANDSCAPE CONTRACTOR'S CONSTRUCTION TO TIME THE SITE IS TURNED OVER TO OWNER FOR MAINTENANCE. INSTALL WEED BARRIER FABRIC IN MULCHED AND PLANTED AREAS WITHOUT PRESERVED EXISTING VEGETATION FOR ADDITIONAL WEED CONTROL. THIS DOES NOT APPLY TO SEEDED OR SODDED AREAS.
12. IRRIGATION, IF PROPOSED, SHALL BE DESIGNED AND INSTALLED BY A LICENSED IRRIGATION CONTRACTOR IN THE STATE OF NORTH CAROLINA.
    12.1. AUTOMATED IRRIGATION PLANS AND SPECIFICATIONS FOR THE IRRIGATION DESIGN SHALL BE SUBMITTED TO THE OWNER OR OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO PURCHASE OR INSTALLATION OF THE MATERIALS.
13. UNLESS OTHERWISE SPECIFIED BY OWNER OR OWNER'S REPRESENTATIVE, ALL DISTURBED AREAS TO BE SEEDED WITH PERM. SEED PER EROSION CONTROL PLANS AND/OR NOTES.
14. THE CONTRACTOR SHALL PREPARE ALL SEEDED OR SODDED AREAS TO ASSURE THAT THE SUBGRADE HAS BEEN RAKED AND ROLLED TO ACCEPT THE SOD/SEED. FINE GRADE AS NEEDED. LANDSCAPE CONTRACTOR TO COORDINATE ROUGH GRADE SCHEDULE WITH GENERAL CONTRACTOR AND NOTIFY OWNER OR OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES IN GRADE OR TIMELINE. ALL SOD/SEED AREAS MUST BE IRRIGATED OR HAND WATERED. ALL SOD SHALL BE PLACED WITH STAGGERED JOINTS AND NO GAPS BETWEEN SOD JOINTS. SOD SHOULD BE ROLLED AFTER INSTALLATION. ALL SEEDED AND/OR SODDED AREAS SHOULD PROVIDE A SMOOTH SURFACE FREE OF DIPS AND UNLEVELED GROUND.
15. LANDSCAPE CONTRACTOR TO VERIFY OWNER'S SEED OR SOD PREFERENCE PRIOR TO THE CONTRACTOR ORDERING OR INSTALLING TURF GRASS.
16. ALL VEGETATION PROPOSED WITHIN SIGHT DISTANCE AREAS SHALL NOT INTERFERE WITH SIGHT DISTANCE AT INTERSECTIONS FROM 30" TO 10'. LIMB TREES OR TRIM EXISTING VEGETATION AS NEEDED WITHIN THE 10' X 70' SIGHT DISTANCE TRIANGLE.
17. ALL VEGETATION PROPOSED WITHIN SIGHT DISTANCE AREAS SHALL NOT INTERFERE WITH SIGHT DISTANCE AT INTERSECTIONS FROM 30" TO 10'. LIMB TREES OR TRIM EXISTING VEGETATION AS NEEDED WITHIN THE 10' X 70' SIGHT DISTANCE TRIANGLE.
18. CONTRACTOR IS RESPONSIBLE FOR REMOVING TRASH, DEBRIS AND EXCESS MATERIALS FROM THE JOB SITE ONCE THE PROJECT IS COMPLETE. SECURING ANY MATERIALS LEFT ON SITE DURING THE COURSE OF THE PROJECT IS THE CONTRACTOR'S RESPONSIBILITY.
19. THE CONTRACTOR SHALL REPLACE DEAD AND/OR UNHEALTHY PLANT MATERIAL FOR A PERIOD OF 12 MONTHS OF ACCEPTANCE OF THE INSTALLED MATERIAL FROM THE OWNER OR OWNER'S REPRESENTATIVE. CONTRACTOR SHALL REPLACE PLANTS WITHIN 1 MONTH OF NOTIFICATION OF THE NEED FOR PLANT REPLACEMENT.
20. NOTIFY THE OWNER OR OWNER'S REPRESENTATIVE OF ANY DISCREPANCY BETWEEN THE PLANS AND SITE CONDITIONS PRIOR TO ORDERING MATERIALS, PERFORMING WORK, OR INSTALLING MATERIALS.

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5/16/2023

NHCS Project No.
22-90458

Southeast Area Technical High School
SCIF Grant Addition

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

Issue Date: May 16, 2023

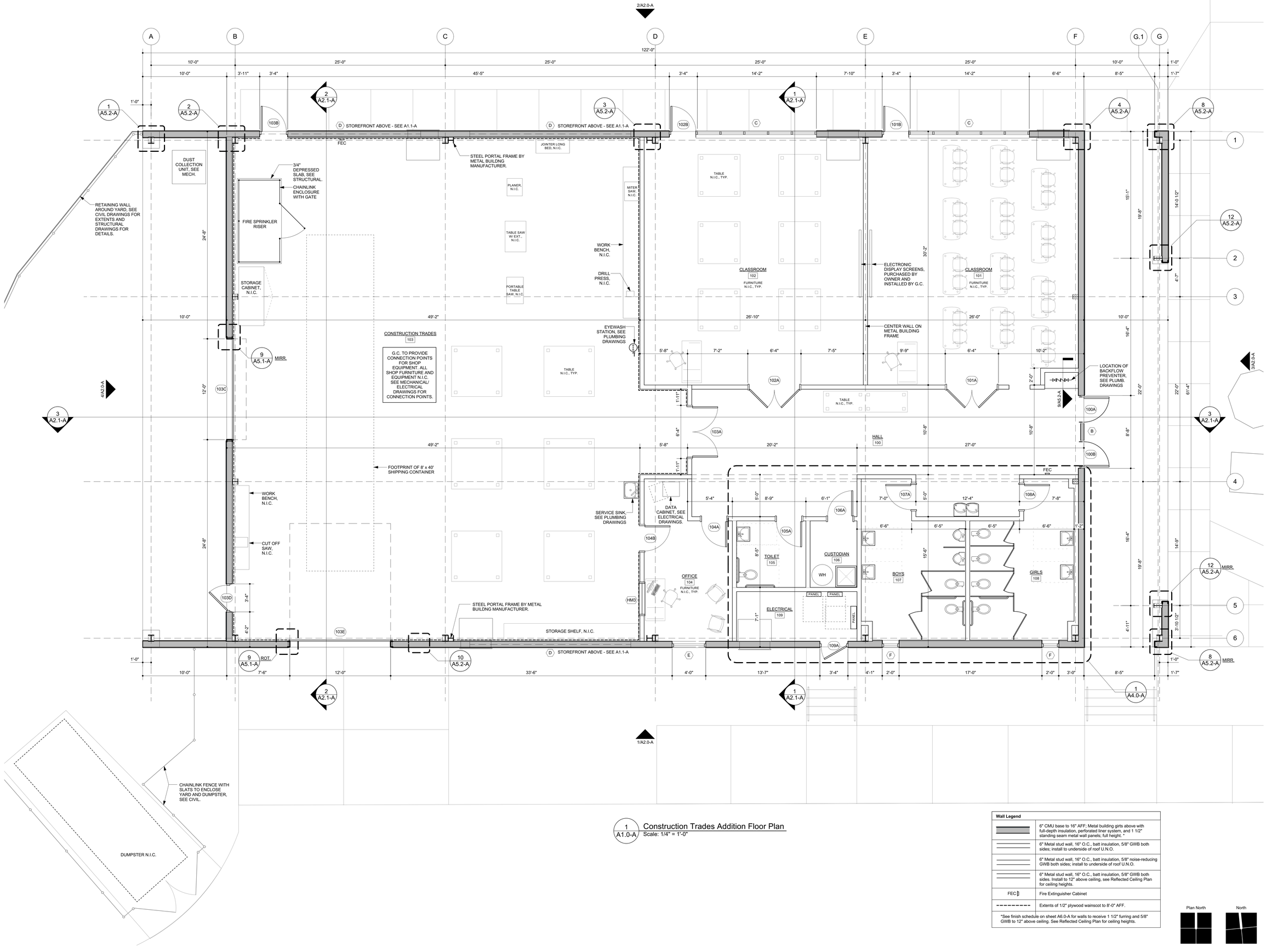
Landscape Plan

Rev.	Date	Notes

L1.0-A

Final Design - Not Issued for Construction

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1 A1.0-A **Construction Trades Addition Floor Plan**
Scale: 1/4" = 1'-0"

Wall Legend	
	6" CMU base to 16" AFF; Metal building girts above with full-depth insulation, perforated liner system, and 1 1/2" standing seam metal wall panels; full height. *
	6" Metal stud wall, 16" O.C., batt insulation, 5/8" GWB both sides; install to underside of roof U.N.O.
	6" Metal stud wall, 16" O.C., batt insulation, 5/8" noise-reducing GWB both sides; install to underside of roof U.N.O.
	6" Metal stud wall, 16" O.C., batt insulation, 5/8" GWB both sides. Install to 12" above ceiling, see Reflected Ceiling Plan for ceiling heights.
FEC	Fire Extinguisher Cabinet
	Extents of 1/2" plywood wainscot to 8'-0" AFF.
*See finish schedule on sheet A6.0-A for walls to receive 1 1/2" furring and 5/8" GWB to 12" above ceiling. See Reflected Ceiling Plan for ceiling heights.	

Plan North

North

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Construction Trades Addition Floor Plan

Rev.	Date	Notes

A1.0-A

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EXISTING SHADE STRUCTURE.
ALT. G-1: RELOCATE TO ACCOMMODATE NEW MECHANICAL EQUIPMENT, SEE CIVIL DRAWINGS.

Sht. A1.1B
ALT. G-1

Sht. A1.2B
ALT. G-2

3 A6.0-B

1 A1.0-B **Existing Conditions Plan**
Scale: 3/32" = 1'-0"

Plan North

North

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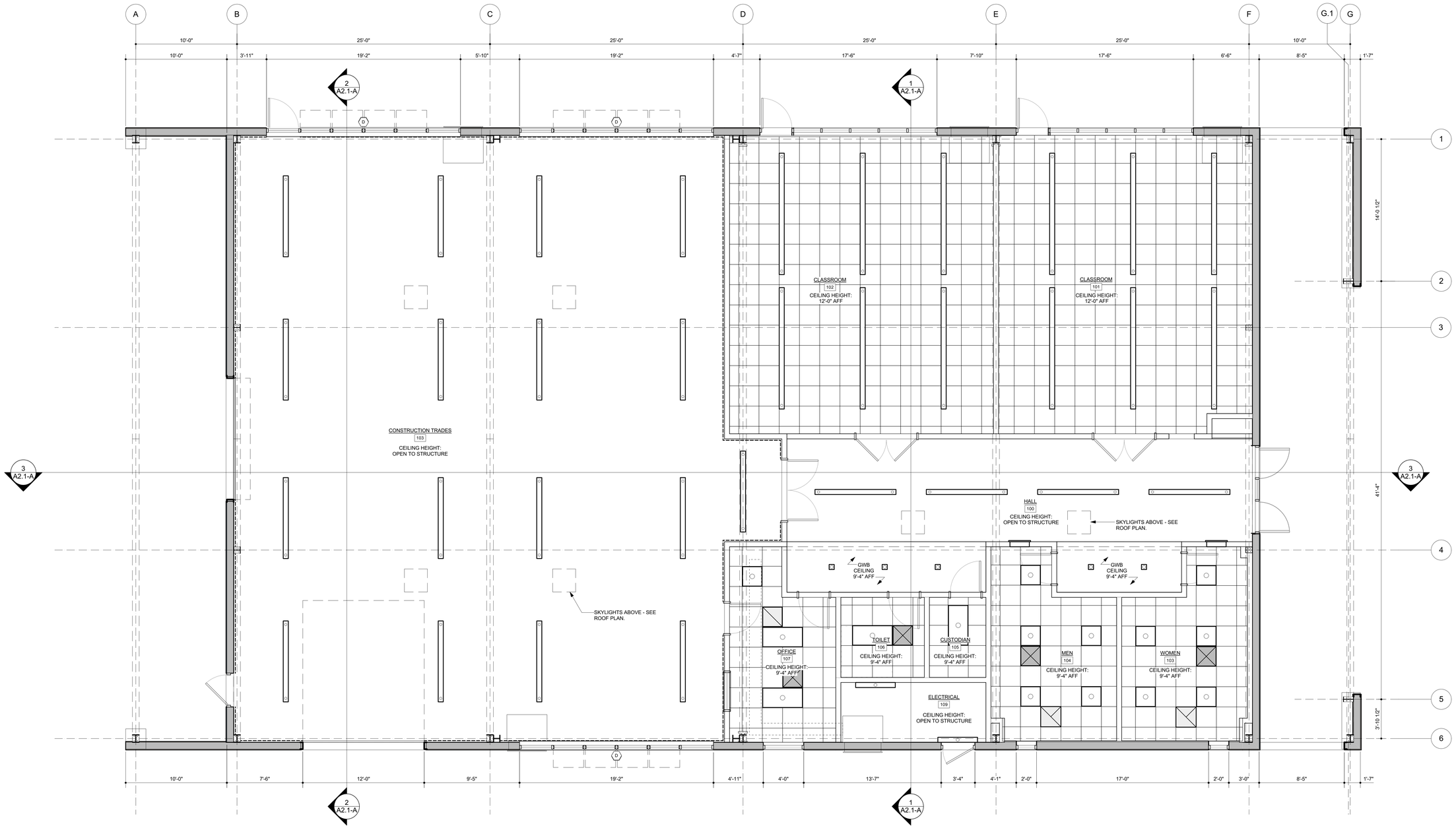
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Existing Conditions Plan

Rev.	Date	Notes

A1.0-B

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1 A1.1-A Construction Trades Addition Reflected Ceiling Plan
Scale: 1/4" = 1'-0"

RCP Legend

	New suspended 2'x2' acoustical tile ceiling.
	Gypsum Wall Board
	New Light Fixtures - See electrical drawings.
	New HVAC Grilles & Equipment - See mechanical drawings.

Plan North

North

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SCIF Grant Addition

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Construction Drawings

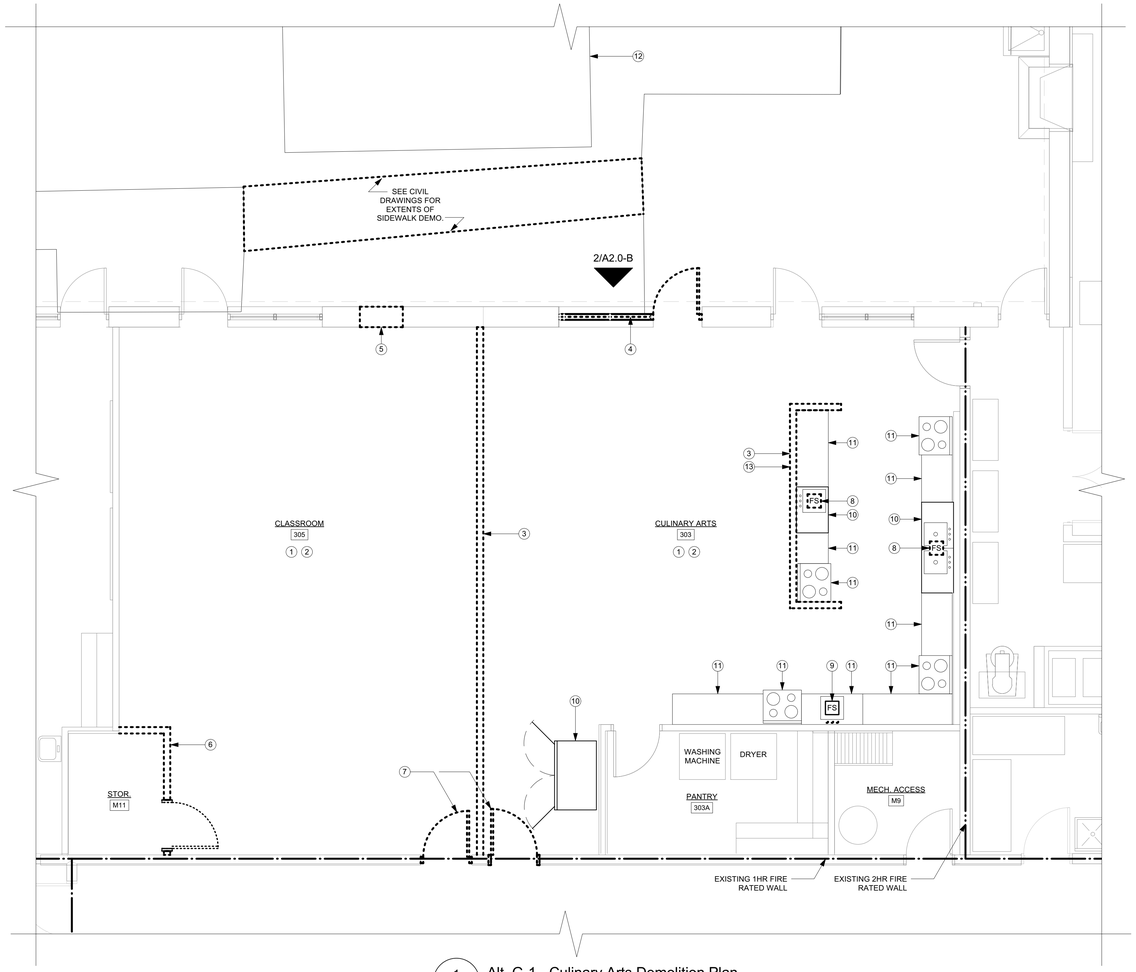
Issue Date: May 16, 2023

Construction Trades
Addition Reflected
Ceiling Plan

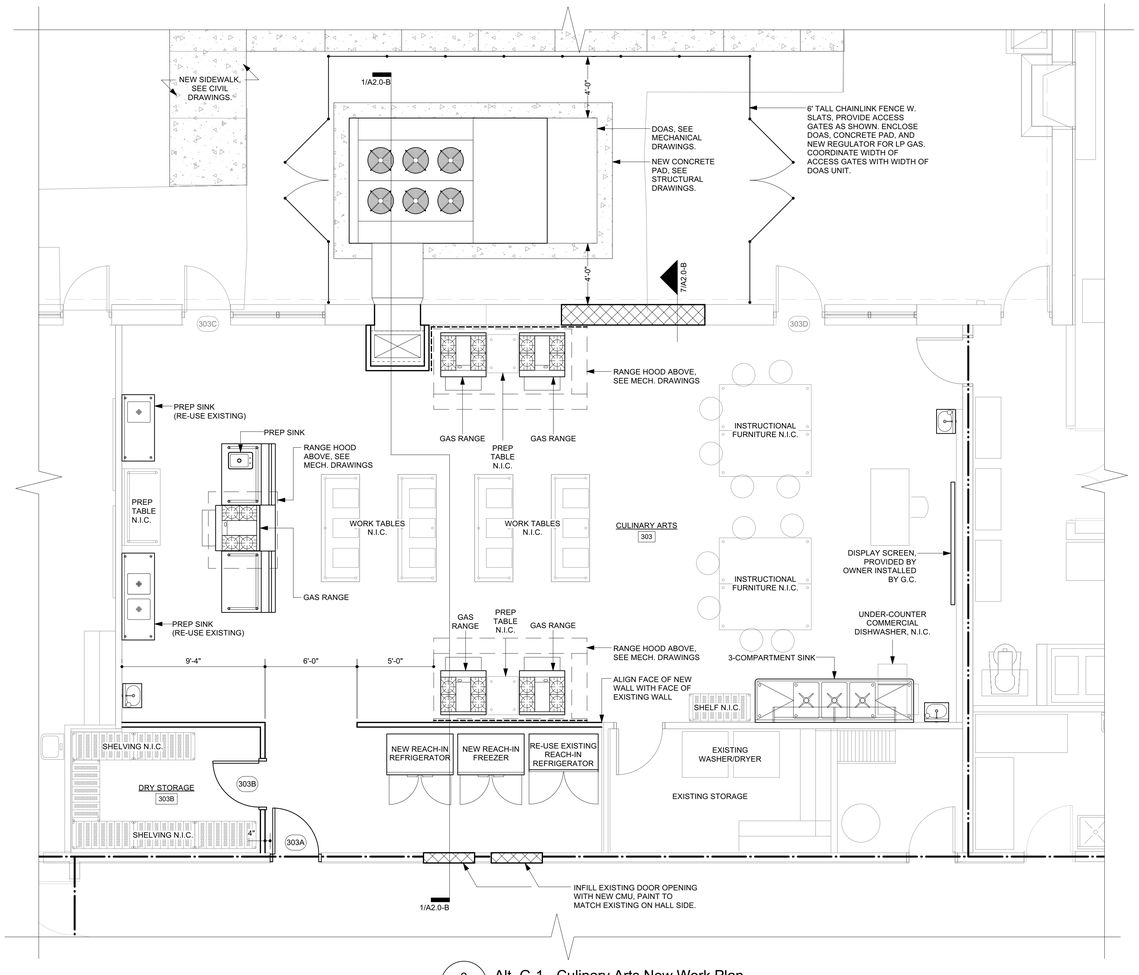
Rev.	Date	Notes

A1.1-A

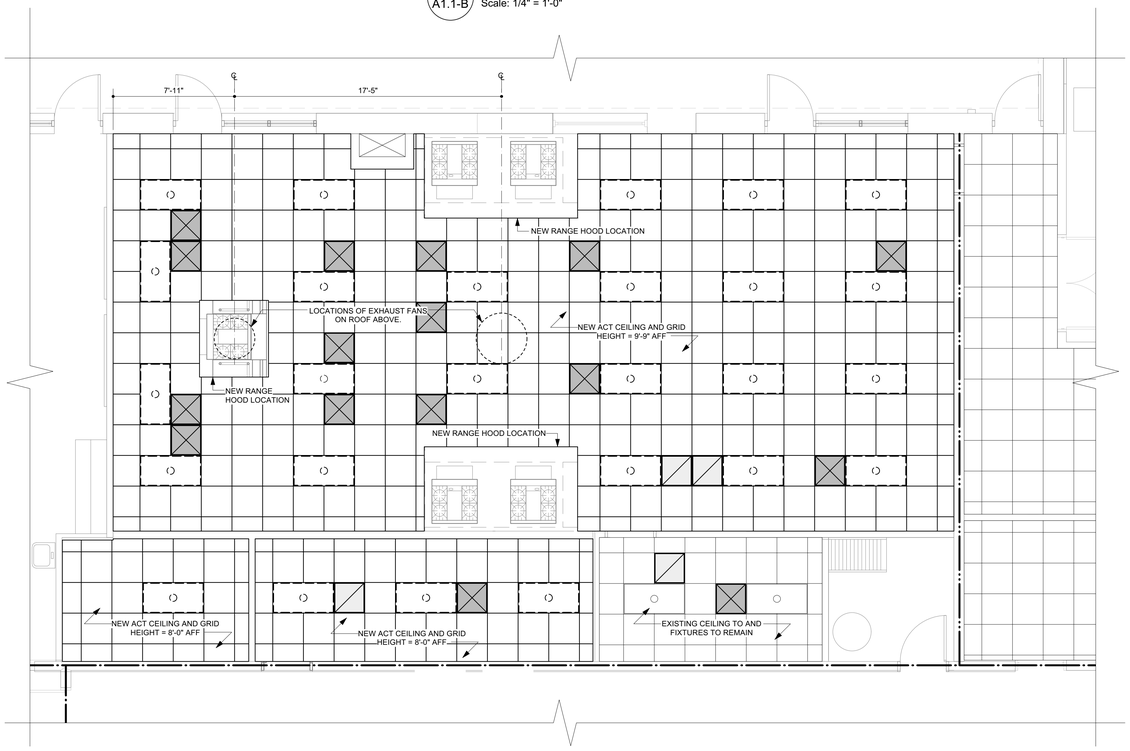
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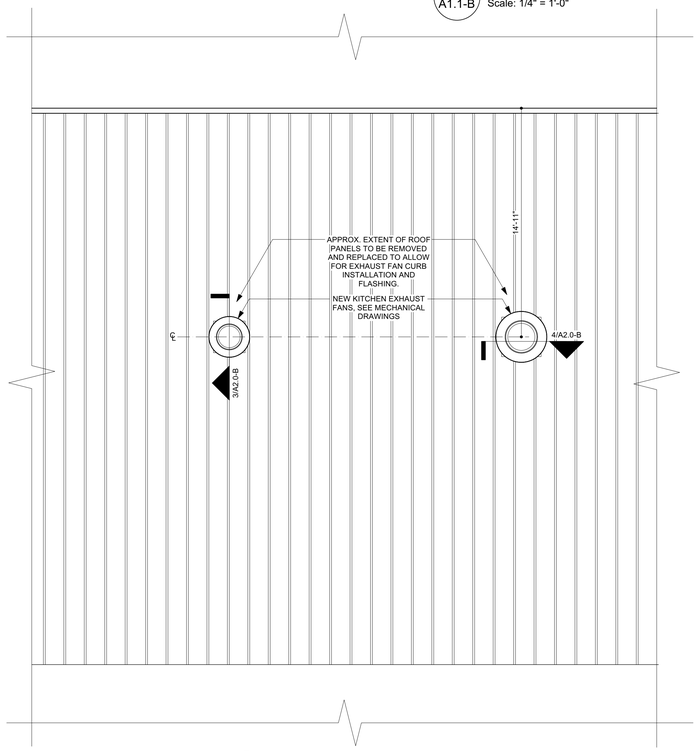
1 A1.1-B **Alt. G-1 - Culinary Arts Demolition Plan**
Scale: 1/4" = 1'-0"



2 A1.1-B **Alt. G-1 - Culinary Arts New Work Plan**
Scale: 1/4" = 1'-0"



3 A1.1-B **Alt. G-1 - Culinary Arts Reflected Ceiling Plan**
Scale: 1/4" = 1'-0"



4 A1.1-B **Alt. G-1 - Culinary Arts Roof Plan**
Scale: 1/4" = 1'-0"

WALL LEGEND

———	3 5/8" Metal studs, sound batt insulation, 5/8" GWB both sides of wall. To 12" above ceiling, U.N.O. - see RCP for ceiling heights.
———	3 5/8" Metal studs, 5/8" GWB outside face of walls. To 12" above ceiling, U.N.O. - see RCP for ceiling heights.
- - - - - - - -	Extents of stainless steel wall panels

DEMOLITION NOTES

1	DEMOLISH EXISTING FLOORING
2	DEMOLISH EXISTING ACT AND GRID. REMOVE LED LIGHT FIXTURES TO REINSTALL AS SHOWN ON 3/A1.1-B
3	DEMOLISH EXISTING WALL.
4	DEMOLISH EXISTING STOREFRONT WINDOW AND DOOR. REMOVE HARDWARE AND DELIVER TO OWNER.
5	DEMOLISH EXISTING CMU TO ALLOW FOR DUCT PENETRATION, COORDINATE WITH LOCATION OF DOAS.
6	EXISTING STORAGE CLOSET IS A FORMER TOILET ROOM AND HAS CAPPED PLUMBING PIPING IN WALL IN THIS LOCATION. DEMOLISH EXISTING WALLS, DOOR AND FRAME, IN-WALL PLUMBING PIPING, AND CEILING.
7	REMOVE EXISTING DOORS AND HARDWARE FOR RE-USE AS SHOWN ON 2/1.1-B. DEMOLISH FRAMES.
8	DEMOLISH EXISTING FLOOR SINK.
9	EXISTING FLOOR SINK TO REMAIN.
10	REMOVE EXISTING KITCHEN EQUIPMENT AND REINSTALL AS SHOWN ON 2/A1.2-B.
11	REMOVE EXISTING KITCHEN EQUIPMENT AND TURN OVER TO OWNER.
12	EXISTING CLOTH CANOPY, RELOCATE AS SHOWN ON CIVIL DRAWINGS.
13	DEMOLISH PLUMBING PIPING IN WALL AND CAP BELOW SLAB.

RCP LEGEND

	New suspended 2'x2' acoustical tile ceiling.
	Re-use existing LED lay-in fixtures, install in configuration shown.
	New HVAC Grilles & Equipment - See mechanical drawings.

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Construction Drawings

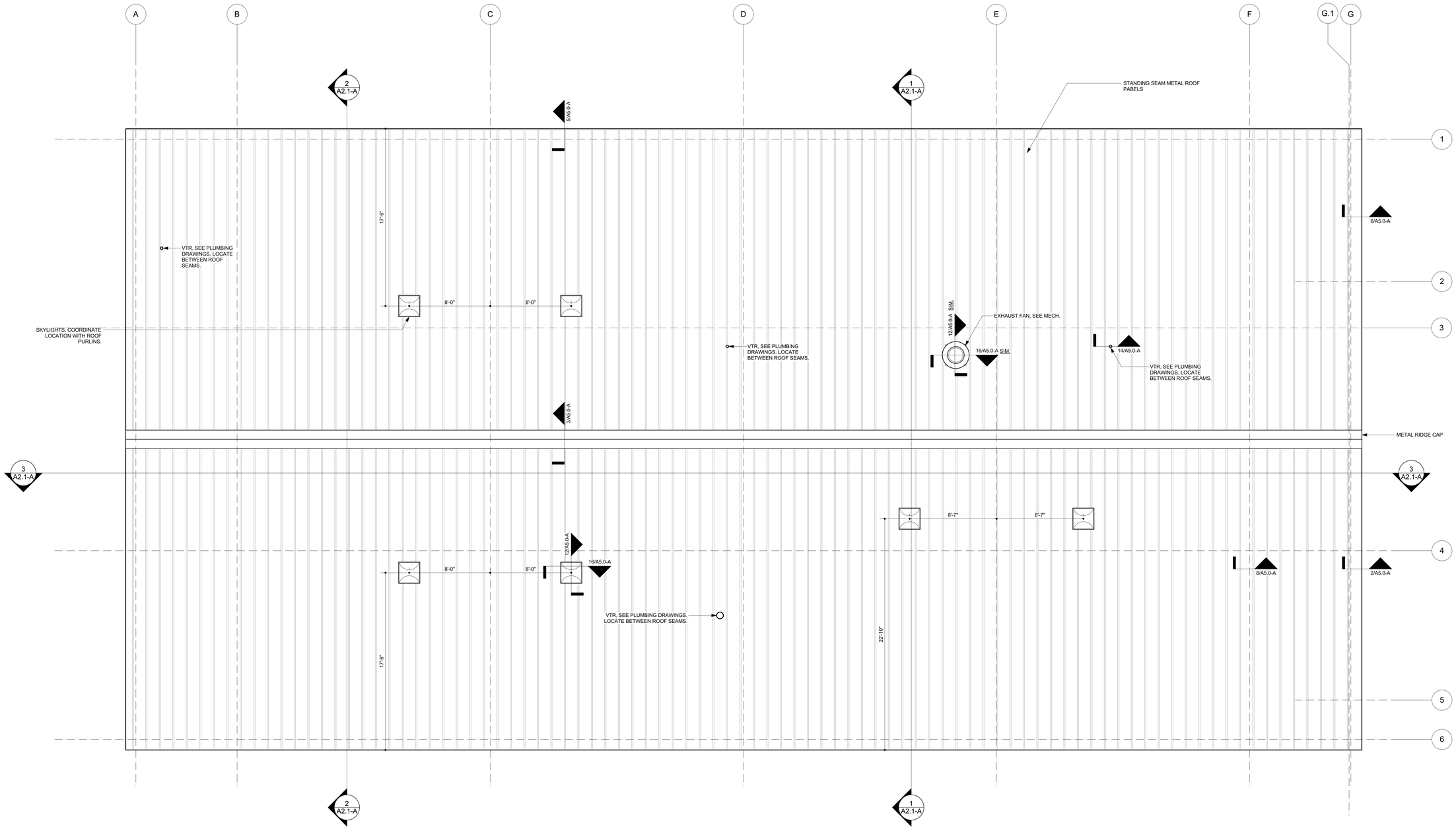
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Alt. G-1 - Culinary Arts Demolition, New Work, RCP

Rev.	Date	Notes

A1.1-B

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1 A1.2-A **Construction Trades Addition Roof Plan**
Scale: 1/4" = 1'-0"

Plan North

North

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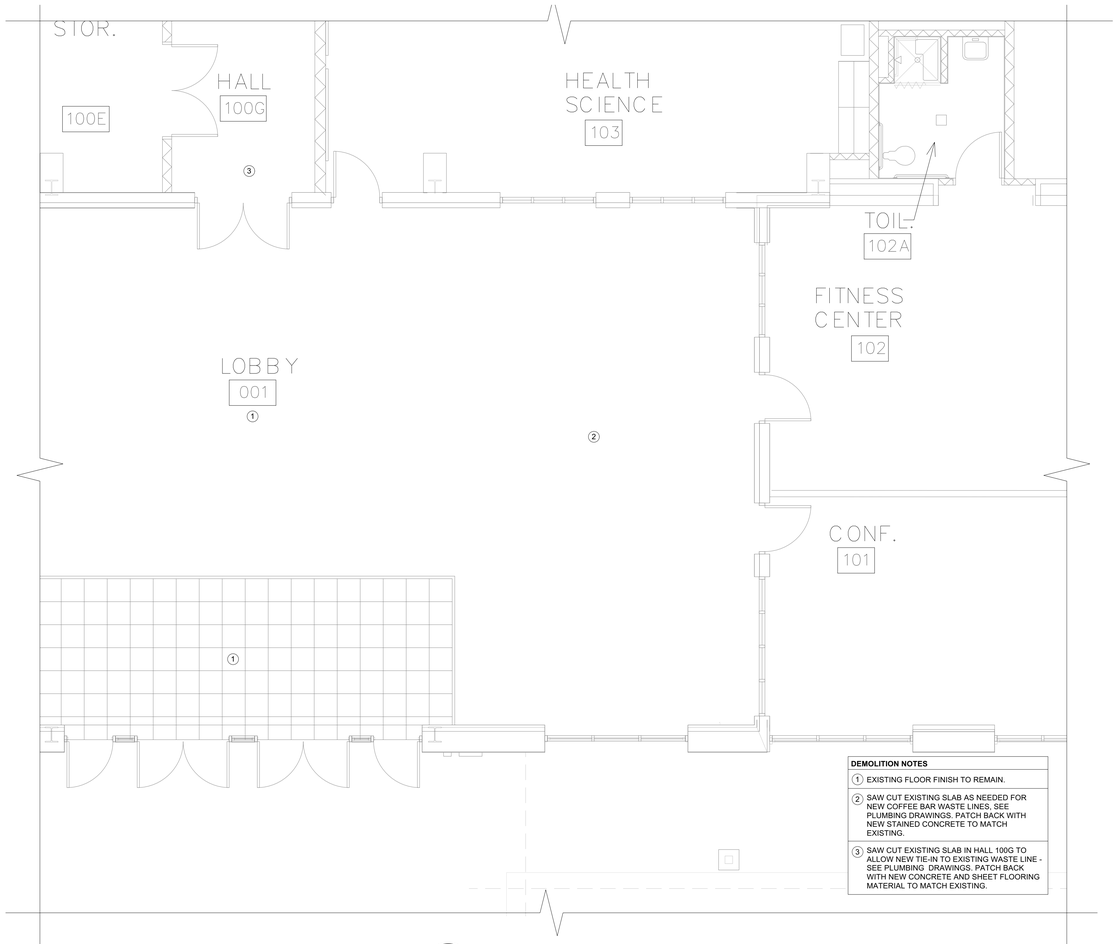
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Construction Trades
Addition Roof Plan

Rev.	Date	Notes

A1.2-A

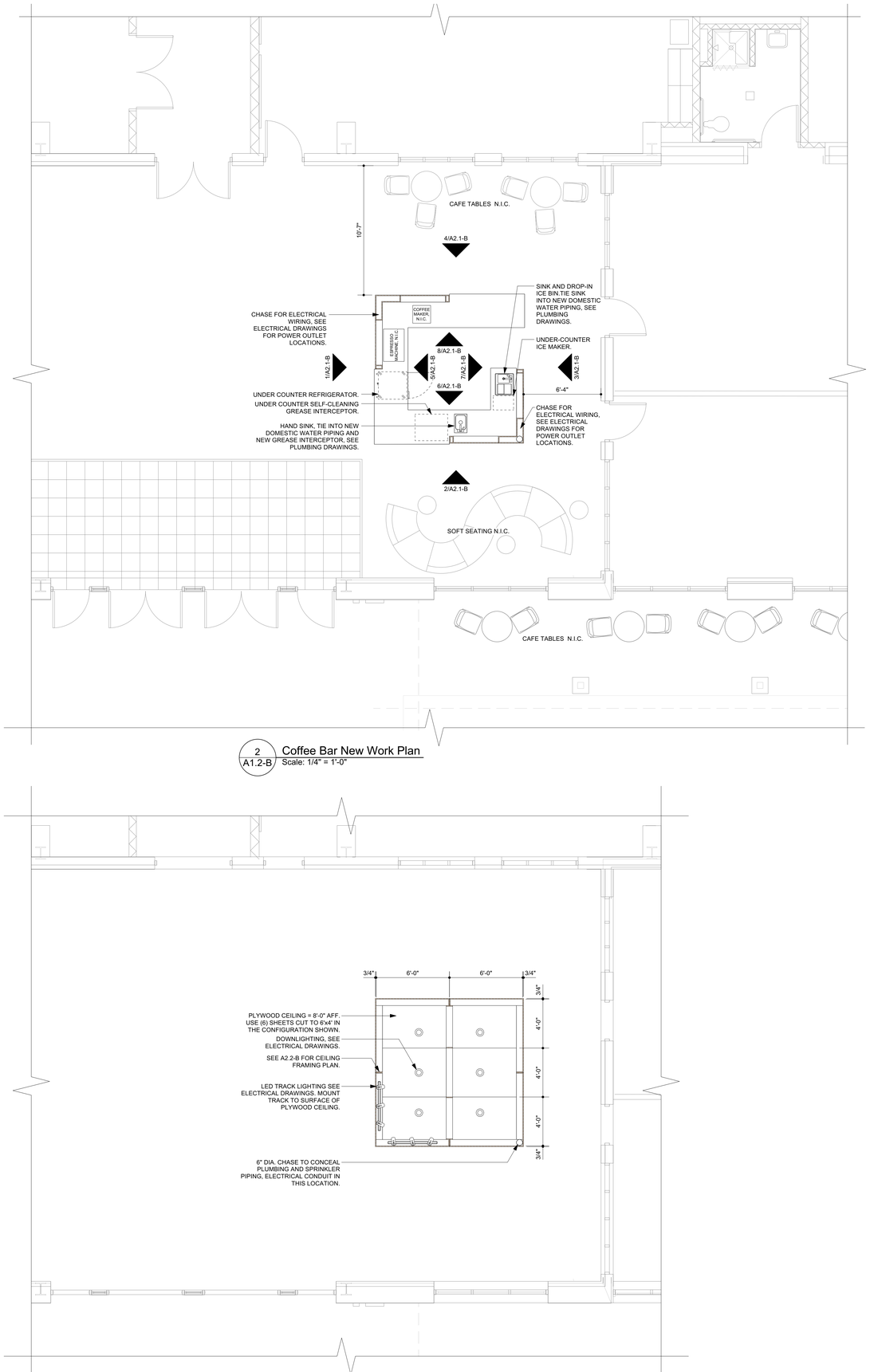
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DEMOLITION NOTES

1. EXISTING FLOOR FINISH TO REMAIN.
2. SAW CUT EXISTING SLAB AS NEEDED FOR NEW COFFEE BAR WASTE LINES, SEE PLUMBING DRAWINGS. PATCH BACK WITH NEW STAINED CONCRETE TO MATCH EXISTING.
3. SAW CUT EXISTING SLAB IN HALL 100G TO ALLOW NEW TIE-IN TO EXISTING WASTE LINE - SEE PLUMBING DRAWINGS. PATCH BACK WITH NEW CONCRETE AND SHEET FLOORING MATERIAL TO MATCH EXISTING.

1 A1.2-B Coffee Bar Demolition Plan
Scale: 1/4" = 1'-0"



2 A1.2-B Coffee Bar New Work Plan
Scale: 1/4" = 1'-0"



3 A1.2-B Coffee Bar Perspective
Scale: 1/4" = 1'-0"

4 A1.2-B Coffee Bar Reflected Ceiling Plan
Scale: 1/4" = 1'-0"

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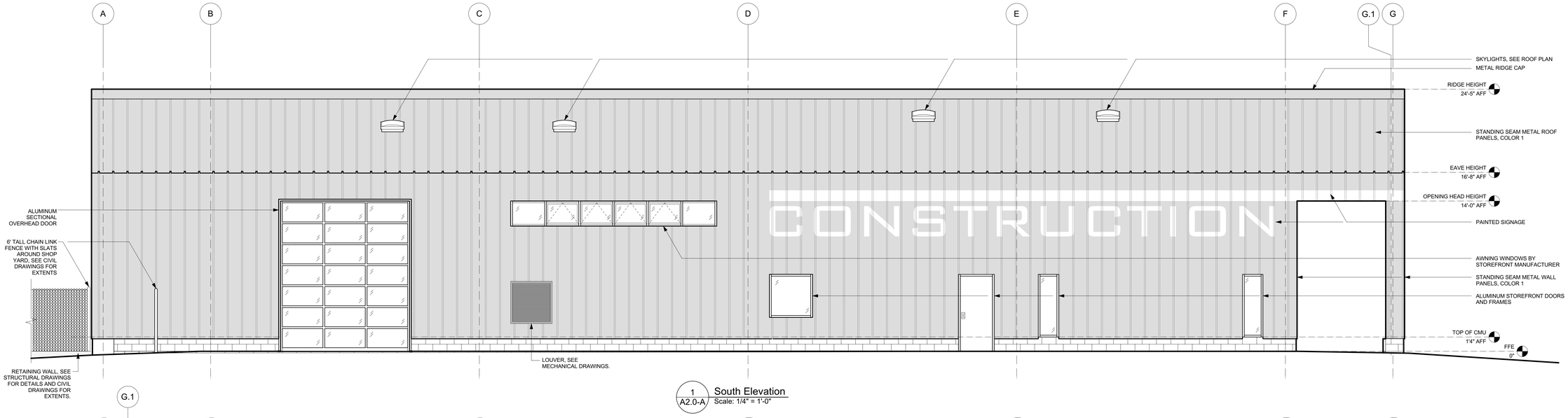
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Alt. G-2 - Coffee Bar Demolition, New Work, RCP

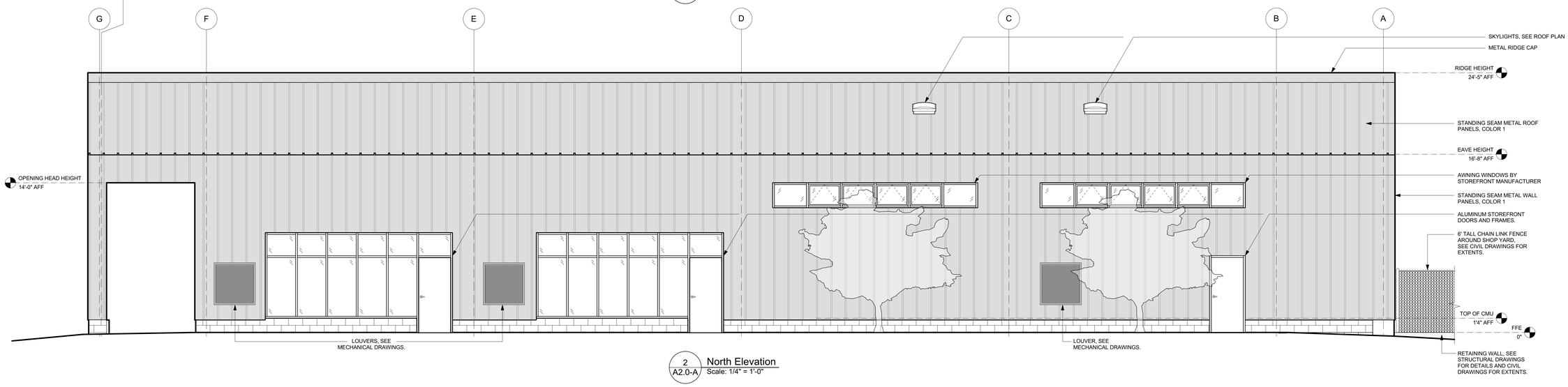
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A1.2-B

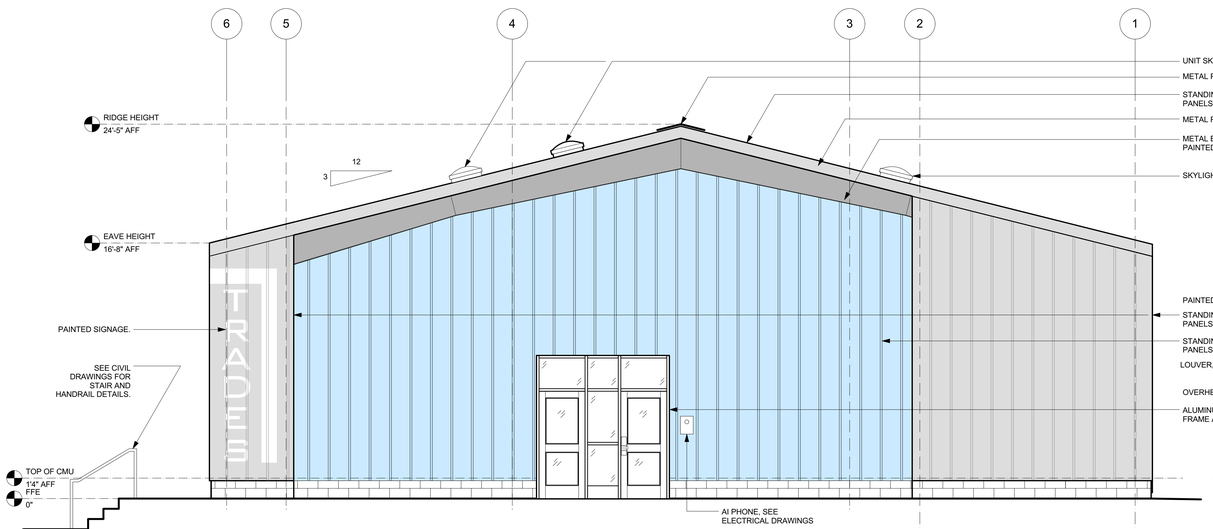
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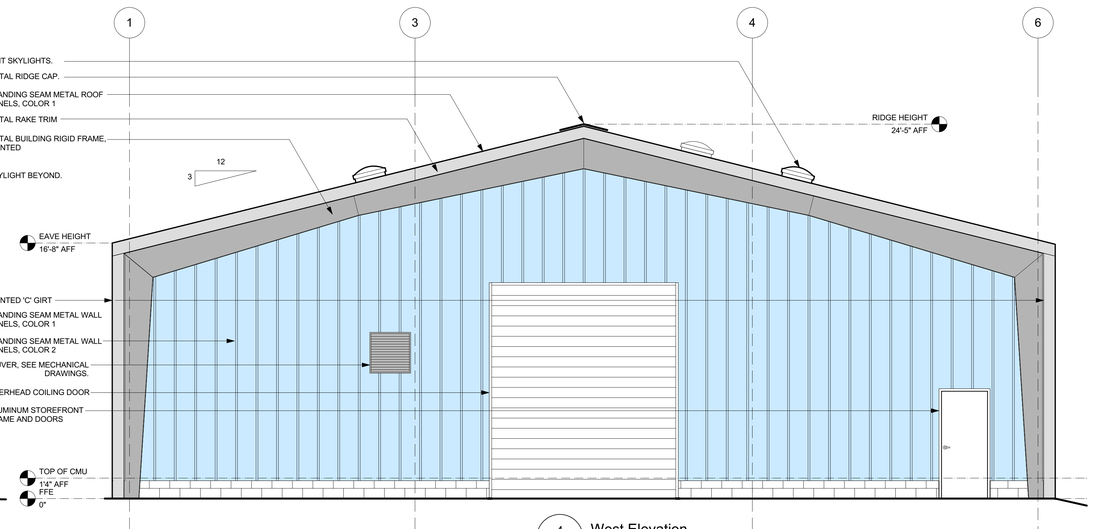
1 A2.0-A **South Elevation**
Scale: 1/4" = 1'-0"



2 A2.0-A **North Elevation**
Scale: 1/4" = 1'-0"



3 A2.0-A **East Elevation**
Scale: 1/4" = 1'-0"



4 A2.0-A **West Elevation**
Scale: 1/4" = 1'-0"

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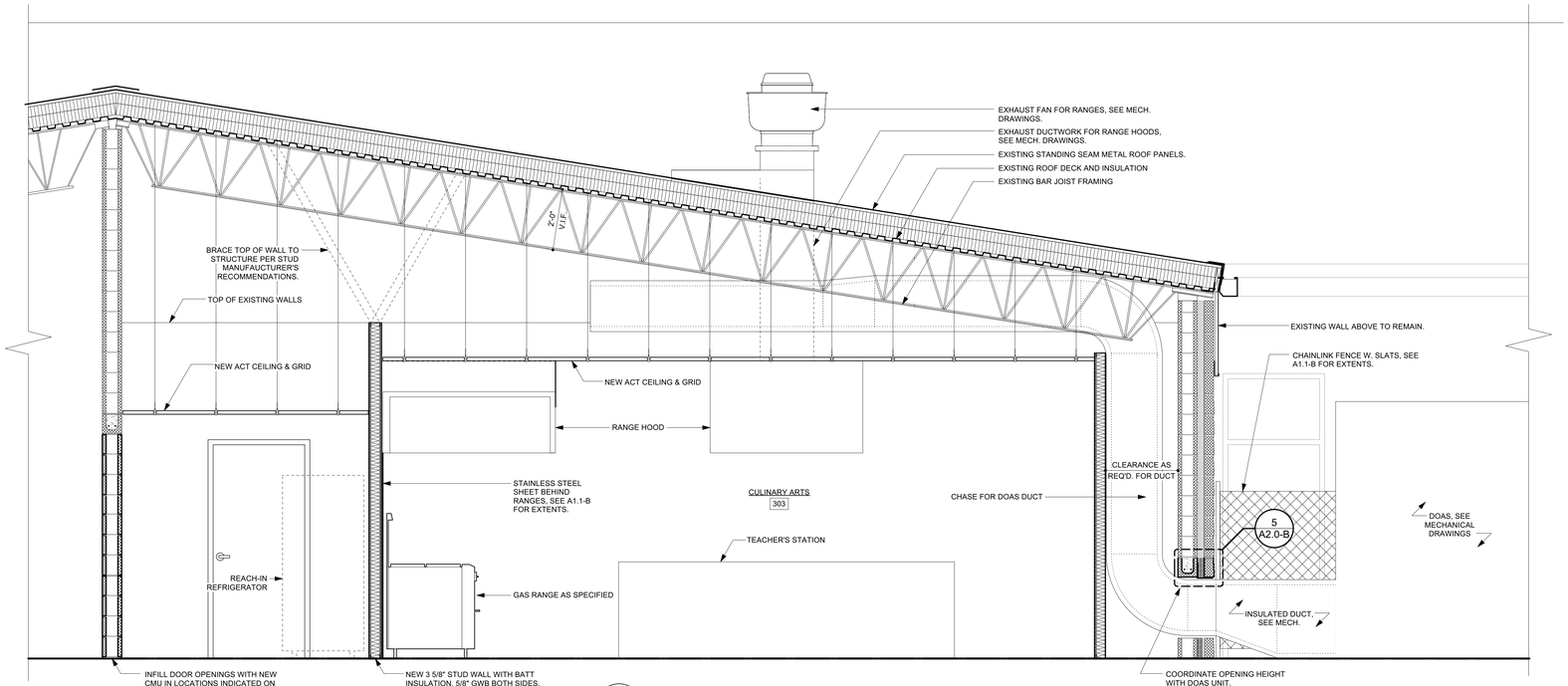
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Construction Trades
Addition Elevations

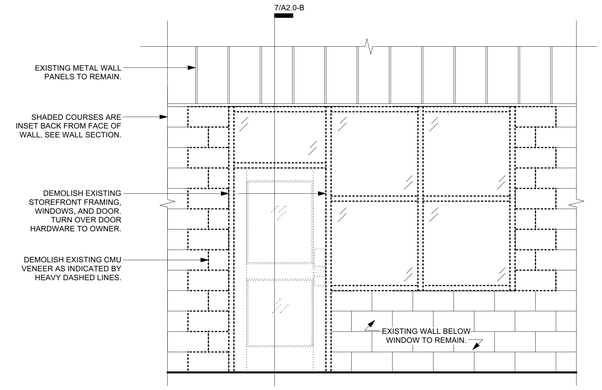
Rev.	Date	Notes

A2.0-A

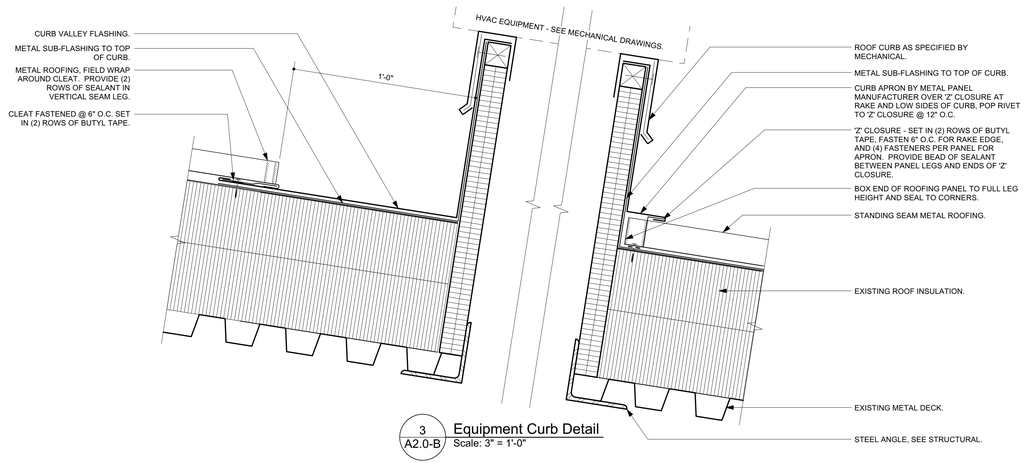
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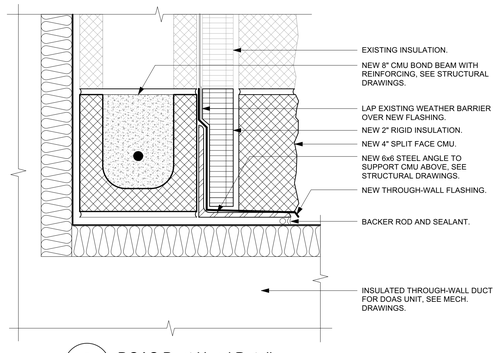
1 A2.0-B **Alt. G-1 Culinary Arts Section**
Scale: 1/2" = 1'-0"



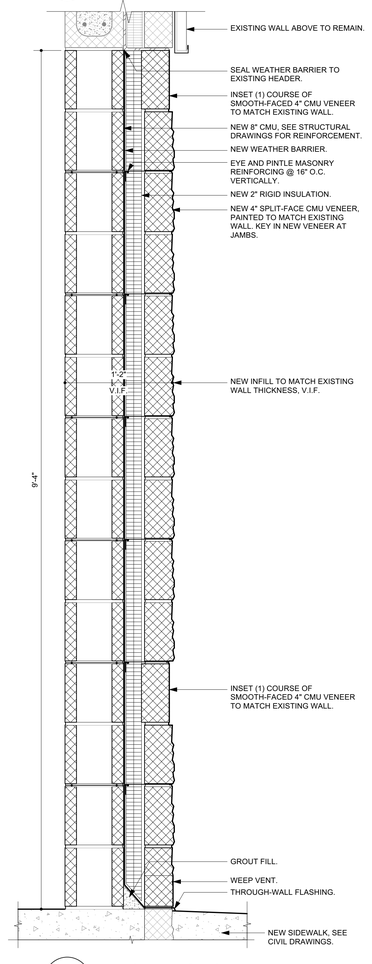
2 A2.0-B **Demo Elevation**
Scale: 1/2" = 1'-0"



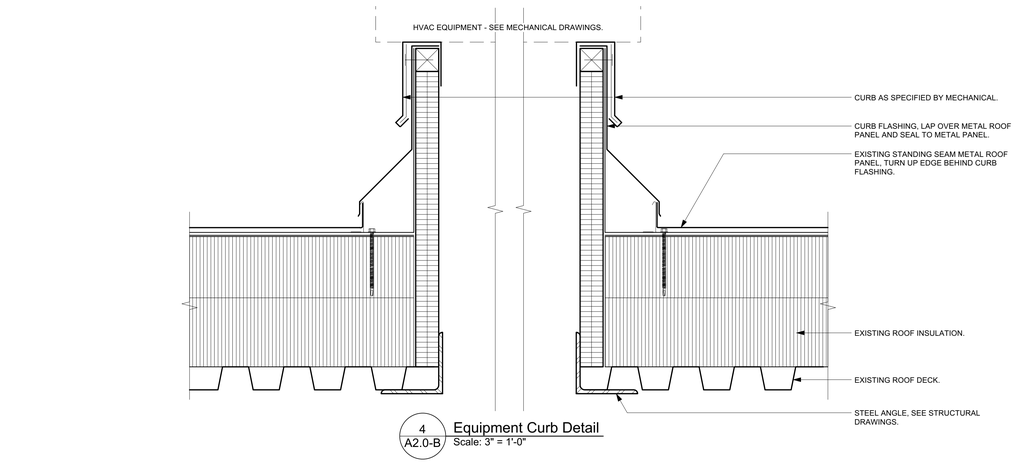
3 A2.0-B **Equipment Curb Detail**
Scale: 3" = 1'-0"



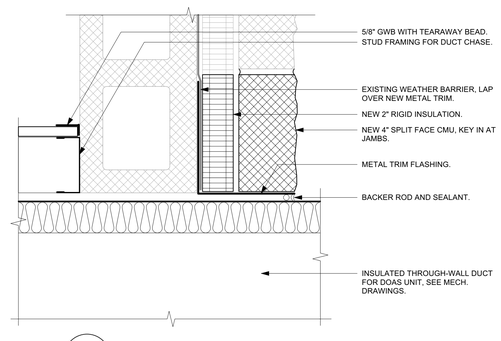
5 A2.0-B **DOAS Duct Head Detail**
Scale: 3" = 1'-0"



7 A2.0-B **Wall Section @ Infill**
Scale: 1 1/2" = 1'-0"



4 A2.0-B **Equipment Curb Detail**
Scale: 3" = 1'-0"



6 A2.0-B **DOAS Duct Jamb Detail**
Scale: 3" = 1'-0"

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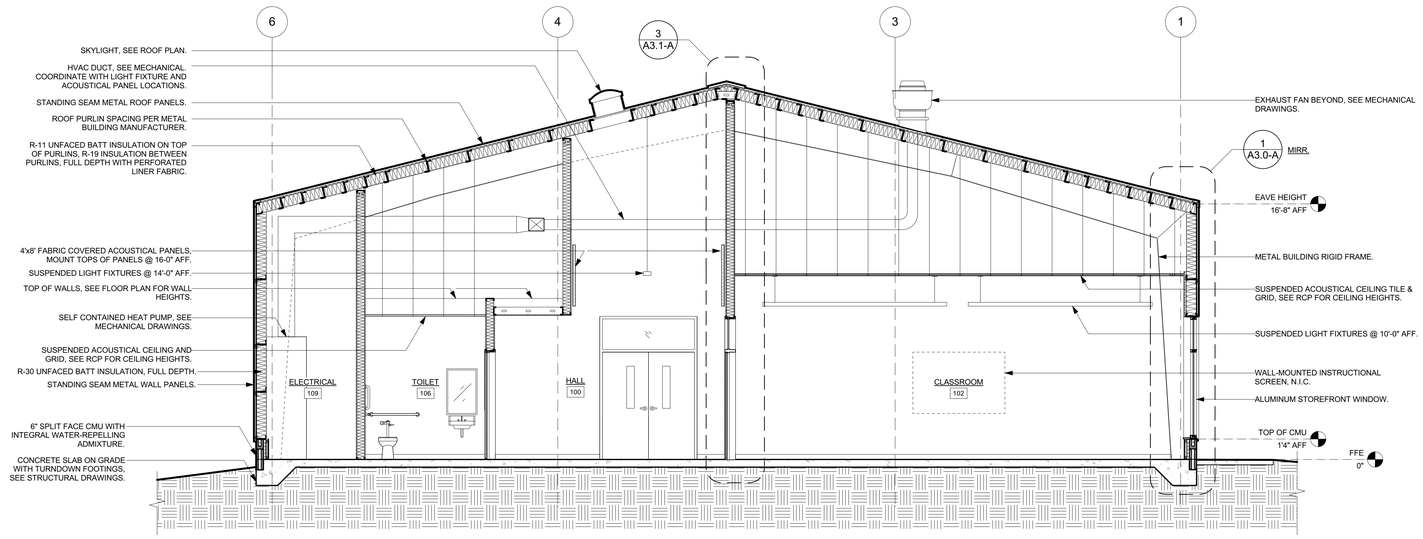
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Alt. G-1 - Culinary Arts Building Section, Wall Section & Detai

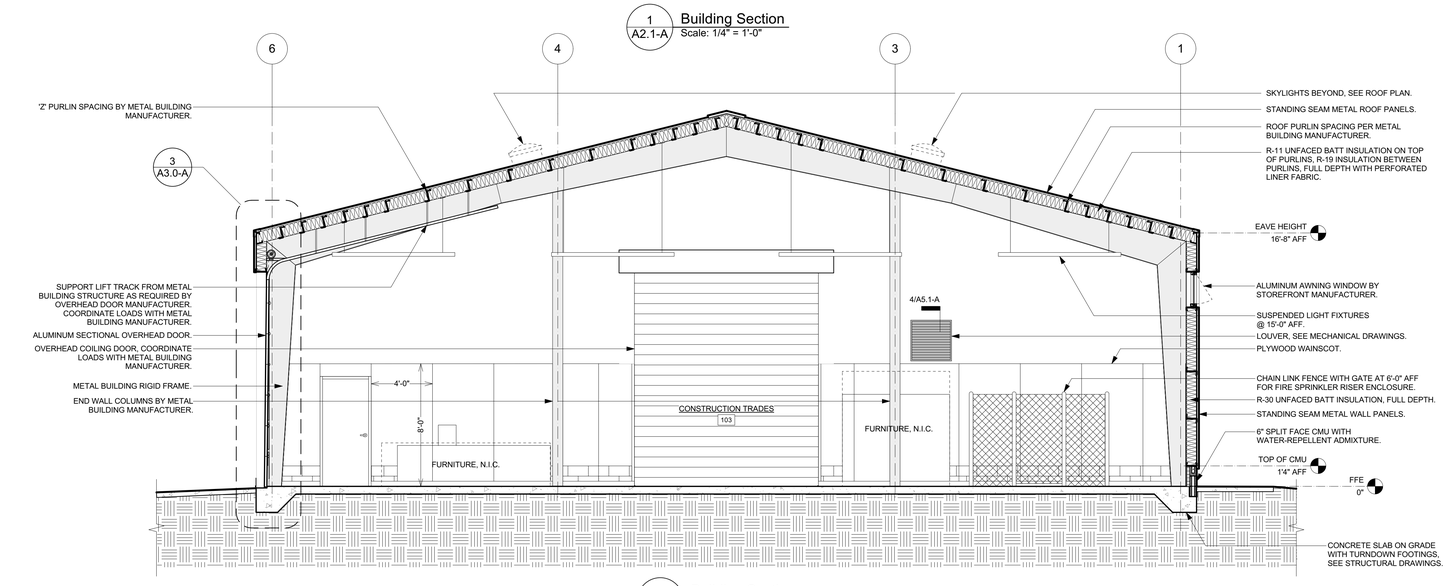
Rev.	Date	Notes

A2.0-B

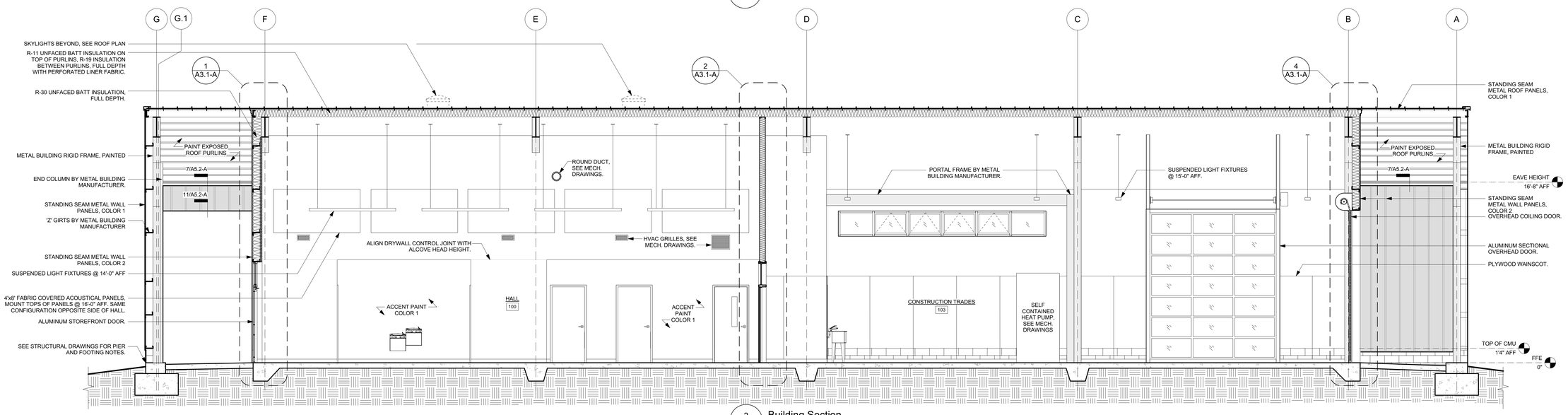
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1 A2.1-A **Building Section**
Scale: 1/4" = 1'-0"



2 A2.1-A **Building Section**
Scale: 1/4" = 1'-0"



3 A2.1-A **Building Section**
Scale: 1/4" = 1'-0"

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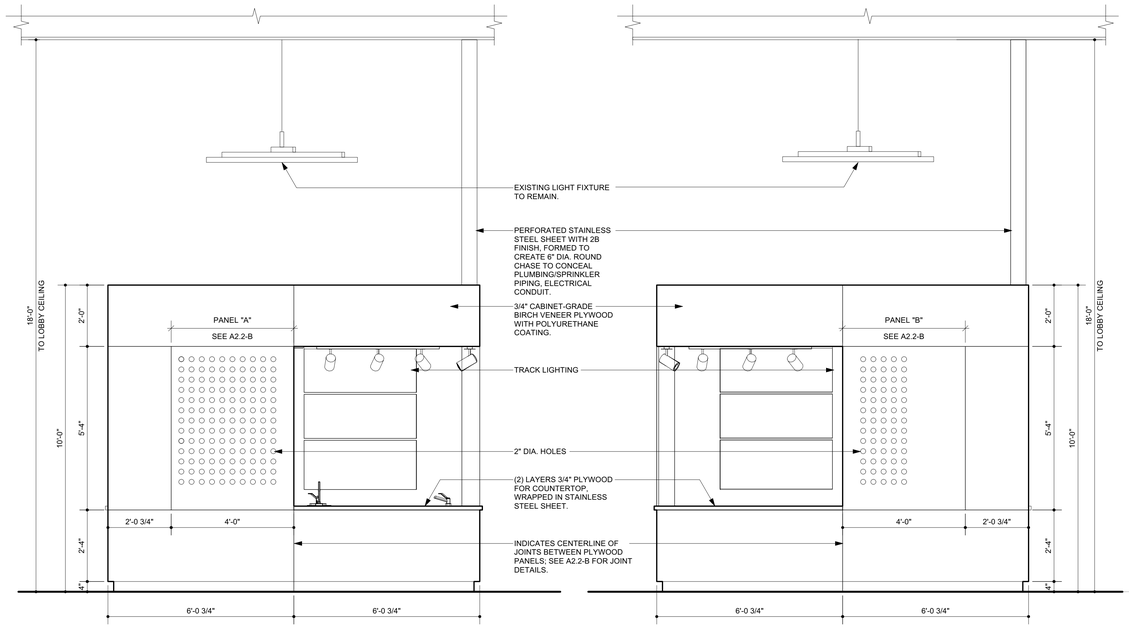
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Construction Trades Addition Building Sections

Rev.	Date	Notes

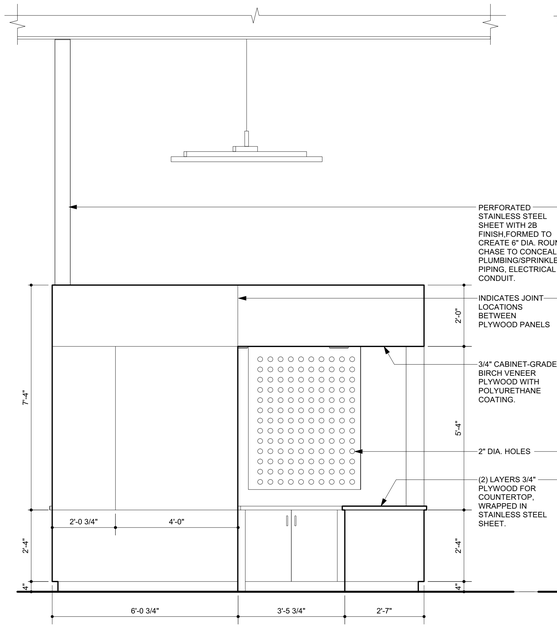
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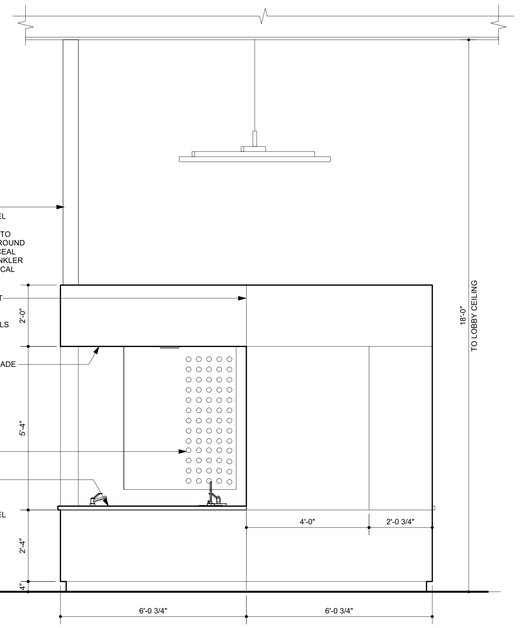


1 A2.1-B Front Elevation
Scale: 1/2" = 1'-0"

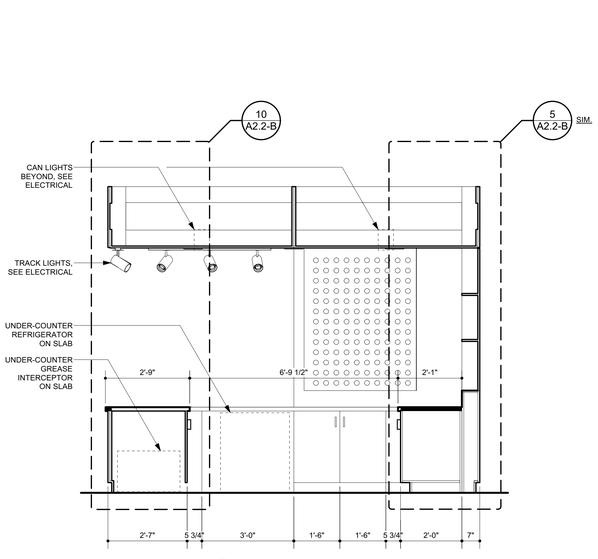
2 A2.1-B Right Side Elevation
Scale: 1/2" = 1'-0"



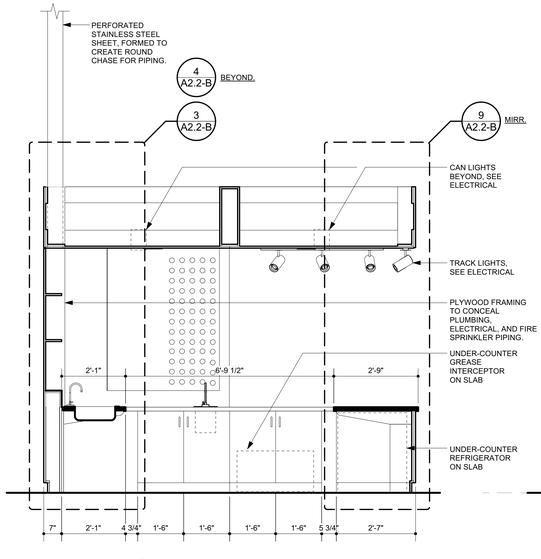
3 A2.1-B Rear Elevation
Scale: 1/2" = 1'-0"



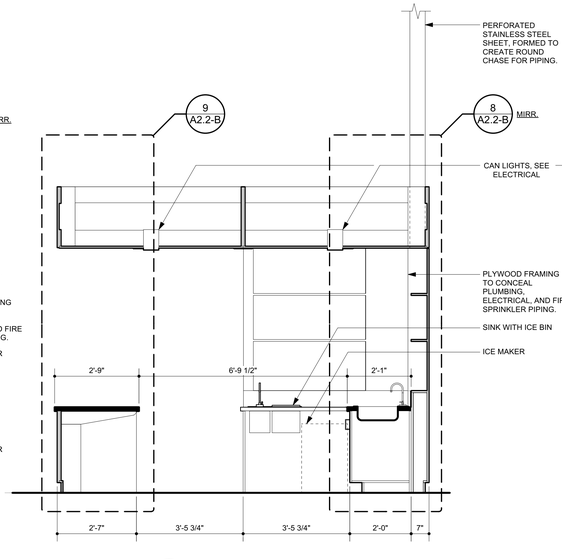
4 A2.1-B Left Side Elevation
Scale: 1/2" = 1'-0"



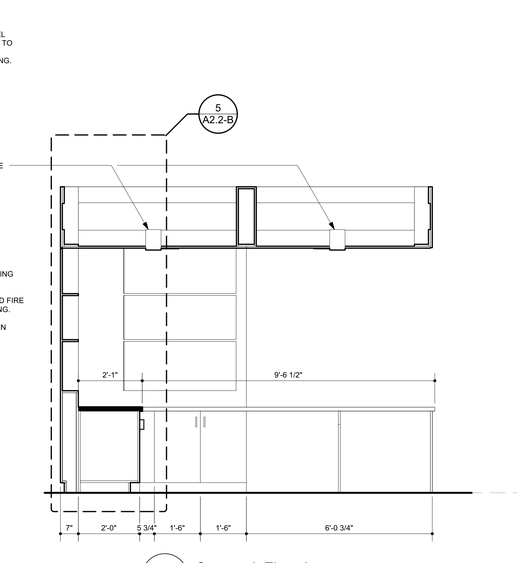
5 A2.1-B Casework Elevation
Scale: 1/2" = 1'-0"



6 A2.1-B Casework Elevation
Scale: 1/2" = 1'-0"



7 A2.1-B Casework Elevation
Scale: 1/2" = 1'-0"



8 A2.1-B Casework Elevation
Scale: 1/2" = 1'-0"

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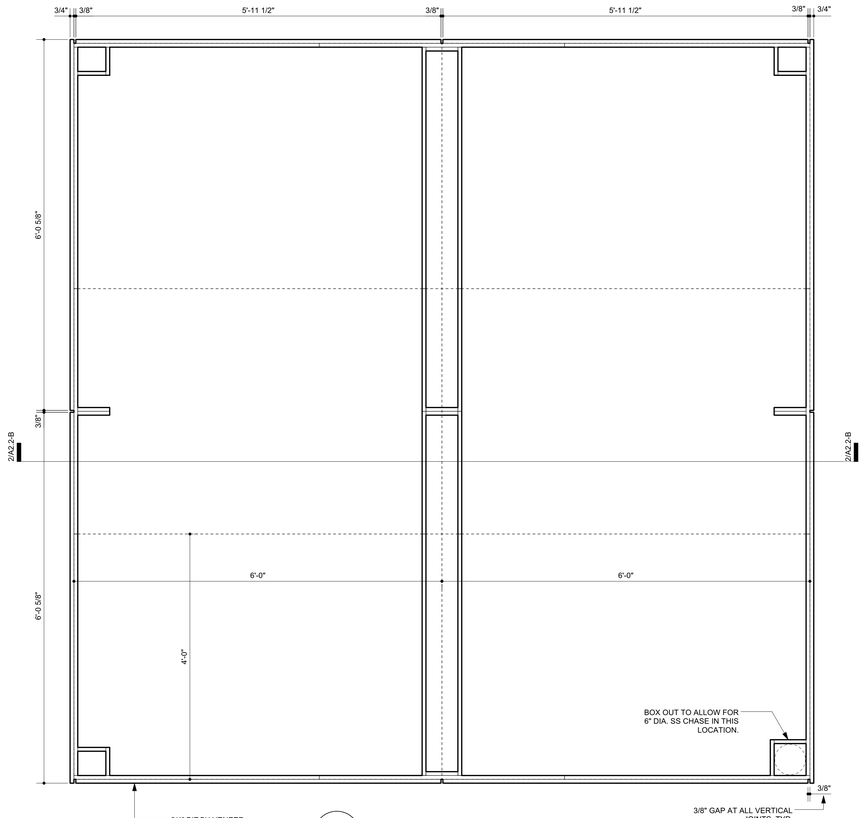
Issue Date: May 16, 2023

Alt. G-2 - Coffee Bar Elevations & Sections

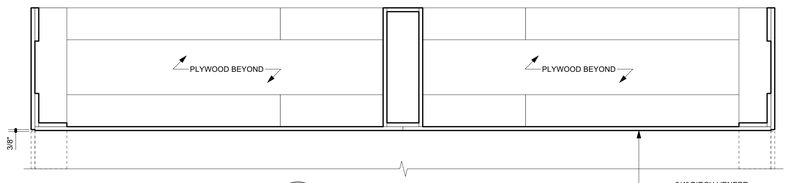
Rev.	Date	Notes

A2.1-B

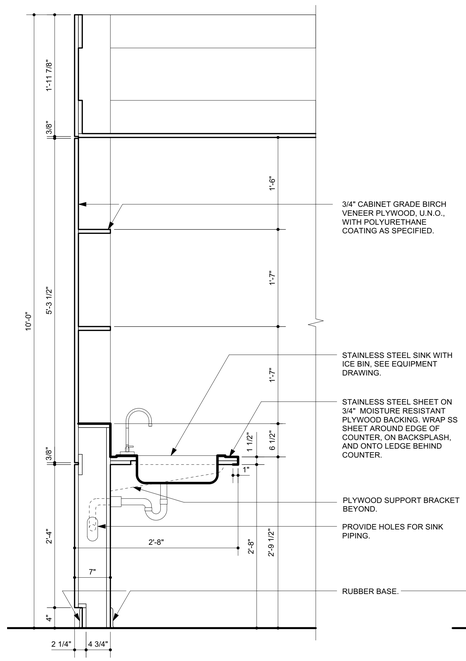
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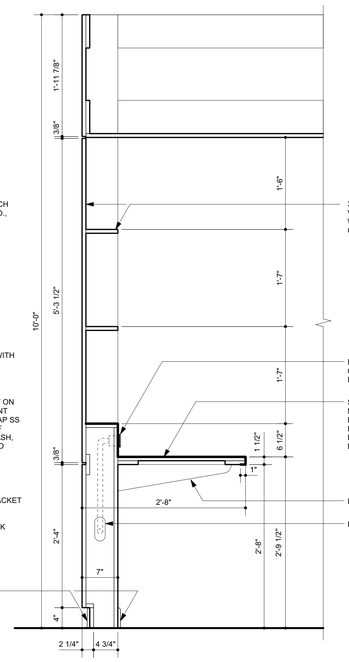
1 A2.2-B **Alt. G-2 Coffee Bar Ceiling Framing Plan**
Scale: 1" = 1'-0"



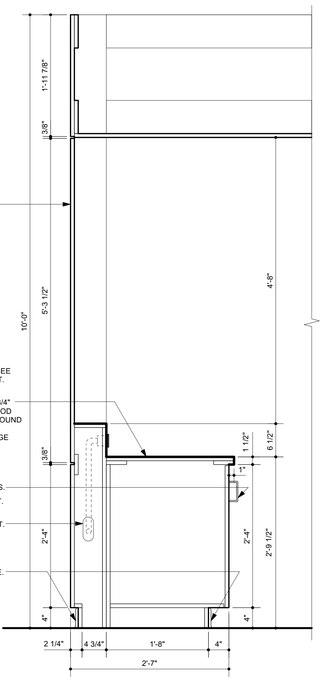
2 A2.2-B **Alt. G-2 Coffee Bar Ceiling Framing Section**
Scale: 1" = 1'-0"



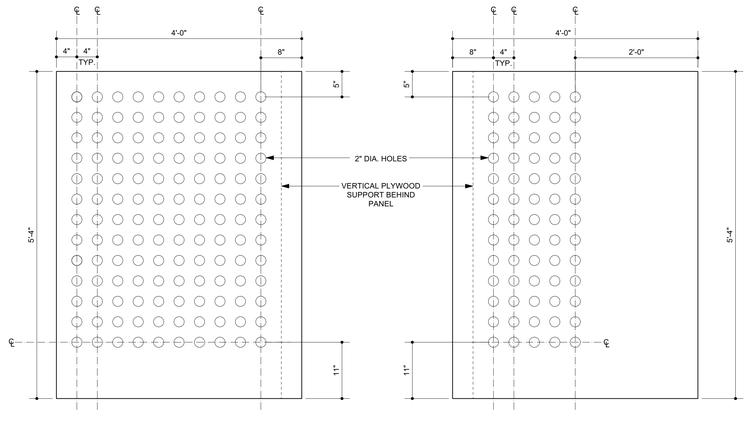
3 A2.2-B **Alt. G-2 Coffee Bar Section**
Scale: 1" = 1'-0"



4 A2.2-B **Alt. G-2 Coffee Bar Section**
Scale: 1" = 1'-0"

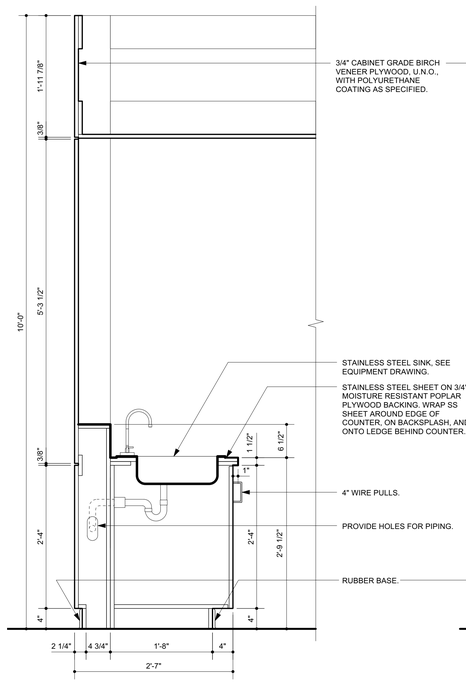


5 A2.2-B **Alt. G-2 Coffee Bar Section**
Scale: 1" = 1'-0"

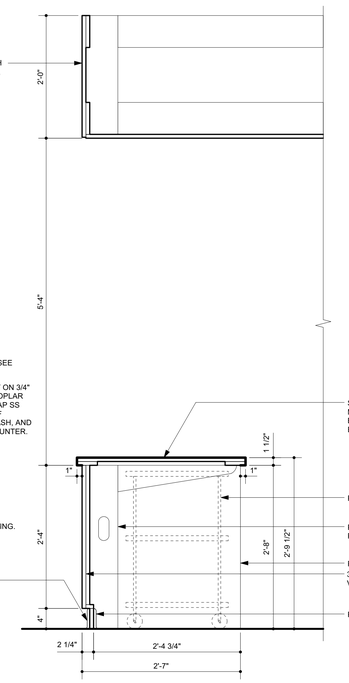


6 A2.2-B **Alt. G-2 - Hole Pattern Panel "A"**
Scale: 1" = 1'-0"

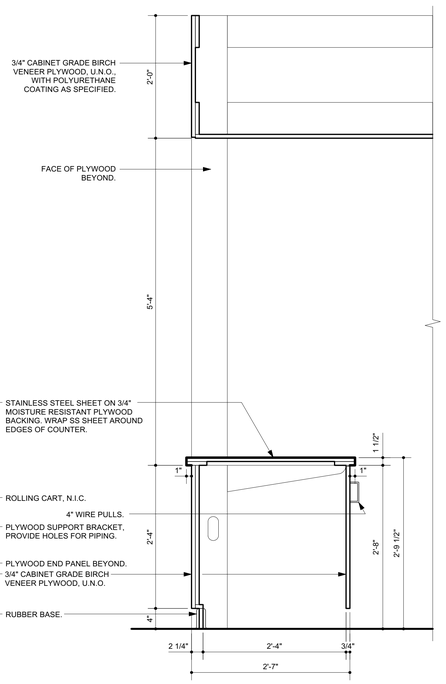
7 A2.2-B **Alt. G-2 - Hole Pattern Panel "B"**
Scale: 1" = 1'-0"



8 A2.2-B **Alt. G-2 Coffee Bar Section**
Scale: 1" = 1'-0"



9 A2.2-B **Alt. G-2 Coffee Bar Section**
Scale: 1" = 1'-0"



10 A2.2-B **Alt. G-2 Coffee Bar Section**
Scale: 1" = 1'-0"

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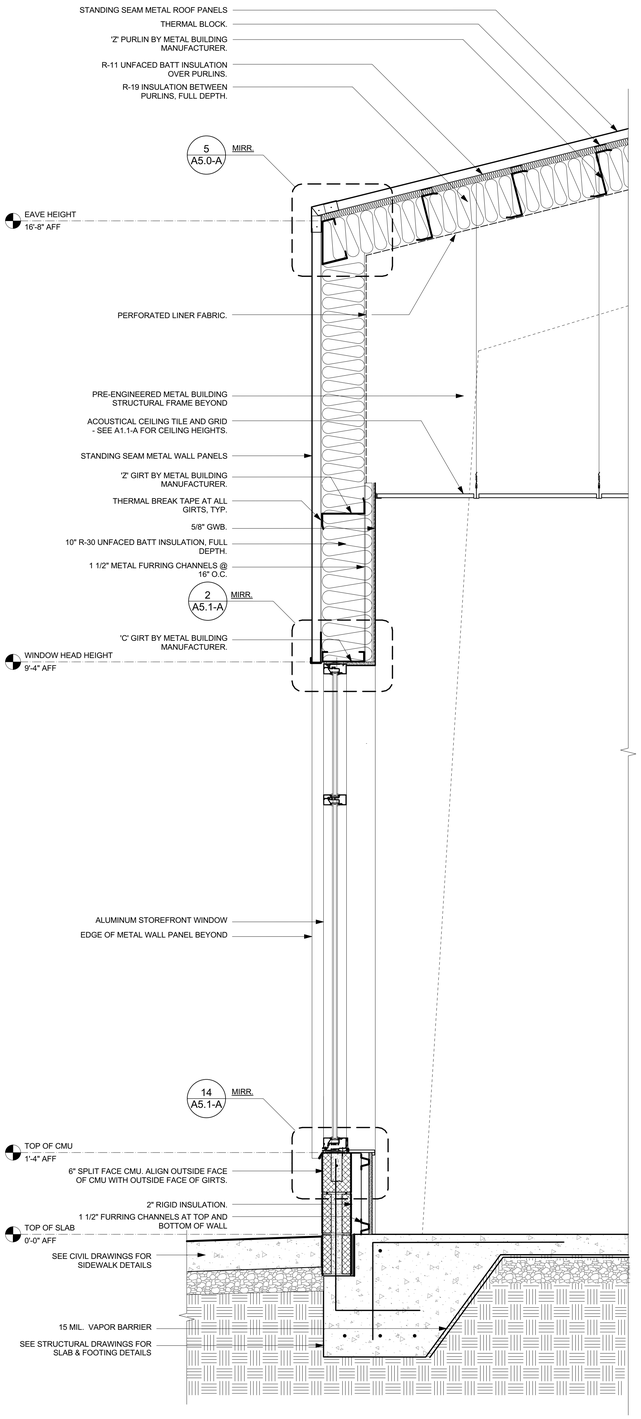
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Alt. G-2 - Coffee Bar Sections & Details

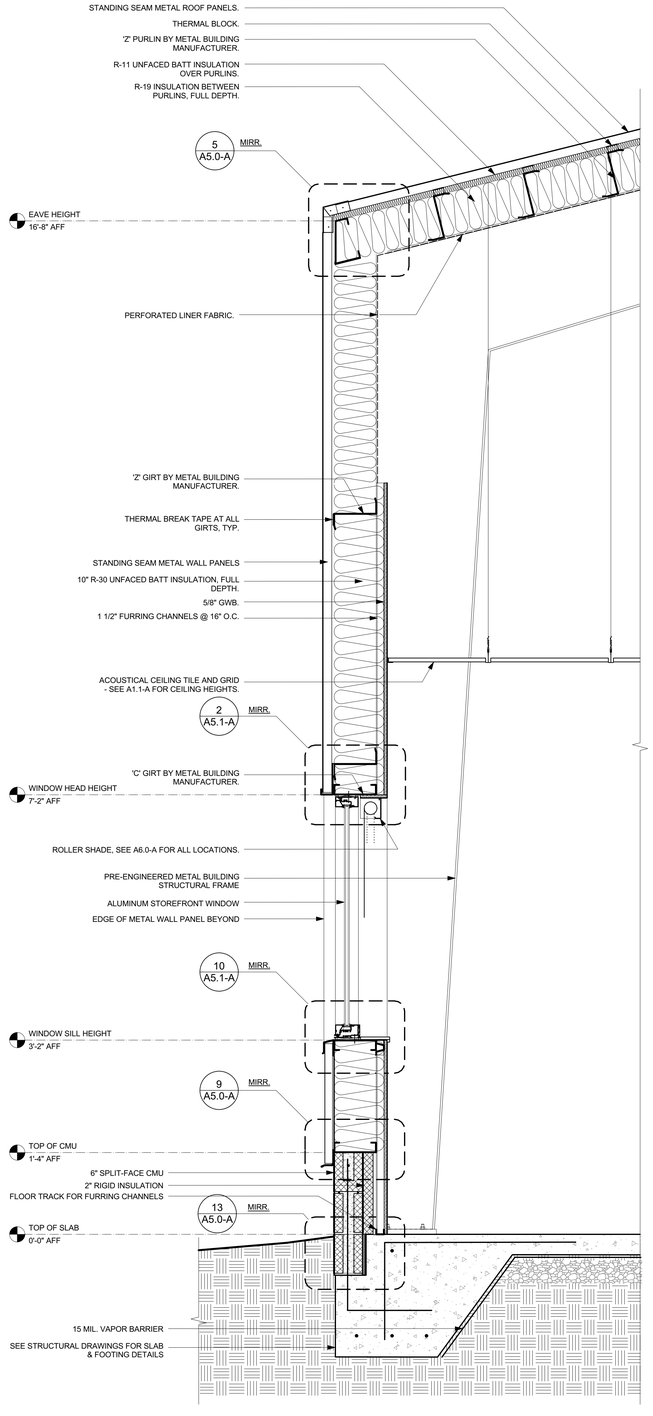
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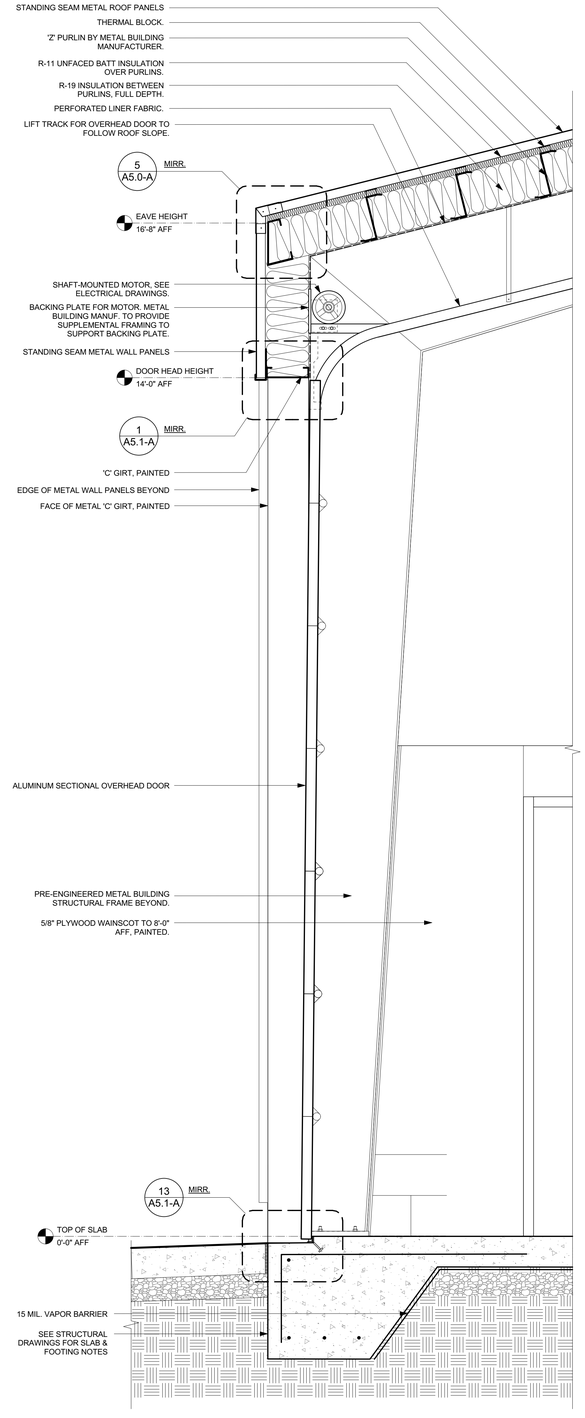
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1 A3.0-A **Exterior Wall Section**
Scale: 1" = 1'-0"



2 A3.0-A **Exterior Wall Section**
Scale: 1" = 1'-0"



3 A3.0-A **Exterior Wall Section**
Scale: 1" = 1'-0"

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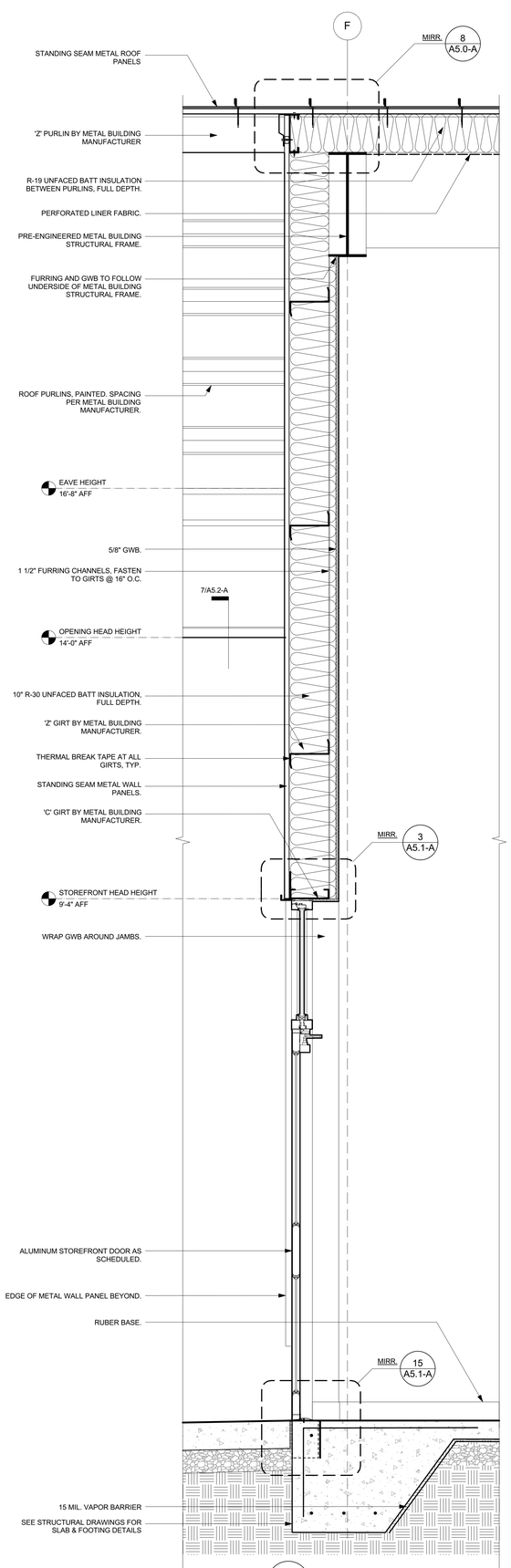
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Construction Trades
Addition Wall Sections

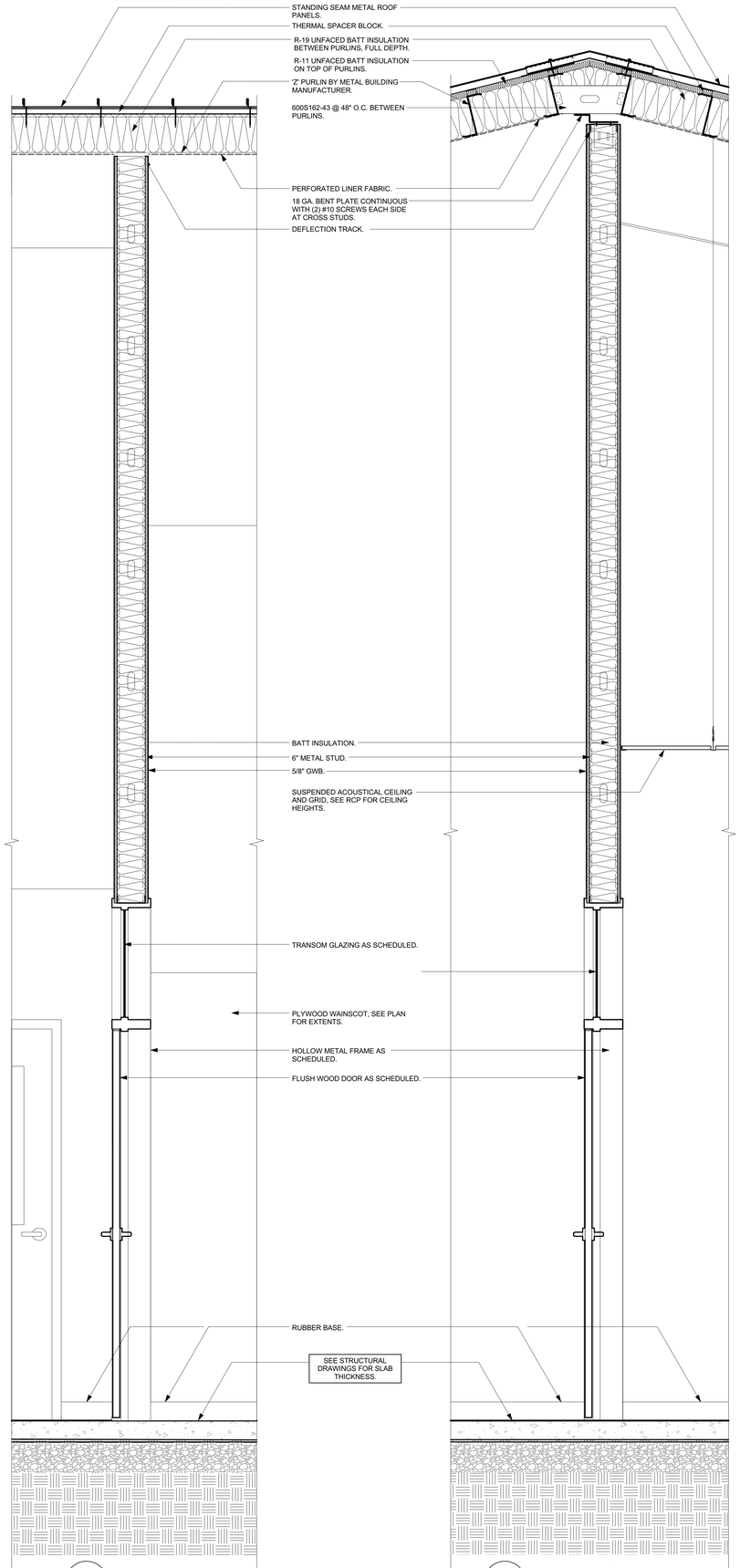
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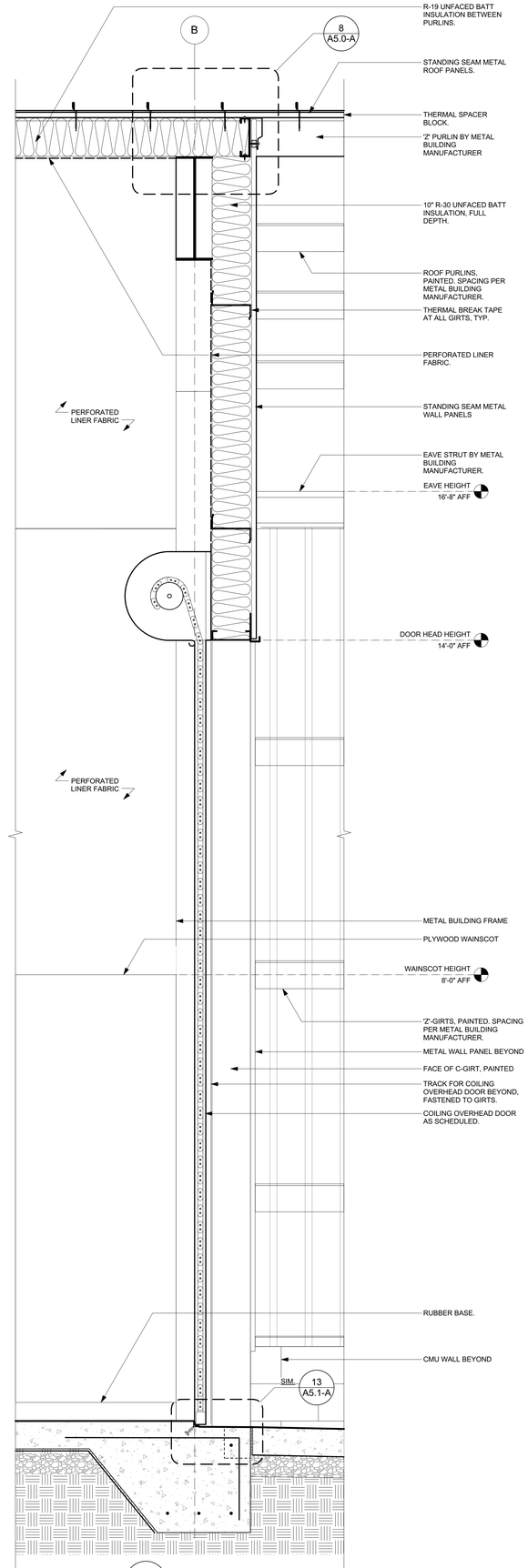


1 A3.1-A Exterior Wall Section
Scale: 1" = 1'-0"



2 A3.1-A Interior Wall Section
Scale: 1" = 1'-0"

3 A3.1-A Interior Wall Section
Scale: 1" = 1'-0"



4 A3.1-A Exterior Wall Section
Scale: 1" = 1'-0"

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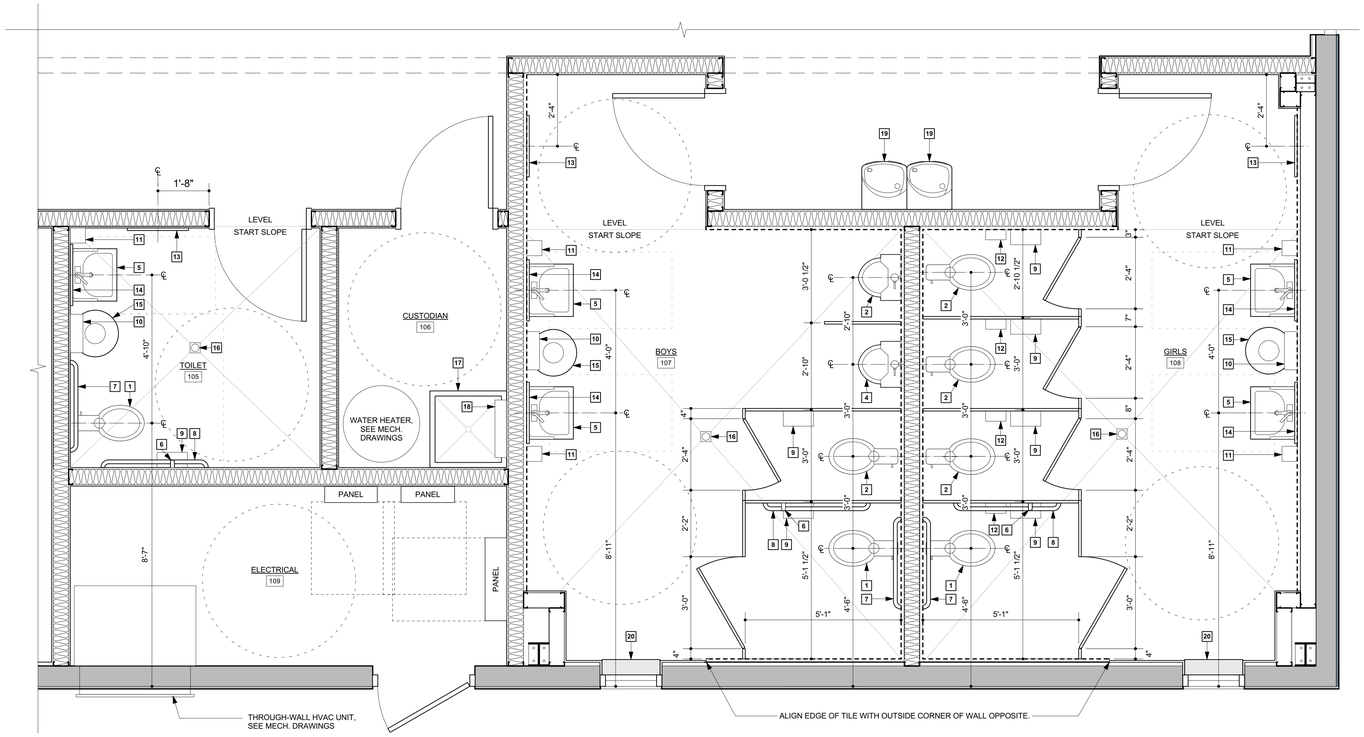
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Construction Trades Addition Wall Sections

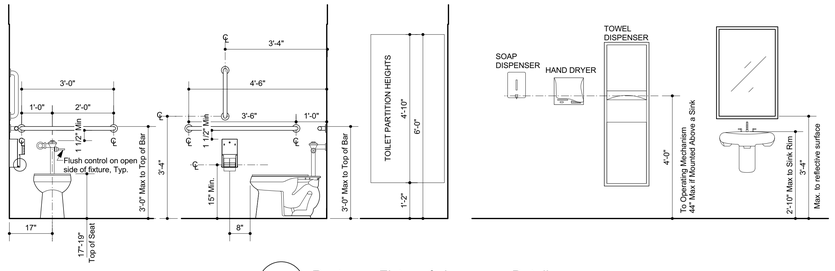
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A3.1-A

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1 A4.0-A **Enlarged Restroom Plan**
Scale: 1/2" = 1'-0"



2 A4.0-A **Restroom Fixture & Accessory Details**
Scale: 1/2" = 1'-0"

Note: Fixtures and Accessories shown are for dimensional purposes only and are not intended to accurately represent specified items. See drawings and specifications for fixture, accessory information, location and orientation.

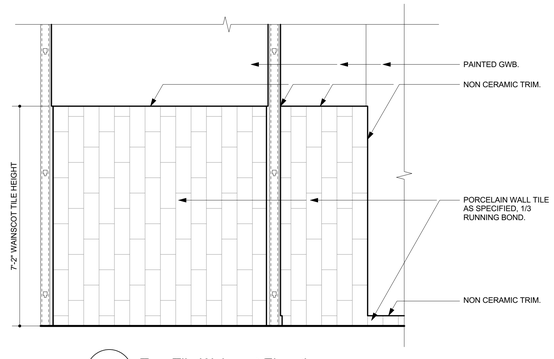
Accessory Key Notes

1	Accessible Toilet Fixture	12	Sanitary Napkin Disposal
2	Toilet Fixture	13	Full Length Mirror, Polished Steel
3	Accessible Urinal Fixture		
4	Urinal Fixture	14	Mirror, Glass
5	Accessible Sink	15	Waste Receptacle**
6	Grab Bar 18"	16	Floor Drain
7	Grab Bar 36"	17	Mop Sink
8	Grab Bar 42"	18	Shelf w. Mop/Broom Holder
9	Toilet Tissue Dispenser**	19	Drinking Fountain
10	Paper Towel Dispenser**	20	Solid Surface Window Stool
11	Soap Dispenser**		

** PROVIDED BY OWNER, INSTALLED BY CONTRACTOR.

Notes

1. Measure fixture dimensions from edge of slab to centerline of fixture.
2. Measure toilet stall dimensions from face of tile to centerline of partition.
3. Slope restroom floors to drain as indicated on enlarged plan, slope not to exceed 2%.
4. – – – – – – – – – Heavy dashed line shows extents of 7'-2" high porcelain tile wainscot.



3 A4.0-A **Typ. Tile Wainscot Elevation**
Scale: 1/2" = 1'-0"

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CBHF Engineers, PLLC

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STATE OF NC ENGINEERING FIRM LICENSE NO. P-1642
PO BOX 1947 Leland, NC 28451
910.682.7750

FOODESIGN The Foodservice Design Agency

SAWYER SHERWOOD & ASSOCIATE, P.C. ARCHITECTURAL CORPORATION 52349 NORTH CAROLINA WILMINGTON, NC

DOUGLAS K. SHERWOOD Registered Architect 10075 North Carolina WILMINGTON, NC
6/16/23

NHCS Project No.
22-90458

Southeast Area
Technical High
School
SCIF Grant Addition

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

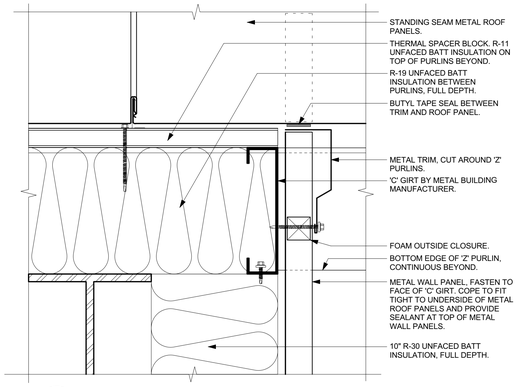
Issue Date: May 16, 2023

Construction Trades
Addition Enlarged Plan

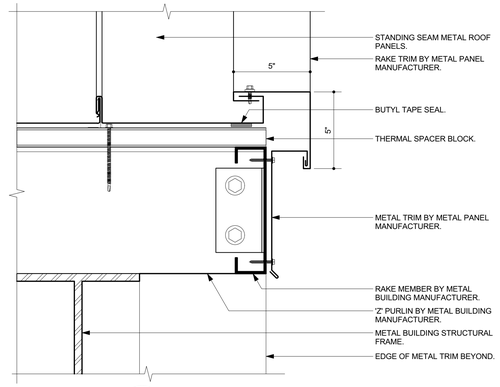
Rev.	Date	Notes

A4.0-A

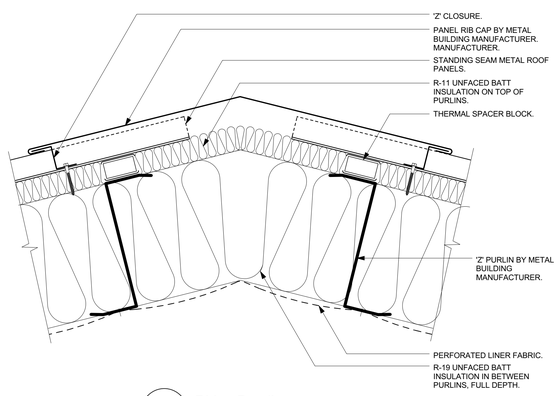
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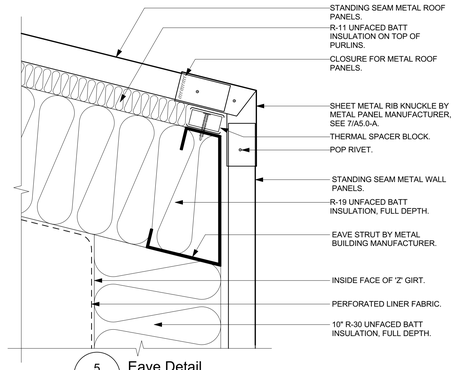
1 A5.0-A **Rake Detail @ Top of Exterior Wall**
Scale: 3" = 1'-0"



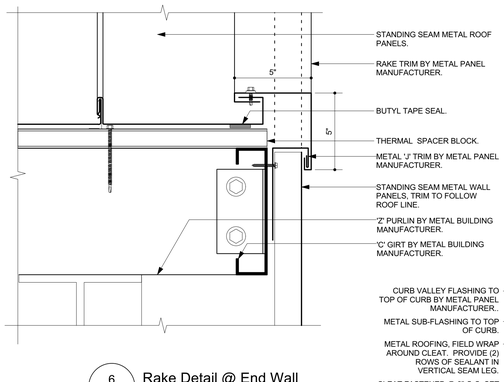
2 A5.0-A **Typ. Rake Detail**
Scale: 3" = 1'-0"



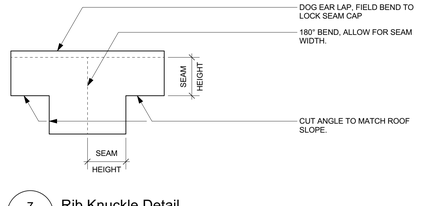
3 A5.0-A **Ridge Detail**
Scale: 3" = 1'-0"



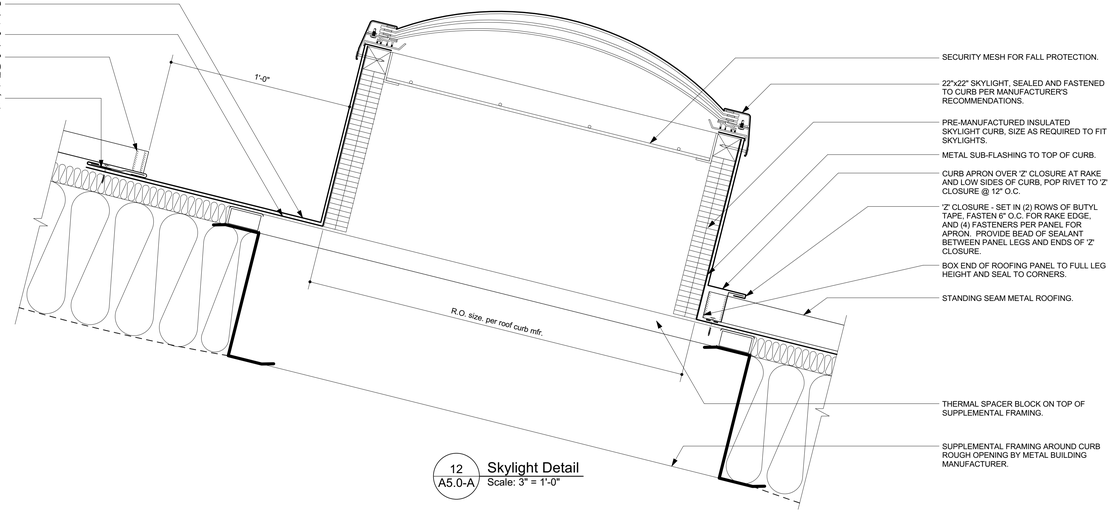
5 A5.0-A **Eave Detail**
Scale: 3" = 1'-0"



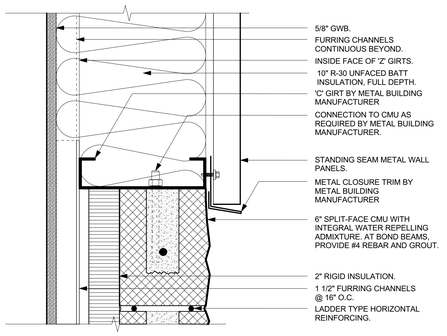
6 A5.0-A **Rake Detail @ End Wall**
Scale: 3" = 1'-0"



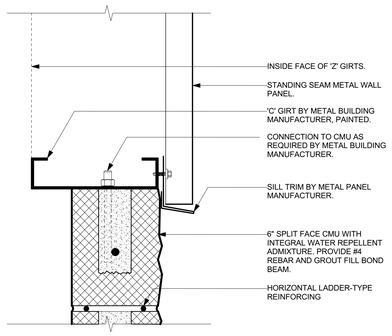
7 A5.0-A **Rib Knuckle Detail**
Scale: 3" = 1'-0"



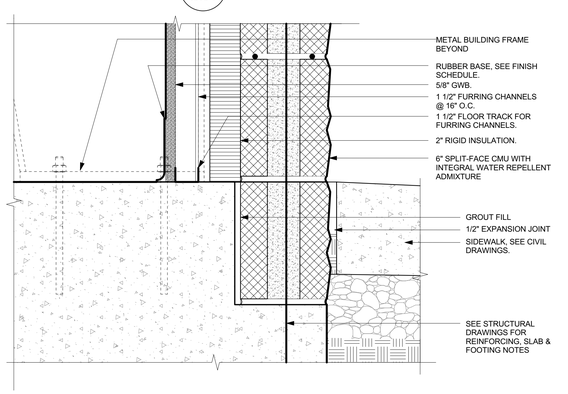
12 A5.0-A **Skylight Detail**
Scale: 3" = 1'-0"



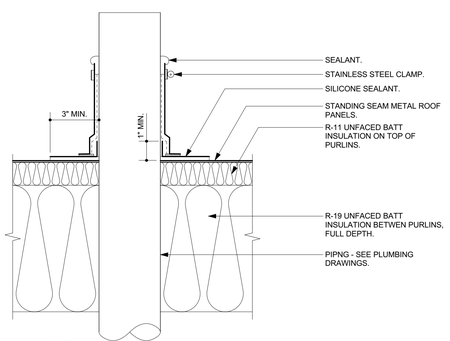
9 A5.0-A **CMU to Metal Building Connection**
Scale: 3" = 1'-0"



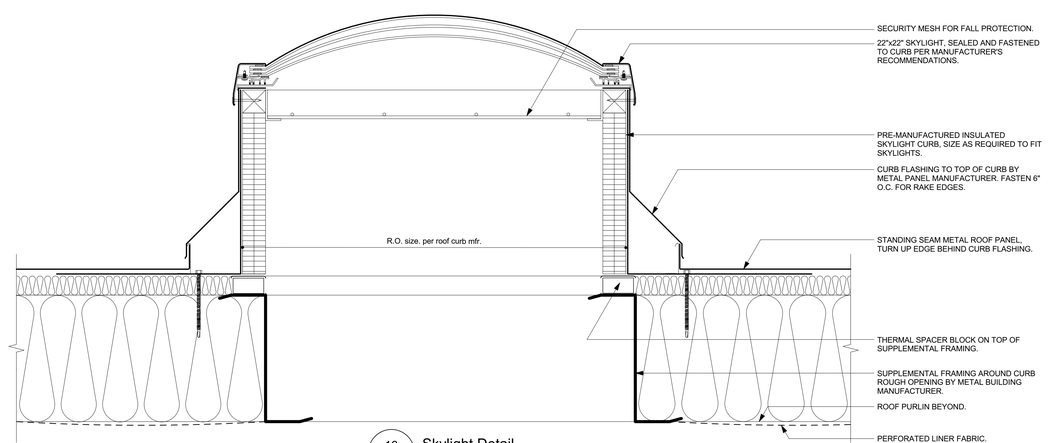
10 A5.0-A **CMU to End Wall Connection**
Scale: 3" = 1'-0"



13 A5.0-A **Base of Wall Detail**
Scale: 3" = 1'-0"



14 A5.0-A **Typ. Piping Through Roof Detail**
Scale: 3" = 1'-0"



16 A5.0-A **Skylight Detail**
Scale: 3" = 1'-0"

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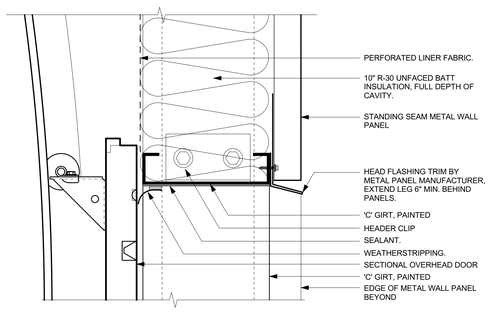
Issue Date: May 16, 2023

Construction Trades Addition Details

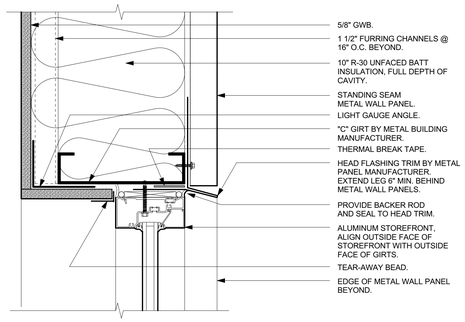
Rev.	Date	Notes

A5.0-A

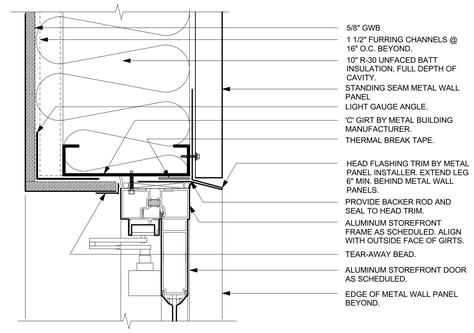
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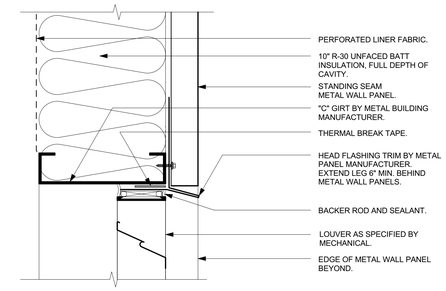
1 A5.1-A Garage Door Head
Scale: 3" = 1'-0"



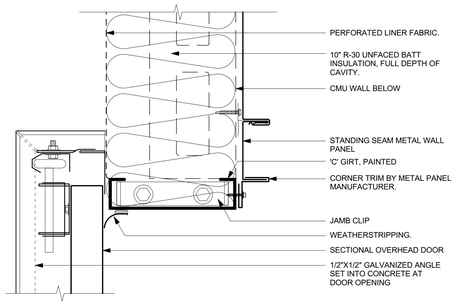
2 A5.1-A Storefront Head
Scale: 3" = 1'-0"



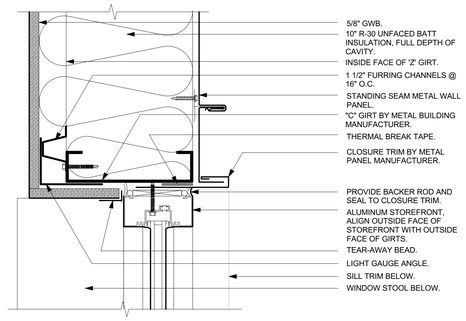
3 A5.1-A Exterior Door Head
Scale: 3" = 1'-0"



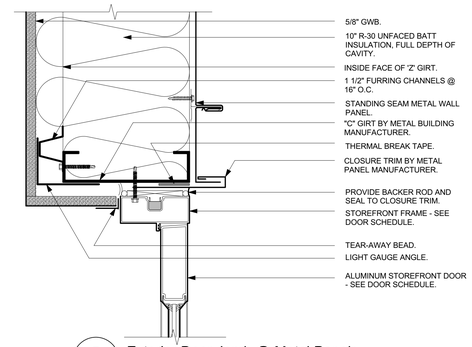
4 A5.1-A HVAC Louver Head Detail
Scale: 3" = 1'-0"



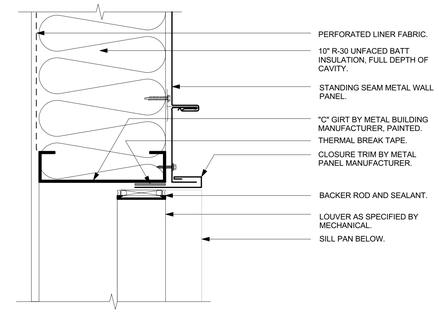
5 A5.1-A Garage Door Jamb @ Metal Panels
Scale: 3" = 1'-0"



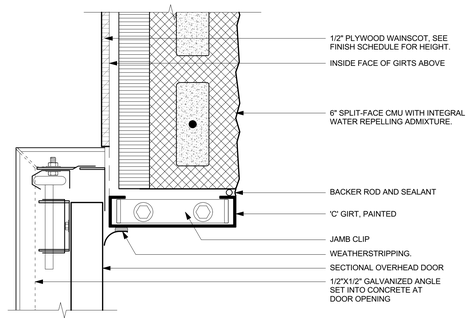
6 A5.1-A Storefront Jamb @ Metal Panels
Scale: 3" = 1'-0"



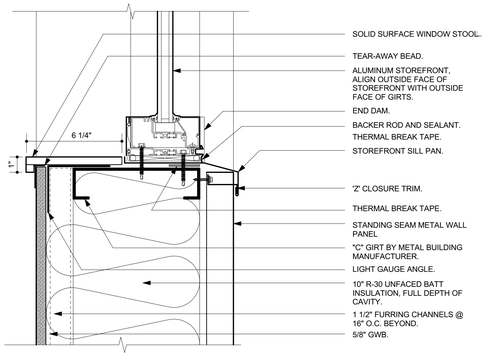
7 A5.1-A Exterior Door Jamb @ Metal Panels
Scale: 3" = 1'-0"



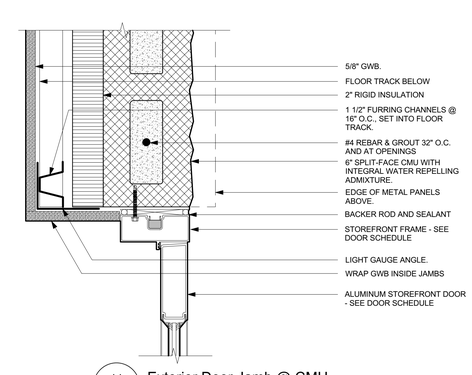
8 A5.1-A HVAC Louver Jamb Detail
Scale: 3" = 1'-0"



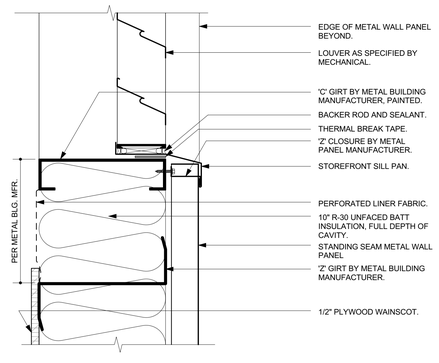
9 A5.1-A Garage Door Jamb @ CMU
Scale: 3" = 1'-0"



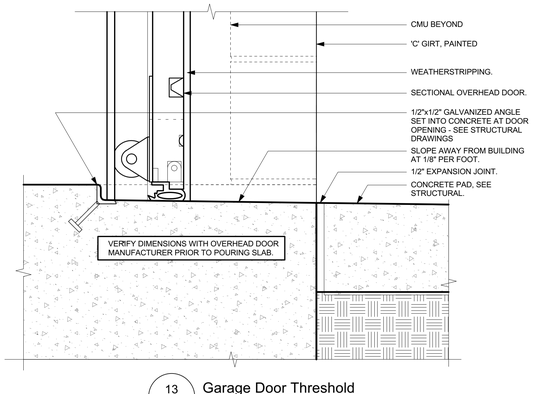
10 A5.1-A Storefront Sill @ Metal Panels
Scale: 3" = 1'-0"



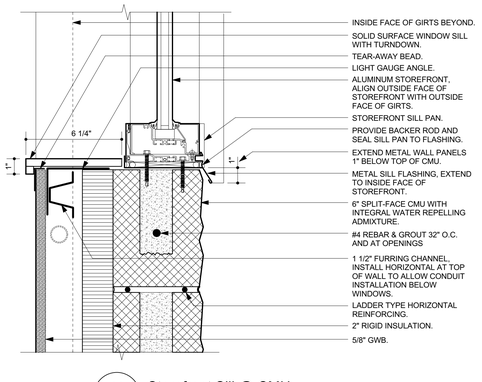
11 A5.1-A Exterior Door Jamb @ CMU
Scale: 3" = 1'-0"



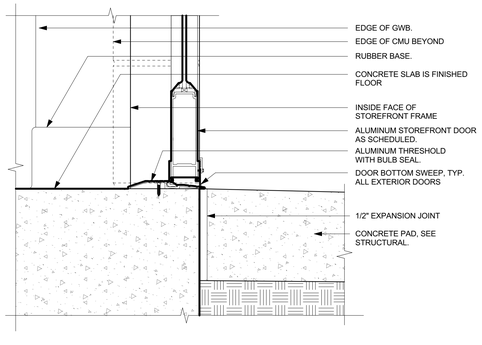
12 A5.1-A HVAC Louver Sill Detail
Scale: 3" = 1'-0"



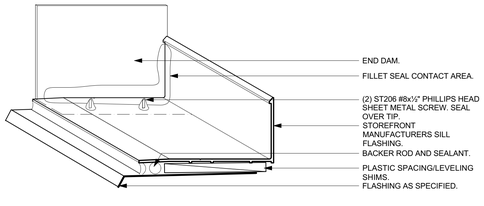
13 A5.1-A Garage Door Threshold
Scale: 3" = 1'-0"



14 A5.1-A Storefront Sill @ CMU
Scale: 3" = 1'-0"



15 A5.1-A Exterior Door Threshold
Scale: 3" = 1'-0"



16 A5.1-A Standard Sill Pan Detail
Scale: Half Actual Size

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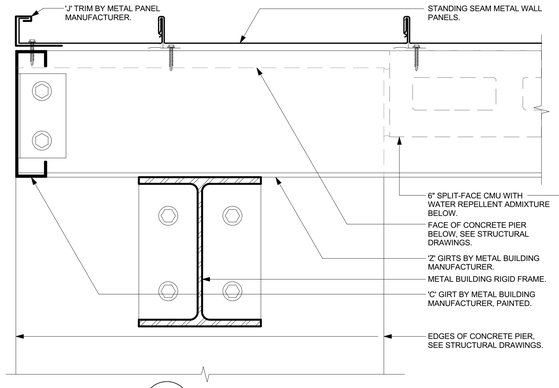
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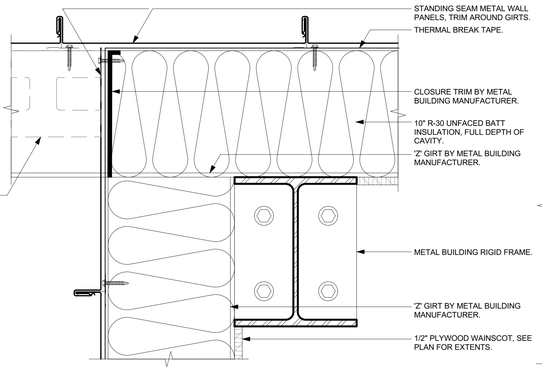
Rev.	Date	Notes

A5.1-A

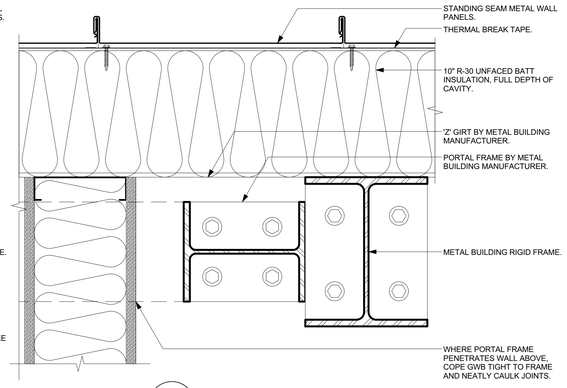
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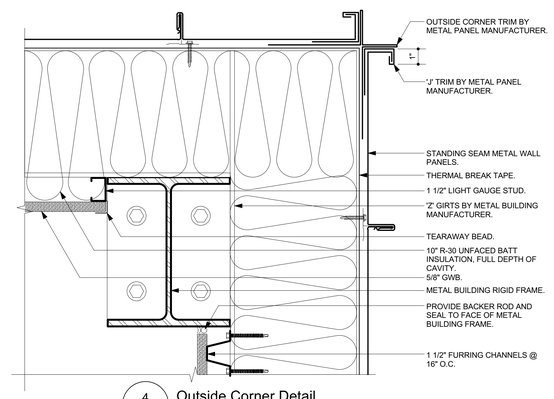
1 A5.2-A — Exterior Wall Termination Detail
Scale: 3" = 1'-0"



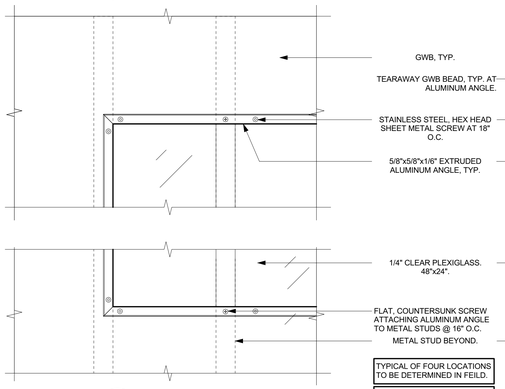
2 A5.2-A — Outside Corner @ End Wall
Scale: 3" = 1'-0"



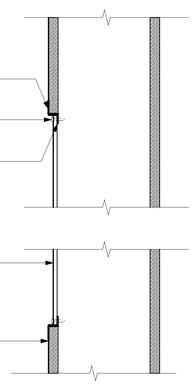
3 A5.2-A — Portal Frame Detail
Scale: 3" = 1'-0"



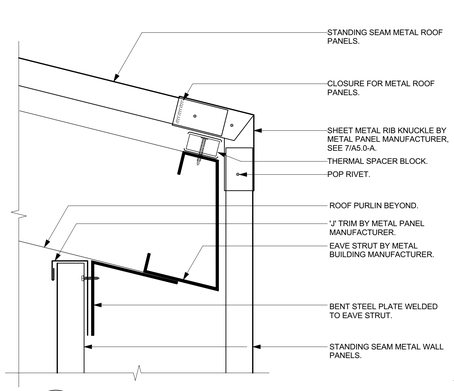
4 A5.2-A — Outside Corner Detail
Scale: 3" = 1'-0"



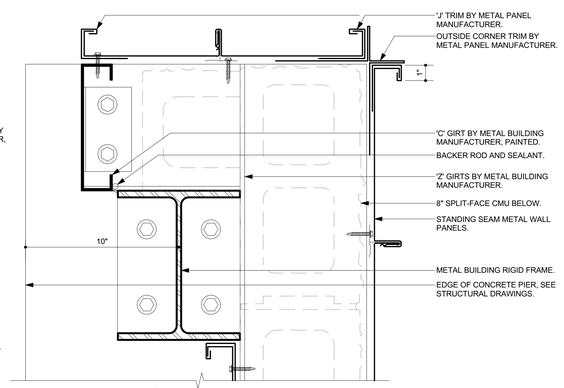
5 A5.2-A — Building System Reveal Detail
Scale: 3" = 1'-0"



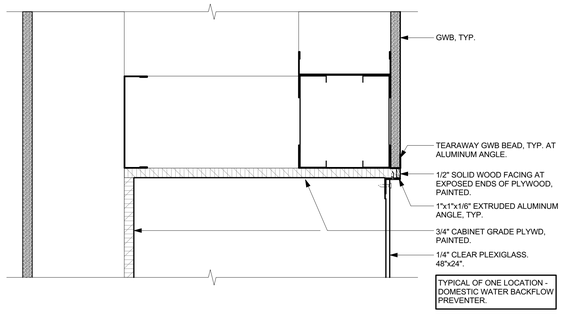
6 A5.2-A — Building System Reveal Detail
Scale: 3" = 1'-0"



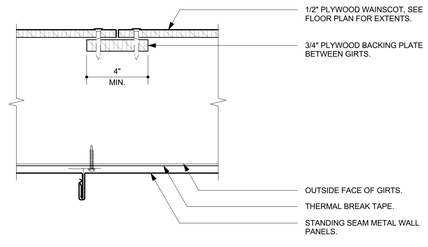
7 A5.2-A — Eave @ Wing Walls
Scale: 3" = 1'-0"



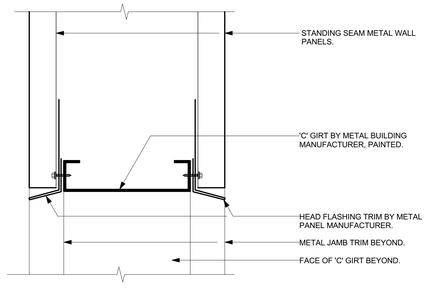
8 A5.2-A — Corner Detail @ Wing Wall
Scale: 3" = 1'-0"



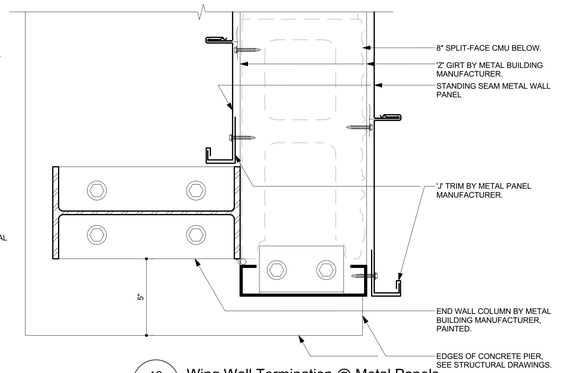
9 A5.2-A — Backflow Preventer Reveal Detail
Scale: 3" = 1'-0"



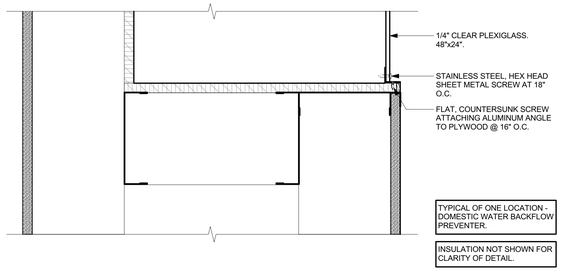
10 A5.2-A — Plywood Backing Detail
Scale: 3" = 1'-0"



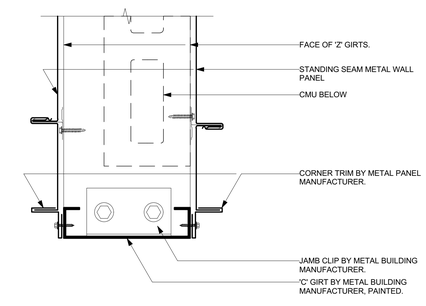
11 A5.2-A — Framed Opening Head Detail
Scale: 3" = 1'-0"



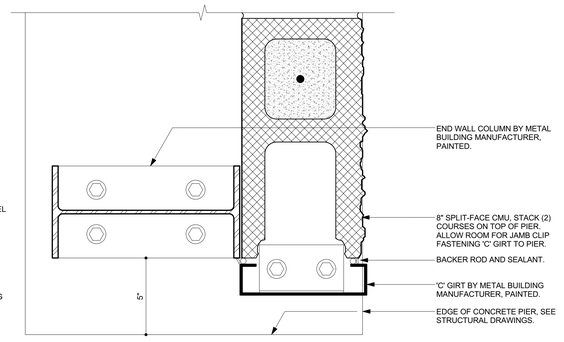
12 A5.2-A — Wing Wall Termination @ Metal Panels
Scale: 3" = 1'-0"



13 A5.2-A — Backflow Preventer Reveal Detail
Scale: 3" = 1'-0"



15 A5.2-A — Framed Opening Jamb Detail
Scale: 3" = 1'-0"



16 A5.2-A — Wing Wall Termination @ CMU
Scale: 3" = 1'-0"

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SAWYER SHERWOOD & ASSOCIATE, P.C. — 52349 — NORTH CAROLINA — WILMINGTON, NC

DOUGLAS K. SHERWOOD — Registered Architect — 10075 — North Carolina — WILMINGTON, NC — 6-1623

NHCS Project No. 22-90458

Southeast Area Technical High School
SCIF Grant Addition

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

Issue Date: May 16, 2023

Construction Trades Addition Details

Rev.	Date	Notes

A5.2-A

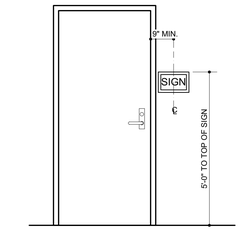
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DOOR SCHEDULE

	Door								Frame				Hardware	Signage		
ID #	Width	Height	Thickness	Configuration	Swing Operation	Type	Material	Glaz. Style	Jamb Thickness	Jamb Depth	Type	Material	HW Set	Sign Type	Sign Text	Remarks
100A	3'0"	7'0"	2 1/4"	Swing	Single	A	ALUM	IG-1	0"	4 1/2"	A	ALUM	CT01A	B	EXIT	*Note door leaf thickness, see specifications
100B	3'0"	7'0"	2 1/4"	Swing	Single	A	ALUM	IG-1	0"	4 1/2"	A	ALUM	CT01B	-	-	*Note door leaf thickness, see specifications
101A	6'0"	7'0"	1 3/4"	Swing	Double Bi-part	D	WD	GL-1	2"	8 1/4"	HM2	HM	CT09	A	CLASSROOM	Frame to be Galvannealed
101B	3'0"	7'0"	1 3/4"	Swing	Single	B	ALUM	-	2"	4 1/2"	HM1	HM	CT11	A	OFFICE	Frame to be Galvannealed
102A	6'0"	7'0"	1 3/4"	Swing	Double Bi-part	D	WD	GL-1	2"	8 1/4"	HM2	HM	CT09	A	CLASSROOM	Frame to be Galvannealed
102B	3'0"	7'0"	1 3/4"	Swing	Single	B	ALUM	-	2"	4 1/2"	HM1	HM	CT11	A	OFFICE	Frame to be Galvannealed
103A	6'0"	7'0"	1 3/4"	Swing	Double Bi-part	D	WD	GL-1	2"	8 1/4"	HM2	HM	CT10	A	SHOP	Frame to be Galvannealed
103B	3'0"	7'0"	1 3/4"	Swing	Single	B	ALUM	-	2"	4 1/2"	B	ALUM	CT07	B	EXIT	
103C	12'0"	14'2"	1 3/4"	Overhead	Single	-	-	-	2"	8 1/4"	-	-	-	-	-	See A5.1-A for overhead door jamb details
103D	3'0"	7'0"	1 3/4"	Swing	Single	B	ALUM	-	2"	4 1/2"	B	ALUM	CT07	B	EXIT	
103E	12'0"	14'0"	1 3/4"	Overhead	Single	E	ALUM	IG-1	2"	8 1/4"	-	-	-	-	-	See A5.1-A for overhead door jamb details
104A	3'0"	7'0"	1 3/4"	Swing	Single	D	WD	GL-1	2"	8 1/4"	HM1	HM	CT05	A	OFFICE	Frame to be Galvannealed
104B	3'0"	7'0"	1 3/4"	Swing	Single	D	WD	GL-1	2"	8 1/4"	HM1	HM	CT06	A	OFFICE	Frame to be Galvannealed
105A	3'0"	7'0"	1 3/4"	Swing	Single	C	WD	-	2"	8 1/4"	HM1	HM	CT04	C	TOILET	Frame to be Galvannealed
106A	3'0"	7'0"	1 3/4"	Swing	Single	C	WD	-	2"	8 1/4"	HM1	HM	CT03	A	CUSTODIAN	Frame to be Galvannealed
107A	3'0"	7'0"	1 3/4"	Swing	Single	C	WD	-	2"	8 1/4"	HM1	HM	CT02	C	BOYS	Frame to be Galvannealed
108A	3'0"	7'0"	1 3/4"	Swing	Single	C	WD	-	2"	8 1/4"	HM1	HM	CT02	C	GIRLS	Frame to be Galvannealed
109A	3'0"	7'0"	1 3/4"	Swing	Single	B	ALUM	-	2"	4 1/2"	B	ALUM	CT08	A	ELECTRICAL	

FINISH SCHEDULE

ID	ROOM NAME	FLOOR FINISH	BASE MATERIAL	NORTH WALL FINISH	EAST WALL FINISH	SOUTH WALL FINISH	WEST WALL FINISH	CEILING	CEILING HT	REMARKS
100	HALL	CONC Sealed	RB	GWB Painted	GWB Painted	GWB Painted	GWB Painted	OTS	Varies	
101	CLASSROOM	CONC Sealed	RB	GWB Painted	GWB Painted	GWB Painted	GWB Painted	ACT	12'-0"	
102	CLASSROOM	CONC Sealed	RB	GWB Painted	GWB Painted	GWB Painted	GWB Painted	ACT	12-0"	
103	CONSTRUCTION TRADES	CONC Sealed	RB	PLWD Painted	PLWD Painted/ GWB Painted	PLWD Painted	PLWD Painted	OTS	Varies	Painted 1/2" plywood wainscot to 8'-0" AFF
104	OFFICE	CONC Sealed	RB	GWB Painted	GWB Painted	GWB Painted	GWB Painted	ACT	9'-6"	
105	TOILET	CONC Sealed	PT	GWB Epoxy Painted	GWB Epoxy Painted	GWB Epoxy Painted	GWB Epoxy Painted	ACT	9'-6"	
106	CUSTODIAN	CONC Sealed	PT	GWB Epoxy Painted	GWB Epoxy Painted	GWB Epoxy Painted	GWB Epoxy Painted	ACT	9'-6"	
107	BOYS	CONC Sealed	PT	PT/ GWB Epoxy Painted	PT/ GWB Epoxy Painted	PT/ GWB Epoxy Painted	PT/ GWB Epoxy Painted	ACT	9'-6"	Porcelain tile wainscot to 7'-2" AFF, see 1/A4.0-A for extents.
108	GIRLS	CONC Sealed	PT	PT/ GWB Epoxy Painted	PT/ GWB Epoxy Painted	PT/ GWB Epoxy Painted	PT/ GWB Epoxy Painted	ACT	9'-6"	Porcelain tile wainscot to 7'-2" AFF, see 1/A4.0-A for extents.
109	ELECTRICAL	CONC Sealed	-	GWB Painted	GWB Painted	-	GWB Painted	OTS	Varies	



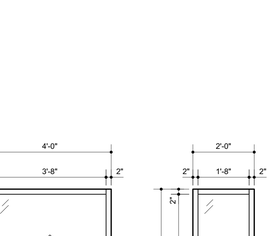
1 A6.0-A Signage Mounting Detail
Scale: 1/2" = 1'-0"

SCHEDULE KEY:

ACT - Acoustical Ceiling Tile
ALUM - Alumium
CONC - Concrete
ETR - Existing To Remain
GWB - Gypsum Wallboard
HM - Hollow Metal
OTS - Open to Structure
PLWD - Plywood
PT - Porcelain Tile
RB - Rubber Base
WD - Wood

GLAZING TYPES

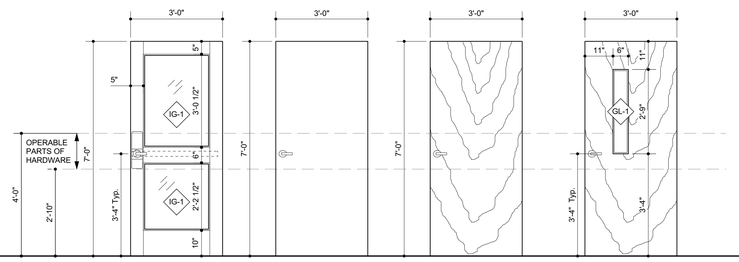
IG-1	1" INSULATED, TEMPERED GREY
IG-2	1/2" INSULATED, TEMPERED GREY
IG-3	1" INSULATED, TEMPERED OBSCURE
IG-4	1" INSULATED, TEMPERED CLEAR
GL-1	1/4" MONOLITHIC, TEMPERED CLEAR



NOTE: GIRLS RESTROOM SIGNAGE SHOWN AS AN EXAMPLE. PROVIDE APPROPRIATE SYMBOLS TO MATCH RESTROOM AS INDICATED ON DOOR SCHEDULE.

2 A6.0-A Signage Details
Scale: Half Actual Size

DOOR TYPES

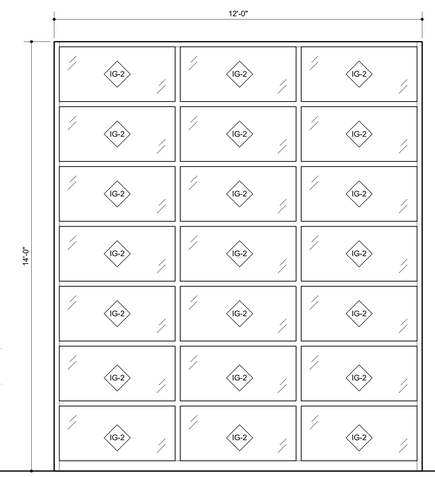


Door Type 'A'

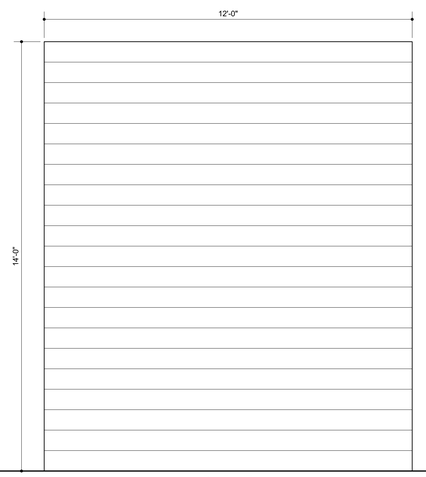
Door Type 'B'

Door Type 'C'

Door Type 'D'

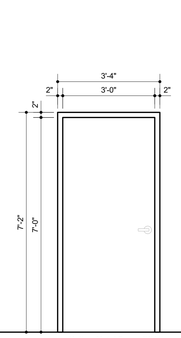


Door Type 'E'

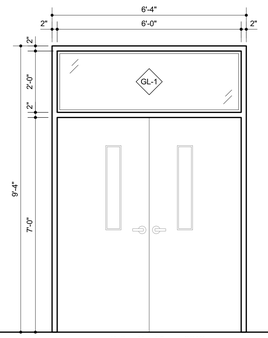


Door Type 'F'

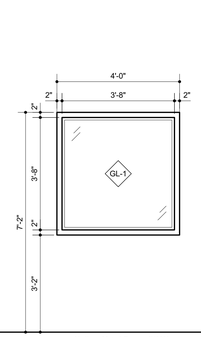
HOLLOW METAL FRAMES



Hollow Metal Frame 'HM1'
(6) TYP.

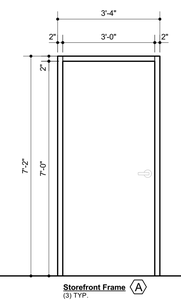


Hollow Metal Frame 'HM2'
(3) TYP.

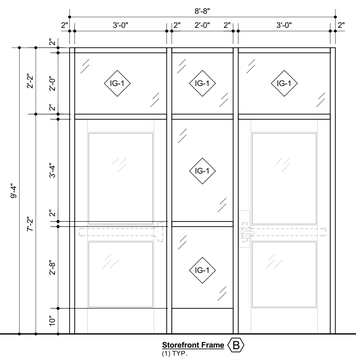


Hollow Metal Frame 'HM3'
(1) TYP.

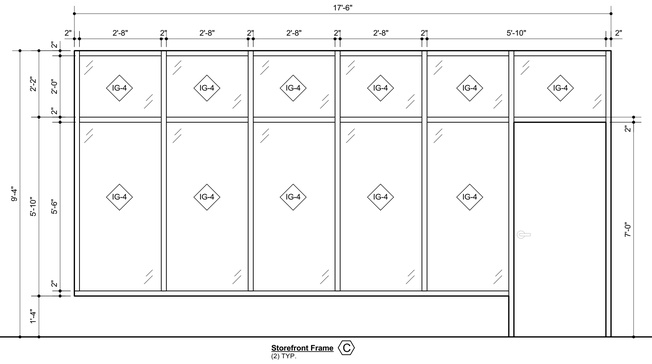
STOREFRONT FRAMES



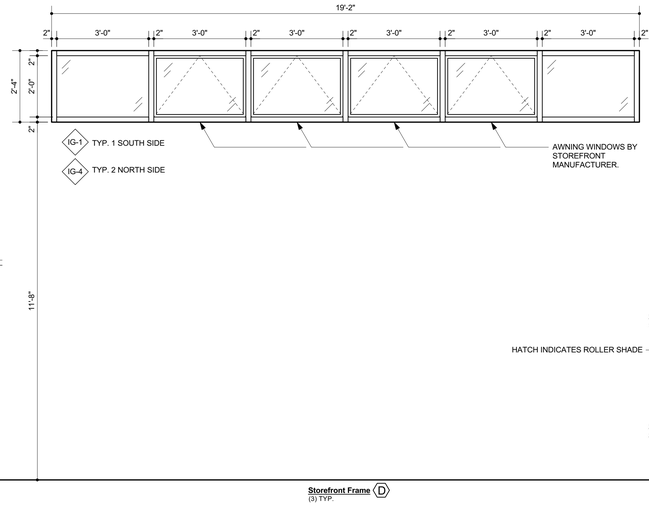
Storefront Frame A
(3) TYP.



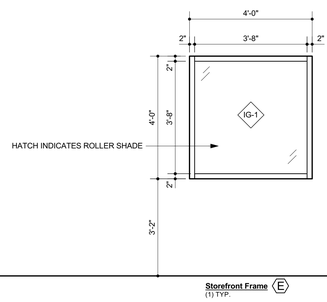
Storefront Frame B
(1) TYP.



Storefront Frame C
(2) TYP.



Storefront Frame D
(3) TYP.



Storefront Frame E
(1) TYP.

Storefront Frame F
(2) TYP.

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DOUGLAS K. SHERWOOD Registered Architect 10078 NORTH CAROLINA WILMINGTON, NC
6-1623

NHCS Project No.
22-90458

Southeast Area Technical High School
SCIF Grant Addition

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

Issue Date: May 16, 2023

Construction Trades Addition Schedules, Door & Window Elevation

Rev.	Date	Notes

A6.0-A

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DOOR SCHEDULE - ALT. G-1

	Door								Frame				Fire Rating		Hardware	Signage		
ID #	Width	Height	Thickness	Configuration	Swing Operation	Type	Material	Glaz. Style	Jamb Thickness	Jamb Depth	Type	Material	Door Rating	Frame Rating	HW Set	Sign Type	Sign Text	Remarks
303A	3'0"	7'0"	1 3/4"	Swing	Single	ETR	WD	-	2"	6"	FR1	HM	20 MIN.	1 HR	ETR	A + B	CULINARY ARTS / EXIT	Re-use existing fire-rated door and hardware, provide new fire-rated frame.
303B	3'0"	7'0"	1 3/4"	Swing	Single	ETR	WD	-	2"	6"	HM1	HM	-	-	ETR	A	DRY STORAGE	Re-use existing door and hardware, provide new frame.
303C	3'0"	7'0"	1 3/4"	Swing	Single	ETR	ALUM	ETR	2"	4 1/2"	ETR	ETR	-	-	ETR	B	EXIT	Door, hardware and frame to remain, add signage
303D	3'4"	7'2"	1 3/4"	Swing	Single	ETR	ALUM	ETR	2"	4 1/2"	ETR	ETR	-	-	ETR	B	EXIT	Door, hardware and frame to remain, add signage

SCHEDULE KEY:

ACT - Acoustical Ceiling Tile
ALUM - Alumium
CONC - Concrete
ETR - Existing To Remain
GWB - Gypsum Wallboard
HM - Hollow Metal
OTS - Open to Structure
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PT - Porcelain Tile
RB - Rubber Base
WD - Wood

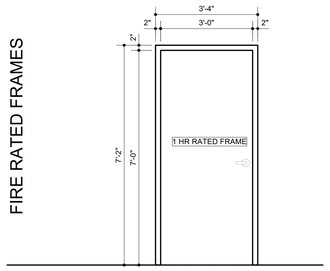
GLAZING TYPES

IG-5 — 1" INSULATED, TEMPERED MIRRORED BRONZE

FINISH SCHEDULE - ALT. G-1

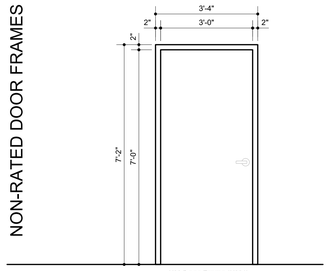
ID	ROOM NAME	FLOOR FINISH	BASE MATERIAL	NORTH WALL FINISH	EAST WALL FINISH	SOUTH WALL FINISH	WEST WALL FINISH	CEILING	CEILING HT	REMARKS
303	Culinary Arts	Resilient Floor	Resilient Base	CMU Epoxy Painted	CMU Epoxy Painted	GWB Epoxy Painted	GWB Epoxy Painted	ACT	9'-9"	
303B	Dry Storage	Resilient Floor	Resilient Base	GWB Epoxy Painted	GWB Epoxy Painted	CMU Epoxy Painted	GWB Epoxy Painted	ACT	8'-0"	

FIRE RATED FRAMES



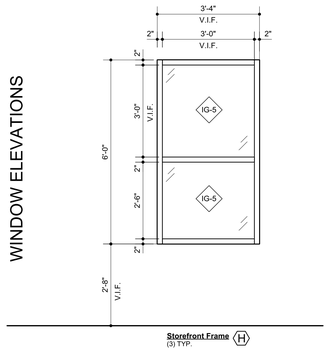
Fire Rated Frame 'FR1'
(1) TYP.

NON-RATED DOOR FRAMES

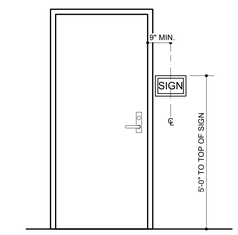


HM Door Frame 'HM1'
(1) TYP.

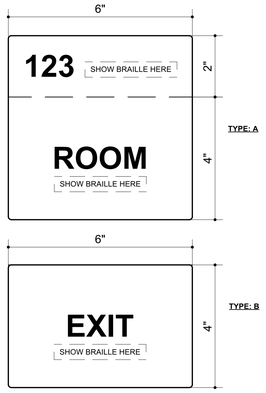
WINDOW ELEVATIONS



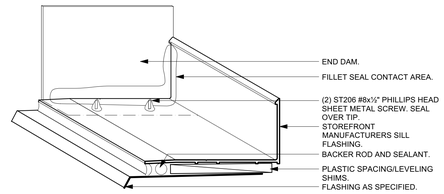
Storefront Frame (H)
(3) TYP.



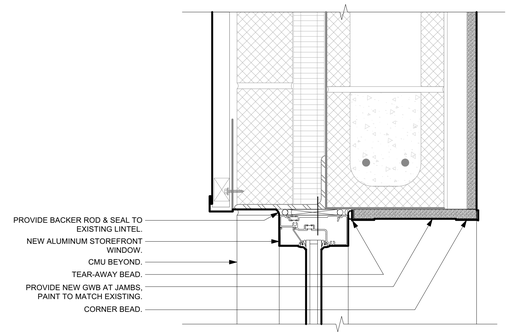
1 A6.0-B Signage Mounting Detail
Scale: 1/2" = 1'-0"



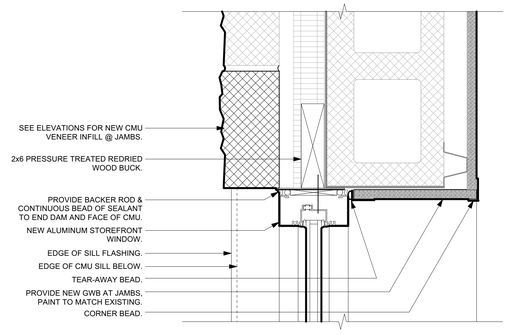
2 A6.0-B Signage Details
Scale: Half Actual Size



6 A6.0-B Storefront Sill Pan Detail
Scale: Half Actual Size



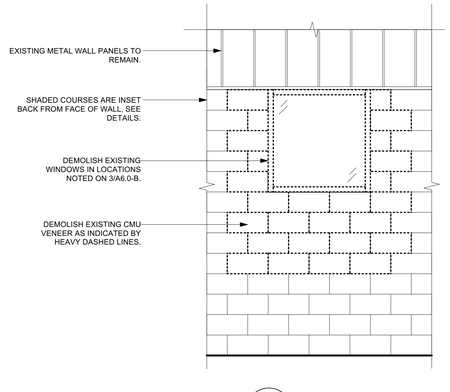
7 A6.0-B New Storefront Head
Scale: 3" = 1'-0"



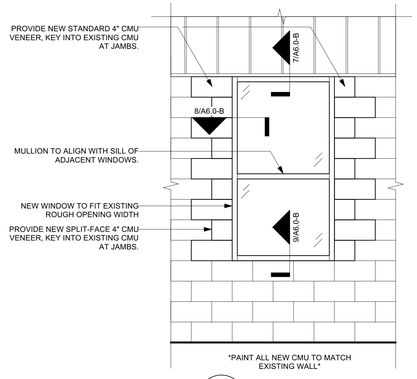
8 A6.0-B New Storefront Jamb
Scale: 3" = 1'-0"



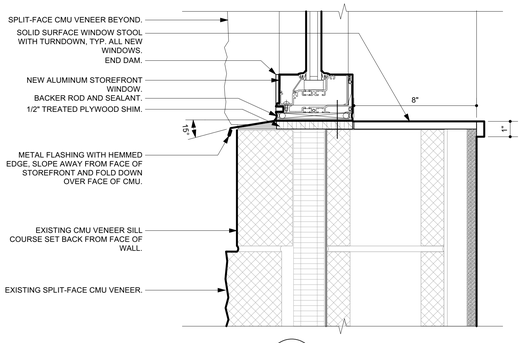
3 A6.0-B Classroom Window Replacement
Scale: N.T.S.



4 A6.0-B Demo. Elevation
Scale: 1/2" = 1'-0"



5 A6.0-B New Work Elevation
Scale: 1/2" = 1'-0"



9 A6.0-B New Storefront Sill
Scale: 3" = 1'-0"

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DOUGLAS K. SHERWOOD — Registered Architect — 10075 — North Carolina — WILMINGTON, NC — 5.16.23

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Schedules, Door & Window Elevations, Details

Rev.	Date	Notes

A6.0-B

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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 "Specification for Structural Steel Buildings (AISC 360-10)" American Institute of Steel Construction, 2011 – 14th Edition

1.6 "Structural Welding Code – Steel (AWS D1.1)" and "Structural Welding Code – Reinforcing Steel (AWS D1.4)", American Welding Society.

2.0 DESIGN LOADS:
Project Located in: City of Castle Hayne, County of New Hanover, 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 Loads:		
Dead Load	50	
Floor Live Loads:		
Assembly	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 "C"

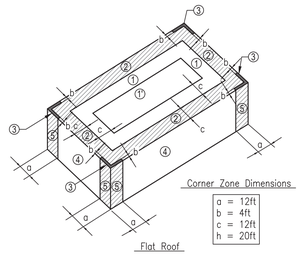
Main Wind Force Resisting System:
Building is enclosed & Internal Pressure coefficient (GCpi) = +0.18 & -0.18
Topographic Factor Kzt = 1.0
Wind Directionality Factor, Kd = 0.85

CALCULATED WIND BASE SHEAR (VULT FOR MWFRS)		
Unit Name	**Vx (k)**	**Vy (k)**
Main Building	Per PEMB	Per PEMB

Components & Cladding

Components and Cladding Wind Pressure (psf)									
Walls	Area = 10ft²		Area = 20ft²		Area = 50ft²		Area = 100ft²		Area = 500ft²	
Zone 4	47.5	-51.4	45.4	-49.4	42.5	-46.6	40.4	-44.4	40.4	-44.4
Zone 5	47.5	-63.5	45.4	-59.2	42.5	-53.6	40.4	-49.4	40.4	-49.4
Roof	Area = 10ft²		Area = 20ft²		Area = 50ft²		Area = 100ft²		Area = 500ft²	
Zone 1	19.2	-75.6	18.0	-70.7	16.6	-64.1	16.0	-59.1	16.0	-59.1
Zone 1'	19.2	-43.5	18.0	-43.5	16.6	-43.5	16.0	-43.5	16.0	-43.5
Zone 2	19.2	-100.1	18.0	-93.3	16.6	-84.8	16.0	-78.5	16.0	-78.5
Zone 3	19.2	-135.9	18.0	-123.1	16.6	-106.2	16.0	-93.3	16.0	-93.3

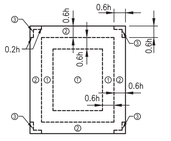
Notes:
1. Areas noted are effective wind areas as per ASCE 7-16, 26.2 definitions.
2. See figures below for Zone locations.
3. Plus and minus signs signify pressures acting toward and away from surfaces, respectively.
4. Design pressures shown in table are strength design wind pressures. Allowable stress 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.



Corner Zone Dimensions

a = 12ft
b = 4ft
c = 12ft
h = 20ft

Flat Roof



COMPONENT & CLADDING ROOF PRESSURES

Flat Roof

2.5 Seismic Loads per Referenced Code.

Risk Category = II
Site class = "D" (Per Geotech Report)
Spectral Response Coefficients:
SS = 0.148g
S1 = 0.066g
SDS = 0.158g
SD1 = 0.105g
Cs = 0.053

Seismic Design Category = "B"
Seismic Importance Factor = 1.0
Basic Seismic – Force – Resisting System
Building Frame System – Steel not specifically detailed for seismic resistance

RX=RY=3.0, DX=DY=3.0, CDX=CDY=3.0
Design Base Shear Vx = Vy = PER PEMB
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 #22:32654 by ECS Southeast LLP, Wilmington, NC dated January 6, 2023. This report is available in the project manual. The recommendations contained in this report are herein made part of the requirements of these contract documents.

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 Concrete shall have a 28 day compressive strength and density as follows:
a. Footings, and Interior Slab-on-grade.....3,000psi, Density = ±145pcf
b. Piers, Interior & Exterior Slab on Grade.....4,000psi, Density = ±145pcf
c. CMU Grout Fill.....3,000psi pea gravel mix, Density = ±145pcf, Slump 8"-11" or grout per Structural Masonry Notes, this sheet.

4.3 Concrete Mix Designs:
a. Submittals: Submit written reports 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. Pea gravel concrete mix for structural masonry shall comply with ASTM C 404-06. "Standard Specifications for Aggregates for Masonry Grout", Section 4.2.
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.

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 degrees. Uniformly heat the water and aggregates to a temperature of not less than 50 degrees. 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 degrees.

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 ⅔ 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 3/4-inch 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 Inches
Concrete exposed to earth or weather:
No. 6 through No. 18 Bars:.....2 Inches
No. 5 Bar and smaller:.....1½" Inches
Concrete not exposed to weather or in contact with ground:
Slabs, Walls, Joists:
No. 11 Bar and smaller:.....¾" Inches
Beams, Columns:
Primary Reinforcement, Ties, Stirrups:.....1½" Inches

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

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.

6.0 PRE-ENGINEERED METAL BUILDING (PEMB):

6.1 Design the building system(s) in accordance with the 2018 North Carolina state building code.

6.2 Design the roof system(s) for the live loads or snow loads (whichever is greater) indicated and a collateral load of 3 psf in addition to the roof dead loads (including roof- and ceiling-mounted equipment, such as A.V. loads, lighting, stage equipment, etc.), wind loads, and seismic loads.

6.3 Load combinations shall be in accordance with ASCE 7-10 unless the MBMA Metal Building Systems Manual (2006) load combinations are more stringent.

6.4 Design the building system(s) with hinged/pinned column bases.

6.5 Building Lateral deflections/racking/drift limits shall be in accordance with "Serviceability Considerations" summary tables contained in AISC Steel Design Guide Series 3 "Serviceability Design Considerations for Low Rise Buildings" (1990). Frame drift shall be limited to max H/60. Deflection limits shall not exceed deflection tolerances of storefronts and equipment supported by the building.

6.6 Design and provide structural members for the support of HVAC units, ducts, fans, piping, electrical components, supported partitions, etc.

6.7 Submit final calculations sealed by the PEMB Structural Engineer. Final calculations shall include the combined maximum reaction for each column (i.e. the maximum reaction determined by the controlling load combination).

7.0 STRUCTURAL MASONRY:

7.1 All structural masonry shall conform to ACI 530 standards as appropriate to the material.

7.2 Concrete Masonry Units (CMU):
a. Units shall be lightweight cellular units conforming to ASTM C 90, Grade N-2. Concrete masonry net area unit strength shall be no less than 2,000psi in accordance with ASTM C 140, with a unit weight not exceeding 95 pcf.
b. Design compressive strength of CMU (fm) = 2,000psi.

7.3 Mortar shall conform to ASTM C 270. Mortar shall be type "S" and shall conform to the ASTM C270 proportion requirements.

7.4 Neither type "N" mortar nor masonry cement shall be used as part of the lateral force resisting system.

7.5 Grouting:
a. Grout shall conform to ASTM C476 as specified by proportion. Masonry grout shall conform to the ASTM proportion requirements for coarse grout with a slump of 8 to 11 inches. Contractor may substitute grout with pea gravel concrete masonry fill, see note 4.2 and 4.3, c this sheet.
b. All bond beams shall be filled with grout and reinforced as indicated on the drawings (details or schedules). Mortar fill is not permitted.
c. All masonry wall cells or cavities indicated as reinforced shall be grouted for the full height of the wall, unless specifically noted otherwise on the drawings. Unreinforced walls indicated as grouted shall be solidly grouted full height, unless specifically noted otherwise. Mortar fill is not permitted.
d. All masonry cells or cavities below grade shall be grouted solid unless specifically noted otherwise on the drawings. Mortar fill is not permitted.
e. Vertical grouting shall be low lift or high lift as follows:
(1) Low lift grouting shall be used for all cavity walls and may be used for all walls at the option of the Contractor. Lifts shall not exceed 4'-0" in height.
(2) High lift grouting is permissible only for filling of cellular masonry units and shall not exceed 12'-8" in height. Clean out holes shall be provided at the base of each grouted cell.
f. Grouting shall be stopped 1-1/2" below the top of a course to form a key at the joint.
g. Grouting of masonry beams or lintels shall be done in one continuous operation.
h. Consolidate pours with mechanical vibrator and reconsolidate by mechanical vibration after initial water loss and settlement has occured.
i. Mechanical vibrator shall be a low velocity vibrator with a ¾" head.

7.6 Masonry Reinforcing:
a. Foundation dowels may slope a maximum of 1:6 to align with wall cavities or vertical CMU cores. Greater slopes will require replacement of the foundation dowels.
b. Spliced reinforcing shall be lapped a length calculated per IBC 2107.5 OR 15" OR as shown on drawings, whichever is greatest. All splices shall be wired together.
c. Vertical reinforcing bars shall have a minimum clearance of ¼" from masonry and shall be held in position top and bottom and at intervals not exceeding 4'-0". Accessories for such support shall be used. Provide "AA Wire Products Company" (or approved equal) Rebar Positioner AA225 or AA239 for vertical bars and AA238 for horizontal bars or approved equal products from other suppliers.
d. Horizontal joint reinforcing shall be lapped no less than 6" all splices, including corners and tees where no control joint is used.
e. All horizontal joint reinforcing shall stop at control joints.
f. Horizontal reinforcing in bond beams shall be continuous through control joints.
g. All CMU walls shall have joint reinforcing @ 16"o.c. All joint reinforcing shall have (2) 9 gauge (0.148"ø or W1.7) side rods & cross rods @ 16"o.c.

7.7 Masonry contractor shall provide for and coordinate with other trades for placement of all items to be embedded or built into the masonry.

MINIMUM SPLICING LENGTH (Ld) FOR MASONRY	
BAR SIZE	**SPLICE LENGTH**
#3	16"
#4	22"
#5	26"
#6	43"
#7	60"

8.0 POST-INSTALLED ANCHORS:

8.1 Except where indicated on the drawings, post-installed anchors shall consist of the following anchor types as provided by HILTI, Inc. Contact HILTI at (800) 879-8000 for product related questions.

Anchorage to Concrete
a. Adhesive anchors for cracked and uncracked concrete use:
1. HILTI HIT-HY 200 Safe Set System with HILTI HIT-Z Rod per ICC ESR-3187 (pending).
2. HILTI HIT-HY 200 Safe Set System with HILTI Hollow Drill Bit System with HAS-E threaded rod per ICC ESR-3187.
3. HILTI HIT-RE 500-SD Epoxy Adhesive Anchoring system with HAS-E threaded rod per ICC ESR-2322 for slow cure applications.

b. Medium duty mechanical anchors for cracked and uncracked concrete use:
1. HILTI KWIK HUS EZ and KWIK HUS EZ-I Screw Anchors per ICC ESR-3027
2. HILTI KWIK BOLT-TZ Expansion Anchors per ICC ESR-1917
3. HILTI KWIK Bolt 3 Expansion Anchors (uncracked concrete only) per ICC ESR-2302

c. Heavy duty mechanical anchors for cracked and uncracked concrete use:
1. HILTI HDA Undercut Anchors per ICC ESR 1546
2. HILTI HSL-3 Expansion Anchors per ICC ESR 1545

Rebar Doweling into Concrete
a. Adhesive anchors for cracked and uncracked concrete use:
1. HILTI HIT-HY 200 Safe Set System with HILTI Hollow Drill Bit System with continuously deformed rebar per ICC ESR-3187.
2. HILTI HIT-RE 500-SD Epoxy Adhesive Anchoring System with continuously deformed rebar per ICC ESR-2322.

Anchorage to Solid Grouted Masonry
a. Adhesive Anchors use:
1. HILTI HIT-HY 70 Masonry Adhesive Anchoring System (ICC pending).
2. Steel anchor element shall be HILTI HAS-E continuously threaded rod or continuously deformed steel rebar.
b. Mechanical Anchors use:
1. HILTI KWIK BOLT-3 Expansion Anchors per ICC ESR 1385.

Anchorage to Hollow/Multi-wythe Masonry
a. Adhesive Anchors use:
1. HILTI HIT-HY 70 Masonry Adhesive Anchoring System per ICC ESR-3342.
2. Steel anchor element shall be HILTI HAS-E continuously threaded rod or continuously deformed steel rebar.
3. The appropriate size screen tube shall be used per adhesive manufacturer's recommendation.

8.2 Anchor capacity used in design shall be based on the technical data published by HILTI or such other method as approved by the Structural Engineer of record. Substitution requests for alternate products must be approved in writing by the Structural Engineer of record prior to use. Contractor shall provide calculations demonstrating that the substituted product is capable of achieving the performance values of the specified product. Substitutions will be evaluated by their having and ICC ESR showing compliance with the relevant building code for seismic uses, load resistance, installation category, and availability of comprehensive installation instructions. Adhesive anchor evaluation will also consider creep, in-service temperature and installation temperature.

8.3 Install anchors per the manufacturer instructions, as included in the anchor packaging.

8.4 Overhead adhesive anchors must be installed using the HILTI PROFI System.

8.5 The contractor shall arrange an anchor manufacturer's representative to provide onsite installation training for all of their anchoring products specified. The Structural Engineer of record must receive documented confirmation that all of the contractor's personnel who install anchors are trained prior to the commencement of installing anchors.

8.6 Anchor capacity is dependant upon spacing between adjacent anchors and proximity of anchors to edge of concrete. Install anchors in accordance with spacing and edge clearances indicated on the drawings.

8.7 Existing reinforcing bars in the concrete structure may conflict with specific anchor locations. Unless noted on the drawings that the bars can be cut, the contractor shall review the existing structural drawings and shall undertake to locate the position of the reinforcing bars at the locations of the concrete anchors, by HILTI FERROSCAN, GPR, X-ray, chipping or other means.

9.0 STRUCTURAL STEEL:

9.1 All structural steel shall be of the grades indicated below, unless noted otherwise on plans or details.
Rolled shapes ASTM A992 Gr. 50
Steel pipe ASTM A53, Type E or S, Grade B, Fy-35ksi
Structural tubing ASTM A500, Grade B, Fy-46ksi
Plates and bars ASTM A36 U.N.O.
Anchor rods ASTM F1554, Grade 36 U.N.O.
Miscellaneous ASTM A36 U.N.O.

9.2 All structural steel shall be detailed, fabricated and erected in accordance with the AISC Code of Standard Practice. The fabricator is responsible for the design of connections not shown on the structural drawings.

9.3 Connection Design:
a. Generally, connections shown on the drawings are schematic and are intended to show the relationship of the members.
b. Connections shall be designed for one-half (1/2) the allowable uniform load on the member, as defined in Part 3, "Allowable Loads on Beams" tables in the AISC "Manual of Steel Construction", 14th Edition, See plan notes for design methodology and minimum reactions.

9.4 Bolted connections:
a. Bearing type connections shall be snug tight with A325N or A490N bolts, U.N.O. Oversized and long-slotted holes are NOT permitted U.N.O. At single shear plate connections, provide bearing type fasteners with horizontal short slotted holes. All bolts shall be snug tight. DO NOT over torque bolts.
b. Protruding bolt heads, shafts or nuts shall not extend nor prohibit the application of architectural finishes or placement of steel deck at its correct location and elevation.
c. Connection designer is responsible for verifying the axial capacity after a section is reduced for bolt holes. Member size may be increased or plates added to maintain required capacity.
d. Bolted connections shall be assembled and inspected in accordance with RCSC-2009 (Specification for Structural Joints Using High-Strength Bolts).

9.5 Welded connections:
a. All welding shall be in accordance with the "Structural Welding Code – Steel" (AWS D1.1) of the American Welding Society, Latest Edition.
b. Electrodes for welding shall comply with the requirements of Table 4.1.1 of the AWS code.
c. At Moment Connections and Braced Frames Provide filler Metal that has a minimum CVN Toughness of 20 ft-lbs at minus 20 degrees F, As determined by AWS classification or Manufacturer Certification.
d. Proof of welder certification shall be available at the job site during times of inspection.

9.6 Minimum plate thickness shall be 3/8" U.N.O.; minimum bolt diameter shall be 3/4-inch U.N.O.; minimum shop weld shall be 3/16" and minimum field weld shall be 1/4-inch U.N.O.

9.7 All re-entrant corners (such as copes and blocks) shall be cut and shaped notch free with a radius of at least 1/2-inch.

10.0 CONSTRUCTION AND SAFETY:

10.1 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.

11.0 STRUCTURAL INSPECTIONS:

11.1 Refer to Sheet S1.03 for all Structural Inspections requirements.

12.0 SHOP DRAWING SUBMITTAL:

12.1 See Project Manual

12.2 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.

ABBREVIATIONS

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

SAWYER SHERWOOD & ASSOCIATE ARCHITECTURE
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NORTH CAROLINA CORPORATE SEAL No. C-1806 WOODS ENGINEERING, P.A.

NORTH CAROLINA PROFESSIONAL SEAL 19475 ENGINEER DION R. WOODS

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DN: cn=dion@woodseng.com, Dion Ron R. Woods, PE", O=WOODS ENGINEERING, P.A., l=Wilmington, S=North Carolina, C=US
Date: 2023.05.17 08:30:39-04'00'

NHCS Project No. 22-90458

Southeast Area Technical High School Construction Trades Addition

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

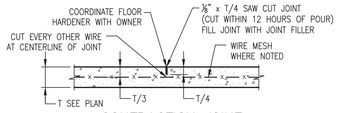
Issue Date: MAY 16, 2023

GENERAL NOTES

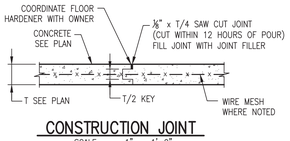
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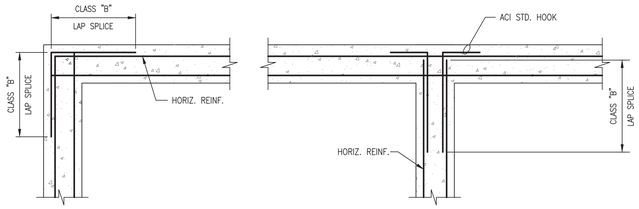
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CONTRACTION JOINT
SCALE: 1" = 1'-0"
WITH WIRE MESH



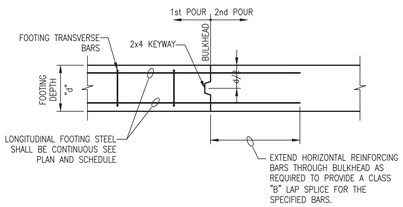
CONSTRUCTION JOINT
SCALE: 1" = 1'-0"
WITH WIRE MESH



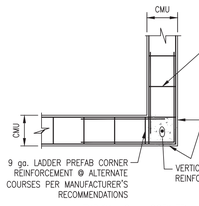
❶ FOOTING CORNERS

❷ FOOTING INTERSECTION

TYPICAL CORNER REINFORCING FOR CONCRETE FOOTINGS
SCALE: 3/4" = 1'-0"

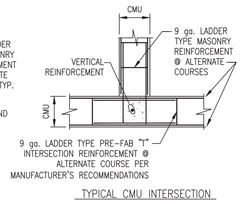


TYPICAL FOOTING CONSTRUCTION JOINT SECTION
SCALE: 3/4" = 1'-0"



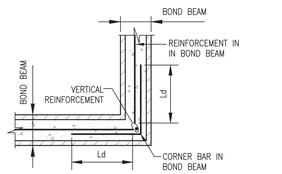
TYPICAL CMU CORNER

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



TYPICAL CMU INTERSECTION

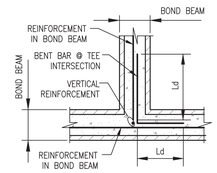
DETAIL "C"
SCALE: 3/4" = 1'-0"



TYPICAL BOND BEAM REINFORCING

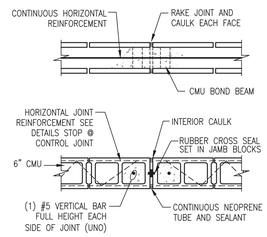
NOTE: TRUSS TYPE REINFORCEMENT SHOWN, HOWEVER LADDER OR TRUSS TYPES ARE ACCEPTABLE.

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



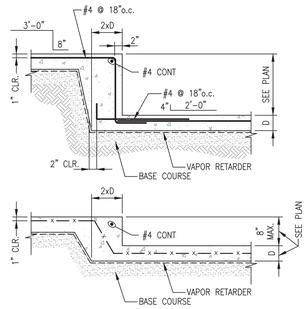
TYPICAL BOND BEAM INTERSECTION REINFORCING

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



TYPICAL CONTROL JOINT

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



TYPICAL SLAB STEP
SCALE: 3/4" = 1'-0"

LOCATE CMU CONTROL JOINTS AS FOLLOWS:

1. AT MAXIMUM SPACING OF 25' OR 3 TIMES THE WALL HEIGHT. COORDINATE CONTROL JOINT LOCATIONS W/ ARCHITECTURAL PLANS.
2. AT ALL ABRUPT CHANGES IN WALL HEIGHT.
3. AT ALL CHANGES IN WALL THICKNESS, SUCH AS AT PIPE AND DUCT CHASES AND ADJACENT TO COLUMNS OR PILASTERS.
4. CENTERED OVER JOINTS IN FOUNDATIONS AND FLOORS.
5. CENTERED BELOW JOINTS IN ROOFS AND FLOORS THAT BEAR ON CMU WALLS.
6. AT A DISTANCE NOT OVER ONE-HALF THE REQUIRED JOINT SPACING FROM BONDED WALL INTERSECTIONS, CORNERS OR CHANGES IN WALL DIRECTION.
7. DO NOT PROVIDE CONTROL JOINTS IN CMU SHEAR WALLS.

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 19475 DON R. WOODS

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1978 Richard C. Sawyer

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Date: 2023.05.17 08:51:04 -04'00'

NHCS Project No. 22-90458

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Construction Drawings

Issue Date: MAY 16, 2023

TYPICAL DETAILS

Rev.	Date	Notes

S1.02-A

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SCHEDULE FOR MATERIAL INSPECTIONS

BUILDING COMPONENTS OR MATERIAL	MATERIAL SUBMITTAL	INSPECTION / MONITORING	INSPECTION FREQUENCY	INSPECTOR QUALIFICATIONS	TEST REQUIREMENTS	TEST FREQUENCY	INSPECTION AGENCY
SOILS	1. REVIEW ECS Southeast LLP GEOTECHNICAL REPORT #22:32654 – ALLOWABLE SOIL BEARING = 2000psf 2. FILL MATERIAL SPECIFICATIONS. 3. VAPOR BARRIER	1.–2. INSPECT SOILS PER ATTACHED 2015 IBC, TABLE 1705.6 FOR REQUIRED VERIFICATION AND INSPECTION. 3. INSPECT VAPOR BARRIER INSTALLATION. SEE PROJECT & MANUFACTURER SPECS.	ALL INSPECTIONS ARE PERIODIC EXCEPT FILL PLACEMENT AND COMPACTION WHICH IS CONTINUOUS.	1. QUALIFIED INSPECTION AGENCY A) INSPECTION AGENCY TO BE APPROVED BY SPECIAL INSPECTION COORDINATOR & BUILDING OFFICIAL.	1. PROVIDE VISUAL AND DCP TESTS PER ASTM STP–399 2. SUBGRADE DENSITY VERIFICATION	1. EACH ISOLATED FOOTING AND AT 20' INTERVALS FOR CONTINUOUS FOOTINGS. 2. AS REQUIRED TO VERIFY ENTIRE BUILDING PAD.	1. QUALIFIED INSPECTION AGENCY A) INSPECTION AGENCY TO BE APPROVED BY SPECIAL INSPECTION COORDINATOR & BUILDING OFFICIAL.
CONCRETE	1. SUBMIT CONCRETE MIX DESIGN. 2. SUBMIT MATERIAL CERTIFICATION 3. SUBMIT REBAR SHOP DRAWINGS.	INSPECT CONCRETE CONSTRUCTION PER ATTACHED 2015 IBC, TABLE 1705.3	AS OUTLINED PER TASK IN TABLE 1705.3	1. QUALIFIED INSPECTION AGENCY A) INSPECTION AGENCY TO BE APPROVED BY SPECIAL INSPECTION COORDINATOR & BUILDING OFFICIAL.	1. TEST CONCRETE FOR COMPRESSIVE STRENGTH, SLUMP, AIR CONTENT, TEMPERATURE AND BATCH TO PLACEMENT TIME.	1. SAMPLES FOR STRENGTH TESTS FOR EACH CLASS OF CONCRETE PLACED EACH DAY SHALL BE TAKEN NOT LESS THAN ONCE A DAY, NOR LESS THAN ONCE FOR EACH 150 YD^3 OF CONCRETE, NOR LESS THAN ONCE FOR EACH 5,000FT^2 OF SURFACE AREA FOR SLABS OR WALLS.	1. QUALIFIED INSPECTION AGENCY A) INSPECTION AGENCY TO BE APPROVED BY SPECIAL INSPECTION COORDINATOR & BUILDING OFFICIAL.
STEEL	1. SUBMIT ANCHOR BOLT SETTING PLAN. 2. SUBMIT STEEL SHOP DRAWINGS. 3. SUBMIT MATERIAL CERTIFICATES. 4. FABRICATOR CERTIFICATE OF COMPLIANCE WITH 2015 IBC, 1705.2.	INSPECT STEEL PER ATTACHED TABLE BELOW	AS OUTLINED PER TASK IN TABLE BELOW	1. QUALIFIED INSPECTION AGENCY A) INSPECTION AGENCY TO BE APPROVED BY SPECIAL INSPECTION COORDINATOR & BUILDING OFFICIAL.	1. VISUAL INSPECTION BY A QUALIFIED STEEL INSPECTOR. 2. MOMENT CONNECTIONS FIELD WELDED. 3. ALL FIELD BOLTING SHALL BE SNUG TIGHT.	INSPECT ALL FIELD CONNECTIONS. CONTINUOUS INSPECTION OF ALL MOMENT CONNECTIONS REQUIRED.	1. QUALIFIED INSPECTION AGENCY A) INSPECTION AGENCY TO BE APPROVED BY SPECIAL INSPECTION COORDINATOR & BUILDING OFFICIAL.
MASONRY	1. SUBMIT MATERIAL CERTIFICATIONS.	INSPECT MASONRY PER ATTACHED ACI 530–13, TABLE 1.19.2. LEVEL B REQUIRED VERIFICATION AND INSPECTION OF MASONRY CONSTRUCTION.	AS OUTLINED PER TASK IN TABLE BELOW.	1. QUALIFIED INSPECTION AGENCY A) INSPECTION AGENCY TO BE APPROVED BY SPECIAL INSPECTION COORDINATOR & BUILDING OFFICIAL.	1. TEST GROUT (PEA GRAVEL CONCRETE) FOR SLUMP & COMPRESSIVE STRENGTH.	1. SAMPLES FOR STRENGTH TESTS FOR EACH CLASS OF CONCRETE PLACED EACH DAY SHALL BE TAKEN NOT LESS THAN ONCE A DAY, NOR LESS THAN ONCE FOR EACH 150 YD^3 OF CONCRETE, NOR LESS THAN ONCE FOR EACH 5,000FT^2 OF SURFACE AREA FOR SLABS OR WALLS.	1. QUALIFIED INSPECTION AGENCY A) INSPECTION AGENCY TO BE APPROVED BY SPECIAL INSPECTION COORDINATOR & BUILDING OFFICIAL.

REQUIRED LEVEL B VERIFICATION & INSPECTION OF MASONRY CONSTRUCTION FREQUENCY CHART

VERIFICATION & INSPECTION TASK	CONTINUOUS	PERIODIC
1. COMPLIANCE WITH REQUIRED INSPECTION PROVISIONS OF THE CONSTRUCTION DOCUMENTS AND THE APPROVED SUBMITTALS SHALL BE VERIFIED.	–	x
2. VERIFICATION OF f'_m AND f'_{MC} PRIOR TO CONSTRUCTION EXCEPT WHERE SPECIFICALLY EXEMPTED BY THIS CODE.	–	X
3. VERIFICATION OF SLUMP FLOW AND VSI AS DELIVERED TO THE SITE FOR SELF–CONSOLIDATING GROUT.	X	–
4. AS MASONRY CONSTRUCTION BEGINS, THE FOLLOWING SHALL BE VERIFIED TO ENSURE COMPLIANCE:		
a. PROPORTIONS OF SITE–PREPARED MORTAR.	–	X
b. CONSTRUCTION OF MORTAR JOINTS.	–	X
c. LOCATION OF REINFORCEMENT, CONNECTORS, PRESTRESSING TENDONS AND ANCHORAGES.	–	X
d. PRESTRESSING TECHNIQUE.	–	X
e. GRADE AND SIZE OF PRESTRESSING TENDONS AND ANCHORAGES.	–	X
5. DURING CONSTRUCTION THE INSPECTION PROGRAM SHALL VERIFY:		
a. SIZE AND LOCATION OF STRUCTURAL ELEMENTS.	–	X
b. TYPE, SIZE AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES OR OTHER CONSTRUCTION.	–	X
c. SPECIFIED SIZE, GRADE AND TYPE OF REINFORCEMENT, ANCHOR BOLTS, PRESTRESSING TENDONS AND ANCHORAGES.	–	X
d. WELDING OF REINFORCING BARS.	X	–
e. PREPARATION, CONSTRUCTION AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40°F) OR HOT WEATHER (TEMPERATURE ABOVE 90°F).	–	X
f. APPLICATION AND MEASUREMENT OF PRESTRESSING FORCE.	X	–
6. PRIOR TO GROUTING, THE FOLLOWING SHALL BE VERIFIED TO ENSURE COMPLIANCE:		
a. GROUT SPACE IS CLEAN.	–	X
b. PLACEMENT OF REINFORCEMENT AND CONNECTORS, AND PRESTRESSING TENDONS AND ANCHORAGES.	–	X
c. PROPORTIONS OF SITE–PREPARED GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS.	–	X
d. CONSTRUCTION OF MORTAR JOINTS.	–	X
7. GROUT PLACEMENT SHALL BE VERIFIED TO ENSURE COMPLIANCE:	X	–
a. GROUTING OF PRESTRESSING BONDED TENDONS.	X	–
8. PREPARATION OF ANY REQUIRED GROUT SPECIMENS, MORTAR SPECIMENS AND/OR PRISMS SHALL BE OBSERVED.	–	X

NOTE: SEE IBC 2015, SECTION 1705.4 FOR REFERENCE STANDARDS.

(a) FREQUENCY REFERS TO THE FREQUENCY OF INSPECTION, WHICH MAY BE CONTINUOUS DURING THE TASK LISTED OF PERIODICALLY DURING THE LISTED TASK, AS DEFINED IN THE TABLE
(b) REQUIRED FOR THE FIRST 5000 ft^2 OF AAC MASONRY
(c) REQUIRED AFTER THE FIRST 5000 ft^2 OF AAC MASONRY
(d) SEE TABLE 1.19.2 OF TMS 402/ACI 530/ASCE 5–13 FOR REFERENCE STANDARDS

REQUIRED VERIFICATION & INSPECTION OF SOILS

VERIFICATION & INSPECTION TASK	CONTINUOUS	PERIODIC
1. VERIFY MATERIALS BELOW FOOTINGS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	–	X
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	–	X
3. PERFORM CLASSIFICATION AND TESTING OF CONTROLLED FILL MATERIALS.	–	X
4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESS DURING PLACEMENT AND COMPACTION OF CONTROLLED FILL.	X	–
5. PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	–	X

NOTE: SEE IBC–2015, TABLE 1705.6, CHAPTER 17

REQUIRED VERIFICATION & INSPECTION OF CONCRETE CONSTRUCTION FREQUENCY CHART

VERIFICATION & INSPECTION TASK	CONTINUOUS	PERIODIC
1. INSPECTION OF REINFORCING STEEL INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT	–	X
2. REINFORCING BAR WELDING: a. VERIFY WEDABILITY OF REINFORCING BARS OTHER THAN ASTM A 706 b. INSPECT SINGLE–PASS FILLET WELDS, MAXIMUM 5/16"; and c. INSPECT ALL OTHER WELDS.	– X	X X
3. INSPECTION OF ANCHORS CAST IN CONCRETE	–	X
4. INSPECT ANCHORS POST–INSTALLED IN HARDENED CONCRETE MEMBERS a. ADHESIVE ANCHORS INSTALLED HORIZONTALLY OR UPWARDLY INCLUDED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS. b. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.a.	X	 X
5. VERIFY USE OF REQUIRED DESIGN MIX.	–	X
6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	–
7. INSPECTION OF CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	–
8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	–	X
9. INSPECTION OF PRESTRESSED CONCRETE: a. APPLICATION OF PRESTRESSING FORCES. b. GROUTING OF BONDED PRESTRESSING TENDONS	X X	– –
10. INSPECT ERECTION OF PRECAST CONCRETE MEMBERS.	–	X
11. VERIFY IN–SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST–TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.	–	X
12. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	–	X

NOTE: SEE IBC 2015, TABLE 1705.3 FOR REFERENCE STANDARDS.

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 19475 JOHN R. WOODS

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DN: cn=woods@woodseng.com, o=WOODS ENGINEERING, P.A., l=Wilmington, s=North Carolina, c=US
Date: 2023.05.17 08:51:09-04'00'

NHCS Project No. 22-90458

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Issue Date: MAY 16, 2023

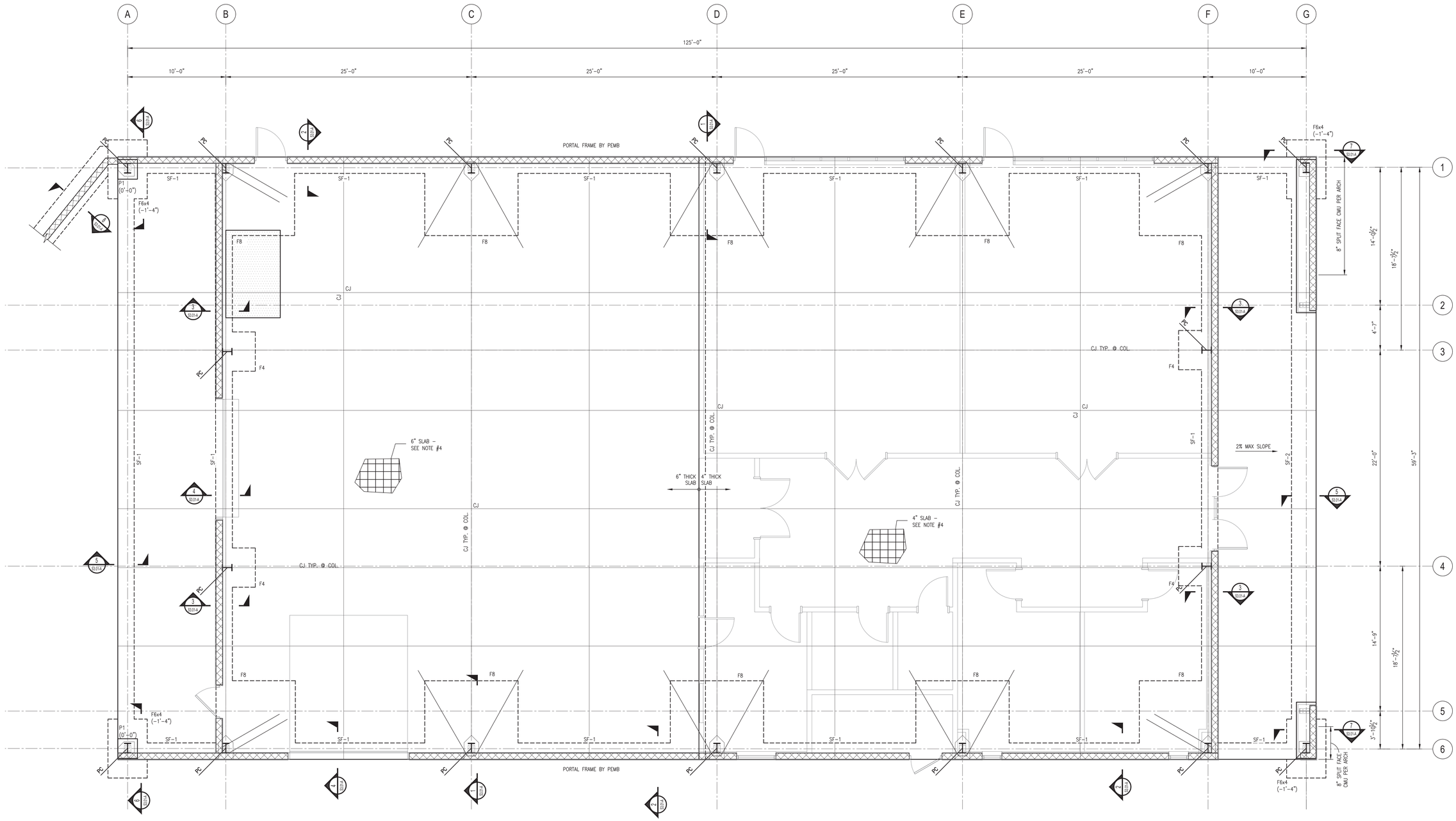
MATERIAL INSPECTION

Rev.	Date	Notes

S1.03-A & B

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05/17/2023



FOUNDATION PLAN
SCALE: 1/4" = 1'-0"

FOUNDATION PLAN NOTES

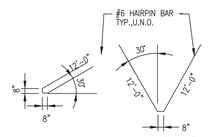
1. SEE S-10 SHEETS FOR ADDITIONAL GENERAL NOTES, MATERIAL NOTES AND MATERIAL SPECIFICATIONS. ALSO, SEE S-10 SHEETS FOR TYPICAL DETAILS. TYPICAL DETAILS ARE GENERALLY NOT SHOWN ON PLAN BUT RATHER ARE INTENDED TO DEFINE TYPICAL CONSTRUCTION CONDITIONS.
2. DATUM ELEVATION = TOP OF SLAB ELEVATION = ASSUMED 0'-0" = 30.8' M.S.L. OTHER ELEVATIONS ARE NOTED AS (+ OR -) FROM DATUM ELEVATION. COORDINATE WITH CIVIL DRAWINGS.
3. FOOTINGS SHALL BE MONOLITHIC WITH SLAB, U.N.O.
4. SLAB-ON-GRADE SHALL BE 4" OR 6" THICK (SEE PLAN) 4000 psi CONCRETE WITH WWM6x6xW2.9xW2.9 ON 15 mil VAPOR RETARDER, ON 6" GRANULAR BASE LAYER CONSISTING OF AN OPEN GRADED CRUSHED STONE (NO. 57 OR SIMILAR) OR CLEAN SAND (ASTM C-33). VERIFY FILL MATERIALS AND COMPACTION WITH QUALIFIED GEOTECHNICAL ENGINEER & GEOTECHNICAL REPORT.
5. REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND OTHER DISCIPLINE DRAWINGS FOR OPENINGS AND DEPRESSIONS NOT SHOWN ON THESE DRAWINGS.
6. 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.
   c. IF THE 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.
8. DIMENSIONS ARE FROM EDGE OF SLAB (E.O.S.) AND OUTSIDE FACE OF STUD (O.F.S.) / CURTAIN WALL (O.F.CW.) TO COLUMN CENTERLINE UNLESS NOTED OTHERWISE. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL & PEMB DRAWINGS.
9. 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.

SPREAD FOOTING (FX) SCHEDULE

MARK	SIZE width x length x thickness	REINFORCEMENT		REMARKS
		TOP BARS EACH WAY (U.N.O.)	BOTTOM BARS EACH WAY (U.N.O.)	
F4	4'-0" x 4'-0" x 2'-0"	(5) #5 E.W.	(5) #6 E.W.	
F8	8'-0" x 8'-0" x 2'-0"	(9) #5 E.W.	(9) #6 E.W.	
F6x4	6-0" x 4'-0" x 2'-0"	(5) #5 LONG (7) #5 SHORT	(5) #6 LONG (7) #5 SHORT	

STRIP FOOTING (SF-X) SCHEDULE

MARK	SIZE width x thickness x length	REINFORCEMENT		REMARKS
		TOP BARS	BOTTOM BARS	
SF-1	1'-8" x 2'-0" x CONT.	(1) #4 CONT.	(3) #4 CONT.	SEE DETAIL 3/S3.01-A
SF-2	2'-6" x 2'-0" x CONT.	(2) #4 CONT.	(3) #5 CONT.	



TYPICAL HAIRPIN DETAIL
SCALE: 1/8" = 1'-0"

FOUNDATION LEGEND

- Fx — SPREAD FOOTING DESIGNATION SEE SCHEDULE THIS SHEET
- SF-x — STRIP FOOTING DESIGNATION SEE SCHEDULE THIS SHEET
- CJ — INDICATES CONCRETE SLAB CONTRACTION JOINTS, SEE S1.0 SHEETS FOR TYPICAL DETAILS. SEE PLAN FOR LOCATIONS. MAXIMUM SPACING = 12' IN BOTH DIRECTIONS
- PE — PRE-ENGINEERED METAL BUILDING STEEL COLUMN – SEE PEMB BASE PLATE INFO AND S301 FOR ANCHOR BOLT INFO
- 0 — GRID DESIGNATION FOR CENTERLINE OF COLUMN U.N.O.
- INDICATES (3) COURSE 6" CMU WALL U.N.O
- P1 — INDICATES 24" SQ. CONCRETE PIER
- INDICATES ¾" DEPRESSED SLAB COORDINATE EXACT LIMITS W/ ARCH. & PLUMBING DWGs & SEE S1.0 SHEETS FOR TYPICAL SLAB DEPRESSION DETAILS

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 19475 DON R. WOODS

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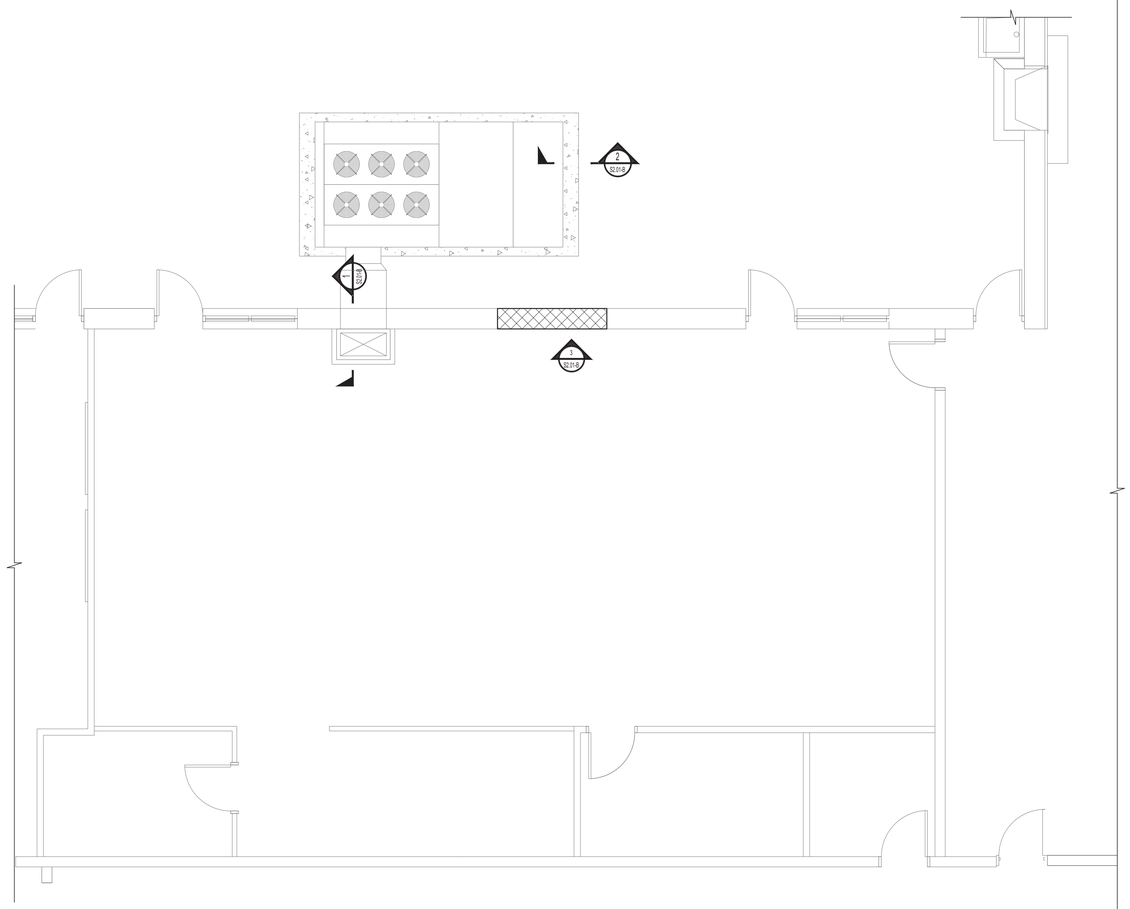
Issue Date: MAY 16, 2023

FOUNDATION PLAN

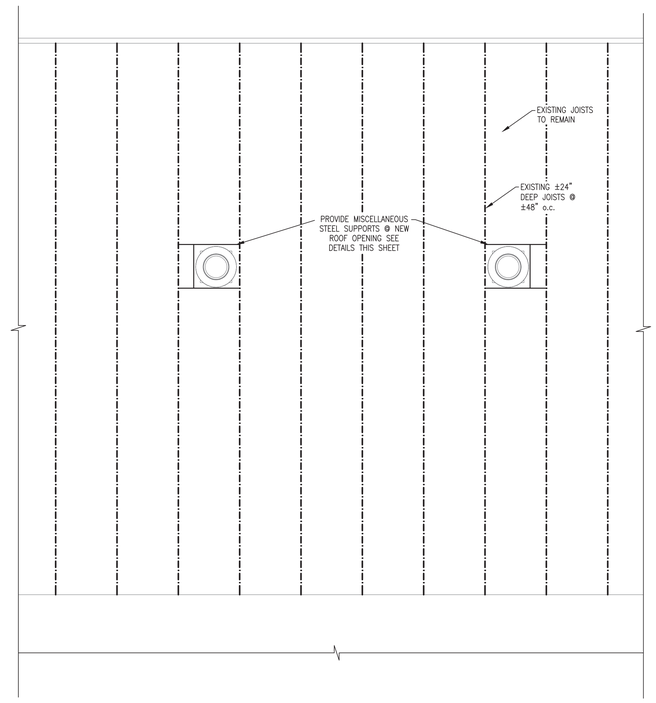
Rev.	Date	Notes

S2.01-A

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PARTIAL FLOOR PLAN – ALT. G-1
SCALE: 1/4" = 1'-0"



PARTIAL ROOF FRAMING PLAN – ALT. G-1
SCALE: 1/4" = 1'-0"

FOUNDATION LEGEND

EXISTING WALL TO REMAIN
8" CMU WITH 2" INSULATION AND 4" SPLIT-FACE CMU VENEER

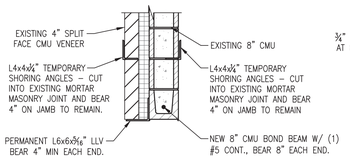
NEW WALL INFILL – MATCH EXISTING COORD. EXACT LIMITS WITH ARCH

ROOF FRAMING PLAN NOTES

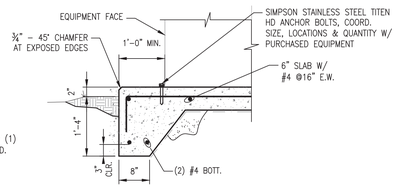
1. SEE S1.0 SHEETS FOR ADDITIONAL GENERAL NOTES, MATERIAL NOTES AND MATERIAL SPECIFICATIONS. ALSO, SEE S1.0 SHEETS FOR TYPICAL DETAILS. TYPICAL DETAILS ARE GENERALLY NOT SHOWN ON PLAN BUT RATHER ARE INTENDED TO DEFINE TYPICAL CONSTRUCTION CONDITIONS.

ROOF FRAMING LEGEND

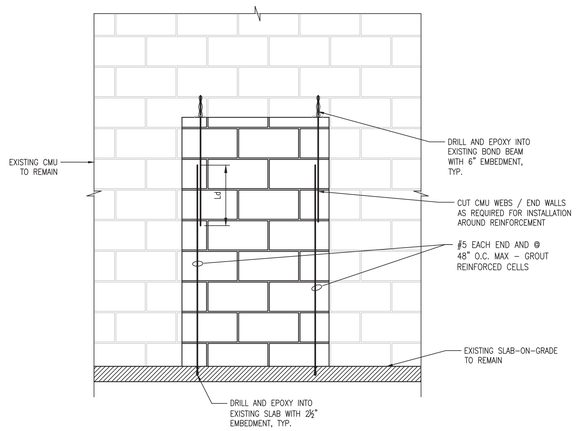
INDICATES EXISITNG STEEL ROOF JOISTS SEE PLAN FOR SIZE AND SPACING



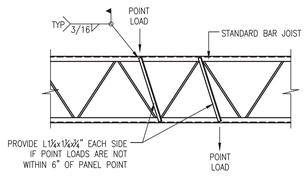
SECTION 1-1 – ALT. G-1
SCALE: 3/4" = 1'-0"



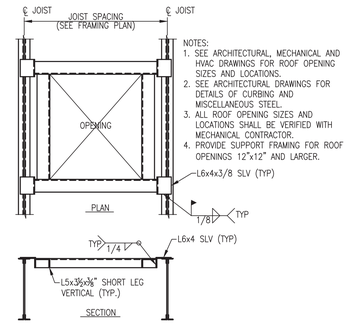
SECTION 2-2 – ALT. G-1
SCALE: 3/4" = 1'-0"



SECTION 3-3 – ALT. G-1
SCALE: 3/4" = 1'-0"
CMU WALL PATCH DETAIL



DETAIL OF TYPICAL JOIST REINFORCEMENT
NOT TO SCALE



NOTES:
1. SEE ARCHITECTURAL, MECHANICAL AND HVAC DRAWINGS FOR ROOF OPENING SIZES AND LOCATIONS.
2. SEE ARCHITECTURAL DRAWINGS FOR DETAILS OF CURBING AND MISCELLANEOUS STEEL.
3. ALL ROOF OPENING SIZES AND LOCATIONS SHALL BE VERIFIED WITH MECHANICAL CONTRACTOR.
4. PROVIDE SUPPORT FRAMING FOR ROOF OPENINGS 12"x12" AND LARGER.

DETAIL OF TYPICAL ROOF OPENING
NOT TO SCALE

AT CONTRACTOR'S OPTION:
USE QUICKFRAMES
WWW.QUICKFRAMES.US

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NORTH CAROLINA WOODS ENGINEERING, P.A. CORPORATE SEAL No. C-1606

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 19475 DON R. WOODS

Signed by Don R. Woods, PE
Email: dwoods@woodseng.com, Organization: WOODS ENGINEERING, P.A., Location: Wilmington, Carolina, C=US
Date: 2023.05.17 08:51:20-04'00'

NHCS Project No. 22-90458

Southeast Area Technical High School Construction Trades Addition

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

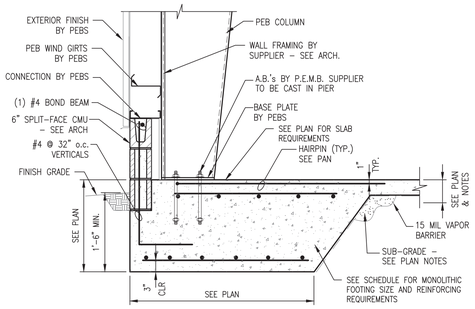
Issue Date: MAY 16, 2023

ALT. G-1 Plans and Details

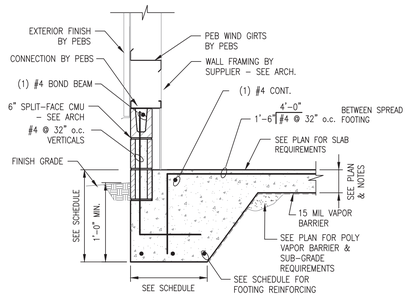
Rev.	Date	Notes

S2.01-B

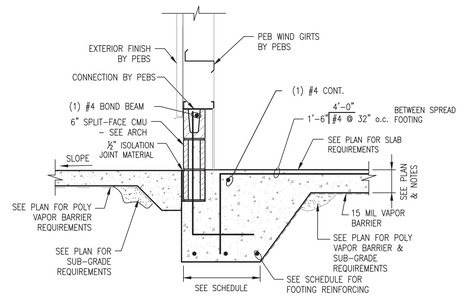
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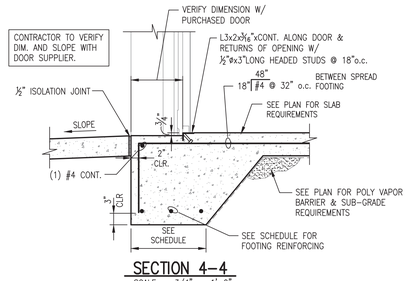
SECTION 1–1
SCALE: 3/4" = 1'-0"



SECTION 2–2
SCALE: 3/4" = 1'-0"



SECTION 3–3
SCALE: 3/4" = 1'-0"



SECTION 4–4
SCALE: 3/4" = 1'-0"

SECTION 5–5
SCALE: 3/4" = 1'-0"

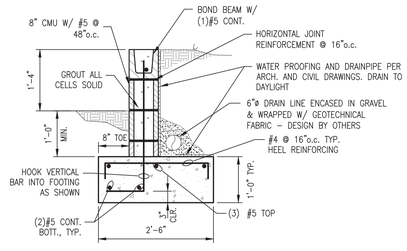
SECTION 6–6
SCALE: 3/4" = 1'-0"

SECTION 7–7
SCALE: 3/4" = 1'-0"

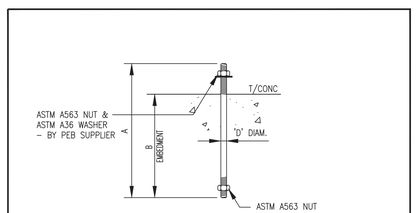
P1
SCALE: 3/4" = 1'-0"

PIER DETAIL NOTES:

1. TYPICAL CLEAR CONCRETE COVER TO STIRRUP IS 2" FOR ALL PIERS.
2. CROSS TIES HAVE SAME DIA. & SPACING AS MAIN STIRRUPS U.N.O. ON SCHEDULE. ALTERNATE 90° HOOK EA. CONSECUTIVE CROSS TIE – TYP.
3. ALL STIRRUPS, TIES & VERTICAL REINFORCEMENT TO HAVE SEISMIC HOOKS – TYP.
4. TOP OF FOOTING (START OF PIER) AND TOP OF COLUMN MUST BE COORDINATED W/ THE RELEVANT PLANS.
5. ALL PIERS SHALL BE 4,000psi CONCRETE.
6. TOP OF ALL PIERS= (–0'–0") U.N.O.



SECTION 8–8
SCALE: 3/4" = 1'-0"
TYPICAL RETAINING WALL



ANCHOR BOLT SCHEDULE

MARK	BOLT DIAM. D	HOLE DIAMETER	A	B	TOP WASHER O.D. x t	LEVELING NUT	REMARKS
A,B,C	¾"	BY PEBS	BY PEBS	18"	BY PEBS	NO	COORDINATE SIZE AND LOCATION WITH PEBS
D	⅜"	BY PEBS	BY PEBS	9"	BY PEBS	NO	

NOTE: PEBS = PRE-ENGINEERED BUILDING SUPPLIER

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. EPOXY FOR CMU SHALL BE HY–270.
6. EPOXY FOR CONCRETE SHALL BE HY–200.

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WOODS ENGINEERING CORPORATE SEAL No. C-1806 NORTH CAROLINA

NORTH CAROLINA PROFESSIONAL SEAL 19475 ENGINEER DON R. WOODS

Digitally signed by Don R. Woods, PE
DN: cn=Don R. Woods, PE, o=WOODS ENGINEERING, P.A., l=Wilmington, S=North Carolina, C=US
Date: 2023.05.17 09:11:25-04'00'

NHCS Project No. 22-90458

Southeast Area Technical High School Construction Trades Addition

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

Issue Date: MAY 16, 2023

FOUNDATION SECTIONS & DETAILS

Rev.	Date	Notes

S3.01-A

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MANUAL FIRE ALARM SYSTEM (NOTES)

1. AS A MINIMUM THE FIRE ALARM SYSTEM SHALL INCLUDE DETECTORS, PULL STATIONS, PANEL. SPEAKER/STROBES AND SPRINKLER MONITORING 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

7.1 THE OPERATION OF ANY MANUAL PULL STATION, OR ANY OTHER SYSTEM ALARM INDICATOR, SHALL CAUSE ALL ALARM SIGNALS, BOTH AUDIBLE AND VISUAL TO ENERGIZE.

7.2 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.

7.3 FIRE ALARM SYSTEM SHALL USE A 120 VOLT POWER SOURCE WITH BATTERY BACK-UP. FIRE ALARM SYSTEM SHALL BE 24 VOLT.

7.4 THE SYSTEM SHALL BE A MONITORED ALARM SYSTEM.

8. EQUIPMENT SHALL CONSIST OF THE FOLLOWING:

8.1 MASTER FIRE ALARM CONTROL PANEL WITH BATTERY BACK-UP.

8.2 MANUAL STATIONS: MANUAL STATIONS SHALL BE CONSTRUCTED OF HIGH IMPACT, RED LEXAN WITH RAISED LETTERING. MANUAL STATIONS SHALL BE LOCATED NOT MORE THAN FOUR FEET ABOVE THE FINISHED FLOOR TO THE CENTER OF THE BOX. STATIONS SHALL BE LOCATED NOT MORE THEN FIVE FEET FROM EACH DESIGNATED EXIT-WAY AND THE TRAVEL DISTANCE SHALL NOT EXCEED 200 FEET.

8.3 COMBINATION AUDIO AND VISUAL SIGNAL: AUDIO VISUAL FIRE ALARM SIGNAL SHALL BE SURFACE MOUNTED WITH FLASHER. UNITS SHALL BE RED IN COLOR. 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.

8.4 SMOKE DETECTOR: PROVIDE SOLID STATE PHOTO ELECTRIC TYPE WITH TWO WIRE OPERATION AND 360° SMOKE ENTRY FOR FACP.

9. PROVIDE FIRE ALARM CONTROL PANEL.

9.1 IN THE EVENT OF A VALVE CLOSURE THAT ACTIVATES A TAMPER SWITCH, THE TROUBLE SIGNALS (BOTH AUDIBLE AND VISUAL) SHALL ACTIVATE AT THE CONTROL PANEL. IN ADDITION, THE ASSOCIATED CIRCUIT TROUBLE LED SHALL ILLUMINATE TO INDICATE THE TAMPER SWITCH CLOSURE, BY MEANS OF A SILENCING SWITCH, IT SHALL BE POSSIBLE TO TEMPORALLY SILENCE THE AUDIBLE ALARM, THE AUDIBLE ALARM SHALL REACTIVATE AUTOMATICALLY ON A PERIODIC BASIS UNTIL THE SYSTEM IS CORRECTED. IT SHALL NOT BE POSSIBLE TO EXTINGUISH THE TROUBLE LIGHT UNTIL THE SYSTEM IS CORRECTED.

10.1 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.

10.2 SLEEVE AND SEAL ALL PENETRATIONS THROUGH FIRE WALLS.

10.3 WIRING SHALL BE A MINIMUM OF NO. 14 AWG UNLESS OTHERWISE NOTED.

11. 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.

12. SHOP DRAWINGS MUST BE SUBMITTED BY THE FIRE ALARM CONTRACTOR COMPLYING WITH THE FIRE ALARM PLAN REVIEW REQUIREMENTS POLICY - JANUARY 2006 BEFORE PERMITTING BY THE WILMINGTON FIRE DEPT. THESE DRAWINGS DO NOT CONSTITUTE APPROVAL AND MAY CHANGE AFTER A FULL REVIEW BY THE WILMINGTON FIRE DEPT. A SEPARATE PERMIT MUST BE OBTAINED PRIOR TO INSTALLATION.

13. IN CORRIDORS WHERE MORE THAN TWO VISIBLE NOTIFICATION APPLIANCES ARE IN ANY FIELD OF VIEW, THEY SHALL FLASH IN SYNCHRONIZATION.

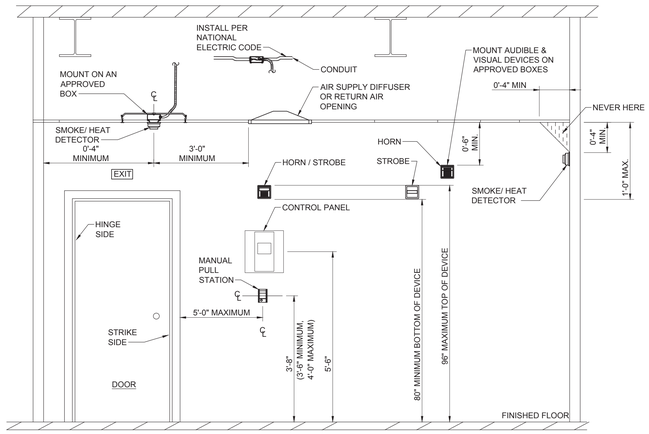
14. FIRE ALARM CONTRACTOR IS RESPONSIBLE FOR MODULES TO SHUTDOWN HVAC EQUIPMENT DURING ALARM CONDITION.

15. PROVIDE (1) 2" CONDUIT FOR A DEDICATED PHONE LINE FOR FIRE PROTECTION DIALER AND BACKUP LINE FROM EXTERIOR CABINET TO FACP.

16. ALL FIRE ALARM WORK AND DEVICES SHALL BE INSTALLED AND TERMINATED BY A NICET LEVEL 2 FIRE ALARM TECHNICIAN.

17. IN THE EVENT OF AN ALARM THERE SHALL BE A "GLOBAL" SHUT DOWN OF ALL AIR HANDLERS.

18. PROVIDE U.L. CERTIFICATION FOR THE SYSTEM AS REQUIRED BY THE NEW HANOVER COUNTY FIRE MARSHALL.



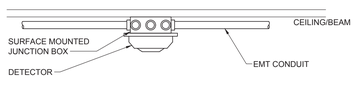
NOTE:
DETAIL SHOWN FOR REFERENCE ONLY, NOT ALL DEVICES ARE INDICATED ON PLANS.

1 DEVICE MOUNTING DETAIL
NOT TO SCALE

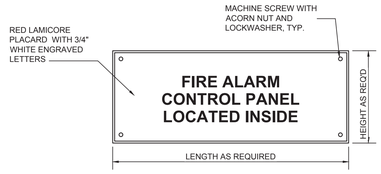
FIRE ALARM LEGEND

SYMBOL	DESCRIPTION
	FIRE ALARM MANUAL STATION, 48" AFF
	FIRE HORN (ONLY) DEVICE, 80" AFF
15cd	FIRE ALARM VISUAL (ONLY) DEVICE, 80" AFF, "15cd" INDICATES CANDELA RATING
15cd	FIRE ALARM SPEAKER/STROBE DEVICE, 80" AFF, "15cd" INDICATES CANDELA RATING
	SMOKE DETECTOR, CEILING MOUNTED
	SPRINKLER FLOW SWITCH
	SPRINKLER TAMPER SWITCH
M	MONITOR MODULE
M	MONITOR MODULE, WALL MOUNTED
I	ISOLATION MODULE
C	CONTROL MODULE
C	CONTROL MODULE, WALL MOUNTED
FACP	FIRE ALARM CONTROL PANEL (FACP)
FA REMOTE ANN	FIRE ALARM REMOTE ANNUNCIATOR PANEL
	END OF LINE RESISTER (EOR)

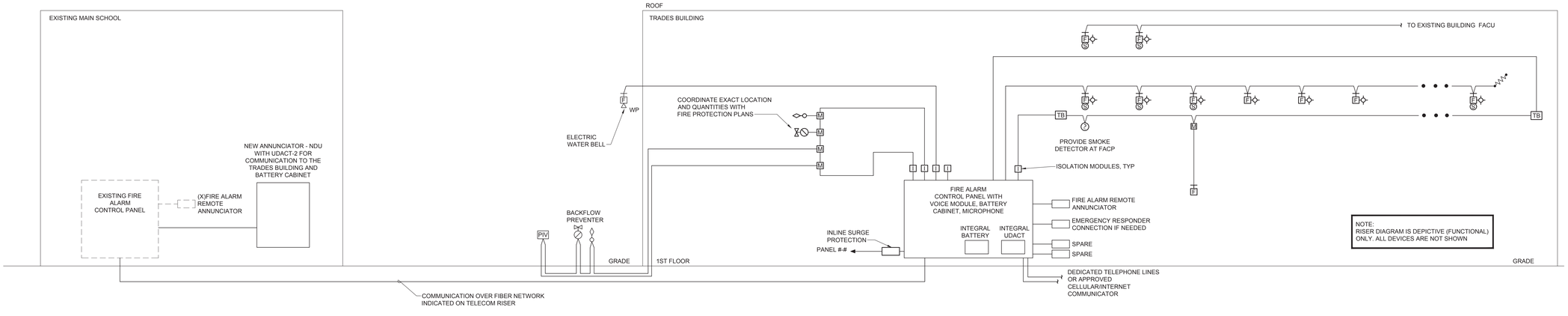
(SYMBOLS SHOWN FOR REFERENCE ONLY AND MAY NOT IMPLY CONTRACTUAL REQUIREMENTS)



2 TYPICAL SURFACE DEVICE DETAIL
NOT TO SCALE



3 FACP PLACARD DETAIL
NOT TO SCALE



3 FIRE ALARM RISER DIAGRAM
NOT TO SCALE

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05/16/2023

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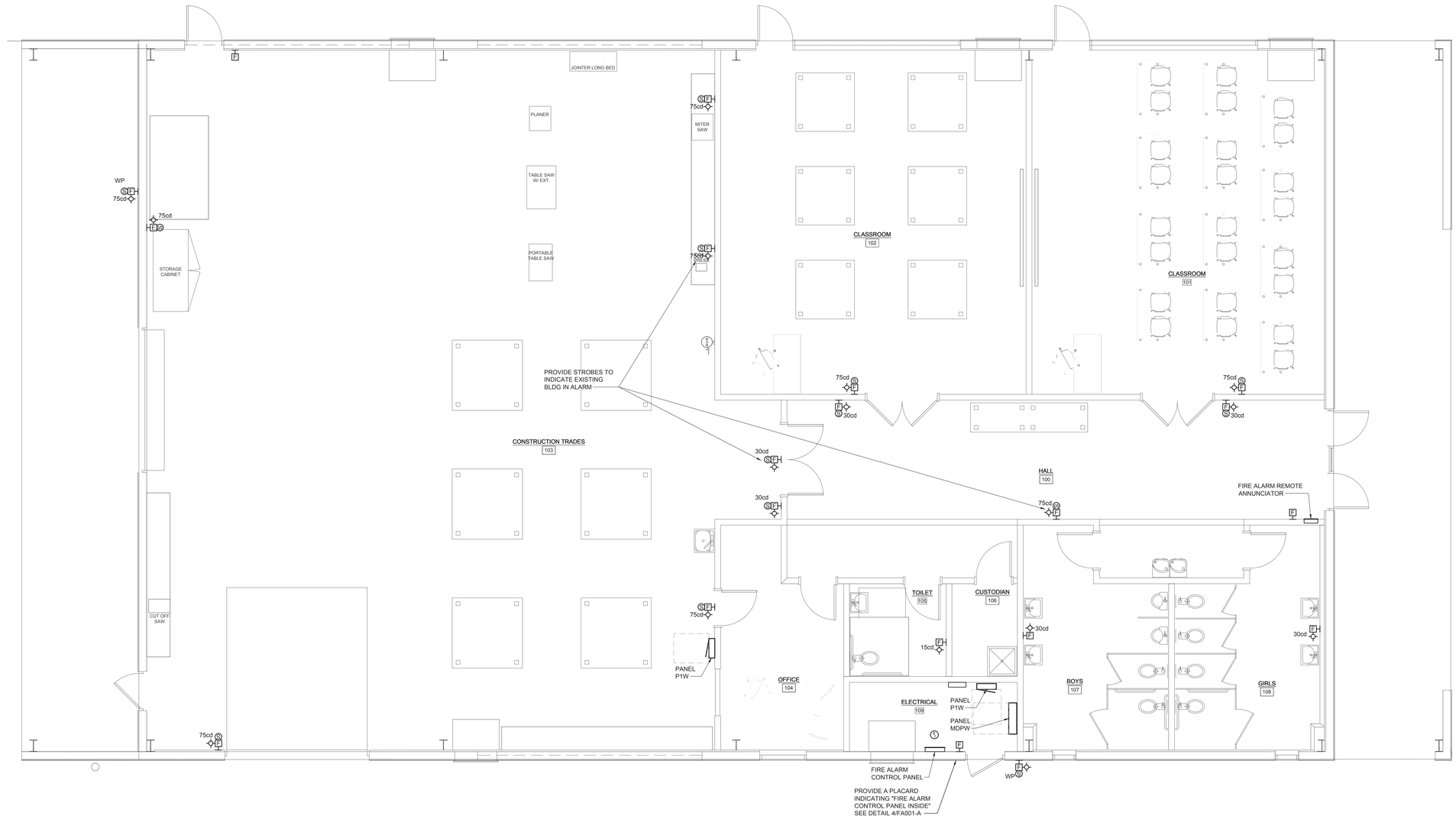
Issue Date: 5/16/2023

FIRE ALARM LEGEND, RISER, NOTES & DETAILS

Rev:	Date	Notes

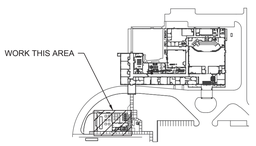
FA001-A

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1 **FLOOR PLAN**
1/4" = 1'-0" 4' 8'

PLAN NORTH



0 **KEYPLAN**
NOT TO SCALE

PLAN NORTH

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230 JOHN P. FAMIGLIETTI
05/16/2023

NHCS Project No.
22-90458

Southeast Area Technical High School
SCIF Grant Addition

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Construction Drawings

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FIRE ALARM FLOOR PLAN

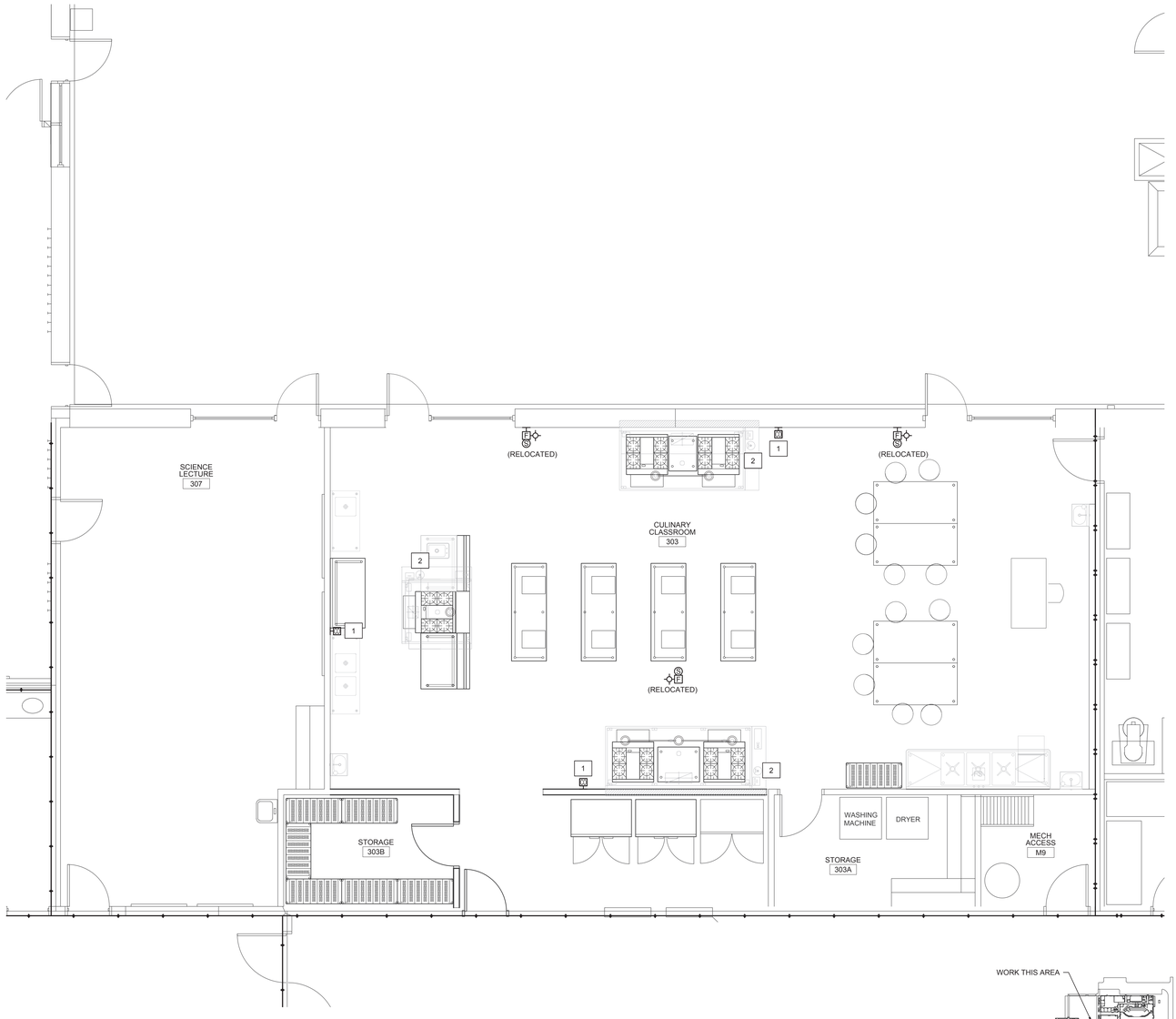
Rev.	Date	Notes

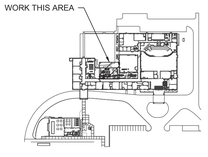
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KEYED NOTES

1. WALL MOUNTED CO DETECTOR AT 60"AFF. COORDINATE EXACT LOCATIONS WITH ENGINEER PRIOR TO INSTALLATION. SURFACE METAL RACEWAY SHALL BE USED TO CONCEAL CABLING TO ABOVE CEILING.
2. CONNECT KITCHEN HOOD ANSUL SYSTEM TO THE FIRE ALARM SYSTEM.





3 **PARTIAL FLOOR PLAN** — 1/4" = 1'-0" — 0 2' 4' 8' — PLAN NORTH

0 **KEYPLAN** — NOT TO SCALE — PLAN NORTH

****ALL WORK ON THIS SHEET SHALL BE PRICED AS ALTERNATE G-1 UNLESS NOTED OTHERWISE.**

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230 FANIOLA, CELITA
05/16/2023

NHCS Project No. 22-90458

Southeast Area Technical High School SCIF Grant Renovations

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

Issue Date: 5/16/2023

FIRE ALARM
ALT. G-1 CULINARY ARTS RENOVATION FLOOR PLAN

Rev.	Date	Notes

FA101-B

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FIRE SPRINKLER PROJECT SCOPE

1 THE SCOPE OF THIS PROJECT INCLUDES THE COMPLETE CONSTRUCTION OF THE FOLLOWING FIRE PROTECTION SYSTEMS, DESIGNED TO PROTECT THE NEW CONSTRUCTION EDUCATION BUILDING.

2 THE CONSTRUCTION OF ONE (1) WET-PIPE FIRE SPRINKLER SYSTEMS. THE FIRST FLOOR IS APPROXIMATELY 6,100 SQFT. THE FIRST FLOOR FIRE SPRINKLER CONTROL VALVES SHALL BE LOCATED IN THE FIRE RISER ENCLOSURE.

3 SPECIAL HAZARD FIRE SUPPRESSION SUCH AS POSSIBLE FUTURE SPRAY BOOTHS, HAZARDOUS EXHAUST, KITCHEN HOOD SYSTEMS, OR OTHER SPECIFIC APPLICATION ARE NOT INCLUDED IN THE DESIGN OF THE WET-PIPE SPRINKLER SYSTEM.

FIRE SPRINKLER GENERAL REQUIREMENTS

1 DESIGN AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE FOLLOWING CODES AND STANDARDS: 2018 NORTH CAROLINA BUILDING CODE, 2018 NORTH CAROLINA FIRE CODE, NFPA 13 STANDARD FOR THE INSTALLATION OF FIRE SPRINKLER SYSTEMS (2013), NFPA 14 STANDARD FOR THE INSTALLATION OF STANDPIPE AND HOSE SYSTEMS (2013), NFPA 24 STANDARD FOR THE INSTALLATION OF PRIVATE FIRE SERVICE MAINS AND THEIR APPURTENANCES (2013), NFPA 25 STANDARD FOR THE INSPECTION, TESTING, AND MAINTENANCE OF WATER-BASED FIRE PROTECTION SYSTEMS (2011), NFPA 70 NATIONAL ELECTRICAL CODE (2020), NFPA 72 NATIONAL FIRE ALARM AND SIGNALING CODE (2017), AND ALL LOCAL AHJ REQUIREMENTS.

2 NO CHANGES TO THE "FP" SHEETS BY THE SPRINKLER SUBCONTRACTOR ARE ALLOWED EXCEPT FOR ADDING SHOP DRAWING INFORMATION. ALL REQUIRED REVISIONS TO THE "FP" SHEETS (OTHER THAN MINOR REVISIONS FOR THE PURPOSE OF COORDINATION) AND ANY ABNORMAL CONDITIONS THAT WOULD RESULT IN NON-COMPLIANCE SHALL BE SUBMITTED IN WRITING AND SHALL BE APPROVED BY PERFORMANCE BASED FIRE PROTECTION ENGINEERING, PLLC AND THE AHJ.

3 THE FIRE SPRINKLER SYSTEMS IN THIS BUILDING SHALL BE MONITORED BY A CENTRAL STATION SIGNALING SYSTEM FURNISHED AND INSTALLED BY THE FIRE ALARM CONTRACTOR. ALL TAMPER SWITCHES AND WATER FLOW INDICATORS SHALL BE INSTALLED BY THE SPRINKLER CONTRACTOR AND WIRED TO THE CENTRAL STATION SIGNALING SYSTEM BY THE ALARM CONTRACTOR.

4 ALL PIPE LENGTHS SHOWN ARE CENTER TO CENTER DIMENSIONS.

5 ALL INSPECTOR'S TEST CONNECTIONS AND LOW POINT DRAINS SHALL BE IN ACCORDANCE WITH NFPA 13 AND SHALL BE DISPLAYED ON SHOP DRAWINGS. MOUNT CONTROL VALVES FOR INSPECTOR'S TEST CONNECTION AND LOW POINT DRAINS INSIDE BUILDING AT 5'-0" A.F.F. PIPE DRAIN LINES TO EXTERIOR OF BUILDING. COORDINATE WITH THE ARCHITECT FOR ACCEPTABLE LOCATIONS.

6 SPRINKLERS IN T-BAR CEILING SHALL BE PLACED IN QUARTER POINT OR CENTER OF 2x4 TILE. IN ALL SOFFITED AREAS, SPRINKLER HEADS SHALL BE ALIGNED WITH ADJACENT LIGHTING.

7 SIGNAGE SHALL BE PROVIDED AS REQUIRED, INCLUDING RISER ROOM IDENTIFICATION, FDC, TEST CONNECTIONS AND HYDRAULIC PLACARD.

8 FLOW SWITCH SHALL BE CONNECTED TO AN OUTSIDE ALARM BELL OR OTHER AUDIBLE ALARM DEVICE AT EACH RISER. APPROVED IDENTIFICATION SIGNS SHALL BE PROVIDED ON THE OUTSIDE ALARM BELL "SPRINKLER FIRE ALARM - WHEN ALARM SOUNDS CALL 911 / FIRE DEPARTMENT"

9 REFERENCE THE CIVIL DRAWINGS FOR ADDITIONAL FIRELINE INFORMATION AND ACTUAL LENGTHS OF PIPE. THE LAYOUT SHOWN ON THE CIVIL DRAWINGS WILL SUPERCEDE WHAT IS SHOWN ON THE FIRE PROTECTION SITE PLAN. THE FIRE PROTECTION SITE PLAN IS FOR HYDRAULIC REFERENCE ONLY.

10 THIS AREA IS NOT KNOWN TO HAVE PROBLEMS WITH MICROBIAL INDUCED CORROSION. NO PREVENTATIVE MEASURES ARE DESIGNED INTO THIS SYSTEM.

11 THE FIRE DEPARTMENT CONNECTION (FDC) IS A 5" STORZ TYPE CONNECTION AND IS LOCATED ATTACHED TO THE EXTERIOR OF THE BUILDING NEAR THE FIRE RISER ENCLOSURE.

12 QUICK RESPONSE SPRINKLER HEADS SHALL BE INSTALLED THROUGHOUT (UNLESS OTHERWISE NOTED).

14 SEISMIC DESIGN REQUIREMENTS FOR NON-STRUCTURAL MEMBERS, INCLUDING SPRINKLER, IS NOT ANTICIPATED. CONFIRM WITH CIVIL AND STRUCTURAL DRAWINGS FOR SITE CLASSIFICATION.

FIRE SPRINKLER CONTRACTOR REQUIREMENTS

1 THE FIRE SPRINKLER SUBCONTRACTOR IS RESPONSIBLE FOR ALL CUTTING, SEALING, PATCHING, AND PAINTING REQUIRED FOR INSTALLATION OF THE SPRINKLER SYSTEM. ALL PENETRATIONS OF RATED ASSEMBLIES SHALL BE FIRE STOPPED WITH AN APPROVED MATERIAL AS PRESCRIBED IN THE APLICABLE CODES AND STANDARDS.

2 THE FIRE SPRINKLER SUBCONTRACTOR SHALL BE LICENSED AS REQUIRED BY THE STATE AND LOCAL AHJ FOR THE DESIGN AND INSTALLATION OF AUTOMATIC SPRINKLER SYSTEMS.

3 ALL WELDING SHALL BE DONE BY CERTIFIED WELDERS AS REQUIRED BY THE STATE AND LOCAL AHJ.

4 THE FIRE SPRINKLER CONTRACTOR SHALL PREPARE A SHOP DRAWING SUBMITTAL AND EQUIPMENT CUTSHEET PACKAGE SUBMITTAL, AND SUBMIT TO THE ENGINEER AND AUTHORITY HAVING JURISDICTION, FOR APPROVAL. APPROVAL OF SHOP DRAWINGS AND EQUIPMENT SHALL BE OBTAINED PRIOR TO STARTING WORK.

5 SPRINKLER CONTRACTOR IS RESPONSIBLE TO COORDINATE AND ADJUST SPRINKLER HEADS AND PIPING TO ACCOUNT FOR ELECTRICAL, MECHANICAL, STRUCTURE AND ALL OTHER TRADES AT NO ADDITIONAL COST.

6 CONTRACTOR SHALL PROVIDE OWNER WITH TEST CERTIFICATES, CARE & MAINTENANCE BOOK, COPY OF NFPA 25, SPARE HEAD CABINET WITH SPRINKLERS, AND REQUIRED SPRINKLER WRENCHES IN ACCORDANCE WITH NFPA 13.

7 DELIVERY OF ALL MATERIALS AND EQUIPMENT TO THE JOB SITE SHALL BE SCHEDULED TO ASSURE COMPLIANCE WITH THE PREDETERMINED CONSTRUCTION SCHEDULE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR STORAGE AND HANDLING ALL MATERIALS AND EQUIPMENT ON THE JOB SITE, INCLUDING FURNISHING OF ANY STORAGE FACILITIES OR STRUCTURE REQUIRED.

8 THE SYSTEM SHOWN ON THESE PLANS REQUIRES A CONNECTION TO THE UNDERGROUND FIRE PROTECTION MAIN. THE CONTRACTOR WHO INSTALLS THE UNDERGROUND PIPING FROM THE POINT OF SERVICE IS RESPONSIBLE FOR COMPLETING THE INSTALLATION TO THE ABOVE GROUND FIRE SPRINKLER SYSTEM CONNECTION FLANGE OR GROOVED CONNECTION. ALL FIRE PROTECTION UNDERGROUND DOWNSTREAM OF THE POINT OF SERVICE IDENTIFIED ON THE PLANS SHALL BE INSTALLED BY A LICENSED CLASS I, CLASS II, OR CLASS V FIRE PROTECTION CONTRACTOR AS REQUIRED BY THE STATE FIRE MARSHAL. THE UNDERGROUND CONTRACTOR IS RESPONSIBLE FOR COMPLETING THE CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR UNDERGROUND PIPING DOCUMENT. ABOVE GROUND CONTRACTORS MAY NOT COMPLETE THE CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR THE UNDERGROUND PIPING OR PORTION THEREOF WHICH HAVE BEEN INSTALLED BY OTHERS.

FIRE SPRINKLER MATERIAL REQUIREMENTS

1 ALL MATERIALS SHALL BE UL LISTED OR FM APPROVED.

2 ALL INTERIOR PIPE SHALL BE BLACK STEEL: SCHEDULE 10 FOR PIPES 2 1/2" AND LARGER AND SCHEDULE 40 FOR PIPES 2" AND SMALLER.

3 ALL EXTERIOR PIPE (INCLUDING NIPPLES OR SPOOL PIECES EXTENDING THROUGH EXTERIOR WALLS) SHALL BE SCHEDULE 40 GALVANIZED STEEL.

4 ALL INTERIOR GROOVED FITTINGS SHALL COME WITH THE FACTORY APPLIED COATING.

5 ALL INTERIOR THREADED FITTINGS SHALL BE CAST IRON, DUCTILE IRON OR MALLEABLE IRON.

6 ALL EXTERIOR FITTINGS SHALL BE GALVANIZED.

7 PROVIDE RIGID COUPLINGS THROUGHOUT, EXCEPT FLEXIBLE COUPLINGS SHALL BE INSTALLED AS FOLLOWS: WITHIN 24 IN. OF THE TOP AND BOTTOM OF ALL RISERS; ON BOTH SIDES OF CONCRETE OR MASONRY WALLS WITHIN 1 FT. OF THE WALL SURFACE; WITHIN 24 IN. OF BUILDING EXPANSION JOINTS; WITHIN 24 IN. OF THE TOP AND BOTTOM OF DROPS TO HOSE LINES, RACK SPRINKLERS, AND MEZZANINES, REGARDLESS OF PIPE SIZE; WITHIN 24 IN. OF THE TOP OF DROPS EXCEEDING 15 FT. IN LENGTH TO PORTIONS OF SYSTEMS SUPPLYING MORE THAN ONE SPRINKLER, REGARDLESS OF PIPE SIZE; ABOVE AND BELOW ANY INTERMEDIATE POINTS OF SUPPORT FOR A RISER OR OTHER VERTICAL PIPE.

8 HANGER LOCATION FOR ALL PIPING SHALL BE IN ACCORDANCE WITH NFPA 13. ALTERNATE UL AND FM HANGER METHODS ARE ACCEPTED AT NO ADDITIONAL COST TO THE OWNER. PROVIDE UL AND FM LITERATURE TO PERFORMANCE BASED FIRE PROTECTION ENGINEERING, PLLC AND THE AHJ FOR REVIEW AND ACCEPTANCE.

FIRE SPRINKLER TESTING REQUIREMENTS

1 THE FIRE SPRINKLER SYSTEM SHALL BE HYDROSTATICALLY PRESSURE TESTED IN ACCORDANCE WITH NFPA 13.

2 ALL PIPING AND ATTACHED APPURTENANCES SUBJECTED TO SYSTEM WORKING PRESSURE SHALL BE HYDROSTATICALLY TESTED AT 200 PSI AND SHALL MAINTAIN THAT PRESSURE WITHOUT LOSS FOR 2 HOURS.

3 LOSS SHALL BE DETERMINED BY A DROP IN GAUGE PRESSURE OR VISUAL LEAKAGE.

4 THE TEST PRESSURE SHALL BE READ FROM A GUAGE LOCATED AT THE LOW POINT OF THE SYSTEM OR PORTION BEING TESTED. THE PRESSURES IN PIPING AT HIGHER ELEVATIONS SHALL BE PERMITTED TO BE LESS THAN 200 PSI WHEN ACCOUNTING FOR ELEVATION LOSSES. SYSTEMS OR PORTIONS OF SYSTEMS THAT CAN BE ISOLATED SHALL BE PERMITTED TO BE TESTED SEPARATELY.

FIRE SPRINKLER LEGEND

PLAN	PROFILE	DESCRIPTION
		FIRE SPRINKLER HEAD
		TEE
		ELBOW
		ENDCAP
		REDUCER
		BUTTERFLY VALVE
		OS&Y GATE VALVE
		2 1/2" HOSE VALVE
		CHECK VALVE
		FLOOR CONTROL VALVE

ANNOTATION LEGEND

PLAN	DESCRIPTION
X" / X' - X"	PIPE DIAMETER OVER PIPE LENGTH
X	KEY NOTE TAG
XX	HAZARD CLASSIFICATION TAG
	MATCHLINE
	REMOTE AREA

WATER SUPPLY INFO

Raw Flow Test Data:
- Static Pressure: 45.00 psi
- Residual Pressure: 23.00 psi
- Residual Flow: 692.00 GPM
- Conducted By: PARAMOUNT ENGINEERING
- Date of Test: 01/13/2023
- Time of Test: N/A
- Location of Test: LEFT & RIGHT OF BUILDING

HYDRAULIC CALCULATION SUMMARY

REMOTE AREA NAME:	SYSTEM DEMAND:	SAFETY FACTOR:
RA1 - LH	289.82 GPM @ 19.77 PSI	20.83 PSI
RA2 - OH2	553.65 GPM @ 25.02 PSI	5.42 PSI

FIRE SPRINKLER SYSTEM DESIGN SCHEDULE

AREAS	SYSTEM TYPE	HAZARD CLASSIFICATION	SYMBOL	DENSITY (GPM/SQFT)	DESIGN AREA (SQFT)	HOSE ALLOWANCE (GPM)	DURATION (MIN)	MAX HEAD SPACING (SQFT)	HEAD TYPE	K-FACTOR	POSITION	FINISH	TEMPERATURE (°F)	REMARKS
OFFICE, CLASSROOM, RESTROOMS	WET-PIPE	LIGHT HAZARD	LH	0.10	1,500[ab]	100	60	225	QUICK RESPONSE STANDARD SPRAY	5.6	CONCEALED PENDENT	WHITE	165	*
ELECTRICAL, CUSTODIAN	WET-PIPE	ORDINARY HAZARD (GROUP 1)	OH1	0.15	1,500[ab]	250	90	130	QUICK RESPONSE STANDARD SPRAY	5.6	UPRIGHT	BRASS	165	*
CONSTRUCTION TRADES	WET-PIPE	ORDINARY HAZARD (GROUP 2)	OH2	0.20	1,500[ab]	250	90	130	QUICK RESPONSE STANDARD SPRAY	8.0	UPRIGHT	BRASS	165	*

a. DESIGN AREA INCREASED 30% FOR SLOPED CEILINGS IN ACCORDANCE WITH NFPA 13 11.2.3.2.4
b. DESIGN AREA IS PERMITTED TO BE REDUCED FOR QUICK RESPONSE SPRINKLER HEADS IN ACCORDANCE WITH NFPA 13 11.2.3.2.3

SHEET LIST

SHEET NAME	SHEET NUMBER
GENERAL FIRE SPRINKLER NOTES	FP001-A
SITE PLAN	FP002-A
LEVEL 1 FIRE SPRINKLER PLAN	FP101-A

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WOODS ENGINEERING Creative Solutions

CBHF Engineers, PLLC

NORTH CAROLINA PROFESSIONAL SEAL 046319 ENGINEER DAVID F. STITH 5-16-23

PERFORMANCE BASED FIRE PROTECTION ENGINEERING PLLC — STATE OF NC ENGINEERING FIRM LICENSE NO. P-1542 — PO BOX 1567 CARY, NC 27512 919.661.7700

NHCS Project No.
22-90458

Southeast Area Technical High School
SCIF Grant Addition

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

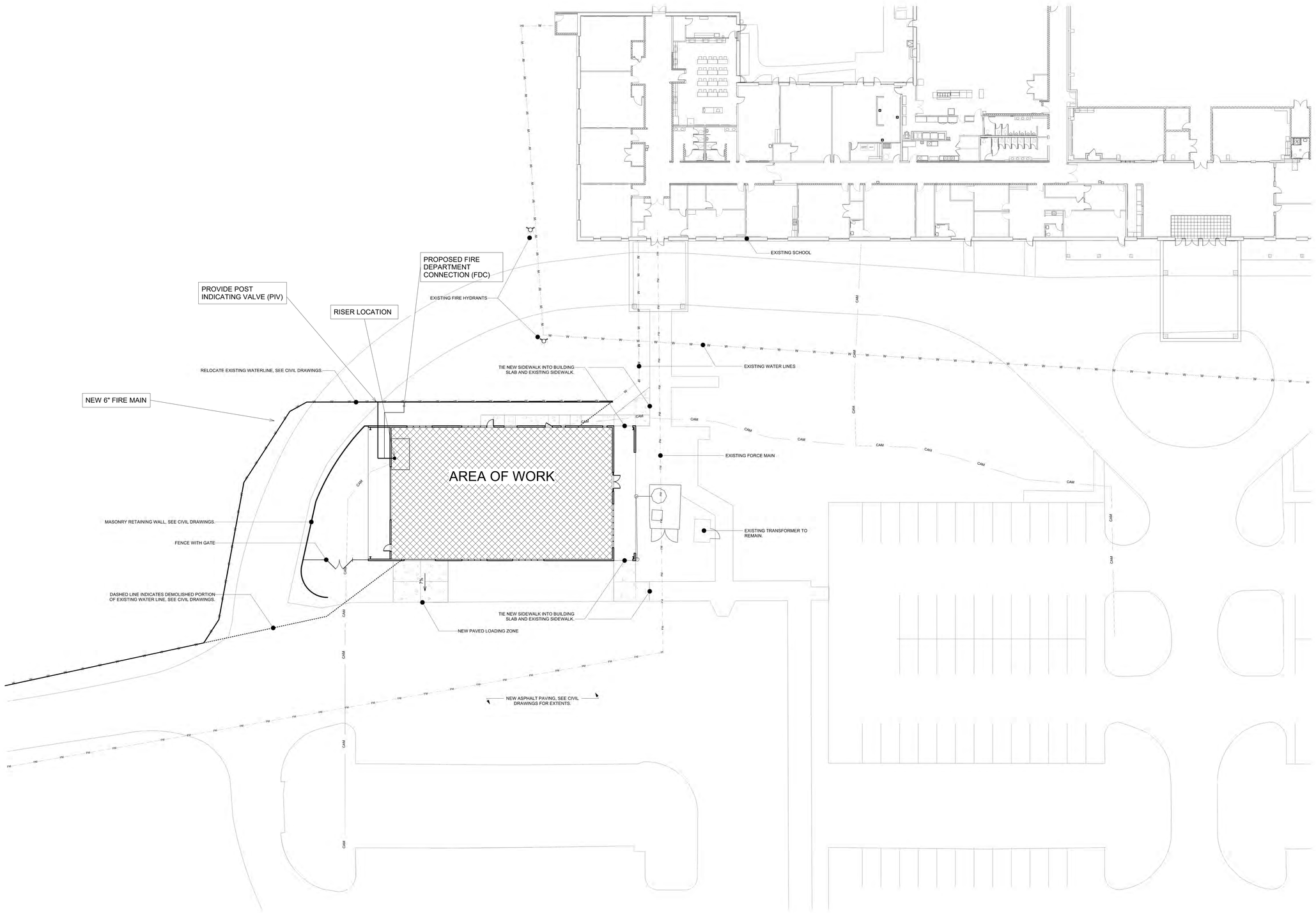
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GENERAL FIRE SPRINKLER NOTES

Rev.	Date	Notes

FP001-A

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1 SITE PLAN
1/4" = 1'-0"

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SITE PLAN

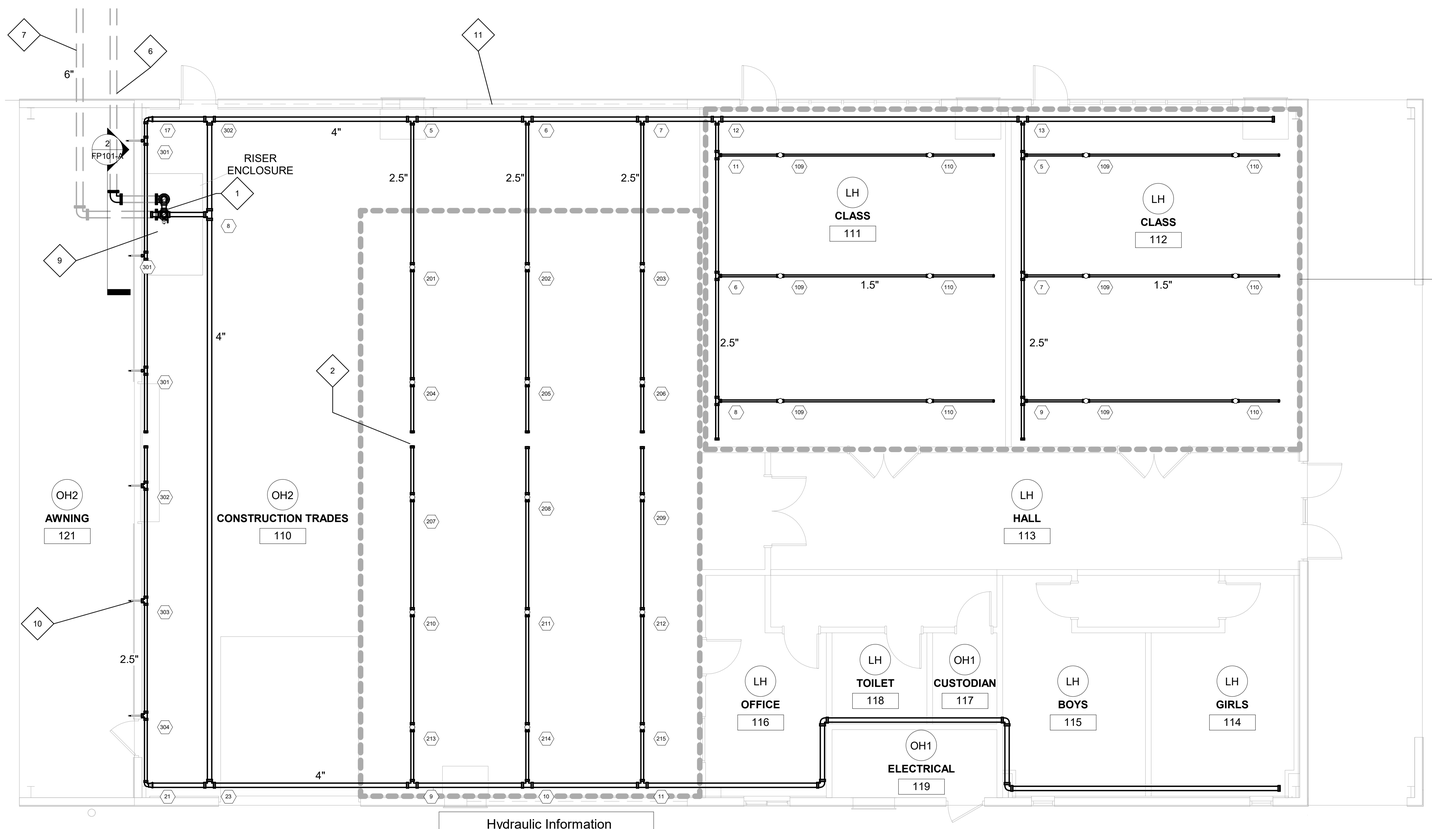
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KEYNOTE LEGEND

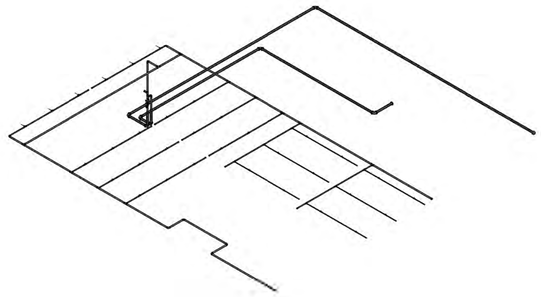
1 RISER ASSEMBLY AND INCOMING FIRE SERVICE THROUGH SLAB.
2 PROVIDE AUTOMATIC AIR-VENTING AT HIGH POINT OF SYSTEM; PIPE OUTLET OF AIR VENT TO DRAIN TO THE EXTERIOR OF THE BUILDING.
3 RISER CONTROL MODULE.
4 CHECK VALVE.
5 BUTTERFLY VAVLE.
6 TO YARD FDC; COORDINATE CONNECTION TYPE WITH LOCAL FD.
7 INCOMING 6" FIRE SERVICE LINE; COORDINATE ROUTING WITH CIVIL PLANS AND PROVIDE PIV.
8 PROVIDE MEANS FOR FORWARD FLOW TEST ON BACKFLOW.
9 RPDA BACKFLOW PREVENTER PROVIDED FOR SITE FIRE PROTECTION.
10 HORIZONTAL DRY SIDEWALLS PROVIDED TO PROTECT COVERED PROJECTED AWNING.
11 SPRINKLER MAINS AND BRANCHLINES SHOWN FOR REPRESENTATIVE PURPOSES ONLY. THE BUILDING WILL BE FULLY SPRINKLER PROTECTED. CONTRACTOR TO SUBMIT SHOP DRAWINGS PRIOR TO FABRICATION OR INSTALLATION FOR APPROVAL.



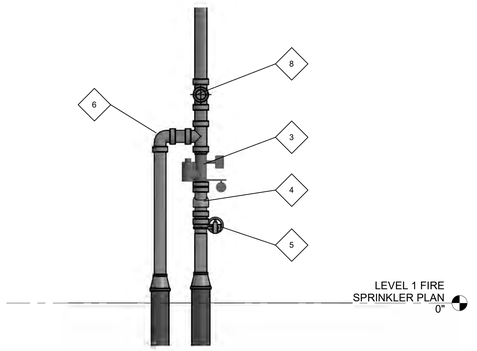
Hydraulic Information	
Remote Area Name	RA1 - LH
Occupancy Classification	Light Hazard
Density	0.10 GPM
Total Hose Streams	100.00 GPM
Flowing Heads	12 @ 15.60 GPM
K-Factor	5.6
Total Water Required	289.82 GPM
Total Pressure Required	19.77 psi
Base of Riser	289.82 GPM
Base of Riser	19.77 psi
Safety Margin	+20.83 (51.3%)

Hydraulic Information	
Remote Area Name	RA2 - OH2
Occupancy Classification	Ordinary Group II
Density	0.20 GPM
Total Hose Streams	250.00 GPM
Flowing Heads	15 @ 20.00 GPM
K-Factor	5.6
Total Water Required	553.64 GPM
Total Pressure Required	25.02 psi
Base of Riser	553.64 GPM
Base of Riser	25.02 psi
Safety Margin	+5.42 (17.82%)

1 LEVEL 1 FIRE SPRINKLER FLOOR PLAN
3/16" = 1'-0"



3 FIRE SPRINKLER ISOMETRIC VIEW



2 FIRE SPRINKLER RISER
1/2" = 1'-0"

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LEVEL 1 FIRE SPRINKLER PLAN

Rev.	Date	Notes

FP101-A

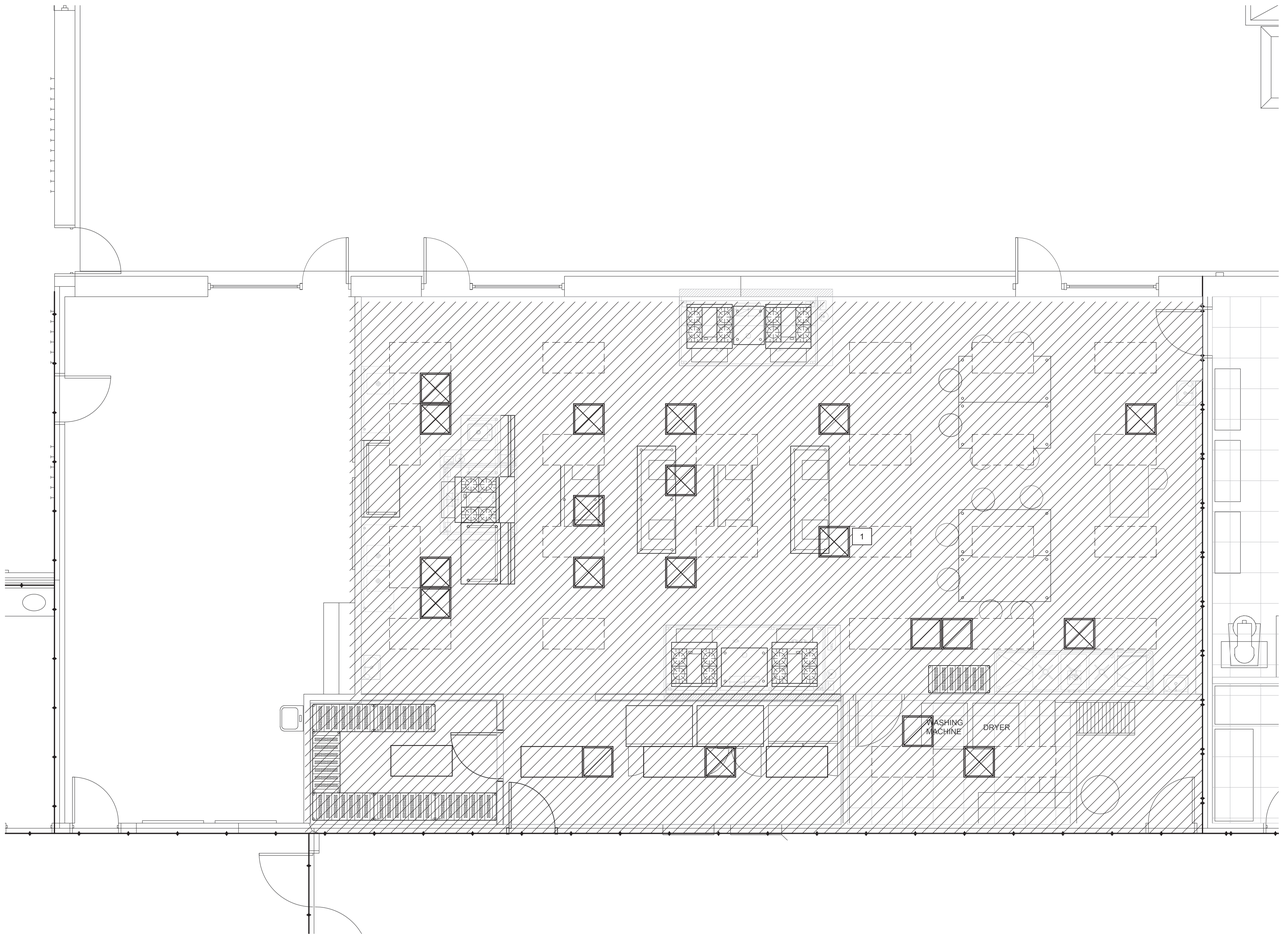
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KEYED NOTES

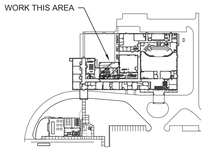
1 REWORK PIPING AND SPRINKLER HEAD LAYOUT TO SUIT ARCHITECTURAL RENOVATIONS, IN HATCHED AREA. COORDINATE WITH CEILINGS, WALLS AND MILLWORK. CULINARY CLASSROOM TO BE RECLASSIFIED FROM LIGHT HAZARD TO ORDINARY HAZARD 1.

FIRE SPRINKLER GENERAL NOTES

1. CONTRACTOR SHALL PROVIDE COMPLETE SPRINKLER DESIGN AND INSTALLATION FOR MODIFICATION TO EXISTING SPRINKLER SYSTEMS IN RENOVATED AREAS AS INDICATED PER NFPA 13, NC STATE BLDG CODE AND LOCAL JURISDICTION REQUIREMENTS. INCLUDE ALL SUBMITTAL DATA AND DOCUMENTATION AS REQUIRED BY AUTHORITIES HAVING JURISDICTION. PROVIDE WRITTEN DOCUMENTATION OF APPROVAL OF DESIGN BY AUTHORITIES HAVING JURISDICTION. INCLUDE ALL DESIGN, MATERIALS AND LABOR FOR FULLY COMPLETE AND APPROVED INSTALLATION.
2. EXISTING BUILDING IS FULLY SPRINKLED. RENOVATION SCOPE OF WORK GENERALLY INCLUDES REWORK OF EXISTING BRANCH LINES, RELOCATION AND/OR INSTALLATION OF NEW SPRINKLER HEADS TO SUIT ARCHITECTURAL MODIFICATIONS. WHERE NEW SPRINKLER HEADS ARE REQUIRED, REPLACE WITH HEADS MATCHING THOSE CURRENTLY INSTALLED IN EXISTING FINISHED AREAS. EXISTING SPRINKLER PIPING MAY BE REUSED AS APPLICABLE TO RENOVATED WORK. CONTRACTOR IS RESPONSIBLE FOR EXISTING EQUIPMENT AND PIPING, ETC. AS REQUIRED BY JURISDICTION APPROVAL. COMPLETE, FULLY OPERATIONAL SYSTEMS IN COMPLIANCE WITH ALL APPLICABLE CODES ARE REQUIRED.
3. VERIFY EXISTING CONDITIONS AND DEVELOP ALL DOCUMENTATION FOR REVIEW AND APPROVAL BY AUTHORITY HAVING JURISDICTION.
4. REWORK PIPING AND HEAD LAYOUT TO SUIT ARCHITECTURAL RENOVATIONS. COORDINATE WITH CEILINGS, WALLS AND MILLWORK. LOCATE HEADS IN CENTER QUADRANT OF CEILING TILES.
5. COORDINATE REWORK OF SPRINKLER PIPING AND SPRINKLER HEADS WITH RENOVATION WORK OF OTHER TRADES.



1 **PARTIAL FLOOR PLAN**
1/4" = 1'-0"
0 2' 4' 8'
PLAN NORTH



2 **KEYPLAN**
NOT TO SCALE
PLAN NORTH

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NORTH CAROLINA PROFESSIONAL SEAL 043801 ENGINEER TROY Z. GRADY
Digitally signed by Troy Z. Grady
Date: 2023.05.15 16:12:05-04'00'

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FIRE SUPPRESSION FLOOR PLAN

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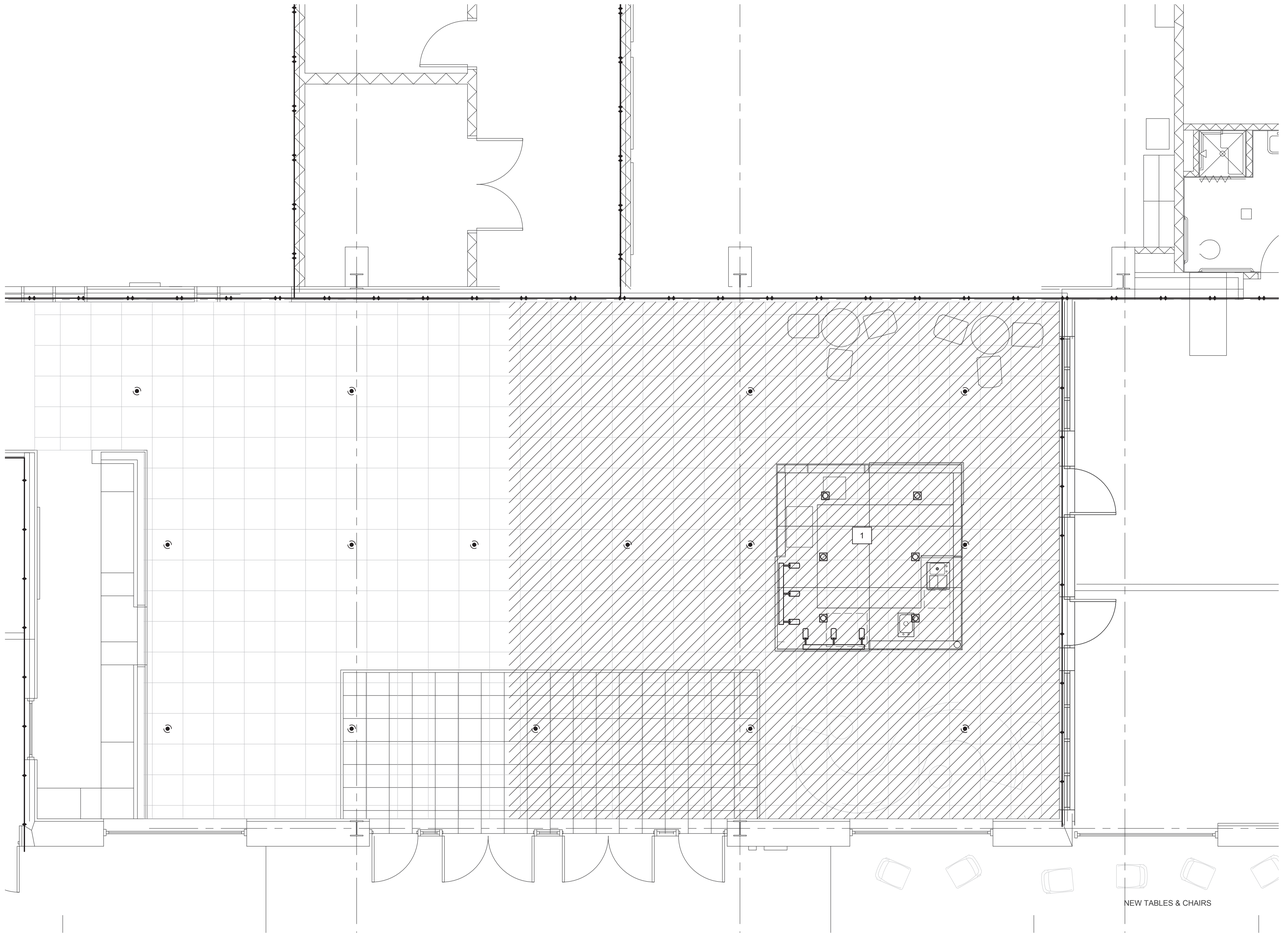
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KEYED NOTES

1 REWORK PIPING AND SPRINKLER HEAD LAYOUT TO SUIT ARCHITECTURAL RENOVATIONS, IN HATCHED AREA. COORDINATE WITH CEILINGS, WALLS AND MILLWORK. PROTECTION IS NEEDED IN THE NEW FLOATING CEILING. CONTRACTOR SHALL ROUTE PIPING DOWN FROM LOBBY CEILING THROUGH STAINLESS STEEL CHASE AND LOCATE HEADS AS REQUIRED. COORDINATE CHASE LOCATIONS WITH ARCHITECT AND HEAD LOCATIONS WITH LIGHT FIXTURES.

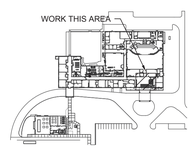
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2. EXISTING BUILDING IS FULLY SPRINKLED. RENOVATION SCOPE OF WORK GENERALLY INCLUDES REWORK OF EXISTING BRANCH LINES, RELOCATION AND/OR INSTALLATION OF NEW SPRINKLER HEADS TO SUIT ARCHITECTURAL MODIFICATIONS. WHERE NEW SPRINKLER HEADS ARE REQUIRED, REPLACE WITH HEADS MATCHING THOSE CURRENTLY INSTALLED IN EXISTING FINISHED AREAS. EXISTING SPRINKLER PIPING MAY BE REUSED AS APPLICABLE TO RENOVATED WORK. CONTRACTOR IS RESPONSIBLE FOR EXISTING EQUIPMENT AND PIPING, ETC. AS REQUIRED BY JURISDICTION APPROVAL. COMPLETE, FULLY OPERATIONAL SYSTEMS IN COMPLIANCE WITH ALL APPLICABLE CODES ARE REQUIRED.
3. VERIFY EXISTING CONDITIONS AND DEVELOP ALL DOCUMENTATION FOR REVIEW AND APPROVAL BY AUTHORITY HAVING JURISDICTION.
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5. COORDINATE REWORK OF SPRINKLER PIPING AND SPRINKLER HEADS WITH RENOVATION WORK OF OTHER TRADES.



1 **PARTIAL FLOOR PLAN**
1/4" = 1'-0"
0 2' 4' 8'

PLAN NORTH



2 **KEYPLAN**
NOT TO SCALE

PLAN NORTH

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NHCS Project No.
22-90458

Southeast Area Technical High School
SCIF Grant Renovations

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

Issue Date: 5/16/2023

FIRE SUPPRESSION FLOOR PLAN

Rev.	Date	Notes

FP102-B

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PLUMBING FIXTURE SCHEDULE - PHASE A

DRAWING CODE	FIXTURE		DESCRIPTION	MANUFACTURER	MODEL	ALTERNATE APPROVED MANUFACTURERS	NOTES	PIPE SIZE DCW	DHW	WASTE	VENT
WC1	FLUSH VALVE WATER CLOSET, FLOOR MTD., 1.28GPF, ADA	BOWL	16.5" HIGH BOWL, ELONGATED, V.C., 2-1/8" TRAPWAY; TOP SPUD; MADERA	AMERICAN STANDARD	3043.001	ZURN, KOHLER	6	1"	-	4"	2"
		FLUSH VALVE	11.5" HIGH, 1.28GPF	SLOAN	111-1.28	ZURN, TEC					
		SEAT	OFLC w/ SELF-SUSTAINING S.S. CHECK HINGE; HEIGHT 17-19" AFF	CHURCH	295SSCT	BEMIS, OLSONITE					
WC2	FLUSH VALVE WATER CLOSET, FLOOR MTD, 1.28GPF	BOWL	15" HIGH BOWL, ELONGATED, V.C., 2-1/8" TRAPWAY; TOP SPUD; MADERA	AMERICAN STANDARD	2234.001	ZURN, KOHLER		1"	-	4"	2"
		FLUSH VALVE	16" HIGH, 1.28GPF	SLOAN	113-1.28	ZURN, TEC					
		SEAT	OFLC w/ SELF-SUSTAINING S.S. CHECK HINGE	CHURCH	295SSCT	BEMIS, OLSONITE					
UR1	URINAL WALL HUNG, ADA	BOWL	VITREOUS CHINA, WATERLESS, ELONGATED RIM MTD. 17 A.F.F. MAX.	SLOAN	WES-4000-STG	AMERICAN STANDARD, TOTO	1	3/4"	-	2"	2"
UR2	URINAL WALL HUNG	BOWL	VITREOUS CHINA, WATERLESS, ELONGATED RIM MTD. 17 A.F.F. MAX.	SLOAN	WES-4000-STG	AMERICAN STANDARD, TOTO	1	3/4"	-	2"	2"
LAV1	LAVATORY WALL HUNG, 0.5GPM, ADA	BOWL	20x18 VITREOUS CHINA, RIM 34" AFF MAX.	AMERICAN STANDARD	0355.012	ZURN, CRANE	1,2,3,9,	1/2"	1/2"	2"	2"
		FAUCET	4"CENTERSET, PRESSURE COMPENSATING, VANDAL PROOF, HOT-COLD, LEVER HANLES, POLISHED CHROME	CHICAGO	802-1000ABCP	ZURN, DELTA					
		DRAIN	CAST BRASS, CHROME PLATED, OPEN GRID STRAINER P.O. PLUG WITH BRASS TAILPIECE	MCGUIRE	155A	DEARBORN, DELTA					
		MIXING VALVE	LEAD FREE THERMOSTATIC MIXING VALVE - SETPOINT = 105°F INSTALL ON HOT WATER SUPPLY, ASSE 1070	CASH ACME	HG-135	LEONARD, WATTS					
LAV2	LAVATORY WALL HUNG, METERING, ADA	BOWL	20"x18" ENAMELED CAST IRON, SINGLE HOLE PUNCH, RIM 34" AFF MAX.	AMERICAN STANDARD	4869.001	ZURN, CRANE	1,2,3,9,	1/2"	-	2"	2"
		FAUCET	SINGLE TEMP, VANDAL PROOF, POLISHED CHROME FINISH	CHICAGO	333-665E39PSHABCP	SYMMONS, DELTA					
		DRAIN	CAST BRASS, CHROME PLATED, OPEN GRID STRAINER P.O. PLUG WITH BRASS TAILPIECE	MCGUIRE	155A	DEARBORN, DELTA					
HS1	WALL HUNG HAND SINK, ADA	BOWL	20x18 ENAMELED CAST IRON, RIM 34" AFF MAX.	AMERICAN STANDARD	4869.008	ZURN, CRANE	1,2,3,9	1/2"	1/2"	2"	2"
		FAUCET	8" CENTERSET, TWO WRISTBLADE HANDLES, SOLID BRASS CONSTRUCTION, CERAMIC CARTRIDGE, HIGH TEMP LIMIT STOP	CHICAGO	786-GN2AFCE1ABCP	ZURN, DELTA					
		DRAIN	CAST BRASS, CHROME PLATED, OPEN GRID STRAINER P.O. PLUG WITH BRASS TAILPIECE	MCGUIRE	155A	DEARBORN, DELTA					
		MIXING VALVE	LEAD FREE THERMOSTATIC MIXING VALVE - SETPOINT = 105°F INSTALL ON HOT WATER SUPPLY, ASSE 1070	CASH ACME	HG-135	LEONARD, WATTS					
MS1	MOP SINK	BASIN	24"x24"x10" MOLDED STONE w/ STAINLESS STEEL DRAIN	FIAT	MSB-2424	FLORESTONE, ZURN		1/2"	1/2"	3"	2"
		FAUCET	BRASS CONSTRUCTION, ROUGH CHROME FINISH, INTEGRAL VACUUM BREAKER, INTEGRAL CHECK STOPS, 3/4"THREADED SPOUT, SERVICE STOPS, WALL MOUNT, VANDAL RESISTANT, LEVER HANDLES	MOEN	8124	DELTA, ZURN					
		ACCESSORIES	STAINLESS STEEL, THREE STATION MOP/BROOM HOLDER	MOEN	8198	-					
		ACCESSORIES	STAINLESS STEEL, HOSE BRACKET WITH 30" HEAVY DUTY RUBBER HOSE, GHT THREADED CONNECTION	MOEN	8199	DELTA, ZURN					
EW1	WALL MOUNT EYE WASH	FIXT	STAINLESS STEEL EYE/FACE WASH AND BOWL, BARRIER FREE, HAND ACTIVATION PADDLE, STAY-OPEN BALL VALVE	BRADLEY	S19224SS	GUARDIAN, ACORN	5	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	1,11	1/2"	-	2"	2"
EWH1	ELECTRIC WATER HEATER, 52 GAL	FIXT	GLASS-LINED TANK, DUAL 4500W, 208V/1PH, NON-SIMULT.	A.O. SMITH	DEN-52	BRADFORD-WHITE, RHEEM	8	3/4"	3/4"	-	-
		EXP TANK	2 GAL DIAPHRAGM		PMC-5					-	-
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	-
BFP	BACKFLOW PREVENTOR	FIXT	LEAD FREE, VERTICAL, DOUBLE CHECK	WATTS	LF007	FEBCO, WILKINS		MATCH			
WCO	WALL CLEANOUT	FIXT	ROUND S/S ACCESS COVER & SCREW, RECESS BRONZE THRD. PLUG	SIOUX CHIEF	870	ZURN, SMITH		-	-	MATCH	-
HB1	EXTERIOR HOSE BIBB	FIXT	FREEZELESS, POWDER COATED, 3/4"HOSE THREAD, ANTI-SIPHON	WOODFORD	19	ZURN, WATTS		3/4"	-	-	-
HB2	INTERIOR HOSE BIBB	FIXT	POLISHED CHROME, VACUUM BREAKER, WHEEL HANDLE, 3/4" HOSE THREAD	WOODFORD	24	ZURN, WATTS		3/4"	-	-	-
YH1	FREEZELESS YARD HYDRANT	FIXT	DUCTILE IRON HANDLE, ALL METAL CONSTRUCTION, 3/4" BRASS HOSE NOZZLE WITH VACUUM BREAKER	WOODFORD	R34	ZURN, WATTS		3/4"	-	-	-

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. DELETED.
5. PROVIDE WITH EMERGENCY THERMOSTATIC MIXING VALVE MEETING ASSE 1071, BRADLEY EFX8 OR APPROVED EQUAL.
6. TRIP LEVER OR FLUSH HANDLE TO BE LOCATED ON WIDE SIDE OF STALL OR TOILET ROOM.
7. PROVIDE TRAP PRIMER
8. FIELD ROUTE 1" DRAIN PAN DRAIN PIPING TO MOP SINK.
9. PROVIDE 1/2" IPS X 3/8" OD ANGLE BRASS STOP(S) WITH RIGID COPPER RISERS. ALL EXPOSED PIPING SHALL BE CHROME PLATED.
10. PROVIDE INLINE CHECK VALVES FOR WATER SUPPLY LINES.
11. PROVIDE 1/2"IPS x 3/8" O.D. BRASS STOP CONCEALED BEHIND CABINET.

PLUMBING GENERAL 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 LATEST EDITIONS OF THE FOLLOWING STANDARDS AND CODES, INSOFAR AS THEY APPLY:

   NORTH CAROLINA STATE BUILDING CODE (CODE), LATEST EDITION AND REVISIONS.

   LOCAL JURISDICTION REQUIREMENTS.
5. PERMITS AND INSPECTIONS: OBTAIN ALL PERMITS, LICENSES, INSPECTIONS, ETC., REQUIRED FOR THE WORK. 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
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
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

CA	COMPRESSED AIR PIPING
C	CONDENSATE PIPING
140°F	DOMESTIC 140°F WATER PIPING
140R	DOMESTIC 140°F RETURN WATER PIPING
	DOMESTIC COLD WATER PIPING
	DOMESTIC HOT WATER CIRCULATION PIPING
	DOMESTIC HOT WATER PIPING
F	FILTERED WATER PIPING
SP	FIRE SPRINKLER PIPING
FM	FORCE MAIN PIPING
NG	GAS PIPING (NAT. OR LP)
GW	GREASE WASTE PIPING
MCA	MEDICAL COMPRESSED AIR PIPING
N2	NITROUS OXIDE PIPING
O2	O2 (0XYGEN) PIPING
OD	OVERFLOW ROOF DRAIN PIPING
RD	ROOF DRAIN PIPING
	SANITARY VENT PIPING
	SANITARY WASTE PIPING
T	TEPID WATER PIPING
VAC	VACUUM PIPING
	BACKFLOW PREVENTION DEVICE
	BALL VALVE
	CHECK VALVE
	CIRCUIT SETTER (BALANCING VALVE)
P	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 P FM	SUMP PUMP
1	DEMOLITION KEYED NOTE TAG
1	NEW WORK KEYED NOTE
	POINT OF CONNECTION - NEW TO EXISTING
	PRESSURE REDUCING VALVE
	SOLENOID VALVE
M 140°F	THERMOSTATIC MIXING VALVE
WCO	WALL CLEANOUT
WH	WALL HYDRANT
	WASHING MACHINE BOX
SA	WATER HAMMER ARRESTOR

NOTE: ALL ITEMS LISTED IN THIS SCHEDULE MAY NOT BE USED IN PROJECT

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NHCS Project No.
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Southeast Area Technical High School
SCIF Grant Addition

5301 Sidbury Rd.
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Construction Drawings

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PLUMBING NOTES, LEGENDS, SCHEDULES AND ABBREVIATIONS

Rev.	Date	Notes

P-001-A

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PLUMBING FIXTURE SCHEDULE - PHASE B

DRAWING CODE	FIXTURE		DESCRIPTION	MANUFACTURER	MODEL	ALTERNATE APPROVED MANUFACTURERS	NOTES	PIPE SIZE			
								DCW	DHW	WASTE	VENT
KEC#5	HAND SINK	BOWL	BY KITCHEN EQUIPMENT VENDOR	-	-	-	1,2	1/2"	1/2"	2"	2"
		FAUCET	BY KITCHEN EQUIPMENT VENDOR	-	-	-					
		DRAIN	BY KITCHEN EQUIPMENT VENDOR	-	-	-					
		MIXING VALVE	LEAD FREE THERMOSTATIC MIXING VALVE - SETPOINT = 105°F INSTALL ON HOT WATER SUPPLY, ASSE 1070	CASH ACME	HG-135	LEONARD, WATTS					
CP1	HOT WATER RECIRCULATION PUMP	FIXT	IN-LINE WET ROTOR, STAINLESS STEEL VOLUTE, 3-SPEED, 115/1/60, 125W. BUILT IN THERMAL PROTECTION.	GRUNDFOS	UPS 15	B&G, MYERS		-	MATCH	-	-
WCO	WALL CLEANOUT	FIXT	ROUND S/S ACCESS COVER & SCREW, RECESS BRONZE THRD. PLUG	SIOUX CHIEF	870	ZURN, SMITH		-	-	MATCH	-
FS1	FLOOR SINK	FIXT	8x8x6 A.R.C.I. RECEPTOR, MEMBRANE CLAMP, DOME STRAINER, 1/2 GRATE	SIOUX CHIEF	861	ZURN, SMITH		-	-	MATCH	-
GI	GREASE INTERCEPTOR	FIXT	INDOOR GREASE INTERCEPTOR	GREASE GUARDIAN	GG-D20	THERMACO, SCHIER		-	-	MATCH	-

NOTES
1. PROVIDE ADA INSULATION KIT
2. PROVIDE 1/2" IPS X 3/8" OD ANGLE BRASS STOP(S) WITH RIGID COPPER RISERS. ALL EXPOSED PIPING SHALL BE CHROME PLATED.

PLUMBING GENERAL NOTES

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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 GENERAL DEMOLITION NOTES

1. THE PLUMBING CONTRACTOR SHALL REVIEW THE DRAWINGS AND SPECIFICATIONS FOR DEMOLITION REQUIREMENTS AND LAYOUT HIS WORK IN A COMPATIBLE AND COMPLEMENTARY MANNER. REMOVE ALL FIXTURES, EQUIPMENT, PIPING, SUPPORTS, ACCESSORIES, ETC. MADE OBSOLETE BY THESE ALTERATIONS AS SHOWN IN THE PLUMBING DRAWINGS. ALL ITEMS TO BE REMOVED OR MODIFIED MAY NOT BE SHOWN, HOWEVER, THIS CONTRACTOR SHALL REMOVE ANY PLUMBING WORK AS REQUIRED BY THE CONSTRUCTION OR AS DIRECTED BY THE OWNER OR THE ENGINEER. SURVEY THE AFFECTED AREAS BEFORE SUBMITTING A BID.
2. ALL EXISTING PLUMBING FIXTURES, EQUIPMENT AND PIPING SHALL REMAIN UNLESS SPECIFICALLY NOTED TO BE REMOVED.
3. THESE DRAWINGS ARE COMPILED BY THE ARCHITECT/ENGINEER FROM THE OWNER'S AS-BUILT RECORD DRAWINGS AND LIMITED FIELD VERIFICATION OF EXISTING CONDITIONS FOR THE PURPOSE OF INDICATING THE WORK REQUIRED AND ARE BELIEVED TO BE CORRECT. NOTWITHSTANDING, THE PLUMBING CONTRACTOR SHALL VERIFY ALL PIPING, FIXTURE LOCATIONS, DIMENSIONS, MATERIALS AND ALL FIELD CONDITIONS AFFECTING HIS WORK.
4. WHERE PLUMBING SYSTEMS PASS THROUGH THE DEMOLITION AREAS TO SERVE OTHER PORTIONS OF THE PREMISES, THEY SHALL REMAIN OR BE SUITABLY RELOCATED AND THE SYSTEM RESTORED TO NORMAL OPERATION. ADVISE THE ARCHITECT/ENGINEER IMMEDIATELY IF SUCH CONDITIONS ARE UNCOVERED BEFORE PROCEEDING WITH ADDITIONAL WORK.
5. PROTECT ALL EXISTING LIFE SAFETY SYSTEMS, FIRE ALARM AND PUBLIC ADDRESS SYSTEMS AND MAINTAIN THEM IN OPERATION THROUGHOUT THE PROGRESS OF THE WORK. NOTIFY THE OWNER AND ARCHITECT/ENGINEER IN WRITING WHEN SHUTDOWNS ARE REQUIRED PRIOR TO ANY OUTAGE OF SERVICE. WHERE THE DURATION OF A PROPOSED OUTAGE CANNOT BE TOLERATED BY THE OWNER, PROVIDE TEMPORARY CONNECTIONS AS REQUIRED TO MAINTAIN SERVICE.
6. SURVEY THE EFFECTED AREAS BEFORE SUBMITTING A BID AS ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DEPICTED ON THE DRAWINGS AND SOME UNUSUAL CONDITIONS MAY EXIST.

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
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
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

CA	COMPRESSED AIR PIPING
C	CONDENSATE PIPING
140°F	DOMESTIC 140°F WATER PIPING
140R	DOMESTIC 140°F RETURN WATER PIPING
	DOMESTIC COLD WATER PIPING
	DOMESTIC HOT WATER CIRCULATION PIPING
	DOMESTIC HOT WATER PIPING
F	FILTERED WATER PIPING
SP	FIRE SPRINKLER PIPING
FM	FORCE MAIN PIPING
NG	GAS PIPING (NAT. OR LP)
GW	GREASE WASTE PIPING
MCA	MEDICAL COMPRESSED AIR PIPING
N2	NITROUS OXIDE PIPING
O2	O2 (0XYGEN) PIPING
OD	OVERFLOW ROOF DRAIN PIPING
RD	ROOF DRAIN PIPING
	SANITARY VENT PIPING
	SANITARY WASTE PIPING
T	TEPID WATER PIPING
VAC	VACUUM PIPING
	BACKFLOW PREVENTION DEVICE
	BALL VALVE
	CHECK VALVE
	CIRCUIT SETTER (BALANCING VALVE)
P	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 P FM	SUMP PUMP
1	DEMOLITION KEYED NOTE TAG
1	NEW WORK KEYED NOTE
	POINT OF CONNECTION - NEW TO EXISTING
	PRESSURE REDUCING VALVE
	SOLENOID VALVE
M 140°F	THERMOSTATIC MIXING VALVE
WCO	WALL CLEANOUT
WH	WALL HYDRANT
	WASHING MACHINE BOX
SA	WATER HAMMER ARRESTOR

NOTE: ALL ITEMS LISTED IN THIS SCHEDULE MAY NOT BE USED IN PROJECT

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NORTH CAROLINA PROFESSIONAL SEAL 043801 ENGINEER TROY D. GRAY
Digitally signed by Troy D. Gray
Date: 2023.05.15 14:59:20-04'00'

NHCS Project No. 22-90458

Southeast Area Technical High School SCIF Grant Renovations

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

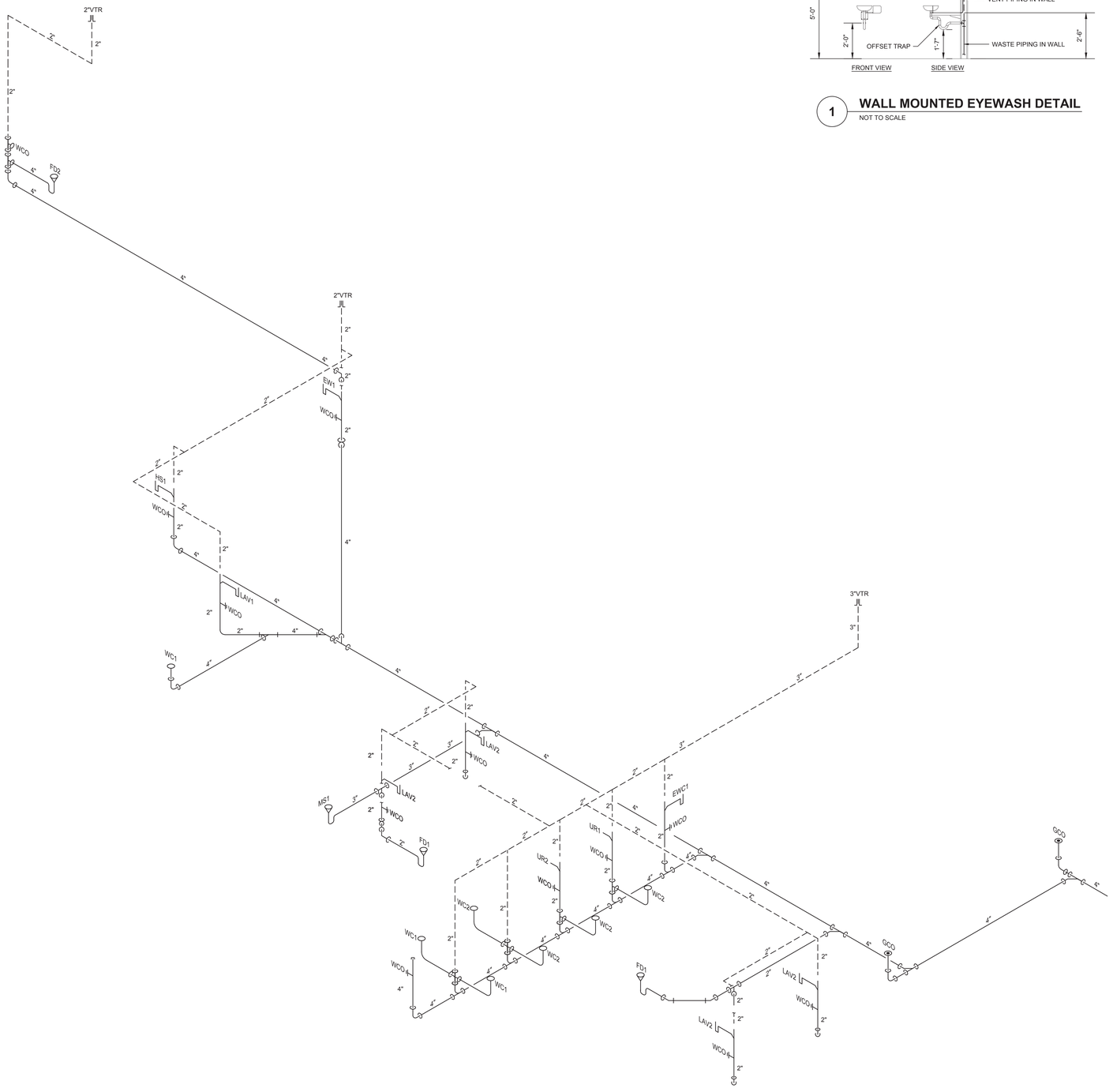
Issue Date: 5/16/2023

PLUMBING NOTES, LEGENDS, SCHEDULES AND ABBREVIATIONS

Rev.	Date	Notes

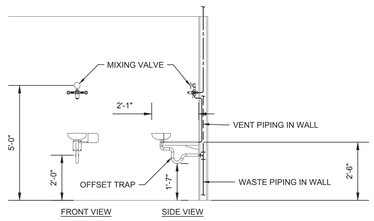
P-001-B

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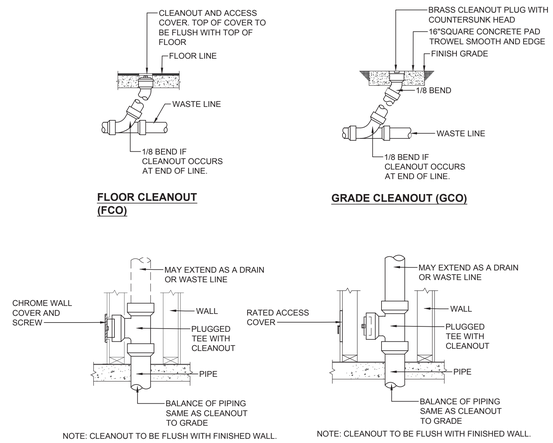
1 SHOP ADDITION WASTE-VENT RISER DIAGRAM

NOT TO SCALE



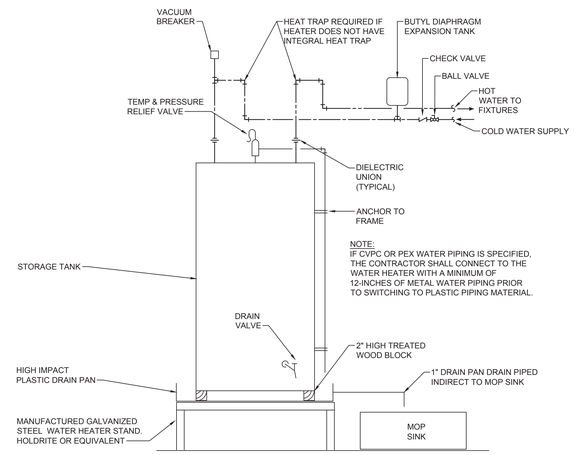
1 WALL MOUNTED EYEWASH DETAIL

NOT TO SCALE



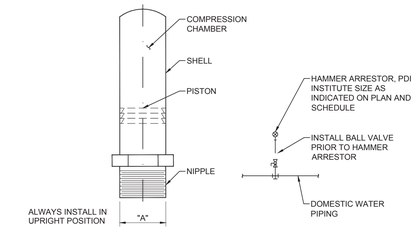
2 TYPICAL CLEANOUT DETAILS

NOT TO SCALE



3 ELECTRIC WATER HEATER DETAIL

NOT TO 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"

4 HAMMER ARRESTOR DETAIL

NOT TO SCALE

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Date: 2023.05.16 14:58:03-04'00'

NHCS Project No. 22-90458

Southeast Area Technical High School SCIF Grant Addition

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

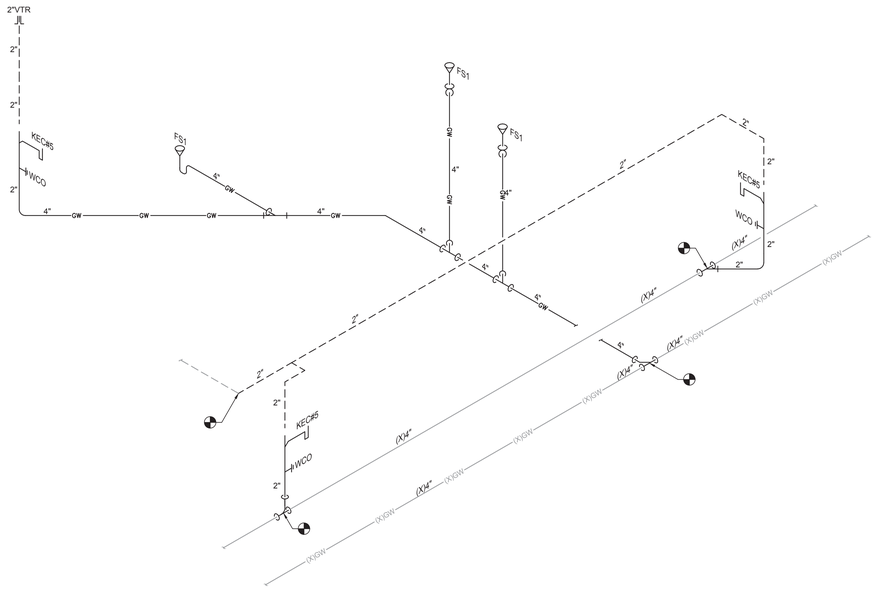
Issue Date: 5/16/2023

PLUMBING DETAILS

Rev.	Date	Notes

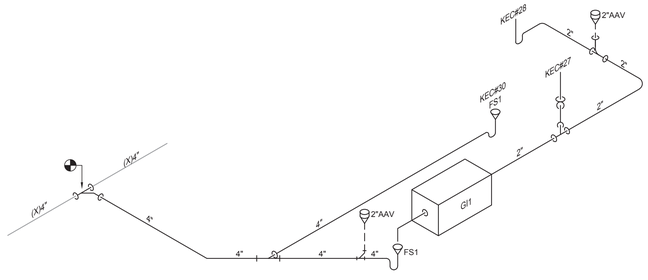
P-501-A

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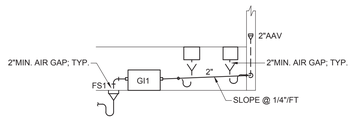
1 ALTERNATE G-1
CULINARY CLASSROOM WASTE-VENT RISER DIAGRAM

NOT TO SCALE



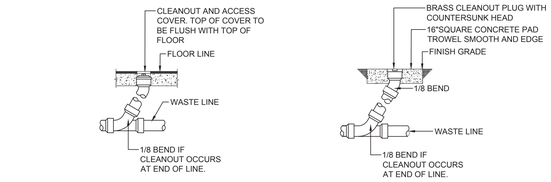
2 ALTERNATE G-2
COFFEE BAR WASTE-VENT RISER DIAGRAM

NOT TO SCALE



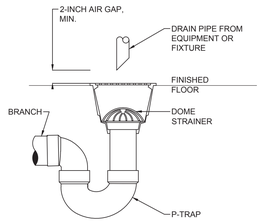
3 GREASE TRAP PIPING DETAIL

NOT TO SCALE



4 TYPICAL CLEANOUT DETAILS

NOT TO SCALE



5 FLOOR SINK DETAIL

NOT TO SCALE

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14:59:23-04'00'

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22-90458

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Construction Drawings

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PLUMBING DETAILS

Rev.	Date	Notes

P-501-B

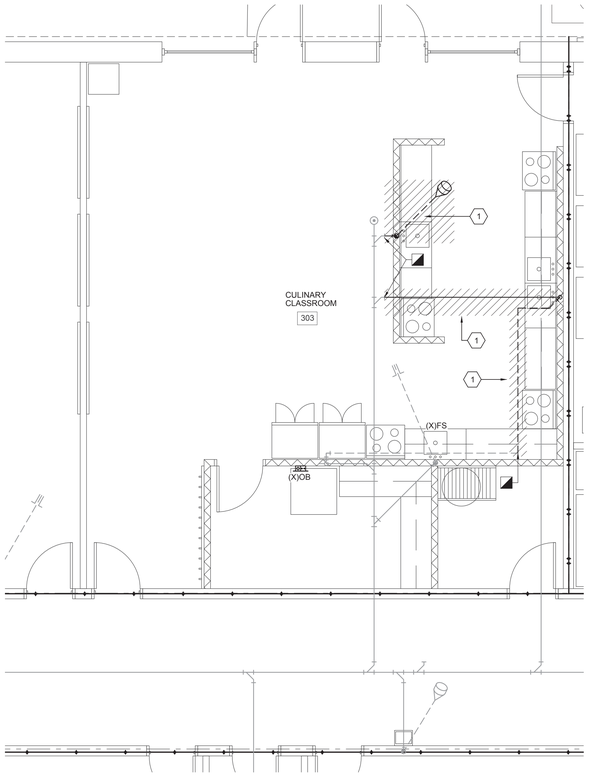
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GENERAL NOTES

ALL WORK ASSOCIATED CULINARY CLASSROOM 303 TO BE PART OF ALTERNATE G-1.

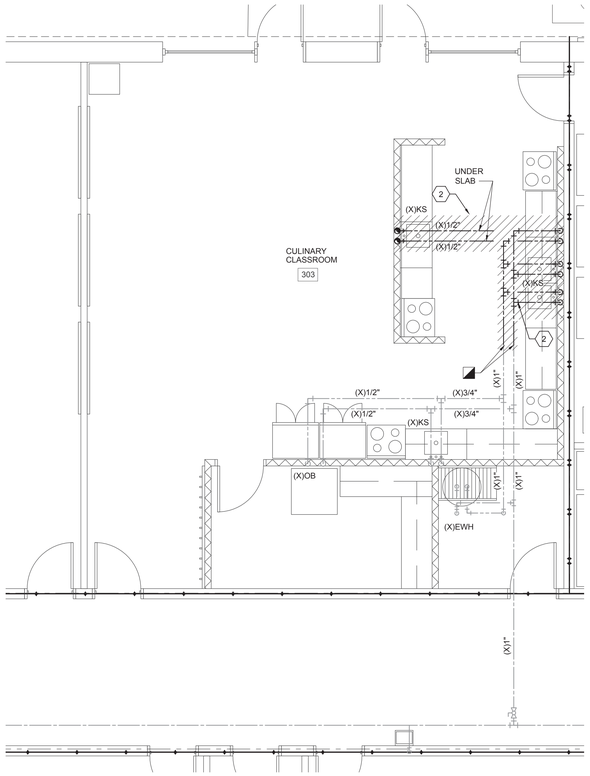
KEYED NOTES

1. PC SHALL REMOVE EXISTING WASTE AND VENT PIPING BACK TO POINT OF END OF DEMOLITION AS INDICATED ON PLAN AND CAP.
2. PC SHALL REMOVE EXISTING DOMESTIC WATER PIPING BACK TO POINT OF END OF DEMOLITION AS INDICATED ON PLAN AND CAP.



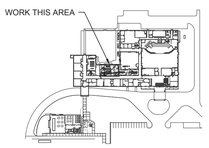
1 ALTERNATE G-1
CULINARY ARTS WASTE-VENT DEMOLITION FLOOR PLAN
1/4" = 1'-0"

PLAN NORTH



2 ALTERNATE G-1
CULINARY ARTS DOMESTIC WATER DEMOLITION FLOOR PLAN
1/4" = 1'-0"

PLAN NORTH



3 KEYPLAN
NOT TO SCALE

PLAN NORTH

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NORTH CAROLINA PROFESSIONAL SEAL 043801 ENGINEER TROY T. CRAIG
Digitally signed by TROY CRAIG
2023.05.15 14:59:21 -04'00'

NHCS Project No.
22-90458

Southeast Area
Technical High
School
SCIF Grant
Renovations

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

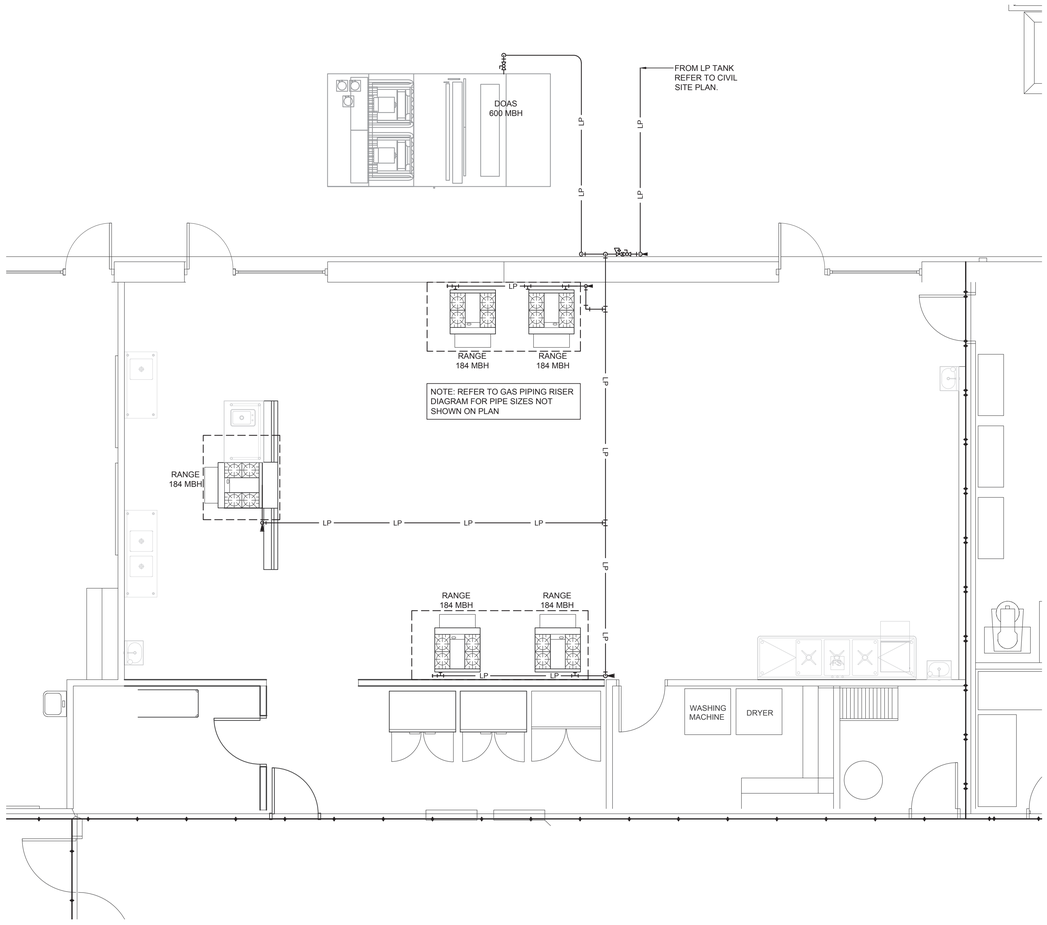
Issue Date: 5/16/2023

PLUMBING
DEMOLITION
FLOOR PLAN

Rev.	Date	Notes

PD101-B

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1 ALTERNATE G-1 CULINARY ARTS GAS PIPING FLOOR PLAN

1/4" = 1'-0"

0 2' 4' 8'

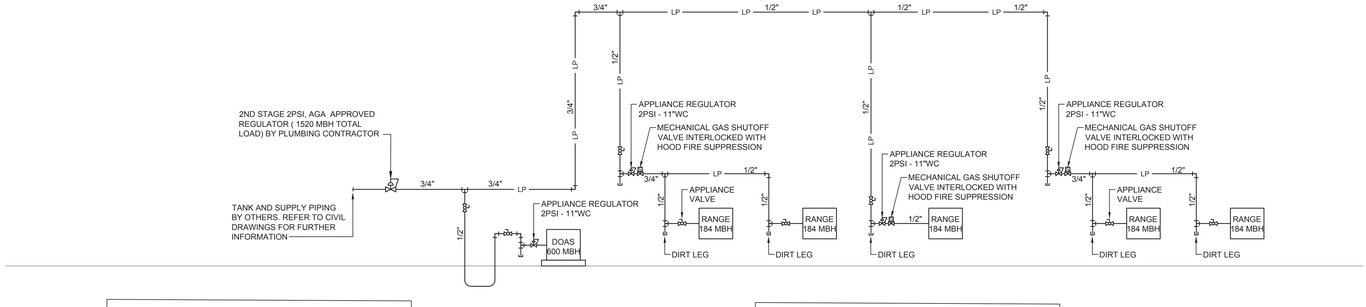
PLAN NORTH

GENERAL NOTES

ALL WORK ASSOCIATED CULINARY CLASSROOM 303 TO BE PART OF ALTERNATE G-1.

GAS LOAD SCHEDULE

FIXTURE TAG	DESCRIPTION	BTUH RATING	QUANTITY	TOTAL
DOAS	DEDICATED OUTDOOR AIR UNIT	600,000	1	600,000
RANGE	RANGE	184,000	1	184,000
RANGE	RANGE	184,000	1	184,000
RANGE	RANGE	184,000	1	184,000
RANGE	RANGE	184,000	1	184,000
RANGE	RANGE	184,000	1	184,000
TOTAL LOAD				1,520,000
BUILDING SERVICE GAS PRESSURE				2 psi

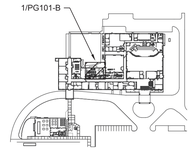


NOTE: HIGH PRESSURE GAS PIPING SIZED PER TABLE 402.4(27) OF THE 2018 NC FUEL GAS CODE FOR A TOTAL DEVELOPED LENGTH OF 100 LINEAR FEET OF SCH. 40 PIPE, INLET PRESSURE OF LESS THAN 2PSI AND 1.0 PSI PRESSURE DROP.

NOTE: LOW PRESSURE GAS PIPING SIZED PER TABLE 402.4(28) OF THE 2018 NC FUEL GAS CODE FOR A TOTAL DEVELOPED LENGTH OF 20 LINEAR FEET OF SCH. 40 PIPE, INLET PRESSURE OF 11 IN WC AND A 0.5 IN WC PRESSURE DROP.

2 ALTERNATE G-1 CULINARY ARTS GAS PIPING RISER DIAGRAM

NOT TO SCALE



3 KEYPLAN

NOT TO SCALE

PLAN NORTH

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2023.05.15 14:59:23-04'00'

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Southeast Area
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Renovations

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Castle Hayne, NC 28429

Construction Drawings

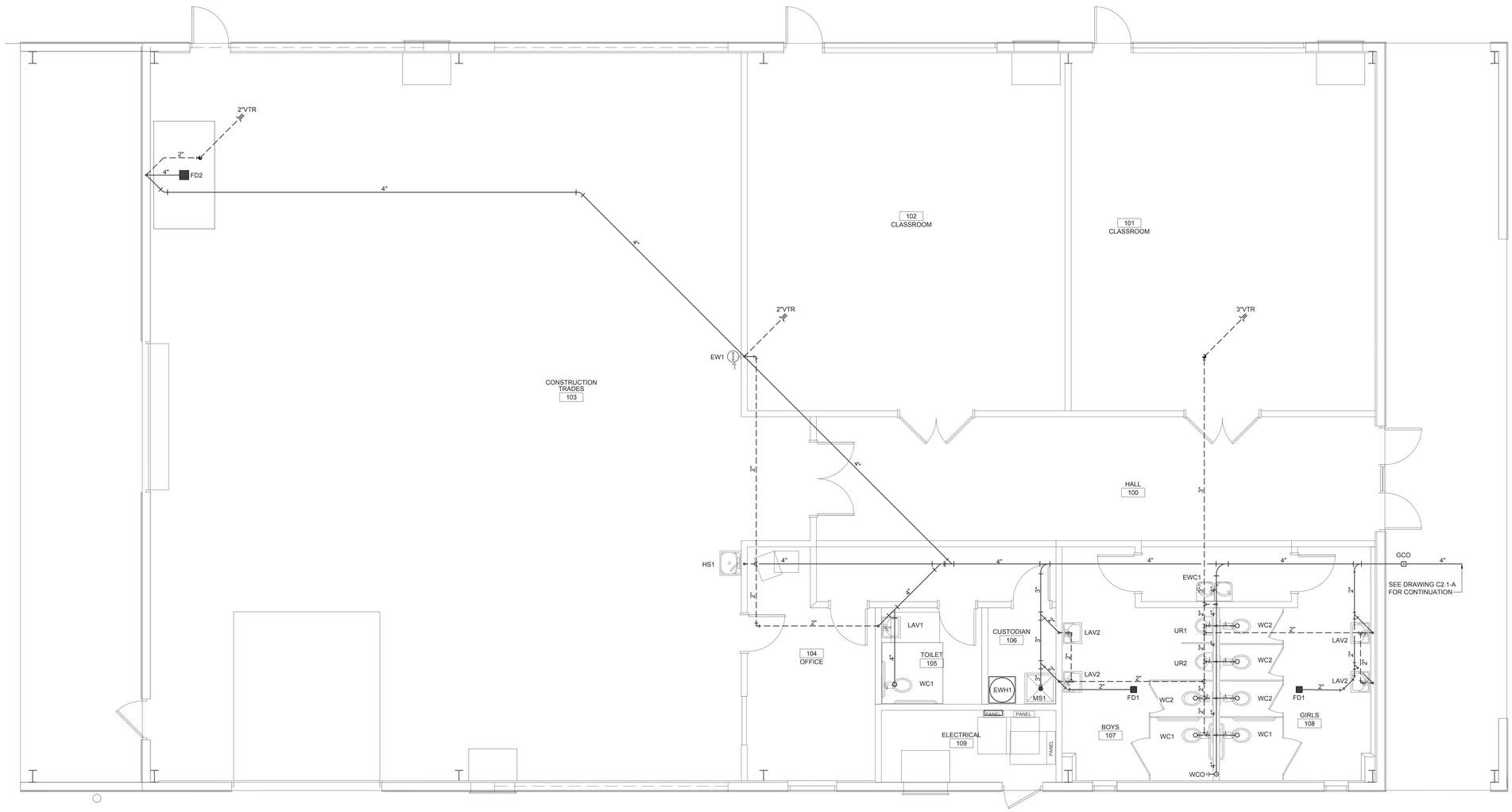
Issue Date: 5/16/2023

PLUMBING
GAS PIPING
FLOOR PLAN

Rev.	Date	Notes

PG101-B

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1 **SHOP ADDITION SANITARY SEWER PLAN**

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043801 TIMOTHY G. CRAIG
Digitally signed by Timothy G. Craig
Date: 2023.05.16 14:58:02 -04'00'

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SCIF Grant Addition

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PLUMBING
SANITARY WASTE-VENT
FLOOR PLAN

Rev.	Date	Notes

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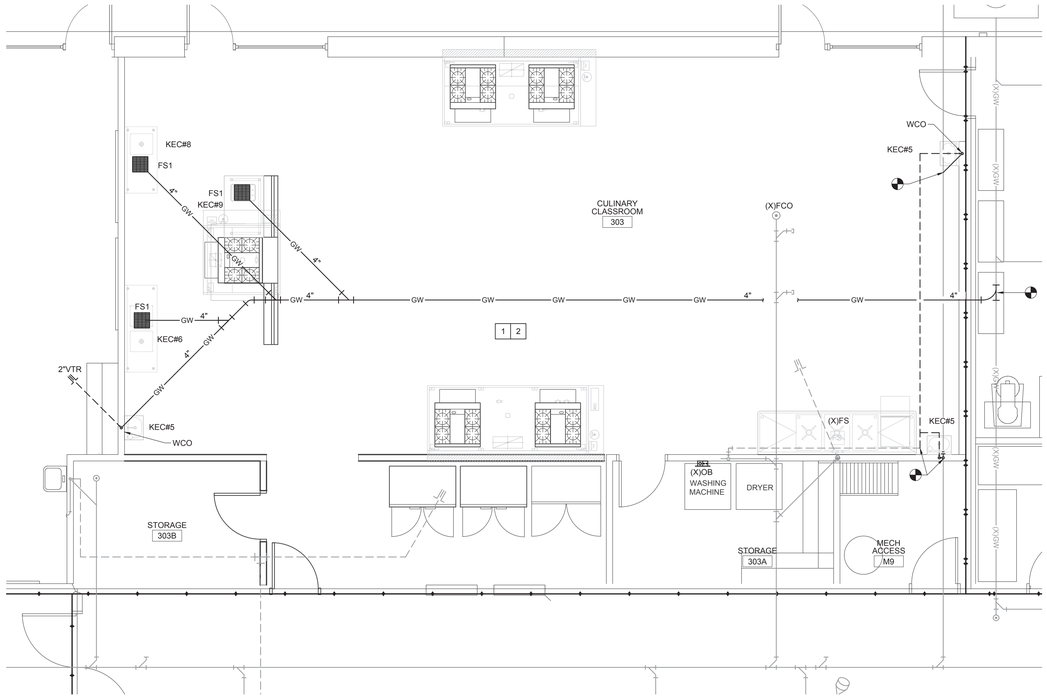
GENERAL NOTES

ALL WORK ASSOCIATED CULINARY CLASSROOM 303 TO BE PART OF ALTERNATE G-1.

ALL WORK ASSOCIATED CULINARY COFFEE BAR TO BE PART OF ALTERNATE G-2.

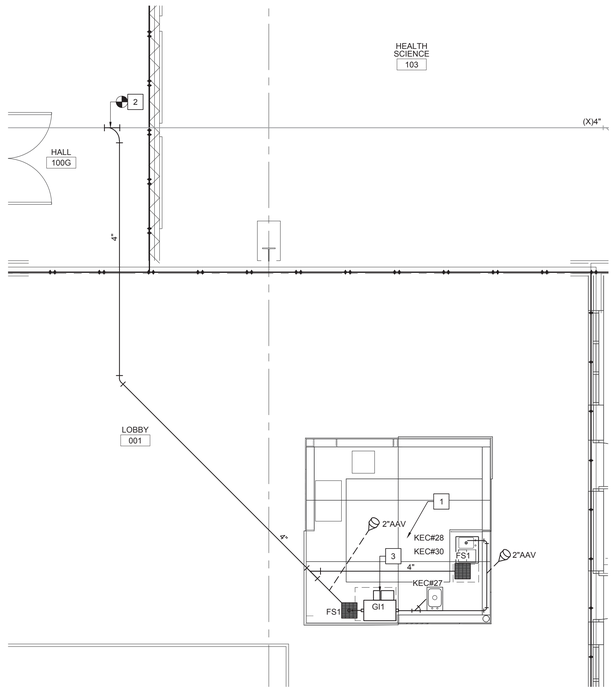
KEYED NOTES

1. KITCHEN EQUIPMENT PLAN AND SCHEDULES PROVIDED BY VENDOR.
2. CONNECT NEW SANITARY SEWER AND VENT PIPING TO EXISTING.
3. INSTALL UNDER SINK GREASE INTERCEPTOR. SEE DETAIL 3/P-501-B FOR ADDITIONAL INFORMATION



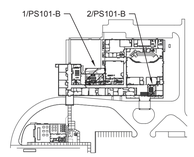
1 **ALTERNATE G-1**
CULINARY ARTS SANITARY WASTE-VENT FLOOR PLAN
1/4" = 1'-0"

PLAN NORTH



2 **ALTERNATE G-2**
COFFEE BAR SANITARY WASTE-VENT FLOOR PLAN
1/4" = 1'-0"

PLAN NORTH



3 **KEYPLAN**
NOT TO SCALE

PLAN NORTH

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2023.05.15 14:59:21-04'00'

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PLUMBING FLOOR PLAN

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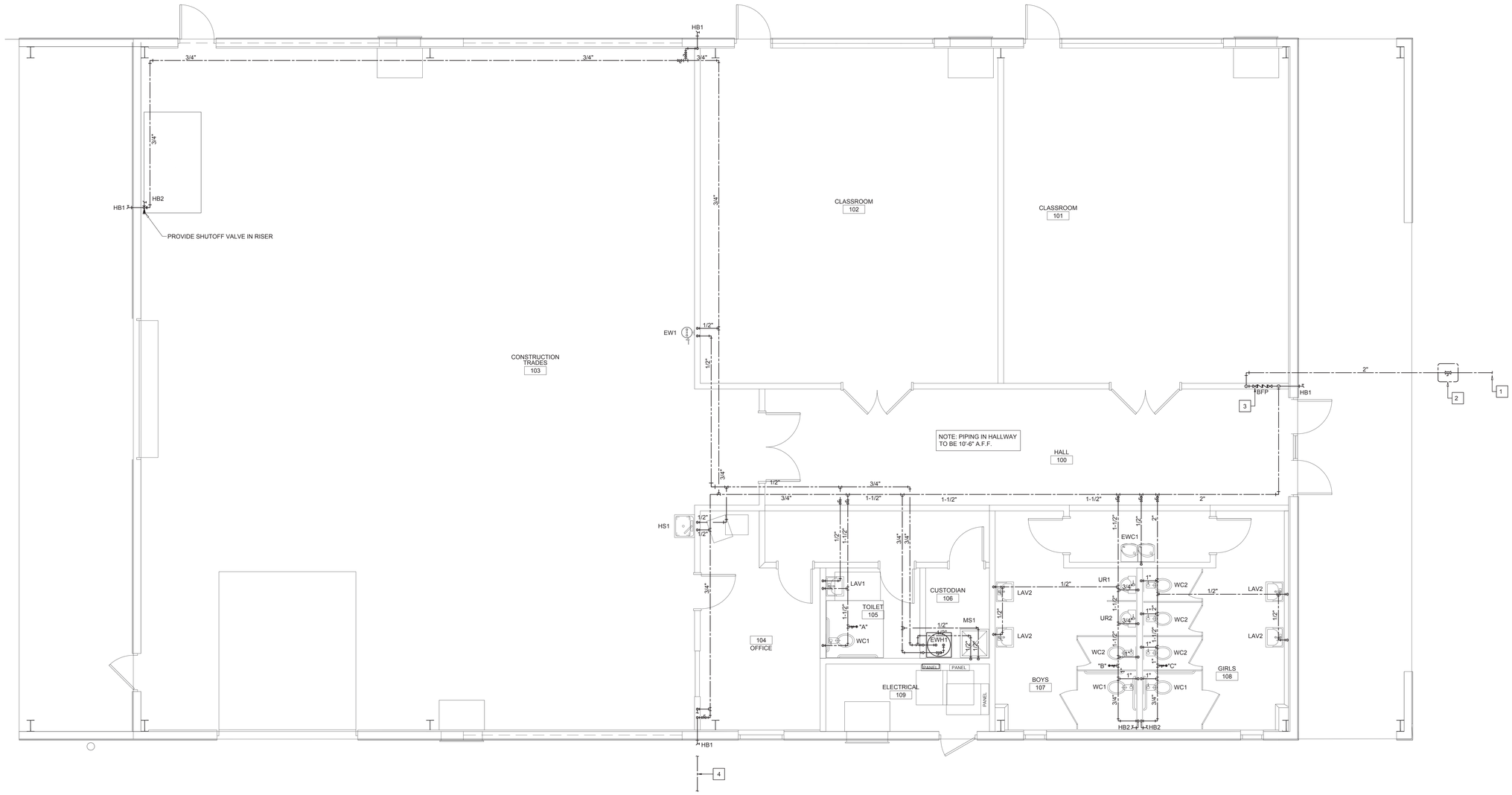
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GENERAL NOTES

ALL WORK ASSOCIATED CULINARY CLASSROOM 303 TO BE PART OF ALTERNATE G-1.

KEYED NOTES THIS SHEET

1. SEE SITE UTILITY DRAWING FOR CONTIUATION
2. MAIN SHUT OFF VALVE IN PRE-FAB VALVE BOX
3. INSTALL 2" DCW UP WALL TO ABOVE CEILING. INSTALL 2" LEAD FREE, HORIZONTAL DOUBLE CHECK VALVE, BACKFLOW PREVENTER IN MAINTENANCE ACCESSIBLE AND STUDENT VIEWABLE ENCLOSURE. COORDINATE INSTALLATION WITH ARCHITECTURAL DRAWINGS.
4. ROUTE 3/4" DCW LINE OUT TO DUMPSTER PAD AND INSTALL NEW YARD HYDRANT. REFER TO CIVIL DRAWINGS FOR LOCATION OF DUMPSTER PAD. COORDINATE WITH ARCHITECT AND G.C. FOR EXACT LOCATION OF HYDRANT. SEE PLUMBING FIXTURE SCHEDULE FOR SPECIFICATION.



1 **SHOP ADDITION DOMESTIC WATER PLAN**

1/4" = 1'-0"

PLAN NORTH

0 2' 4' 8'

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043801 JOHN E. CRAIG

Digitally signed by John E. Craig
Date: 2023.05.16 14:58:02 -04'00'

NHCS Project No.
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PLUMBING DOMESTIC WATER FLOOR PLAN

Rev.	Date	Notes

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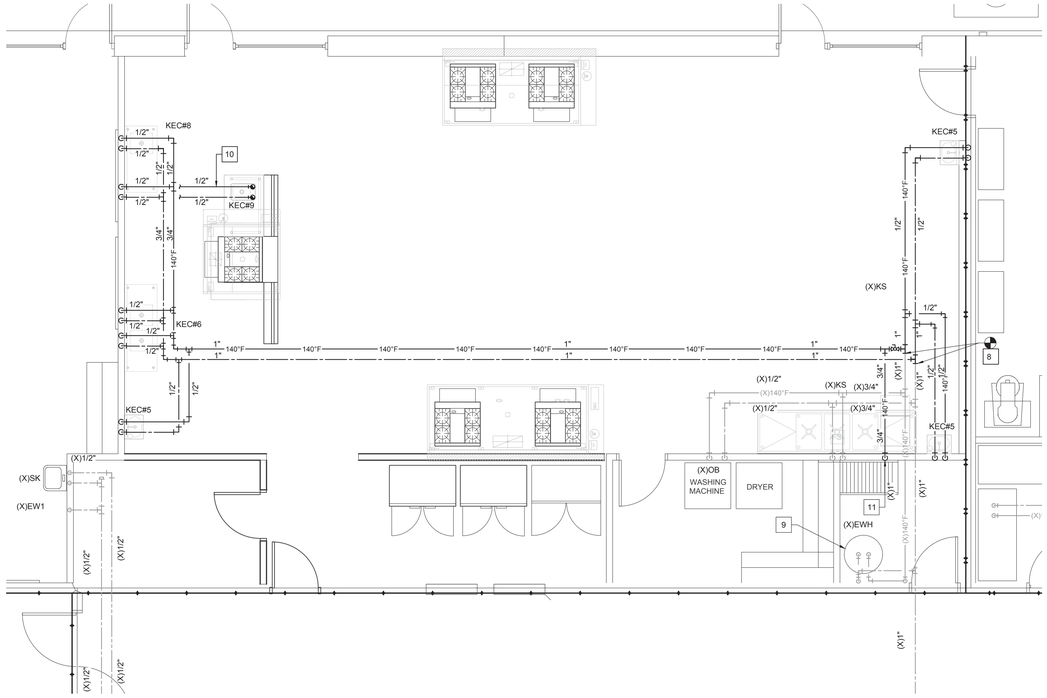
KEYED NOTES

1. PC SHALL FIELD LOCATE AND CONNECT NEW DCW PIPING TO EXISTING DCW PIPING
2. PC SHALL ROUTE DCW PIPING DOWN IN CHASE TO CASEWORK
3. PC SHALL PROVIDE AND INSTALL ANGLE STOP FOR SUPPLY TO ICE MACHINE.
4. PC SHALL PROVIDE AND INSTALL ANGLE STOOP FOR SUPPLY TO COFFEE MACHINE AND ESPRESSO MACHINE. (COFFEE AND ESPRESO MACHINES PROVIDED BY OTHERS)
5. PC SHALL ROUTE DOMW PIPING INSIDE OF CASEWORK.
6. PC SHALL TAP INTO (X)DHW PIPING SERVING RESTROOM.
7. PC SHALL INSTALL CIRCULATION PUMP AND CONNECT NEW CIRCULATION PIPING INTO EXISTING WATER HEATER PIPING. PC SHALL SET DISCHARGE TEMPERATURE OF (X)WATER HEATER TO 140°F. PC SHALL VERIFY THAT EXISTING LAVATORIES AND SINK THAT IS FED BY THE EXISTING HEATER HAS POINT OF USE MIXING VALVES INSTALLED AND THAT THEY ARE ADJUSTING TO PROVIDE WATER BETWEEN 90°F AND 105°F AT FAUCETS. THE NEW DHW PIPING SERVING THE NEW CAFE SHALL PROVIDE 140°F WATER.
8. PC SHALL CONNECT NEW WATER PIPING TO (X) WATER PIPING ABOVE CEILING.
9. PC SHALL SET DISCHARGE WATER TEMPERATURE FOR (X)EWH TO 140°F.
10. PC SHALL ROUTE TYPE "K" SOFT COPPER UNDER SLAB TO ISLAND FIXTURE. NO JOINTS PERMITTED BENEATH SLAB.
11. PC SHALL ROUGH-IN 3/4" DHW LINE FOR UNDERCOUNTER DISHWASHER.

GENERAL NOTES

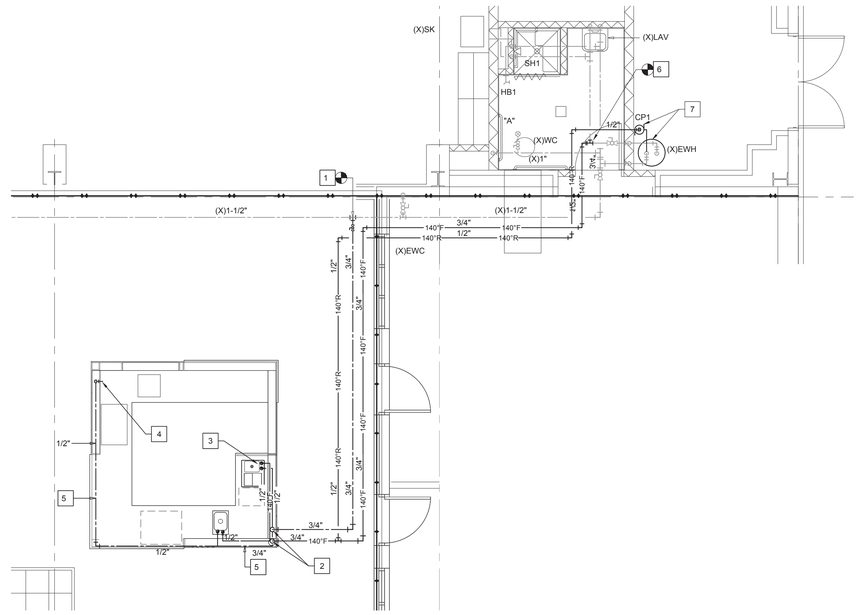
ALL WORK ASSOCIATED CULINARY CLASSROOM 303 TO BE PART OF ALTERNATE G-1.

ALL WORK ASSOCIATED CULINARY COFFEE BAR TO BE PART OF ALTERNATE G-2.



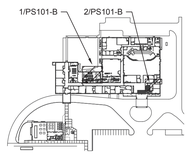
1 **ALTERNATE G-1**
CULINARY ARTS DOMESTIC WATER FLOOR PLAN
1/4" = 1'-0"

PLAN NORTH



2 **ALTERNATE G-2**
COFFEE BAR DOMESTIC WATER FLOOR PLAN
1/4" = 1'-0"

PLAN NORTH



3 **KEYPLAN**
NOT TO SCALE

PLAN NORTH

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NORTH CAROLINA PROFESSIONAL SEAL 043801 ENGINEER TROY T. GRADY
Digitally signed by TROY GRADY
Date: 2023.05.15 14:59:22-04:00

NHCS Project No.
22-90458

Southeast Area Technical High School
SCIF Grant Renovations

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

Issue Date: 5/16/2023

PLUMBING
DOMESTIC WATER
FLOOR PLAN

Rev.	Date	Notes

PW101-B

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MECHANICAL DUCTWORK LEGEND

BD	BALANCING DAMPER
	CEILING RETURN OR TRANSFER REGISTER/GRILLES
	EXHAUST GRILLES
	CEILING SUPPLY DIFFUSERS
	CONICAL TEE
FD	HORIZONTAL FIRE DAMPER
FD	VERTICAL FIRE DAMPER
SD	VERTICAL SMOKE DAMPER
F/SD	VERTICAL FIRE/SMOKE DAMPER
	FLEXIBLE DUCT CONNECTION
DROP	DECLINED DROP WITH RESPECT TO AIRFLOW
RISE	INCLINED RISE WITH RESPECT TO AIRFLOW
Ø	INDICATES ROUND DUCTWORK
	MITERED ELBOW WITH TURNING VANES
M	MOTORIZED CONTROL DAMPER
	RADIUS ELBOW
	SUPPLY DUCT TURNING UP (ROUND OR RECTANGULAR)
	RETURN DUCT TURNING UP (ROUND OR RECTANGULAR)
	EXHAUST DUCT TURNING UP (ROUND OR RECTANGULAR)
	OUTSIDE AIR DUCT TURNING UP (ROUND OR RECTANGULAR)
	SUPPLY DUCT TURNING DOWN (ROUND OR RECTANGULAR)
	RETURN DUCT TURNING DOWN (ROUND OR RECTANGULAR)
	EXHAUST DUCT TURNING DOWN (ROUND OR RECTANGULAR)
	OUTSIDE AIR DUCT TURNING DOWN (ROUND OR RECTANGULAR)
10X10	SQUARE OR RECTANGULAR DUCTWORK
	VOLUME DAMPER
	TAKEOFF WITH 45° THROAT
	RETURN, EXHAUST OR TRANSFER AIR FLOW
	SUPPLY AIR FLOW
	DUCT CROSSING
	RECTANGULAR DUCT TURNING DOWN WITH CHANGE OF DIRECTION
	ROUND DUCT TURNING DOWN WITH CHANGE OF DIRECTION
	TERMINATION OF DUCT WITH BRANCH CONNECTIONS
	RECTANGULAR TO ROUND DUCT TRANSITION
SA	SUPPLY AIR DUCTWORK
RA	RETURN AIR DUCTWORK
EA	EXHAUST AIR DUCTWORK
OA	OUTSIDE AIR DUCTWORK
MA	MAKEUP AIR DUCTWORK
SD	DUCT SMOKE DETECTOR
P	STATIC PRESSURE SENSOR
DPT	DIFFERENTIAL PRESSURE TRANSDUCER

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MECHANICAL GENERAL NOTES:

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4. THE CONTRACTOR SHALL TEMPORARILY COVER ALL EXPOSED DUCT AND PIPE OPENINGS WITH A NON-COMBUSTIBLE MATERIAL, AND SEAL THEM AIR TIGHT TO PREVENT CONTAMINATION OF THE RESPECTIVE SYSTEMS DURING CONSTRUCTION.
5. CONTRACTOR SHALL REMOVE AND DISPOSE OF OFFSITE ALL DEMOLISHED WORK IN ACCEPTABLE AND SAFE MANNER AND SHALL KEEP ALL NON-WORK AREAS CLEAN AND SAFE.
6. ALL EXISTING EQUIPMENT AND CONNECTIONS THAT NEED TO BE TEMPORARILY DEMOLISHED FOR RIGGING AND / OR INSTALLATION SHALL BE REINSTALLED AND BROUGHT BACK TO ORIGINAL CONDITIONS PRIOR TO TEMPORARY REMOVAL.
7. INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.

MECHANICAL DEMOLITION NOTES:

1. THE CONTRACTOR SHALL REVIEW THE DRAWINGS AND SPECIFICATIONS FOR DEMOLITION REQUIREMENTS AND LAYOUT HIS WORK IN A COMPATIBLE AND COMPLEMENTARY MANNER. REMOVE ALL EQUIPMENT, DUCTWORK, SUPPORTS, CONTROLS, ACCESSORIES, ETC.., AND MECHANICAL ITEMS MADE OBSOLETE BY THESE ALTERATIONS AS SHOWN IN THE MECHANICAL DRAWINGS. ALL ITEMS TO BE REMOVED OR MODIFIED MAY NOT BE SHOWN, HOWEVER, THIS CONTRACTOR SHALL REMOVE ANY MECHANICAL WORK AS REQUIRED BY THE CONSTRUCTION OR AS DIRECTED BY THE GOVERNMENT CONTRACTING OFFICER. SURVEY THE AFFECTED AREAS BEFORE SUBMITTING A BID.
2. SCHEDULING OF DEMOLITION - COORDINATE SCHEDULING OF MECHANICAL DEMOLITION WORK WITH THE CONTRACTING OFFICER SO AS TO MINIMIZE DISRUPTION OF THE GOVERNMENT'S USE OF THE FACILITIES AND MAINTAIN THE CONSTRUCTION SEQUENCE. SEE DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INSTRUCTIONS CONCERNING PHASING AND SEQUENCE OF WORK.
3. DEMOLISHED MATERIALS - UNLESS SPECIFICALLY REQUESTED BY THE GOVERNMENT, ALL DEMOLISHED MECHANICAL MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY.
4. CUTTING AND PATCHING - PERFORM CUTTING AND PATCHING FOR MECHANICAL WORK SO AS TO MINIMIZE DAMAGE TO CEILINGS, FLOORS AND WALLS.
5. THESE DRAWINGS ARE COMPILED BY THE ENGINEER FROM THE GOVERNMENT'S AS-BUILT RECORD DRAWINGS AND LIMITED FIELD VERIFICATION OF EXISTING CONDITIONS FOR THE PURPOSE OF INDICATING THE WORK REQUIRED AND ARE BELIEVED TO BE CORRECT. NOTWITHSTANDING, THE CONTRACTOR SHALL VERIFY ALL DUCTWORK, EQUIPMENT LOCATIONS, DIMENSIONS AND ALL FIELD CONDITIONS AFFECTING HIS WORK.
6. WHERE MECHANICAL SYSTEMS PASS THROUGH THE DEMOLITION AREAS TO SERVE OTHER PORTIONS OF THE PREMISES, THEY SHALL REMAIN OR BE SUITABLY RELOCATED AND THE SYSTEM RESTORED TO NORMAL OPERATION. ADVISE THE CONTRACTING OFFICER IMMEDIATELY IF SUCH CONDITIONS ARE UNCOVERED BEFORE PROCEEDING WITH ADDITIONAL WORK.
7. PROTECT ALL EXISTING LIFE SAFETY SYSTEMS, FIRE ALARM AND PUBLIC ADDRESS SYSTEMS AND MAINTAIN THEM IN OPERATION THROUGHOUT THE PROGRESS OF THE WORK. NOTIFY THE CONTRACTING OFFICER IN WRITING OF SHUTDOWNS ARE REQUIRED PRIOR TO ANY OUTAGE OF SERVICE. WHERE THE DURATION OF A PROPOSED OUTAGE CANNOT BE TOLERATED BY THE GOVERNMENT, PROVIDE TEMPORARY CONNECTIONS AS REQUIRED MAINTAINING SERVICE.
8. SURVEY THE AFFECTED AREAS BEFORE STARTING DEMOLITION AS ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DEPICTED ON THE DRAWINGS AND SOME UNUSUAL CONDITIONS EXIST.
9. IF ANY UNUSUAL STRUCTURAL OR ARCHITECTURAL CONDITIONS ARE ENCOUNTERED DURING DEMOLITION, CONTACT THE CONTRACTING OFFICER FOR ASSISTANCE.

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:	89.9 MBH
BUILDING COOLING LOAD:	184.8 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 REASON:	N/A
CHILLER	
SIZE CATEGORY, IF OVERSIZED STATE REASON:	N/A
LIST EQUIPMENT EFFICIENCIES:	SEE SCHEDULES

MECHANICAL ABBREVIATIONS

ABBREVIATION	TERM
ADJ	ADJUSTABLE
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AMP	AMPERE (AMP, AMPS)
ASTM	AMERICAN SOCIETY OF TESTING AND MATERIALS
CFM	CUBIC FEET PER MINUTE
CIP	CAST IN PLACE
CMU	CONCRETE MASONRY UNIT
COP	COEFFICIENT OF PERFORMANCE
DB	DRY BULB
DEG OR °	DEGREE
EA	EXHAUST AIR
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EAT	ENTERING AIR TEMPERATURE
ECM	ELECTRONICALLY COMMUTATED MOTOR
EER	ENERGY EFFICIENCY RATIO
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F	FAN
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FLA	FULL LOAD AMPS
FT	FEET
HC	HOT WATER COIL
HGT OR H	HEIGHT
HP	HORSEPOWER
HR	HOUR(S)
IN.	INCH
IN.-WG	INCHES WATER GAUGE
KW	KILOWATT
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
L	LOUVER
MAX	MAXIMUM
MBH	1000 BTUH
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MIN.	MINIMUM
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NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
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TG	TRANSFER GRILLE
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UH	UNIT HEATER
V/PH/HZ	VOLT/PHASE/HERTZ
VTR	VENT THROUGH ROOF
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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043801 TIMOTHY G GRADY
Digitally signed by Timothy G Grady
Date: 2023.05.16 14:57:28-04'00'

NHCS Project No.
22-90458

Southeast Area Technical High School
SCIF Grant Addition

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

Issue Date: 5/16/2023

MECHANICAL LEGENDS, NOTES AND ABBREVIATIONS

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M-001-A

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043801 TROY D. GRADY
Digitally signed by TROY GRADY 2023.05.15 14:58:40-04'00'

NHCS Project No. 22-90458

Southeast Area Technical High School SCIF Grant Renovations

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

Issue Date: 5/16/2023

MECHANICAL LEGENDS, NOTES AND ABBREVIATIONS

Rev.	Date	Notes

M-001-B

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POWER VENTILATOR SCHEDULE

DRAWING CODE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	ALTERNATE APPROVED MANUFACTURERS	FAN TYPE	SERVICE	DRIVE TYPE	DAMPER	MOTOR ENCLOSURE	FAN ENERGY INDEX (FEI)	CAPACITIES				ELECTRICAL					SONES	WEIGHT (LBS.)	NOTES	ACCESSORIES
										AIRFLOW (CFM)	ESP (IN. WG.)	FAN RPM	MOTOR RPM	MOTOR TYPE	MOTOR SIZE (WATTS)	V/PH/HZ	FLA	MCA	MOCP				
PV01	GREENHECK	SP-A50-90-VG	TWIN CITY, PENNBARRY	CEILING-MOUNTED VENTILATORS	EXHAUST	DIRECT	BACKDRAFT	OPEN DRIPPROOF	-	50	0.25	808	808	ECM	6	120/1/60	0.3	-	-	0.7	12	1,2	A
PV02	GREENHECK	CSP-A390-VG	TWIN CITY, PENNBARRY	CENTRIFUGAL VENTILATORS - IN-LINE	EXHAUST	DIRECT	BACKDRAFT	OPEN DRIPPROOF	-	200	0.25	949	949	ECM	25	120/1/60	1.5	-	-	1.1	24	1,2	A
PV03	GREENHECK	CSP-A390-VG	TWIN CITY, PENNBARRY	CENTRIFUGAL VENTILATORS - IN-LINE	EXHAUST	DIRECT	BACKDRAFT	OPEN DRIPPROOF	-	200	0.25	949	949	ECM	25	120/1/60	1.5	-	-	1.1	24	1,2	A

NOTES:
1 REFER TO SPECIFICATIONS FOR FURTHER INFORMATION.
2 CONTROLLED VIA OCCUPANCY SENSOR. REFER TO ELECTRICAL PLANS.

ACCESSORIES: A GRAVITY DAMPER

LOUVER SCHEDULE

DRAWING CODE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	ALTERNATE APPROVED MANUFACTURERS	TYPE	FRAME	DESCRIPTION	MATERIAL	LOUVER DEPTH (IN.)	SIZE (W x H) (IN.)	SERVICE	AIRFLOW (CFM)	PERFORMANCE RATINGS			NOTES	ACCESSORIES
												FREE AREA (SF)	S.P. LOSS (IN. H20)	WATER PENETRATION SAFETY FACTOR		
L1	RUSKIN	HZ700	GREENHECK, POTTORFF	FIXED	EXTERIOR FLANGE	HORIZONTAL, WIND-DRIVEN-RAIN-RESISTANT	ALUMINUM	7	30 X 30	INTAKE	1,950	2.98	0.13	1.23	1,2,3,4	A

NOTES:
1 REFER TO SPECIFICATIONS FOR FURTHER INFORMATION.
2 FINISH AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE OF COLOR AND GLOSS.
3 INTERLOCK WITH DUCT COLLECTION SYSTEM.
4 AMCA 550 LISTED

ACCESSORIES: A MOTORIZED DAMPER

SELF-CONTAINED HEAT PUMP SCHEDULE

DRAWING CODE	BASIS OF DESIGN MANUFACTURER	MODEL	ALTERNATE APPROVED MANUFACTURERS	AIRFLOW		COOLING CAPACITY			AIR ENTERING INDOOR COIL		OUTSIDE COIL	HEATING CAPACITY				AUXILIARY HEATING		FILTERS	ELECTRICAL CHARACTERISTICS			NOTES	ACCESSORIES
				TOTAL (CFM)	OUTSIDE (CFM)	TOTAL (MBH)	SENSIBLE (MBH)	EER	DRY BULB (°F)	WET BULB (°F)	ENTERING-AIR TEMP (°F)	TOTAL (MBH)	OUTDOOR AIR TEMP (°F)	INDOOR AIR RETURN (°F)	COP	OUTPUT (KW)	STAGES		VOLTAGE	MCA	MOCP		
SHP01	BARD	I42H1	MARVAIR, EUBANKS	1,300	450	42.2	32.7	12.0	77.7	65.3	95.0	38.5	47.0	65.8	3.7	9.0	1	2" PLEATED	208/3/60	52.0	60	1	A,B,C,D,E,F,G,H
SHP02	BARD	I42H1	MARVAIR, EUBANKS	1,300	450	42.2	32.7	12.0	77.7	65.3	95.0	38.5	47.0	65.8	3.7	9.0	1	2" PLEATED	208/3/60	52.0	60	1	A,B,C,D,E,F,G,H
SHP03	BARD	I36H1	MARVAIR, EUBANKS	1,150	175	36.2	27.7	12.0	78.3	66.0	95.0	32.8	47.0	61.0	3.7	9.0	1	2" PLEATED	208/3/60	49.0	50	1	A,B,C,D,E,F,G
SHP04	BARD	I42H1	MARVAIR, EUBANKS	1,300	190	42.7	32.6	12.0	78.2	66.0	95.0	38.5	47.0	61.3	3.7	9.0	1	2" PLEATED	208/3/60	52.0	60	1	A,B,C,D,E,F,G
SHP05	BARD	I30H1	MARVAIR, EUBANKS	900	60	28.1	21.1	11.7	77.2	65.6	95.0	26.6	47.0	66.1	3.6	6.0	1	2" PLEATED	208/3/60	35.0	35	1	A,B,C,E,F,G

NOTES:
1 REFER TO SPECIFICATIONS FOR FURTHER INFORMATION.

ACCESSORIES:
A 2" ARCHITECTURAL OUTDOOR LOUVER.
B. ADJUSTABLE WALL SLEEVE.
C. PROGRAMMABLE TEMPERATURE/HUMIDITY THERMOSTAT
D. DUCT-FREE PLENUM BOX.
E HOT GAS REHEAT FOR DEHUMIDIFICATION.
F MODULATING OUTSIDE AIR DAMPER
G 2" MERV 8 FILTERS
H ENERGY RECOVERY VENTILATOR. COOLING CAPACITY DOES NOT INCLUDE ERV CAPACITY.

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	TYPE	MATERIAL		AIRFLOW (CFM)	HEIGHT (IN.)	WIDTH (IN.)	DEPTH (IN.)	PRESSURE DROP (IN. WG.)		
RH1	GREENHECK	GRSR-12	TWIN CITY, PENNBARRY	EXHAUST	ALUMINUM	SLOPED	BIRD	STAINLESS	ANODIZED	450	22.00	22.00	22.00	0.04	1	A,B

NOTES:
1 REFER TO SPECIFICATIONS FOR FURTHER INFORMATION.

ACCESSORIES:
A BIRD SCREEN
B ROOF CURB

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	ASPD	METALAIRE, TITUS	SQUARE CEILING DIFFUSER	SUPPLY	6Ø	12 X 4	ALUMINUM	WHITE	WALL SURFACE	1,2	A
S2	PRICE	ASPD	METALAIRE, TITUS	SQUARE CEILING DIFFUSER	SUPPLY	6Ø	24 X 24	ALUMINUM	WHITE	T-BAR	1,2	A
S3	PRICE	ASPD	METALAIRE, TITUS	SQUARE CEILING DIFFUSER	SUPPLY	8Ø	24 X 24	ALUMINUM	WHITE	T-BAR	1,2	A
S4	PRICE	ASPD	METALAIRE, TITUS	SQUARE CEILING DIFFUSER	SUPPLY	12Ø	24 X 24	ALUMINUM	WHITE	T-BAR	1,2	A
R1	PRICE	630	METALAIRE, TITUS	FIXED FACE GRILLE	RETURN	-	18 X 14	ALUMINUM	WHITE	WALL SURFACE	1,2	
R2	PRICE	630	METALAIRE, TITUS	FIXED FACE GRILLE	RETURN	22 X 22	24 X 24	ALUMINUM	WHITE	T-BAR	1,2	
E1	PRICE	630	METALAIRE, TITUS	FIXED FACE GRILLE	EXHAUST	-	24 X 24	ALUMINUM	WHITE	T-BAR	1,2	

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.

ACCESSORIES: A VOLUME DAMPER

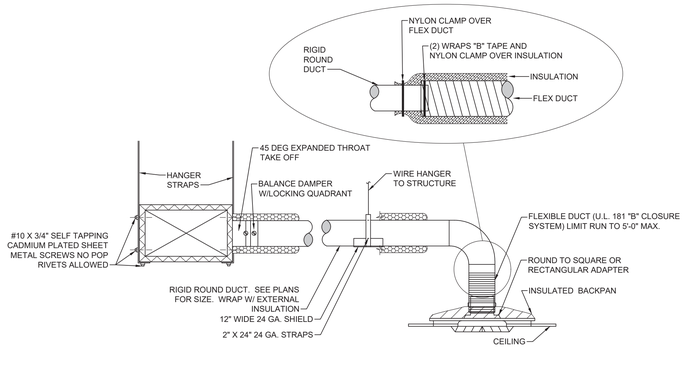
ALL ITEMS LISTED MAY NOT BE USED IN THIS PHASE OF THE PROJECT

DUST COLLECTOR

DRAWING CODE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	ALTERNATE APPROVED MANUFACTURERS	DESCRIPTION	AIRFLOW (CFM)	E.S.P. (IN. WG.)	MOTOR SIZE (HP)	SPEED (RPM)	ENCLOSURE TYPE	ELECTRICAL (V/PH/HZ)	(FLA)	(MOCP)	WEIGHT (LBS)	NOTES	ACCESSORIES
DC01	STERNVENT	DKPD 244	AMERICAN AIR FILTER, DONALDSON	VIBRACLEAN	2000	9	7.5	3450	TEFC	208/3/60	-	-	1325	1	A,B,C

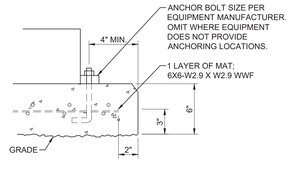
NOTES: 1. REFER TO SPECIFICATIONS FOR FURTHER INFORMATION

ACCESSORIES:
A. DUCT SILENCER DISCHARGE OUTLET.
B. PROVIDE MANUFACTURED SUPPORT STRUCTURE AS REQUIRED.
C. 55 GALLON COLLECTION DRUM.
D. START STOP PUSH BUTTON STATION.
E. CONTROL PANEL THAT CONTROLS BLOWER, SHAKER AND MAKEUP AIR DAMPER. INTERLOCK TO OPEN MAKEUP AIR DAMPER WHEN BLOWER IS RUNNING.
F. VFD FOR AIR BALANCE
G. 1/3 HP SHAKER.



1 **TYPICAL DIFFUSER CONNECTION DETAIL**
NOT TO SCALE

NOTE:
1. MESH SHALL BE FURNISHED IN SHEETS.
2. ALL PAD EDGES SHALL BE CHAMFERED.
3. CONCRETE COMPRESSIVE STRENGTH SHALL BE 4,000 PSI AT 28 DAYS
4. ONLY ANCHOR EQUIPMENT WITH MANUFACTURER SUPPLIED ANCHOR MOUNTS



2 **EQUIPMENT PAD-EXTERIOR DETAIL**
NOT TO SCALE

SAWYER SHERWOOD & ASSOCIATE ARCHITECTURE
124 Market Street
Wilmington, NC 28401
910 762-0892
S2a3.com

PARAMOUNTE ENGINEERING
WOODS ENGINEERING Creative Solutions
CBHF Engineers, PLLC
PERFORMANCE BASED FIRE PROTECTION ENGINEERING, PLLC
STATE OF NC ENGINEERING FIRM LICENSE NO. P-1842
PO BOX 1847 Pittsboro, NC 919.600.7780
cbhfpe.com

NORTH CAROLINA PROFESSIONAL SEAL 043801 ENGINEER TROY D. GRADY
2023.05.15 14:57:30-04'00'

NHCS Project No. 22-90458

Southeast Area Technical High School
SCIF Grant Addition

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

Issue Date: 5/16/2023

MECHANICAL SCHEDULES AND DETAILS

Rev.	Date	Notes

M-601-A

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SPLIT SYSTEM SCHEDULE

DRAWING CODE (IDU/ODU)	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL (IDU/ODU)	ALTERNATE APPROVED MANUFACTURERS	SYSTEM TYPE	COOLING (AHRI STANDARD)			HEATING (AHRI STANDARD)			INDOOR UNIT				ELECTRICAL						WEIGHT (LBS.)		NOTES	ACCESSORIES
					TOTAL (MBH)	SENSIBLE (MBH)	EFFICIENCY	TOTAL (MBH)	EFFICIENCY		SUPPLY AIRFLOW (CFM)	OUTSIDE AIRFLOW (CFM)	ESP (IN. WG.)	AUX HEAT CAP (KW)	INDOOR UNIT			OUTDOOR UNIT			INDOOR UNIT	OUTDOOR UNIT		
															(V/PH/HZ)	(MCA)	(MOCP)	(V/PH/HZ)	(MCA)	(MOCP)				
(x)AH15 / (x)HP15	TRANE	-	YORK, CARRIER	HEAT PUMP	46.7	33.3	SEER 14.5	41.5	HSPF	8.2	1440	290	0.50	7.7	460/3/60	15.3	20	460/3/60	8	15	200	300	5	A,B,C,D
AH22 / HP22	TRANE	GAM5B0A24M21 / 4TWR4024N1	YORK, CARRIER	HEAT PUMP	23.2	17.8	SEER 14.6	22	COP	3.7	800	140	0.5	5.76	208/1/60	38	40	208/1/60	14	25	120	163	1,2,3,4	A,B,C,D

NOTES:
1. REFER TO SPECIFICATIONS FOR FURTHER INFORMATION.
2. MOUNT OUTDOOR UNIT ON CONCRETE HOUSEKEEPING PAD
3. CONTRACTOR MUST PROVIDE THERMOSTAT/HUMIDISTAT AND SES DEHUMIDIFICATION MODULE. CONFIRM PROPER OPERATION WITH EQUIPMENT MANUFACTURER.
4. SCHEDULED COOLING CAPACITY IS NET.
5. UNIT IS EXISTING. CONTRACTOR MUST RE-BALANACE SYSTEM TO SCHEDULED AIR FLOWS.

ACCESSORIES:
- A LOW AMBIENT COOLING OPERATION TO 40F
- B E-COAT COILS WITH HAIL GUARDS
- C SINGLE POINT POWER CONNECTION FOR INDOOR UNIT
- D THERMOSTAT MODEL BAYSTAT152. THERMOSTAT TO CONNECT IN CONJUNCTION WITH SES DEHUMIDIFICATION MODULE

DIFFUSERS, REGISTERS AND GRILLES SCHEDULE

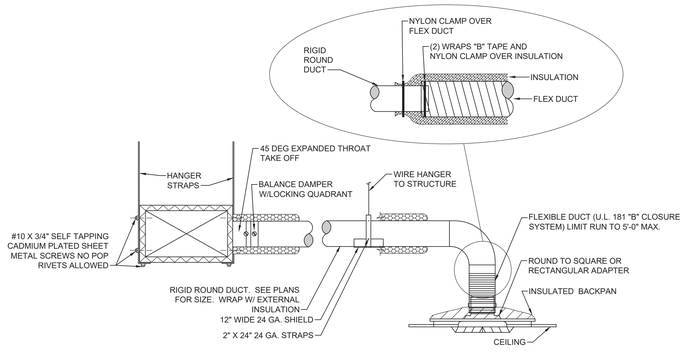
DRAWING CODE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	ALTERNATE APPROVED MANUFACTURERS	TYPE	SERVICE	NECK SIZE (IN.)	MODULE SIZE (IN.)	MATERIAL	FINISH	MOUNTING	NOTES	ACCESSORIES
S1	PRICE	ASPD	METALAIRE, TITUS	SQUARE CEILING DIFFUSER	SUPPLY	6Ø	12 X 4	ALUMINUM	WHITE	WALL SURFACE	1,2	A
S2	PRICE	ASPD	METALAIRE, TITUS	SQUARE CEILING DIFFUSER	SUPPLY	6Ø	24 X 24	ALUMINUM	WHITE	T-BAR	1,2	A
S3	PRICE	ASPD	METALAIRE, TITUS	SQUARE CEILING DIFFUSER	SUPPLY	8Ø	24 X 24	ALUMINUM	WHITE	T-BAR	1,2	A
S4	PRICE	ASPD	METALAIRE, TITUS	SQUARE CEILING DIFFUSER	SUPPLY	12Ø	24 X 24	ALUMINUM	WHITE	T-BAR	1,2	A
R1	PRICE	630	METALAIRE, TITUS	FIXED FACE GRILLE	RETURN	-	18 X 14	ALUMINUM	WHITE	WALL SURFACE	1,2	
R2	PRICE	630	METALAIRE, TITUS	FIXED FACE GRILLE	RETURN	22 X 22	24 X 24	ALUMINUM	WHITE	T-BAR	1,2	
E1	PRICE	630	METALAIRE, TITUS	FIXED FACE GRILLE	EXHAUST	-	12 X 12	ALUMINUM	WHITE	T-BAR	1,2	

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.

ACCESSORIES:
- A VOLUME DAMPER

ALL ITEMS LISTED MAY NOT BE USED IN THIS PHASE OF THE PROJECT

REFER TO M-701-B FOR DOAS SCHEDULE



1 TYPICAL DIFFUSER CONNECTION DETAIL
NOT TO SCALE

SAWYER SHERWOOD & ASSOCIATE ARCHITECTURE
124 Market Street
Wilmington, NC 28401
910 762-0892
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PARAMOUNTE ENGINEERING
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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043801 TROY C. COVEY
2023.05.15 14:58:43-04'00'

NHCS Project No. 22-90458

Southeast Area Technical High School SCIF Grant Renovations

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

Issue Date: 5/16/2023

MECHANICAL SCHEDULES AND DETAILS

Rev.	Date	Notes

M-601-B

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HOOD INFORMATION

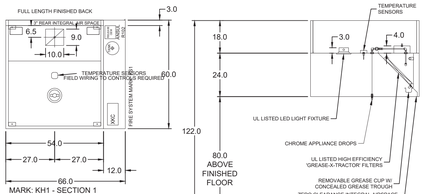
HOOD NO.	MARK	MODEL	HOOD DIMENSIONS (IN.)			HOOD CONSTR.	COOKING LOAD / DUTY RATING	EXHAUST					SUPPLY		TOTAL WEIGHT LBS.	SECTION LOCATION
			LENGTH	WIDTH	HEIGHT			TOTAL CFM	COLLAR(S)				MUA CFM	AC CFM		
									WIDTH	LENGTH	DIA.	CFM S.P.				
1	KH1	XXEW-54-S	54	60	24	430 SS WHERE EXPOSED	HEAVY	1020	9	10		1020 0.608			178.895	SINGLE

HOOD INFORMATION

HOOD NO.	MARK	LIGHTING DETAILS			GREASE FILTRATION DETAILS				UTILITY CABINET(S)				
		FIXTURE TYPE BULB / LAMP INFO	QTY	FOOT CANDLES	TYPE / MODEL MATERIAL	QTY	SIZE (IN.) L	H	LOCATION	FIRE SYSTEM TYPE	SIZE	MODEL	CONTROLS INTERFACE
1	KH1	ROUND LED	1	54.07	X-TRACTOR STAINLESS STEEL	2	16	20	RIGHT	ANSUL R102	3	XKC	TOUCHSCREEN

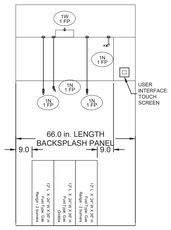
HOOD OPTIONS

UL 710 LISTED W/ OUT EXHAUST FIRE DAMPER - UL #R25625
BACK INTEGRAL AIR SPACE - 3 IN WIDE - ZERO CLEARANCE
FINISHED BACK - FULL LENGTH
18 IN HIGH CEILING ENCLOSURES - FRONT BACK LEFT RIGHT - FIELD INSTALLED
FACTORY MOUNTED EXHAUST COLLAR(S)
STAINLESS STEEL BACKSPLASH 80.00 IN HIGH 66.00 IN LONG
PERFORMANCE ENHANCING LIP (PEL) TECHNOLOGY
STANDING SEAM CONSTRUCTION FOR SUPERIOR STRENGTH



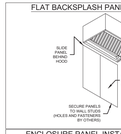
MARK: KH1 - SECTION 1
PLAN VIEW

MARK: KH1
SECTION VIEW

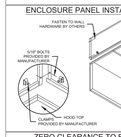


MARK: KH1 - SECTION 1
ELEVATION VIEW

FLAT BACKSPLASH PANEL INST. DETAIL



ENCLOSURE PANEL INSTALLATION DETAIL



ZERO CLEARANCE TO BACK OF HOOD



NOTES:
TO BE UL LISTED THERE MUST BE BACKSPLASH PANELS MOUNTED THE FULL LENGTH OF THE HOOD AGAINST THE COMBUSTIBLE WALL

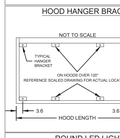
HOOD HANGING HEIGHT FOR FIRE SYSTEMS

VERIFICATION OF HOOD HANGING HEIGHT ABOVE FINISHED FLOOR (A.F.F.) IS REQUIRED FOR CORRECT PLACEMENT OF FIRE SYSTEM NOZZLES.

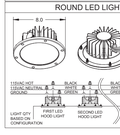
☐ RECOMMENDED HANGING HEIGHT = 80" FROM FINISHED FLOOR TO LOWER FRONT EDGE OF HOOD.

☐ OTHER HANGING HEIGHT = _____" FROM FINISHED FLOOR TO LOWER EDGE OF HOOD.

HOOD HANGER BRACKET DETAIL



ROUND LED LIGHT DETAIL



HOOD INFORMATION

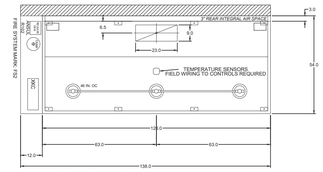
HOOD NO.	MARK	MODEL	HOOD DIMENSIONS (IN.)			HOOD CONSTR.	COOKING LOAD / DUTY RATING	EXHAUST					SUPPLY		TOTAL WEIGHT LBS.	SECTION LOCATION
			LENGTH	WIDTH	HEIGHT			TOTAL CFM	COLLAR(S)				MUA CFM	AC CFM		
									WIDTH	LENGTH	DIA.	CFM S.P.				
1	KH2	XXEW-126-S	126	54	24	430 SS WHERE EXPOSED	HEAVY	2350	9	23		2350 0.59			343.594	SINGLE

HOOD INFORMATION

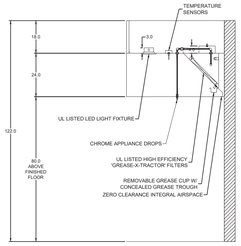
HOOD NO.	MARK	LIGHTING DETAILS			GREASE FILTRATION DETAILS				UTILITY CABINET(S)				
		FIXTURE TYPE BULB / LAMP INFO	QTY	FOOT CANDLES	TYPE / MODEL MATERIAL	QTY	SIZE (IN.) L	H	LOCATION	FIRE SYSTEM TYPE	SIZE	MODEL	CONTROLS INTERFACE
1	KH2	ROUND LED	3	73.33	X-TRACTOR STAINLESS STEEL	3	20	20	LEFT	ANSUL R102	3	XKC	TOUCHSCREEN

HOOD OPTIONS

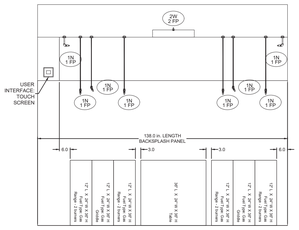
UL 710 LISTED W/ OUT EXHAUST FIRE DAMPER - UL #R25625
BACK INTEGRAL AIR SPACE - 3 IN WIDE - ZERO CLEARANCE
18 IN HIGH CEILING ENCLOSURES - FRONT LEFT RIGHT - FIELD INSTALLED
FACTORY MOUNTED EXHAUST COLLAR(S)
STAINLESS STEEL BACKSPLASH 80.00 IN HIGH 138.00 IN LONG
PERFORMANCE ENHANCING LIP (PEL) TECHNOLOGY
STANDING SEAM CONSTRUCTION FOR SUPERIOR STRENGTH



MARK: KH2 - SECTION 1
PLAN VIEW

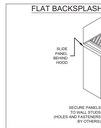


MARK: KH2
SECTION VIEW



MARK: KH2 - SECTION 1
ELEVATION VIEW

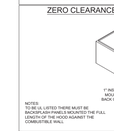
FLAT BACKSPLASH PANEL INST. DETAIL



ENCLOSURE PANEL INSTALLATION DETAIL



ZERO CLEARANCE TO BACK OF HOOD



NOTES:
TO BE UL LISTED THERE MUST BE BACKSPLASH PANELS MOUNTED THE FULL LENGTH OF THE HOOD AGAINST THE COMBUSTIBLE WALL

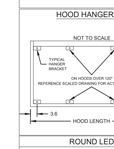
HOOD HANGING HEIGHT FOR FIRE SYSTEMS

VERIFICATION OF HOOD HANGING HEIGHT ABOVE FINISHED FLOOR (A.F.F.) IS REQUIRED FOR CORRECT PLACEMENT OF FIRE SYSTEM NOZZLES.

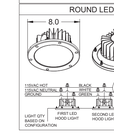
☐ RECOMMENDED HANGING HEIGHT = 80" FROM FINISHED FLOOR TO LOWER FRONT EDGE OF HOOD.

☐ OTHER HANGING HEIGHT = _____" FROM FINISHED FLOOR TO LOWER EDGE OF HOOD.

HOOD HANGER BRACKET DETAIL



ROUND LED LIGHT DETAIL



HOOD INFORMATION

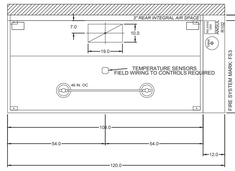
HOOD NO.	MARK	MODEL	HOOD DIMENSIONS (IN.)			HOOD CONSTR.	COOKING LOAD / DUTY RATING	EXHAUST					SUPPLY		TOTAL WEIGHT LBS.	SECTION LOCATION
			LENGTH	WIDTH	HEIGHT			TOTAL CFM	COLLAR(S)				MUA CFM	AC CFM		
									WIDTH	LENGTH	DIA.	CFM S.P.				
1	KH3	XXEW-108-S	108	54	24	430 SS WHERE EXPOSED	HEAVY	2025	10	19		2025 0.546			296.261	SINGLE

HOOD INFORMATION

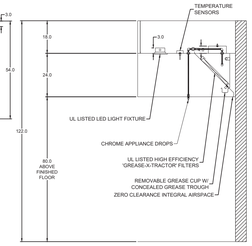
HOOD NO.	MARK	LIGHTING DETAILS			GREASE FILTRATION DETAILS				UTILITY CABINET(S)				
		FIXTURE TYPE BULB / LAMP INFO	QTY	FOOT CANDLES	TYPE / MODEL MATERIAL	QTY	SIZE (IN.) L	H	LOCATION	FIRE SYSTEM TYPE	SIZE	MODEL	CONTROLS INTERFACE
1	KH3	ROUND LED	2	62.94	X-TRACTOR STAINLESS STEEL	3	16	20	RIGHT	ANSUL R102	3		

HOOD OPTIONS

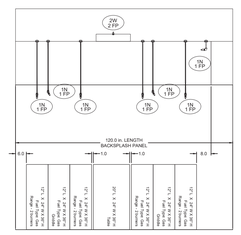
UL 710 LISTED W/ OUT EXHAUST FIRE DAMPER - UL #R25625
BACK INTEGRAL AIR SPACE - 3 IN WIDE - ZERO CLEARANCE
18 IN HIGH CEILING ENCLOSURES - FRONT LEFT RIGHT - FIELD INSTALLED
FACTORY MOUNTED EXHAUST COLLAR(S)
STAINLESS STEEL BACKSPLASH 80.00 IN HIGH 120.00 IN LONG
PERFORMANCE ENHANCING LIP (PEL) TECHNOLOGY
STANDING SEAM CONSTRUCTION FOR SUPERIOR STRENGTH



MARK: KH3 - SECTION 1
PLAN VIEW

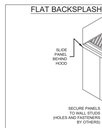


MARK: KH3
SECTION VIEW

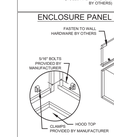


MARK: KH3 - SECTION 1
ELEVATION VIEW

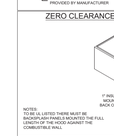
FLAT BACKSPLASH PANEL INST. DETAIL



ENCLOSURE PANEL INSTALLATION DETAIL



ZERO CLEARANCE TO BACK OF HOOD



NOTES:
TO BE UL LISTED THERE MUST BE BACKSPLASH PANELS MOUNTED THE FULL LENGTH OF THE HOOD AGAINST THE COMBUSTIBLE WALL

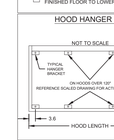
HOOD HANGING HEIGHT FOR FIRE SYSTEMS

VERIFICATION OF HOOD HANGING HEIGHT ABOVE FINISHED FLOOR (A.F.F.) IS REQUIRED FOR CORRECT PLACEMENT OF FIRE SYSTEM NOZZLES.

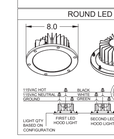
☐ RECOMMENDED HANGING HEIGHT = 80" FROM FINISHED FLOOR TO LOWER FRONT EDGE OF HOOD.

☐ OTHER HANGING HEIGHT = _____" FROM FINISHED FLOOR TO LOWER EDGE OF HOOD.

HOOD HANGER BRACKET DETAIL



ROUND LED LIGHT DETAIL



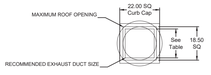
Direct Drive Upblast Centrifugal Roof Exhaust Fan

MARK INFORMATION		FAN INFORMATION						MOTOR INFORMATION				
QTY	MARK	MODEL	VOLUME (CFM)	TOTAL EXTERNAL SP (IN WG)	FAN RPM	OPERATING POWER (HP)	WEIGHT (LB.)	SIZE (HP)	V/C/P	ENCLOSURE	MOTOR RPM	WINDINGS	NEC FLA*
1	KEF1	XCUE-120-VG	1,020	1.058	1,469	0.28	67	0.5	115/60/1	OP	1725	1	9.8

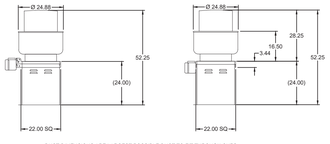
NEC FLA - Based on table 430.250 or 430.248 of National Electrical Code 2020. Actual motor FLA may vary for sizing thermal overload, consult factory

KEF1 : SELECTED OPTIONS AND ACCESSORIES

One piece fully welded windband
Tapered bushing wheel hub
Breather tube outlet area min. 4.4 sq. in. (sizes 99-480), 2.0 sq. in. (sizes 60-95)
Min. windband material thickness: 0.051" aluminum (060-240), 0.064" aluminum (240HP, 240XP), 0.080" aluminum (sizes 300-480)
Larger Curb Cap Size - 22 Square
UL/cUL 762 Listed - "Power Ventilators for Rest. Exh. Appliances"
Switch, NEMA-3R, Toggle, Shipped with Unit
Hinge, Factory Installed
High Temp Curb Seal Rated for Continuous Duty at 1500 F (Factory Attached)
Grease Trap (PN 475538)



DUCT TYPE	SIZE
STANDARD	16 SQ
FIRE-WRAPPED	8 SQ



DUCT DIMENSIONS ARE LARGEST POSSIBLE DUCT TO FIT THROUGH CURB. CONSULT SYSTEM DESIGN ENGINEER FOR RECOMMENDED DUCT SIZE.

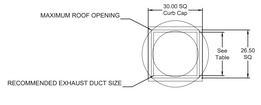
OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.

Direct Drive Upblast Centrifugal Roof Exhaust Fan

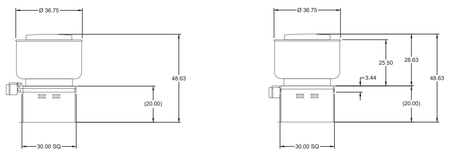
MARK INFORMATION		FAN INFORMATION						MOTOR INFORMATION				
QTY	MARK	MODEL	VOLUME (CFM)	TOTAL EXTERNAL SP (IN WG)	FAN RPM	OPERATING POWER (HP)	WEIGHT (LB.)	SIZE (HP)	V/C/P	ENCLOSURE	MOTOR RPM	WINDINGS
1	KEF2	XCUE-200-B	4,375	1.211	1,140	1.7	189	2	460/60/3	OP	1140	1

KEF2 : SELECTED OPTIONS AND ACCESSORIES

Motor VFD Rated without Shaft Grounding Protection
One piece fully welded windband
Tapered bushing wheel hub
Breather tube outlet area min. 4.4 sq. in. (sizes 99-480), 2.0 sq. in. (sizes 60-95)
Min. windband material thickness: 0.051" aluminum (060-240), 0.064" aluminum (240HP, 240XP), 0.080" aluminum (sizes 300-480)
Standard Curb Cap Size - 30 Square
UL/cUL 762 Listed - "Power Ventilators for Rest. Exh. Appliances"
Switch, NEMA-3R, Toggle, Shipped with Unit
Hinge, Factory Installed
High Temp Curb Seal Rated for Continuous Duty at 1500 F (Factory Attached)
Grease Trap (PN 475538)



DUCT TYPE	SIZE
STANDARD	24 SQ
FIRE-WRAPPED	16 SQ



DUCT DIMENSIONS ARE LARGEST POSSIBLE DUCT TO FIT THROUGH CURB. CONSULT SYSTEM DESIGN ENGINEER FOR RECOMMENDED DUCT SIZE.

OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.

EQUIPMENT SCHEDULE

Packaged Ventilator

Mark Name	Qty	Model	Mounting Location	Weight
DOAS1	1	XRV-75-30I-O-A1	Outdoor	5,352 lb

Supply Fan

Outdoor Air Volume	Supply ESP	Supply TSP	FRPM	Supply BHP	Supply Motor
5,395 CFM	0.5 in. wg	0.837 in. wg	799	0.507	(2) 1 hp

Electrical

Voltage	Frequency	Phase	Unit MCA	Unit MOP
460	60	3	76.3	100

Cooling Section

Coil Entering DB	Coil Entering WB	Coil Leaving DB	Coil Leaving WB	Nominal Tonnage	Total Capacity	Sensible Capacity	Coil Face Velocity	Coil Pressure Drop	Rows Deep	Fins per Inch	Compressor Type	Compressor Qty	AHRI 920 EMIRE
94.1 F	78.3 F	57.5 F	57.3 F	30.0	415.9 MBH	213.3 MBH	180 ft/min	0.09 in. wg	4	12	Inverter Scroll	2	6.6

Heating Section

Gas Type	Input	Output	EAT	LAT	Furnace Control	Temp Rise
LP	600.0 MBH	480.0 MBH	18.8 F	101.2 F	4:1 Modulating	82.4 F

Hot Gas Reheat

Hot Gas Reheat Capacity	LAT
155.5 MBH	84.2 F

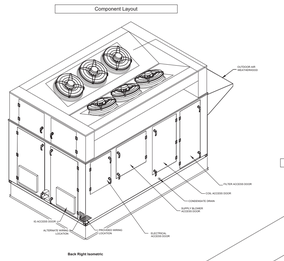
NOTES

Painted exterior with 2,500 hr. salt spray rating.
Double wall 2" R13 injected foam insulated cabinet.
Single condenser fan shaft not exceed a sound power level of 75 LwA.
Compressors mounted on a shelf behind an insulated door for minimized radiated and transmitted sound.
Direct-drive fans with factory mounted VFDs.
Controller must have simplified access via a laptop to view and change unit operation, set points, alarm history & 1 week of trending data.
Inverter scroll lead compressor with a 5 year warranty.
Factory commissioning by Factory Trained Technician and a 25 year HX warranty.
Airflow monitoring via differential pressure measurement on supply airstream.

OPTIONS AND ACCESSORIES

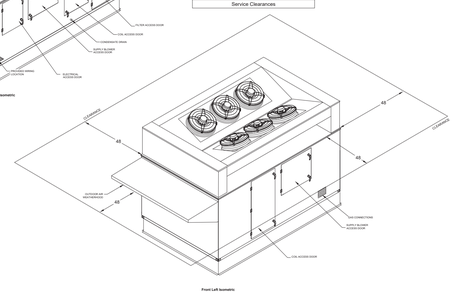
Weatherhood: Downturned Hood
Supply Filters: 2" Pleated MERV 8, 6-20x20x2, 4-16x20x2
Outdoor Air Dampers - Motorized Low Leakage
Exhaust Fan - Backward Inclined Plenum
Painted Exterior - Concrete Grey (RAL 7032)
Microprocessor Controls
Supply Fan VFD Control - 0-10VDC By Others
Space Thermostat - 1 Temperature Only
Phase Failure Protection
Phase and Brown Out Protection
Airflow Monitoring: Supply
Branch Circuit Fusing
Unit Disconnect - Mounted By Factory
Unit Mounted Service Light
Unit Warranty: 18 Months Standard
Extended Compressor Warranty: 5 Yrs

Component Layout



Back Right Isometric

Service Clearances



Front Left Isometric

NOTE: BASIS OF DESIGN IS BY ACCUREX AND FOR REFERENCE ONLY. MECHANICAL CONTRACTOR TO INCLUDE PURCHASE AND INSTALL IN PRICING. VERIFY AND COORDINATE WITH ACTUAL EQUIPMENT PROVIDED.

SAWYER SHERWOOD & ASSOCIATE ARCHITECTURE
124 Market Street
Wilmington, NC 28401
910 762-0892
S2a3.com

PARAMOUNTE ENGINEERING

WOODS ENGINEERING Creative Solutions

CBHF Engineers, PLLC

PERFORMANCE BASED FIRE PROTECTION ENGINEERING, PLLC
STATE OF NC ENGINEERING FIRM LICENSE NO. P-1842
PO BOX 1847
Pittsboro, NC
919.600.7780
pbfpe.com

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043801 TROY L. GRANT

2023.05.15
14:58:44 -04'00'

NHCS Project No.
22-90458

Southeast Area Technical High School
SCIF Grant Renovations

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

Issue Date: 5/16/2023

MECHANICAL SCHEDULES AND DETAILS

Rev.	Date	Notes

M-701-B

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CONTROL INFORMATION

MARK	ELECTRICAL CONTROL PACKAGE		USER INTERFACE		FANS CONTROLLED												
	MODEL	LOCATION	TYPE	LOCATION	FAN #	TYPE	FAN	FAN MARK	ZONE	CFM	MOTOR HP	MOTOR VOLT	CYCLE	MOTOR PHASE	MOTOR STARTER IN PANEL	VFD IN PANEL
KEP1	XKC-DCV-S-10-1-1-0	RIGHT CABINET ON KH1	FULL COLOR TOUCHSCREEN	CABINET – RIGHT CABINET ON KH1	1	EXHAUST	E1	KEF1	1	1020	0.5	115	60	1	NO	NO

CONTROL FEATURES

- HOOD LIGHT CONTROL
- TEMP SENSORS (FACTORY INSTALLED) - QTY. 1
- DRY FIRE CONTACTS - QTY. 2
- LIGHTS OFF DURING FIRE
- EXHAUST MAX DURING FIRE
- SUPPLY OFF DURING FIRE

DOC NUMBER: | REV:

CAUTION

UNIT MUST BE GROUNDED IN ACCORDANCE WITH N.E.C. POWER SHALL BE OFF WHILE SERVICING

ATTENTION

L'APPAREIL DOIT ÊTRE MIS À LA TERRE CONFORMÉMENT AU CODE C.E. L'ALIMENTATION DOIT ÊTRE COUPÉE DURANT L'ENTRETIEN.

4368M

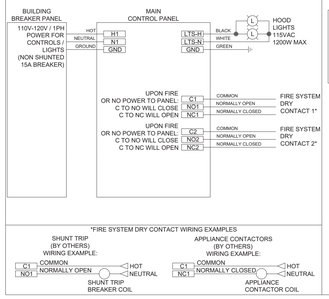
COMMERCIAL APPLIANCE OUTLET CENTER
ELECTRICAL RATINGS: 110-240V, 1PHASE, 50-60HZ, 15A
BASE FILE #E200616, ML FILE #E313951

THESE DRAWINGS SHALL NOT BE REMOVED FROM THIS EQUIPMENT. USE COPPER CONDUCTORS RATED TO 90°C UNLESS SPECIFIED. TORQUE POWER LUGS/SCREWS TO COMPONENT RATINGS LISTED. TORQUE CONTROL BOARD SCREW TERMINALS TO 5 IN-LBS. USE COPPER WIRING RESISTANCE SHOULD NOT EXCEED 0.75 OHM. SEE FACTORY WIRED (CABLE & LEGNE)

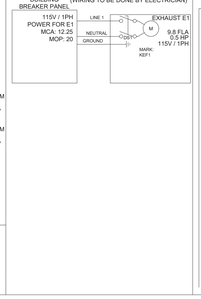
NE PAS RETIRER CES DESSINS DE CET ÉQUIPEMENT. SAUF INDICATION CONTRAIRE, UTILISER DES CONDUCTEURS EN CUIVRE CLASSÉS À 90°C. SERRER LES CONNECTEURS DE COUPLE DE MISE À LA TERRE À 5 LB-PO. SERRER LES COSSES/VIS D'ALIMENTATION AUX COUPLES INDIQUÉS POUR LE COMPOSANT. SERRER LES BORNES À VIS DE LA CARTE DE COMMANDE À 3.5 LB-PO. LA RÉSISTANCE DU CÂBLAGE DE COMMANDE LOCAL NE DOIT PAS DÉPASSER 075 OHM. POUR PLUS D'INFORMATION, CONSULTER LE MANUEL OU APPELER 1-800-571-4668

WIRING DIAGRAM CODE:
JOB NAME: SEA TECH CULINARY SCHOOL - DOAS
MODEL: XKC-DCV-S-10-1-1-0
SERIAL NUMBER: WDSN#
MARK: KEP1

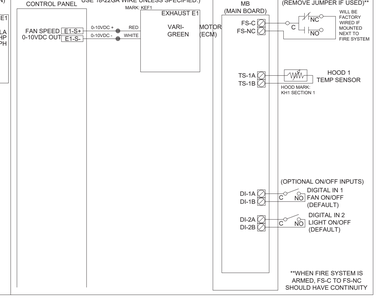
POWER WIRING FOR KITCHEN CONTROLS
(WIRING TO BE DONE BY ELECTRICIAN)



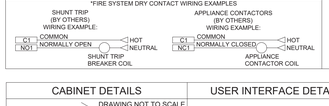
POWER WIRING FROM BREAKER PANEL DIRECT TO FANS
(WIRING TO BE DONE BY ELECTRICIAN)



CONTROL WIRING FOR KITCHEN CONTROLS
(WIRING TO BE DONE BY ELECTRICIAN, IF NO CONTROLS CONTRACTOR USE 18-22GA WIRE UNLESS SPECIFIED.)



*FIRE SYSTEM DRY CONTACT WIRING EXAMPLES



ZONE CONFIGURATION

ZONE #	ZONE	ROOM TEMP
1	Z1	PRESET

HOOD CONFIGURATION

HOOD #	HOOD	HOOD MARK	ZONE	EXHAUST	SUPPLY	MB-TEMP SENSORS	HCB
1	H1	KH1 SECTION 1	Z1	E1		TS1	NO

FAN CONFIGURATION

FAN #	TYPE	FAN	FAN MARK	ZONE	MIN CFM	MAX CFM	MODBUS VFD	VFD ADDRESS	MIN FREQ	MAX FREQ	MIN VDC	MAX VDC
1	EXHAUST	E1	KEF1	Z1	510	1020	NO	-	-	-	5.0	10.0

WIRING DIAGRAM CODE:
JOB NAME: SEA TECH CULINARY SCHOOL - DOAS
MODEL: XKC-DCV-S-10-1-1-0
SERIAL NUMBER: WDSN#
MARK: KEP1
DOC NUMBER: #### REV: ####

DEFAULT SETTINGS / PARAMETRES PAR DEFAUT

FACTORY SETTINGS
TYPE: VAV
CONFIGURATION: STANDARD
ZONES: 1
HOODS: 1
SUMPS: 0
EXHAUST FANS: 1
SUPPLY FANS: 0
MB ROOM SENSOR: NO
MB TEMP SENSORS: 1
HIGH TEMP FAULT: NO
FREEZE PROTECTION: YES
GAS RESET: NO
FAN PROVING: NO
BMS: NONE

ZONE SETTINGS
SEE ZONE CONFIGURATION IN TABLE ON LEFT

HOOD SETTINGS
SEE HOOD CONFIGURATION IN TABLE ON LEFT

EXHAUST FAN SETTINGS
SEE FAN CONFIGURATION IN TABLE ON LEFT

SUPPLY FAN SETTINGS
SEE FAN CONFIGURATION IN TABLE ON LEFT

SENSOR SETTINGS
SEE HOOD CONFIGURATION IN TABLE ON LEFT

USER INTERFACE SETTINGS (MB)
FAN & LIGHT BUTTONS: SHOW BOTH (SEPERATE)

USER INTERFACE SETTINGS (HCB)
NA

GENERAL SETTINGS
TIME ZONE: CENTRAL DAYLIGHT (DEFAULT)

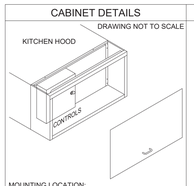
FIRE/FAULT SETTINGS
EXHAUST DURING FIRE: MAX
SUPPLY DURING FIRE: OFF
LIGHTS DURING FIRE: OFF

BMS SETTINGS
NA

PRG VERSION: V4

CABINET DETAILS

DRAWING NOT TO SCALE



MOUNTING LOCATION:
UTILITY CABINET ON HOOD
(INNER CONTROL BOX: 12 X 20 X 6)

NOTES:
1) WHEN CONTROLS ARE MOUNTED IN HOOD-MOUNTED OR WALL-MOUNTED UTILITY CABINET, FOR HOOD OR WALL CABINET DIMENSIONS SEE HOOD SUBMITTAL.

2) MINIMUM OF 36" OF CLEARANCE RECOMMENDED IN FRONT OF CONTROL CABINET

USER INTERFACE DETAILS

MOUNTING TYPE
FACTORY MOUNTED:
UTILITY CABINET - RIGHT END OF HOOD

USER INTERFACE CONTROL
FANS AND LIGHTS

INTERFACE CABLE LENGTH
7FT (FACTORY PROVIDED)

CONTROL INFORMATION

MARK	ELECTRICAL CONTROL PACKAGE		USER INTERFACE		FANS CONTROLLED												
	MODEL	LOCATION	TYPE	LOCATION	FAN #	TYPE	FAN	FAN MARK	ZONE	CFM	MOTOR HP	MOTOR VOLT	CYCLE	MOTOR PHASE	MOTOR STARTER IN PANEL	VFD IN PANEL
KEP2	XKC-DCV-S-11-2-1-0	LEFT CABINET ON KH2	FULL COLOR TOUCHSCREEN	CABINET – LEFT CABINET ON KH2	1	EXHAUST	E1	KEF2	1	4323	2	460	60	3	NO	YES
					2	SUPPLY	S1	DOAS1	1	5395	1	460	60	3	NO	NO

CONTROL FEATURES

- HOOD LIGHT CONTROL
- TEMP SENSORS (FACTORY INSTALLED) - QTY. 2
- DRY FIRE CONTACTS - QTY. 2
- LIGHTS OFF DURING FIRE
- EXHAUST MAX DURING FIRE
- SUPPLY OFF DURING FIRE

DOC NUMBER: #### REV: ####

CAUTION

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4368M

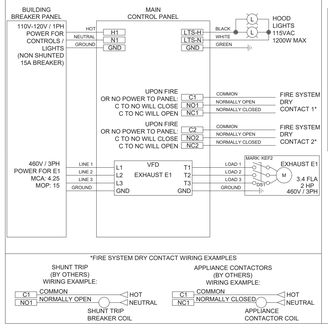
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BASE FILE #E200616, ML FILE #E313951

THESE DRAWINGS SHALL NOT BE REMOVED FROM THIS EQUIPMENT. USE COPPER CONDUCTORS RATED TO 90°C UNLESS SPECIFIED. TORQUE POWER LUGS/SCREWS TO COMPONENT RATINGS LISTED. TORQUE CONTROL BOARD SCREW TERMINALS TO 5 IN-LBS. USE COPPER WIRING RESISTANCE SHOULD NOT EXCEED 0.75 OHM. SEE FACTORY WIRED (CABLE & LEGNE)

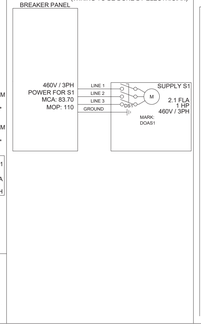
NE PAS RETIRER CES DESSINS DE CET ÉQUIPEMENT. SAUF INDICATION CONTRAIRE, UTILISER DES CONDUCTEURS EN CUIVRE CLASSÉS À 90°C. SERRER LES CONNECTEURS DE COUPLE DE MISE À LA TERRE À 5 LB-PO. SERRER LES COSSES/VIS D'ALIMENTATION AUX COUPLES INDIQUÉS POUR LE COMPOSANT. SERRER LES BORNES À VIS DE LA CARTE DE COMMANDE À 3.5 LB-PO. LA RÉSISTANCE DU CÂBLAGE DE COMMANDE LOCAL NE DOIT PAS DÉPASSER 075 OHM. POUR PLUS D'INFORMATION, CONSULTER LE MANUEL OU APPELER 1-800-571-4668

WIRING DIAGRAM CODE: #####
JOB NAME: SEA TECH CULINARY SCHOOL - DOAS
MODEL: XKC-DCV-S-11-2-1-0
SERIAL NUMBER: WDSN#
MARK: KEP2

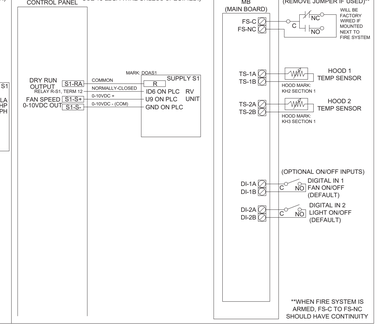
POWER WIRING FOR KITCHEN CONTROLS
(WIRING TO BE DONE BY ELECTRICIAN)



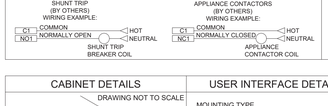
POWER WIRING FROM BREAKER PANEL DIRECT TO FANS
(WIRING TO BE DONE BY ELECTRICIAN)



CONTROL WIRING FOR KITCHEN CONTROLS
(WIRING TO BE DONE BY ELECTRICIAN, IF NO CONTROLS CONTRACTOR USE 18-22GA WIRE UNLESS SPECIFIED.)



*FIRE SYSTEM DRY CONTACT WIRING EXAMPLES



ZONE CONFIGURATION

ZONE #	ZONE	ROOM TEMP
1	Z1	PRESET

HOOD CONFIGURATION

HOOD #	HOOD	HOOD MARK	ZONE	EXHAUST	SUPPLY	MB-TEMP SENSORS	HCB
1	H1	KH2 SECTION 1	Z1	E1	S1	TS1	NO
2	H2	KH3 SECTION 1	Z1	E1	S1	TS2	NO

FAN CONFIGURATION

FAN #	TYPE	FAN	FAN MARK	ZONE	MIN CFM	MAX CFM	MODBUS VFD	VFD ADDRESS	MIN FREQ	MAX FREQ	MIN VDC	MAX VDC
1	EXHAUST	E1	KEF2	Z1	2162	4323	YES	1	30	60	-	-
2	SUPPLY	S1	DOAS1	Z1	2698	5395	NO	-	-	-	5.0	10.0

WIRING DIAGRAM CODE: ####
JOB NAME: SEA TECH CULINARY SCHOOL - DOAS
MODEL: XKC-DCV-S-11-2-1-0
SERIAL NUMBER: WDSN#
MARK: KEP2
DOC NUMBER: #### REV: ####

DEFAULT SETTINGS / PARAMETRES PAR DEFAUT

FACTORY SETTINGS
TYPE: VAV
CONFIGURATION: STANDARD
ZONES: 1
HOODS: 2
SUMPS: 0
EXHAUST FANS: 1
SUPPLY FANS: 1
MB ROOM SENSOR: NO
MB TEMP SENSORS: 1
HIGH TEMP FAULT: NO
FREEZE PROTECTION: YES
GAS RESET: NO
FAN PROVING: NO
BMS: NONE

ZONE SETTINGS
SEE ZONE CONFIGURATION IN TABLE ON LEFT

HOOD SETTINGS
SEE HOOD CONFIGURATION IN TABLE ON LEFT

EXHAUST FAN SETTINGS
SEE FAN CONFIGURATION IN TABLE ON LEFT

SUPPLY FAN SETTINGS
SEE FAN CONFIGURATION IN TABLE ON LEFT

SENSOR SETTINGS
SEE HOOD CONFIGURATION IN TABLE ON LEFT

USER INTERFACE SETTINGS (MB)
FAN & LIGHT BUTTONS: SHOW BOTH (SEPERATE)

USER INTERFACE SETTINGS (HCB)
NA

GENERAL SETTINGS
TIME ZONE: CENTRAL DAYLIGHT (DEFAULT)

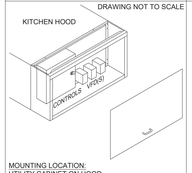
FIRE/FAULT SETTINGS
EXHAUST DURING FIRE: MAX
SUPPLY DURING FIRE: OFF
LIGHTS DURING FIRE: OFF

BMS SETTINGS
NA

PRG VERSION: V4

CABINET DETAILS

DRAWING NOT TO SCALE



MOUNTING LOCATION:
UTILITY CABINET ON HOOD
(INNER CONTROL BOX: 12 X 20 X 6)

NOTES:
1) WHEN CONTROLS ARE MOUNTED IN HOOD-MOUNTED OR WALL-MOUNTED UTILITY CABINET, FOR HOOD OR WALL CABINET DIMENSIONS SEE HOOD SUBMITTAL.

2) MINIMUM OF 36" OF CLEARANCE RECOMMENDED IN FRONT OF CONTROL CABINET

USER INTERFACE DETAILS

MOUNTING TYPE
FACTORY MOUNTED:
UTILITY CABINET - LEFT END OF HOOD

USER INTERFACE CONTROL
FANS AND LIGHTS

INTERFACE CABLE LENGTH
7FT (FACTORY PROVIDED)

NOTE: BASIS OF DESIGN IS BY ACCUREX AND FOR REFERENCE ONLY. MECHANICAL CONTRACTOR TO INCLUDE PURCHASE AND INSTALL IN PRICING. VERIFY AND COORDINATE WITH ACTUAL EQUIPMENT PROVIDED.

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043801 TROY D. GRADY
2023.05.15 14:58:44-04'00'

NHCS Project No.
22-90458

Southeast Area Technical High School
SCIF Grant Renovations

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

Issue Date: 5/16/2023

MECHANICAL SCHEDULES AND DETAILS

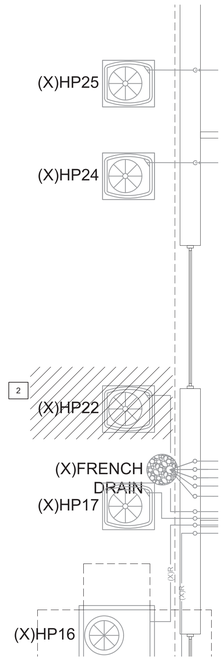
Rev.	Date	Notes

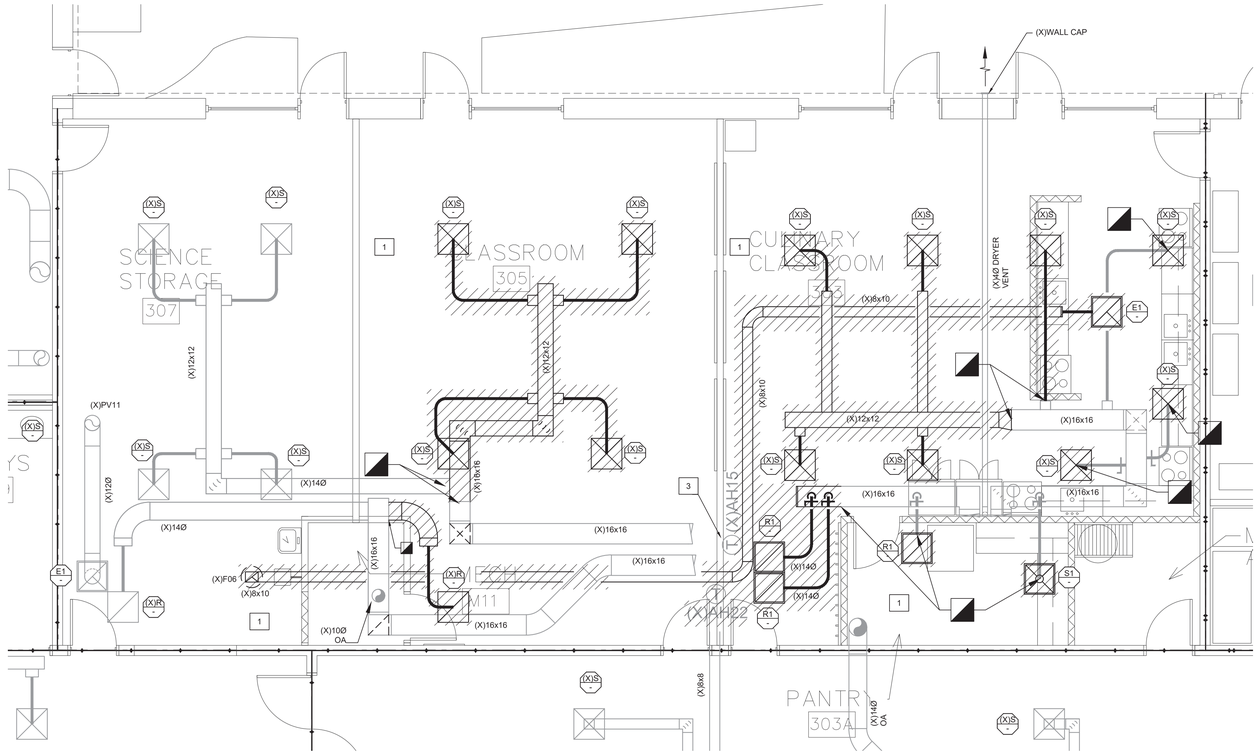
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KEYED NOTES

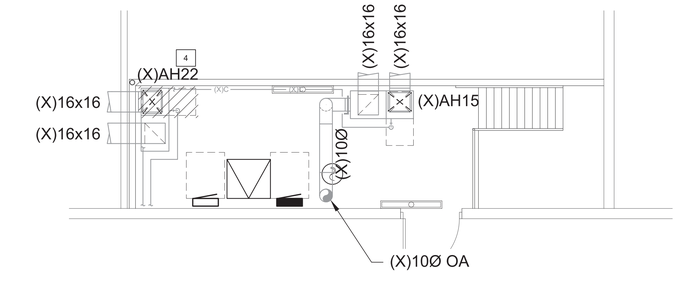
1. REMOVE/DISPOSE OF ALL EXISTING HVAC EQUIPMENT, DUCT, DAMPERS, PIPING, HANGERS, SUPPORTS, INSULATION, CONTROLS, THERMOSTATS AND HVAC ACCESSORIES TO EXTENT SHOWN. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.
2. REMOVE AND DISPOSE OF EXISTING OUTDOOR UNIT INCLUDING PIPING AND CONTROLS. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING ITEMS TO REMAIN IN PLACE.
3. REMOVE, PRESERVE AND PROTECT FOR RE-USE.
4. REMOVE/DISPOSE EXISTING AIR HANDLING UNIT INCLUDING PIPING AND CONTROLS.



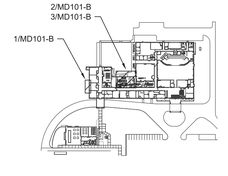


1 **ALTERNATE G-1 PARTIAL FLOOR PLAN**
1/4" = 1'-0"
PLAN NORTH

2 **ALTERNATE G-1 PARTIAL FLOOR PLAN**
1/4" = 1'-0"
PLAN NORTH



3 **ALTERNATE G-1 MECHANICAL MEZZANINE**
1/4" = 1'-0"
PLAN NORTH



4 **KEYPLAN**
NOT TO SCALE
PLAN NORTH

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2023.05.15 14:58:41-04'00'

NHCS Project No. 22-90458

Southeast Area Technical High School SCIF Grant Renovations

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

Issue Date: 5/16/2023

MECHANICAL DEMOLITION FIRST FLOOR PLAN

Rev.	Date	Notes

MD101-B

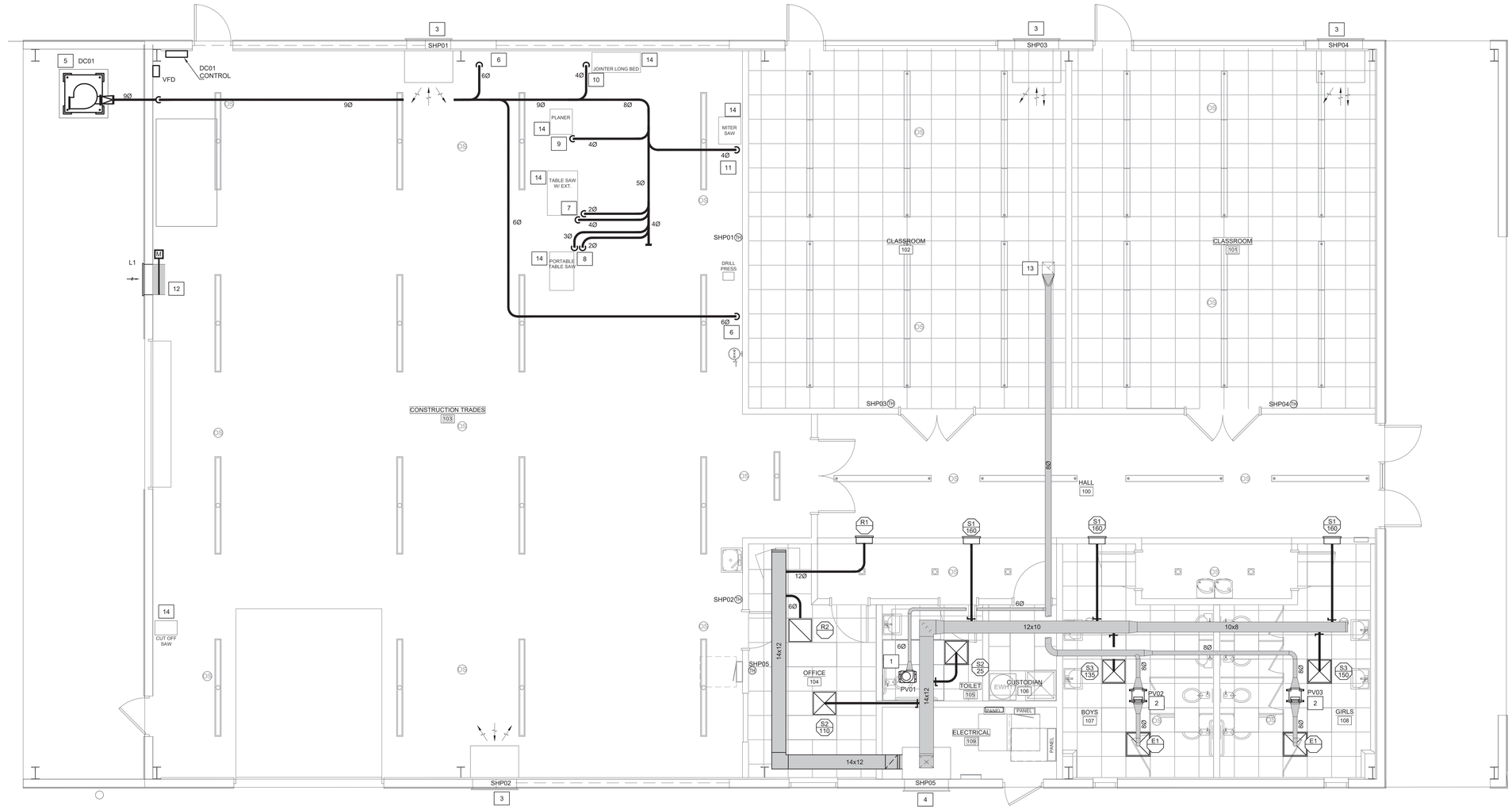
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KEYED NOTES

1. INSTALL POWER VENTILATOR IN CEILING WHILE MAINTAINING ALL OF THE MANUFACTURERS RECOMMENDED CLEARANCES. FIELD ROUTE EXHAUST DUCTWORK UP TO ROOF HOOD, RH01 ON ROOF.
2. INSTALL POWER VENTILATOR ABOVE CEILING WHILE MAINTAINING MANUFACTURERS RECOMMENDED CLEARANCES. FIELD ROUTE EXHAUST DUCTWORK UP TO ROOF HOOD, RH01 ON ROOF.
3. INSTALL WALL HUNG SELF CONTAINED HEAT PUMP ON INTERIOR WALL WHILE MAINTAINING ALL OF THE MANUFACTURERS RECOMMENDED CLEARANCES.
4. INSTALL WALL HUNG SELF CONTAINED HEAT PUMP ON INTERIOR WALL WHILE MAINTAINING ALL OF THE MANUFACTURERS RECOMMENDED CLEARANCES. FIELD ROUTE SUPPLY AND RETURN DUCTWORK AS SHOWN.
5. INSTALL DUST COLLECTION UNIT ON NEW CONCRETE HOUSEKEEPING PAD IN LOCATION SHOWN WHILE MAINTAINING ALL OF THE MANUFACTURERS RECOMMENDED CLEARANCES.
6. 6"Ø DUCT DOWN TO FLOOR SWEEP WITH GATE SHUT OFF. PROVIDE GALVANIZED FLOOR SWEEP WITH 6" OUTLET, TAKEOFF AND SHUT-OFF FOR VACUUM HOSE.
7. 4"Ø DUCT DOWN TO DUST COLLECTION PORT ON TABLE SAW AND 2"Ø DUCT DOWN TO DUST COLLECTION PORT ON BLADE GUARD. CONTRACTOR TO MAKE NECESSARY TRANSITIONS TO DUST COLLECTION PORTS ON EQUIPMENT.
8. 3"Ø DUCT DOWN TO DUST COLLECTION PORT ON PORTABLE TABLE SAW AND 2"Ø DUCT DOWN TO DUST COLLECTION PORT ON BLADE GUARD. CONTRACTOR TO MAKE NECESSARY TRANSITIONS TO DUST COLLECTION PORTS ON
9. EQUIPMENT. 4"Ø DUCT DOWN TO PLANNER. CONTRACTOR TO MAKE NECESSARY TRANSITION TO DUST COLLECTION PORT ON EQUIPMENT.
10. 4"Ø DUCT DOWN TO JOINTER. CONTRACTOR TO MAKE NECESSARY TRANSITION TO DUST COLLECTION PORT ON EQUIPMENT.
11. 4"Ø DUCT DOWN TO DUST HOOD INSTALLED BEHIND MITER SAW. CONTRACTOR TO PROVIDE BIG GULP HOOD, OR EQUAL, AT BACK OF MITER SAW. CONTRACTOR TO MAKE NECESSARY TRANSITION TO DUST COLLECTION PORT ON HOOD.
12. INSTALL LOUVER IN EXTERIOR WALL. REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHT ABOVE FINISHED FLOOR. PROVIDE MOTORIZED DAMPER INTERLOCKED WITH DUST COLLECTION SYSTEM CONTROL PANEL.
13. TRANSITION DUCTWORK UP TO RH01 ON ROOF. COORDINATE FINAL LOCATION WITH G.C. IN ORDER TO ASSURE THAT RH01 IS NOT VISIBLE.
14. SHOP EQUIPMENT BY OTHERS.

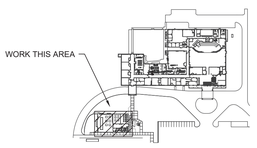
GENERAL NOTES

1. CONTRACTOR MUST PROVIDE AND INSTALL A FULLY FUNCTIONING DUST COLLECTION SYSTEM INCLUDING FLOOR SWEEPS. ONLY THE WOOD WORKING TOOLS WILL BE PROVIDED BY THE OWNER. CONTRACTOR MUST MAKE FINAL CONNECTIONS TO OWNER PROVIDED EQUIPMENT.



1 **FLOOR PLAN**
NOT TO SCALE

PLAN NORTH



2 **KEYPLAN**
NOT TO SCALE

PLAN NORTH

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043801 TIMOTHY O GRAY
Digitally signed by TIMOTHY O GRAY
Date: 2023.05.15 14:57:23-04'00'

NHCS Project No.
22-90458

Southeast Area Technical High School
SCIF Grant Addition

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

Issue Date: 5/16/2023

MECHANICAL FLOOR PLAN

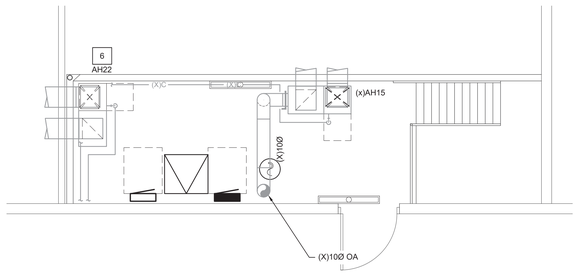
Rev.	Date	Notes

MH101-A

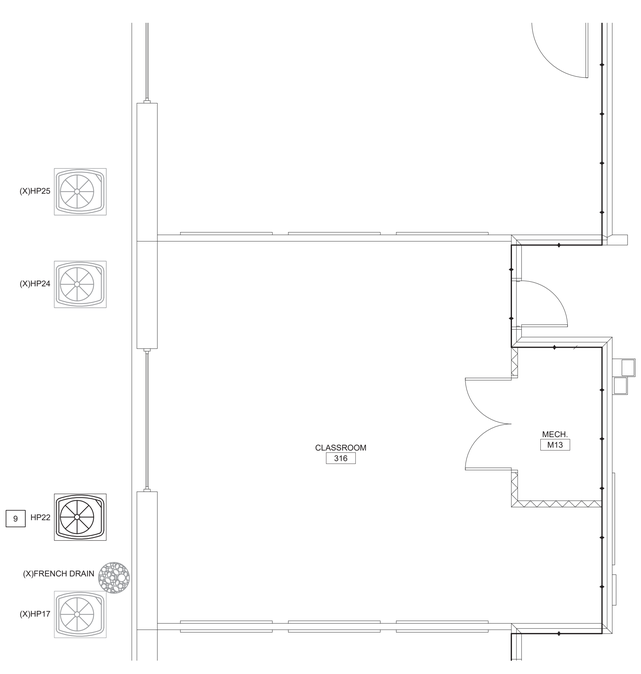
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KEYED NOTES

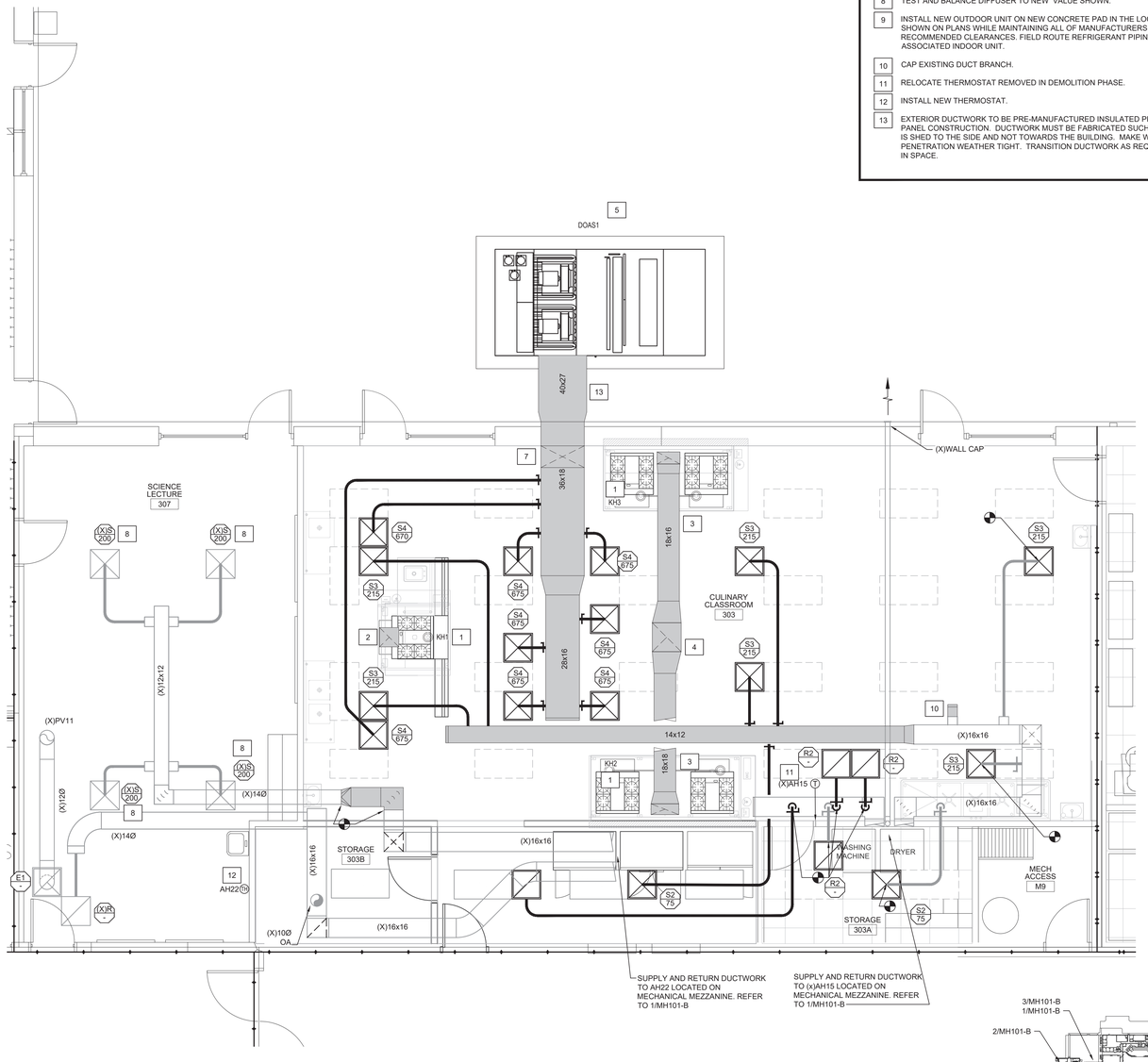
1. INSTALL NEW KITCHEN HOOD WHILE MAINTAINING ALL OF THE MANUFACTURERS RECOMMENDED CLEARANCES.
2. ROUTE EXHAUST DUCTWORK BETWEEN JOIST TO KEF1. SLOPE DUCTS 1/4:12 TOWARDS GREASE RESERVOIR. PROVIDE CLEANOUT OPENINGS NO MORE THAN 10FT. FROM CHANGE IN DIRECTIONS.
3. ROUTE EXHAUST DUCTWORK BETWEEN JOIST TO KEF2. SLOPE DUCTS 1/4:12 TOWARDS GREASE RESERVOIR. PROVIDE CLEANOUT OPENINGS NO MORE THAN 10FT. FROM CHANGE IN DIRECTIONS.
4. EXHAUST DUCTWORK FROM KH2 AND KH3 COMBINE AND CONTINUE TO KEF2. TRANSITION DUCTWORK AS NECESSARY TO AVOID OBSTRUCTIONS AND OTHER CONFLICTS WITH STRUCTURAL COMPONENTS.
5. INSTALL DOAS UNIT ON NEW CONCRETE PAD IN THE LOCATION SHOWN ON PLANS WHILE MAINTAINING ALL OF MANUFACTURERS RECOMMENDED CLEARANCES. SEE STRUCTURAL DRAWINGS FOR NEW CONCRETE PAD AND SECURITY FENCE DETAILS. THE SIZE, NUMBER AND LOCATION OF SERVICE/MAINTENANCE GATES IN SECURITY FENCE TO BE DETERMINED BY THE PHYSICAL SIZE AND REQUIREMENTS OF THE MODEL DOAS SELECTED.
6. INSTALL NEW AIR HANDLING UNIT IN MECHANICAL MEZZANINE, WHILE MAINTAINING ALL OF MANUFACTURERS RECOMMENDED CLEARANCES. FIELD ROUTE REFRIGERANT PIPING TO ASSOCIATED OUTDOOR UNIT AND CONNECT TO EXISTING CONDENSATE PIPING.
7. ROUTE MAKE-UP AIR DUCTWORK FROM DOAS-1 THROUGH WALL AND UP ON INTERIOR WALL TO ABOVE CEILING.
8. TEST AND BALANCE DIFFUSER TO NEW VALUE SHOWN.
9. INSTALL NEW OUTDOOR UNIT ON NEW CONCRETE PAD IN THE LOCATION SHOWN ON PLANS WHILE MAINTAINING ALL OF MANUFACTURERS RECOMMENDED CLEARANCES. FIELD ROUTE REFRIGERANT PIPING TO ASSOCIATED INDOOR UNIT.
10. CAP EXISTING DUCT BRANCH.
11. RELOCATE THERMOSTAT REMOVED IN DEMOLITION PHASE.
12. INSTALL NEW THERMOSTAT.
13. EXTERIOR DUCTWORK TO BE PRE-MANUFACTURED INSULATED PHENOLIC PANEL CONSTRUCTION. DUCTWORK MUST BE FABRICATED SUCH THAT WATER IS SHED TO THE SIDE AND NOT TOWARDS THE BUILDING. MAKE WALL PENETRATION WEATHER TIGHT. TRANSITION DUCTWORK AS REQUIRED TO FIT IN SPACE.



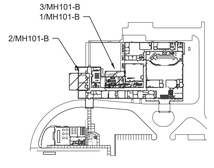
1 ALTERNATE G-1 MECHANICAL MEZZANINE
1/4" = 1'-0" 0 2' 4' 8'
PLAN NORTH



2 ALTERNATE G-1 PARTIAL FLOOR PLAN
1/4" = 1'-0" 0 2' 4' 8'
PLAN NORTH



3 ALTERNATE G-1 PARTIAL FLOOR PLAN
1/4" = 1'-0" 0 2' 4' 8'
PLAN NORTH



4 KEYPLAN
NOT TO SCALE
PLAN NORTH

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10/23/2023
14:58:42-04'00'

NHCS Project No.
22-90458

Southeast Area Technical High School
SCIF Grant Renovations

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

Issue Date: 5/16/2023

MECHANICAL HVAC FLOOR PLAN

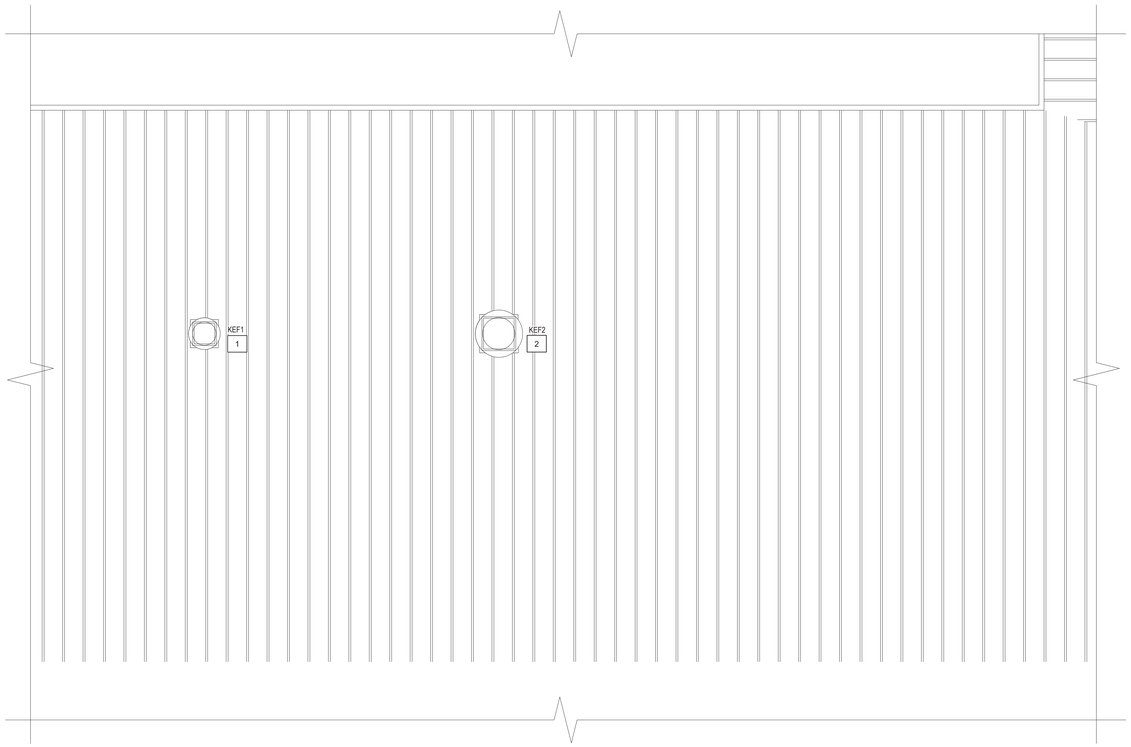
Rev.	Date	Notes

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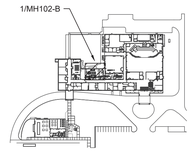
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KEYED NOTES

1. INSTALL KEF1 ON NEW ROOF CURB, CENTERED ON KH1 BELOW, WHILE MAINTAINING ALL OF THE MANUFACTURERS RECOMMENDED CLEARANCES. COORDINATE LOCATION WITH EXISTING ROOF FRAMING. SEE STRUCTURAL DRAWINGS FOR BRACING TO EXISTING ROOF STRUCTURE TO SUPPORT EXHAUST FAN.
2. INSTALL KEF2 ON NEW ROOF CURB AT A MIDPOINT BETWEEN KH2 AND KH3 BELOW, WHILE MAINTAINING ALL OF THE MANUFACTURERS RECOMMENDED CLEARANCES. COORDINATE LOCATION WITH EXISTING ROOF FRAMING. SEE STRUCTURAL DRAWINGS FOR BRACING TO EXISTING ROOF STRUCTURE TO SUPPORT EXHAUST FAN.



1 **ALTERNATE G-1 PARTIAL ROOF PLAN**
1/4" = 1'-0"
0 2' 4' 8'
PLAN NORTH



2 **KEYPLAN**
NOT TO SCALE
PLAN NORTH

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2023.05.15 14:58:42 -04'00'

NHCS Project No. 22-90458

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Castle Hayne, NC 28429

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MECHANICAL HVAC PARTIAL ROOF PLAN

Rev.	Date	Notes

MH102-B

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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,
VFD	VARIABLE FREQUENCY DRIVE (VFD)
"Equip" #AMP HMCP (IHP) NEMA # M$##	COMBINATION STARTER WITH CIRCUIT BREAKER DISCONNECT, FULL VOLTAGE, NON-REVERSING, (600V, 3P, NEMA) SIZE AS INDICATED ON DRAWINGS
	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 1 1/4" CONDUIT TO ABOVE ACCESSIBLE GRID CEILING W/PULL STRING FOR OUTLETS LOCATED BELOW HARD (GYPBOARD) CEILINGS, ROUTE 1 1/4" 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 1 1/4" CONDUIT TO ABOVE ACCESSIBLE GRID CEILING W/PULL STRING FOR OUTLETS LOCATED BELOW HARD (GYPBOARD) CEILINGS, ROUTE 1 1/4" CONDUIT TO TELEPHONE/DATA ROOM.
1V/1D	COMBINATION DATA/TELEPHONE OUTLET, RECESSED CEILING MOUNTED (LAY-IN / GYPBOARD) PROVIDE 1 1/4" CONDUIT TO ABOVE ACCESSIBLE GRID CEILING W/PULL STRING FOR OUTLETS LOCATED BELOW HARD (GYPBOARD) CEILINGS, ROUTE 1 1/4" 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 S1PT4X4BRS), 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 FBX	4 GANG FLOOR BOX WITH DUPLEX RECEPTACLE AND DATA CAPABILITIES (CONFIRM WITH OWNER FOR REQUIREMENTS). PROVIDE METALLIC IN-USE COVER (HUBBELL CFB4G30CR OR EQUIVALENT).
	JUNCTION BOX - WALL MOUNTED +##" - INDICATES MOUNTING HEIGHT OF DEVICE IN INCHES AFF (if given)
J	JUNCTION BOX - CEILING/ABOVE CEILING MOUNTED
J	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.
	PANIC BUTTON
	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
	1 HOUR RATED FIRE WALL
(X)	1 HOUR RATED FIRE WALL - EXISTING
	2 HOUR RATED FIRE WALL
(X)	2 HOUR RATED FIRE WALL - EXISTING
	3 HOUR RATED FIRE WALL
(X)	3 HOUR RATED FIRE WALL - EXISTING
OHP	OVERHEAD PRIMARY CONDUCTORS
(X)OHP	OVERHEAD PRIMARY CONDUCTORS - EXISTING
UGP	UNDERGROUND PRIMARY CONDUCTORS
(X)UGP	UNDERGROUND PRIMARY CONDUCTORS - EXISTING
OHS	OVERHEAD SECONDARY CONDUCTORS
(X)OHS	OVERHEAD SECONDARY CONDUCTORS - EXISTING
UGS	UNDERGROUND SECONDARY CONDUCTORS
(X)UGS	UNDERGROUND SECONDARY CONDUCTORS - EXISTING
	COPPER CLASS 1 CONDUCTOR ON ROOF
	ALUMINUM CLASS 1 CONDUCTOR ON ROOF
	COPPER CLASS 1 CONDUCTOR BELOW GRADE
	CONTROL CABLE CONDUIT
	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
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	PRECEPTACLE
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
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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05/16/2023

NHCS Project No.
22-90458

Southeast Area
Technical High
School
SCIF Grant Addition

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

Issue Date: 5/16/2023

ELECTRICAL
LEGEND &
ABBREVIATIONS

Rev.	Date	Notes

E-001-A

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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,
VFD	VARIABLE FREQUENCY DRIVE (VFD)
"Equip" #AMP HMCP (IHP) NEMA #	COMBINATION STARTER WITH CIRCUIT BREAKER DISCONNECT, FULL VOLTAGE, NON-REVERSING, (600V, 3P, NEMA) SIZE AS INDICATED ON DRAWINGS
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 1¼" CONDUIT TO ABOVE ACCESSIBLE GRID CEILING W/PULL STRING FOR OUTLETS LOCATED BELOW HARD (GYPBOARD) CEILINGS, ROUTE 1¼" 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 1¼" CONDUIT TO ABOVE ACCESSIBLE GRID CEILING W/PULL STRING FOR OUTLETS LOCATED BELOW HARD (GYPBOARD) CEILINGS, ROUTE 1¼" CONDUIT TO TELEPHONE/DATA ROOM.
1V/1D	COMBINATION DATA/TELEPHONE OUTLET, RECESSED CEILING MOUNTED (LAY-IN / GYPBOARD) PROVIDE 1¼" CONDUIT TO ABOVE ACCESSIBLE GRID CEILING W/PULL STRING FOR OUTLETS LOCATED BELOW HARD (GYPBOARD) CEILINGS, ROUTE 1¼" 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 S1PT4X4BRS), 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 FBX	4 GANG FLOOR BOX WITH DUPLEX RECEPTACLE AND DATA CAPABILITIES (CONFIRM WITH OWNER FOR REQUIREMENTS). PROVIDE METALLIC IN-USE COVER (HUBBELL CFB4G30CR OR EQUIVALENT).
	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
	1 HOUR RATED FIRE WALL
(X)	1 HOUR RATED FIRE WALL - EXISTING
	2 HOUR RATED FIRE WALL
(X)	2 HOUR RATED FIRE WALL - EXISTING
	3 HOUR RATED FIRE WALL
(X)	3 HOUR RATED FIRE WALL - EXISTING
OHP (X)OHP	OVERHEAD PRIMARY CONDUCTORS OVERHEAD PRIMARY CONDUCTORS - EXISTING
UGP (X)UGP	UNDERGROUND PRIMARY CONDUCTORS UNDERGROUND PRIMARY CONDUCTORS - EXISTING
OHS (X)OHS	OVERHEAD SECONDARY CONDUCTORS OVERHEAD SECONDARY CONDUCTORS - EXISTING
UGS (X)UGS	UNDERGROUND SECONDARY CONDUCTORS UNDERGROUND SECONDARY CONDUCTORS - EXISTING
	COPPER CLASS 1 CONDUCTOR ON ROOF
	ALUMINUM CLASS 1 CONDUCTOR ON ROOF
	COPPER CLASS 1 CONDUCTOR BELOW GRADE
	CONTROL CABLE CONDUIT
	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
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	PRECEPTACLE
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
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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NHCS Project No.
22-90458

Southeast Area Technical High School
SCIF Grant Renovations

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

Issue Date: 5/16/2023

ELECTRICAL LEGEND & ABBREVIATIONS

Rev.	Date	Notes

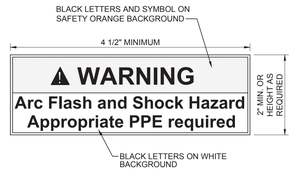
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BDA PROJECT NOTES IN TESTING AND INSTALLATION SEQUENCING

1. A PRELIMINARY SITE SURVEY IS NEEDED TO DETERMINE THE EXISTING dBm SIGNAL STRENGTH.
2. A MORE DETAILED SURVEY WILL MAP THE BUILDING ONCE THE BUILDING IS SUBSTANTIALLY COMPLETED.
3. THE NEXT SIGNAL STRENGTH SURVEY WILL COMPLY WITH THE 2018 NCFC, 510.5.3 AND NFPA 72, 24.5.2.1 (2013 EDITION)
   - EACH FLOOR SHALL BE DIVIDED INTO 20 (APPROXIMATELY) EQUAL TEST AREAS. THE WORST CASE SIGNAL STRENGTH READING SHALL BE RECORDED. PROVIDE 90 PERCENT FLOOR AREA RADIO COVERAGE.
   - CRITICAL AREAS, IF PRESENT, SHALL BE SURVEYED SEPARATE FROM THE EQUAL TEST AREAS;
   --- EXIT STAIRS
   --- EXIT PASSAGEWAYS
   --- ELEVATOR LOBBIES
   --- AT STANDPIPE CABINETS
   --- SPRINKLER SECTIONAL VALVE LOCATIONS
   --- AHJ MAY REQUIRE ADDITIONAL LOCATIONS.

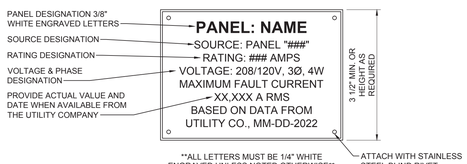
   -- CRITICAL AREAS SHALL BE PROVIDED WITH 99 PERCENT RADIO COVERAGE.
4. THE MINIMUM SIGNAL STRENGTH OF -95 dBm IS REQUIRED.



NOTES:
1. LABEL SHOWN CAN BE SOURCED FROM SAFETYSIGN.COM, OTHER SUPPLIERS ARE COMPLIANTSIGNS.COM & SETON.COM

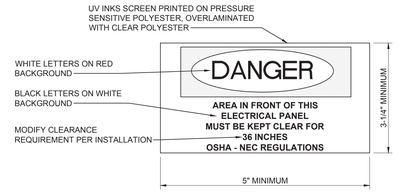
2. THIS WARNING LABEL MINIMALLY COMPLIES WITH NEC, HOWEVER IF ELECTRICAL EQUIPMENT IS LIKELY TO REQUIRE EXAMINATION OR MAINTENANCE WHILE ENERGIZED A DETAILED SHORT CIRCUIT AND ARC FLASH HAZARD ANALYSIS IS RECOMMENDED.

1 ELECTRICAL EQUIPMENT WARNING LABEL DETAIL
NOT TO SCALE

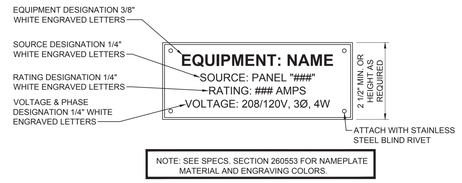


NOTE: SEE SPECS. SECTION 260553 FOR NAMEPLATE MATERIAL AND ENGRAVING COLORS.

2 TYPICAL PANELBOARD NAMEPLATE DETAIL
NOT TO SCALE

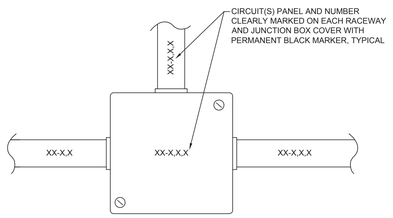


3 NEC WORKING SPACE LABEL DETAIL
NOT TO SCALE

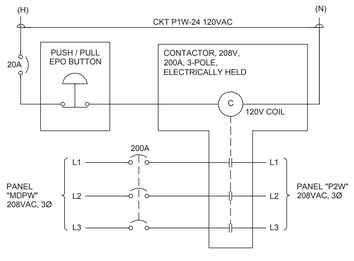


NOTE: SEE SPECS. SECTION 260553 FOR NAMEPLATE MATERIAL AND ENGRAVING COLORS.

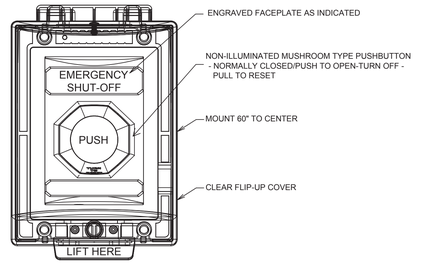
4 TYPICAL EQUIPMENT NAMEPLATE DETAIL
NOT TO SCALE



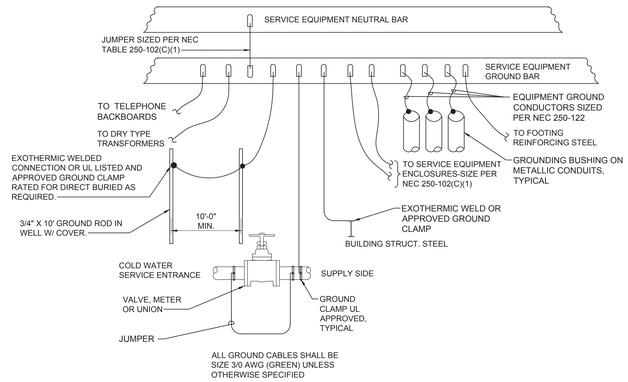
5 CIRCUIT IDENTIFICATION DETAIL
NOT TO SCALE



6 PANEL P2W EMERGENCY POWER OFF WIRING DETAIL
NOT TO SCALE



7 EMERGENCY POWER OFF "EPO" BUTTON DETAIL
NOT TO SCALE



8 SERVICE GROUNDING DETAIL
NOT TO SCALE

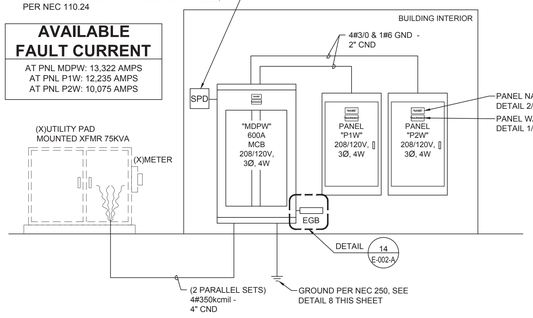
NOTE:
1. SHORT CIRCUIT CALCULATION COMPLETED ON 04/07/2023. BASED ON A 150KVA PAD MOUNTED TRANSFORMER @ 2.4% IMPEDANCE, AND 3.5 X/R. WITH 85 FEET OF SERVICE ENTRANCE CONDUCTOR. VERIFY ACTUAL PARAMETERS WITH UTILITY COMPANY PRIOR TO INSTALLATION

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

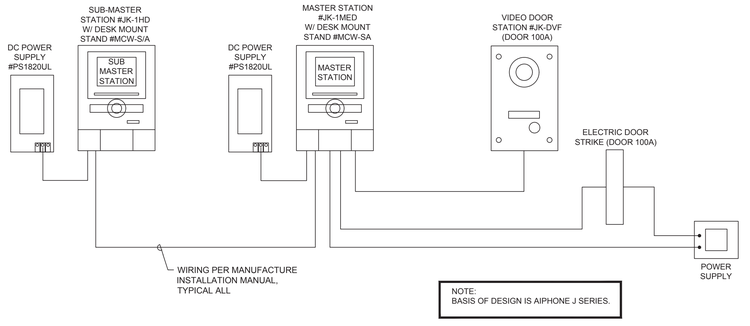
AVAILABLE FAULT CURRENT
AT PNL MDPW: 13,322 AMPS
AT PNL P1W: 12,235 AMPS
AT PNL P2W: 10,075 AMPS

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, 2 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

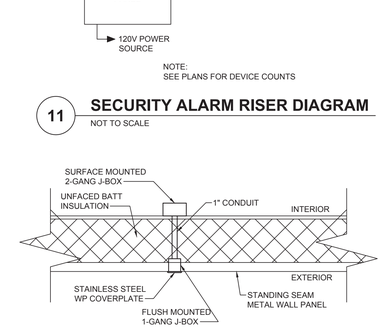


9 NEW BUILDING RISER DIAGRAM
NOT TO SCALE



NOTE:
BASIS OF DESIGN IS AIPHONE J SERIES.

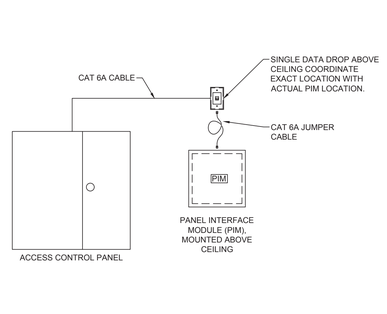
10 VIDEO INTERCOM SYSTEM RISER
NOT TO SCALE



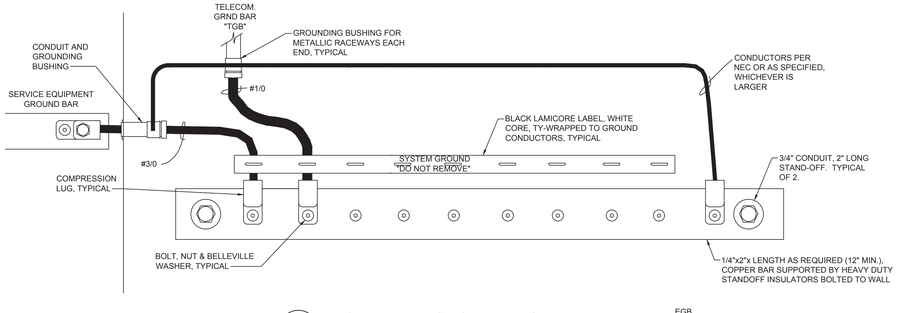
NOTE:
SEE PLANS FOR DEVICE COUNTS

11 SECURITY ALARM RISER DIAGRAM
NOT TO SCALE

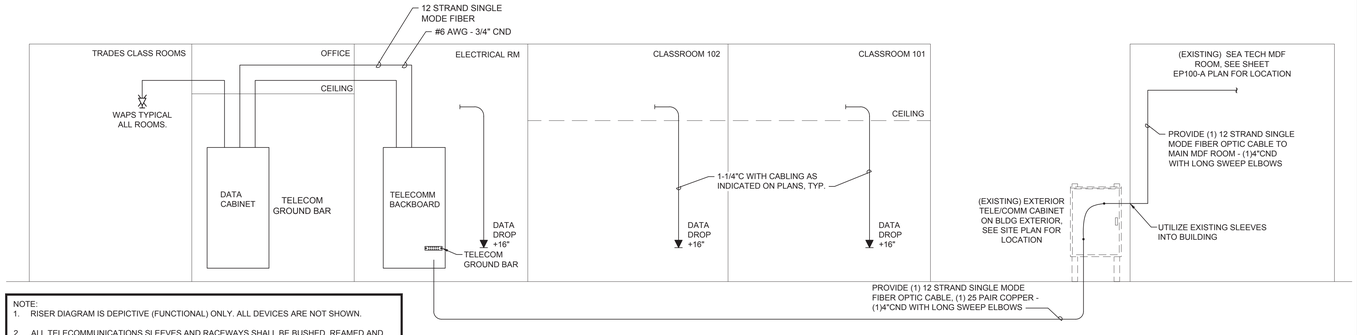
12 CAMERA JUNCTION BOX DETAIL
NOT TO SCALE



13 PANEL INTERFACE MODULE (PIM) WIRING DIAGRAM
NOT TO SCALE



14 EQUIPMENT GROUND "EGB" BAR DETAIL EGB
NOT TO SCALE



NOTE:
1. RISER DIAGRAM IS DEPICTIVE (FUNCTIONAL) ONLY. ALL DEVICES ARE NOT SHOWN.
2. ALL TELECOMMUNICATIONS SLEEVES AND RACEWAYS SHALL BE BUSHED, REAMED AND BE PROVIDED WITH INSULATED BONDING BUSHINGS. PROVIDE PULL STRING IN ALL UNUSED SLEEVES AND RACEWAYS.
3. ALL FIBER SHALL BE TERMINATED, TESTED AND LABELED PER NHCS SPECIFICATIONS.

15 NEW BUILDING TELECOMMUNICATIONS RISER DIAGRAM
NOT TO SCALE

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PERFORMANCE BASED FIRE PROTECTION ENGINEERING, PLLC
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PO BOX 1847 Pittsboro, NC 919.600.7780
pbfpe.com

JOSEPH CAROL IANNI PROFESSIONAL ENGINEER SEAL 35230 NORTH CAROLINA
05/16/2023

NHCS Project No.
22-90458

Southeast Area Technical High School
SCIF Grant Addition

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

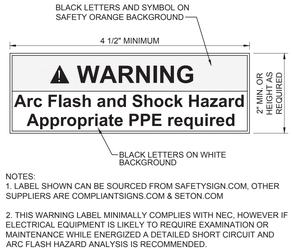
Issue Date: 5/16/2023

ELECTRICAL RISER DIAGRAM & DETAILS

Rev.	Date	Notes

E-002-A

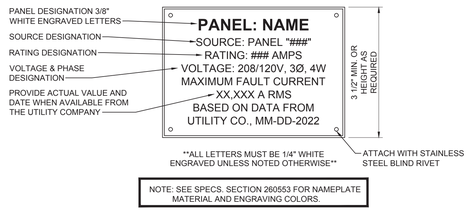
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NOTES:
1. LABEL SHOWN CAN BE SOURCED FROM SAFETYSIGN.COM, OTHER SUPPLIERS ARE COMPLIANTSIGNS.COM & SETON.COM

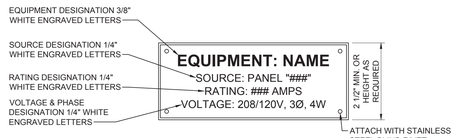
2. THIS WARNING LABEL MINIMALLY COMPLIES WITH NEC, HOWEVER IF ELECTRICAL EQUIPMENT IS LIKELY TO REQUIRE EXAMINATION OR MAINTENANCE WHILE ENERGIZED A DETAILED SHORT CIRCUIT AND ARC FLASH HAZARD ANALYSIS IS RECOMMENDED.

1 ELECTRICAL EQUIPMENT WARNING LABEL DETAIL
NOT TO SCALE



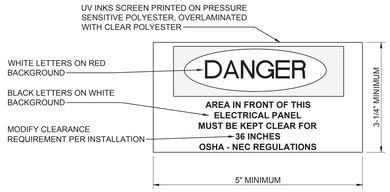
NOTE: SEE SPECS. SECTION 260553 FOR NAMEPLATE MATERIAL AND ENGRAVING COLORS.

2 TYPICAL PANELBOARD NAMEPLATE DETAIL
NOT TO SCALE

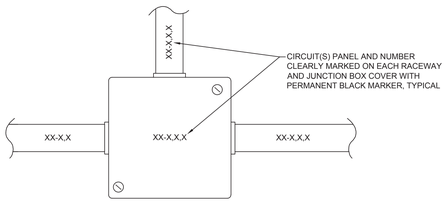


NOTE: SEE SPECS. SECTION 260553 FOR NAMEPLATE MATERIAL AND ENGRAVING COLORS.

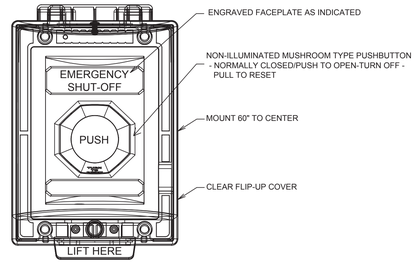
3 TYPICAL EQUIPMENT NAMEPLATE DETAIL
NOT TO SCALE



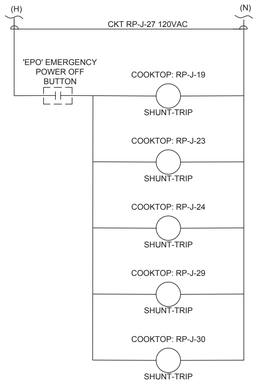
4 NEC WORKING SPACE LABEL DETAIL
NOT TO SCALE



5 CIRCUIT IDENTIFICATION DETAIL
NOT TO SCALE



6 EMERGENCY POWER OFF "EPO" BUTTON DETAIL
NOT TO SCALE



7 EMERGENCY POWER OFF "EPO" BUTTON DETAIL
NOT TO SCALE

LIGHTING FIXTURE SCHEDULE

MARK	DESCRIPTION	MANUFACTURER/SERIES	NOM. SIZE	SOURCE / TEMP(øK) / DELIVERED LUMENS	VOLTS	WATTS	LENS	COLOR/ MATERIAL	MOUNTING HEIGHT	DRIVER/ DIMMING	REMARKS
A	TRACK LIGHTING FIXTURE WITH 60 WATT CURRENT LIMITER AND THREE HEADS	WAC LIGHTING - OCULUX TRACK H KIT PROGRESS LIGHTING - P900002-031-27 NORA LIGHTING - NTLE-875	4' TRK.	LEDs / 3500K / 850 LUMENS/HEAD	120	60	ACRYLIC	BLACK/ ALUMINUM	SURFACE MTD.	LED DRIVER 0-10V DIMMING	
B	LAY-IN LENSED FLAT PANEL	LITHONIA LIGHTING - CPX SERIES COLUMBIA LIGHTING - CBT SERIES COOPER LIGHTING METALUX - FP SERIES	2'x4'x1"	LEDs / 3500K / 3813 LUMENS	120	29	ACRYLIC	WHITE/ STEEL	RECESSED	LED DRIVER 0-10V DIMMING	
E	DUAL HEAD EMERGENCY LIGHTING UNIT WITH 90 MINUTE EMERGENCY BATTERY BACKUP	EELP LIGHTING - EM1 SERIES COMPASS LIGHTING - CU2 SERIES COOPER LIGHTING SURE LITES - SEL SERIES		LEDs /	120				WALL MTD.		
J	RECESSED DOWNLIGHT	LITHONIA LIGHTING - LBR4 SERIES COLUMBIA LIGHTING - LITE FRAME LFR-4RD SERIES COOPER LIGHTING HALO HC4 SERIES	4" DIA.	LEDs / 3500K / 2528 LUMENS	120	25	ACRYLIC	WHITE/ STEEL	RECESSED	LED DRIVER	
X	THERMOPLASTIC EXIT SIGN WITH 90 MINUTE EMERGENCY BATTERY BACKUP	EELP LIGHTING - XE SERIES COMPASS LIGHTING - CE SERIES COOPER LIGHTING SURE LITES - LPX7 SERIES		LEDs /	120				WALL MTD. OR CLG. MTD.		

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.

SAWYER SHERWOOD & ASSOCIATE ARCHITECTURE
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Wilmington, NC 28401
910 762-0892
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PARAMOUNTE ENGINEERING
WOODS ENGINEERING Creative Solutions
CBHF Engineers, PLLC
PERFORMANCE BASED FIRE PROTECTION ENGINEERING, PLLC
STATE OF NC ENGINEERING FIRM LICENSE NO. P-1842
PO BOX 1847
Pittsboro, NC
919.600.7780
pbfpe.com

NORTH CAROLINA PROFESSIONAL SEAL 35230 ENGINEER JOSEPH P. FAMIGLIETTI
05/16/2023

NHCS Project No. 22-90458

Southeast Area Technical High School SCIF Grant Renovations

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

Issue Date: 5/16/2023

ELECTRICAL DETAILS

Rev.	Date	Notes

E-002-B

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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 LENSED FLAT PANEL	LITHONIA LIGHTING - CPX SERIES COLUMBIA LIGHTING - CBT SERIES COOPER LIGHTING METALUX - FP SERIES	2'x4'x1"	LEDs / 3500K / 4543 LUMENS	120	39	ACRYLIC	WHITE/ STEEL	RECESSED	LED DRIVER 0-10V DIMMING	7
A1	LAY-IN LENSED FLAT PANEL	LITHONIA LIGHTING - CPX SERIES COLUMBIA LIGHTING - CBT SERIES COOPER LIGHTING METALUX - FP SERIES	2'x4'x1"	LEDs / 3500K / 3813 LUMENS	120	29	ACRYLIC	WHITE/ STEEL	RECESSED	LED DRIVER 0-10V DIMMING	
B	LAY-IN LENSED FLAT PANEL	LITHONIA LIGHTING - CPX SERIES COLUMBIA LIGHTING - CBT SERIES COOPER LIGHTING METALUX - FP SERIES	2'x2'x1"	LEDs / 3500K / 3555 LUMENS	120	32	ACRYLIC	WHITE/ STEEL	RECESSED	LED DRIVER 0-10V DIMMING	
C	VANITY FIXTURE	LITHONIA LIGHTING - FMVCSLS SERIES COLUMBIA LIGHTING - CWM SERIES TERON LIGHTING - VICEROY SERIES	2'	LEDs / 3500K / 1550 LUMENS	120	27	ACRYLIC	WHITE/ STEEL	WALL MTD.	LED DRIVER	
D	SUSPENDED LENSED SHOP LIGHT	LITHONIA LIGHTING - CSS SERIES COLUMBIA LIGHTING - CSL SERIES COOPER LIGHTING METALUX - ST SERIES	8'	LEDs / 3500K / 8271 LUMENS	120	72	ACRYLIC	WHITE/ STEEL	SUSP.	LED DRIVER 0-10V DIMMING	
D1	SUSPENDED LENSED SHOP LIGHT	LITHONIA LIGHTING - CSS SERIES COLUMBIA LIGHTING - CSL SERIES COOPER LIGHTING METALUX - ST SERIES	4'	LEDs / 3500K / 4135 LUMENS	120	36	ACRYLIC	WHITE/ STEEL	SUSP.	LED DRIVER 0-10V DIMMING	
E	DUAL HEAD EMERGENCY LIGHTING UNIT WITH 90 MINUTE EMERGENCY BATTERY BACKUP	EELP LIGHTING - EM1 SERIES COMPASS LIGHTING - CU2 SERIES COOPER LIGHTING SURE LITES - SEL SERIES	14"x15" x3"	LEDs	120	1.8		WHITE	WALL MTD.		
F	SUSPENDED INDIRECT/DIRECT FIXTURE	MARK ARCH LTG - SLOT 4 SERIES AMERICAN LINEAR LIGHTING - 3SID SERIES AXIS LIGHTING - BEAM SERIES	12'	LEDs /3500K 1500 LUMENS DOWN 300 LUMENS UP	120	180	ACRYLIC	WHITE/ STEEL	SUSP.	LED DRIVER 0-10V DIMMING	
F8	SUSPENDED INDIRECT/DIRECT FIXTURE	MARK ARCH LTG SLOT 4 SERIES AMERICAN LINEAR LIGHTING - 3SID SERIES AXIS LIGHTING - BEAM SERIES	8'	LEDs /3500K 1500 LUMENS DOWN 300 LUMENS UP	120	64	ACRYLIC	WHITE/ STEEL	SUSP.	LED DRIVER 0-10V DIMMING	
G	LENSED STRIP FIXTURE	LITHONIA LIGHTING - CSS SERIES COLUMBIA LIGHTING - CSL SERIES COOPER LIGHTING METALUX - SNLED SERIES	4'	LEDs / 3500K / 4135 LUMENS	120	36	ACRYLIC	WHITE/ STEEL	WALL MTD.	LED DRIVER	
H	EXTERIOR WALLPACK, WITH 90 MINUTE EMERGENCY BATTERY BACKUP WITH PHOTOCELL	BROWNLEE ARMOR SERIES COLUMBIA LIGHTING - RWL1 LUMARK LIGHTING - IST SERIES	13"x11" x9"	LEDs / 3500K / 4927 LUMENS	120	30	TEMPERED GLASS	BRONZE/ ALUMINUM	WALL MTD.	LED DRIVER	3
H1	EXTERIOR WALLPACK WITH PHOTOCELL	BROWNLEE ARMOR SERIES COLUMBIA LIGHTING - RWL1 LUMARK LIGHTING - IST SERIES	13"x11" x9"	LEDs / 3500K / 4927 LUMENS	120	30	TEMPERED GLASS	BRONZE/ ALUMINUM	WALL MTD.	LED DRIVER	3
J	RECESSED DOWN LIGHT	LITHONIA LIGHTING - LBR4 SERIES COLUMBIA LIGHTING - LITE FRAME LFR-4RD SERIES COOPER LIGHTING HALO HC4 SERIES	4" DIA.	LEDs / 3500K / 2528 LUMENS	120	25	ACRYLIC	WHITE/ STEEL	RECESSED	LED DRIVER	
K	EXTERIOR WALL SCONCE UP/DOWN LIGHT	VISUAL COMFORT - POHL TALL OUTDOOR SCONCE ASTRO LIGHTING - OSLO UP/DOWN SCONCE PROGRESS LTG - LED SQUARE CYLINDER	5"x14" x8"	LEDs / 3000K / 800 LUMENS	120	19		BLACK	WALL MTD.	LED DRIVER	3
L	EXTERIOR LINEAR WALL WASH	PINNACLE LTG - MOFFAT ALCON - 31022 STANTON LED SIGN LIGHT PUREEDGE LTG - SLICK OUTDOOR LINEAR	24"	LEDs / 3000K / 1000 LUMENS	120	16	ACRYLIC	BRONZE	WALL MTD.	LED DRIVER	3
X	THERMOPLASTIC EXIT SIGN WITH 90 MINUTE EMERGENCY BATTERY BACKUP	EELP LIGHTING - XE SERIES COMPASS LIGHTING - CE SERIES COOPER LIGHTING SURE LITES - LPX7 SERIES		LEDs /	120				WALL MTD. OR CLG. MTD.		

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LOAD SUMMARY BLDG A

VOLTAGE	PHASE	
208	3	
LARGEST MOTOR APPROX. AMPS	41	AMPS
LARGEST MOTOR APPROX. AMPS x .25	10	AMPS
HVAC		
SHP'S	69,173	VA
SUB-TOTAL HVAC DEMAND	69,173	VA
SUB-TOTAL HVAC DEMAND	192	AMPS
EQUIPMENT		
EWH1	4,500	VA
DC01 BLOWER	9,108	VA
DC01 SHAKER	721	VA
MOTORIZED DAMPER	400	VA
FIRE ALARM CONTROL PANEL	400	VA
SECURITY PANEL	400	VA
EWC	600	VA
PLANER CORD REEL	1,800	VA
CUT OFF SAW	1,800	VA
MITER SAW	1,560	VA
DRILL PRESS	864	VA
PORT. TABLE SAW CORD REEL	1,800	VA
TABLE SAW	4,728	VA
MOTORIZED DOOR	3,840	VA
JOINTER	1,920	VA
EPO CONTACTOR	200	VA
SUB-TOTAL EQUIPMENT DEMAND	34,640	VA
SUB-TOTAL EQUIPMENT DEMAND	96	AMPS
ADD FOR LARGEST MOTOR	10	AMPS
TOTAL EQUIPMENT DEMAND	106	AMPS
LIGHTING		
LIGHTS (INTERIOR, BASED ON NEC 220.12)	18,114	VA
LIGHTS (EXTERIOR)	294	VA
SIGN	1,200	VA
TOTAL LIGHTING LOAD	19,608	VA
TOTAL DEMAND FOR LIGHTING	54	AMPS
RECEPTACLES		
RECEPTACLES	12,240	VA
FIRST 10000VA	10,000	VA
REMAINDER @ 50%	1,120	VA
TOTAL DEMAND FOR RECEPTACLES	11,120	VA
TOTAL DEMAND FOR RECEPTACLES	31	AMPS
TOTAL DEMAND BUILDING AMPS	384	AMPS
TOTAL DEMAND BUILDING VA	138,234	VA
TOTAL BUILDING CONNECTED LOAD	135,661	VA

PANEL MDPW (SERVICE ENTRANCE LISTED)

TYPE: BOLT-ON
DOOR-IN-DOOR WITH-IN HINGED TRIM FRONT COVER
208 V, 3 PH, 4 WIRE
MOUNT: SURFACE
FEED:
PROVIDE IF CHECKED: XX / XX
EQUIP. GROUND BUS
NEUTRAL BUS
GUTTER TAPS
SUB-FEED LUGS

LOAD SERVED	LOAD VA	CKT BKR	CKT #	LOAD VA A	LOAD VA B	LOAD VA C	CKT #	CKT BKR	LOAD VA	LOAD SERVED
SHP01	4,996	60/3	1	9,690			2	200/3	4,694	PANEL P1W
"	4,996	|	3		9,556		4	|	4,560	"
"	4,996	|	5			9,001	6	|	4,005	"
SHP02	4,996	60/3	7	12,476			8	200/3	7,480	PANEL P2W
"	4,996	|	9		14,428		10	|	9,432	"
"	4,996	|	11			12,124	12	|	7,128	"
SHP03	4,708	50/3	13	4,948			14	20/3	240	DC01 SHAKER
"	4,708	|	15		4,948		16	|	240	"
"	4,708	|	17			4,948	18	|	240	"
SHP04	4,996	60/3	19	4,996			20			SPACE
"	4,996	|	21		4,996		22			"
"	4,996	|	23			4,996	24			"
SHP05	3,363	35/3	25	3,363			26			SPACE
"	3,363	|	27		3,363		28			"
"	3,363	|	29			3,363	30			"
DC01 BLOWER	3,036	30/3	31	3,036			32			SPACE
"	3,036	|	33		3,036		34			"
"	3,036	|	35			3,036	36			"
EWH1	2,250	30/2	37	2,250			38			SPACE
"	2,250	|	39		2,250		40			"
			41				42			"
NOTES:				40,758	42,576	37,467	TOTAL VOLT AMPS		600	A. BUS (COPPER)
				340	355	312	CONN. AMPS		600	A. MAIN CIRCUIT BREAKER
									42	KAIC MIN.

PANEL P1W

TYPE: BOLT-ON
DOOR-IN-DOOR WITH-IN HINGED TRIM FRONT COVER
208 V, 3 PH, 4 WIRE
MOUNT: SURFACE
FEED:
PROVIDE IF CHECKED: XX / XX
EQUIP. GROUND BUS
NEUTRAL BUS
GUTTER TAPS
SUB-FEED LUGS

LOAD SERVED	LOAD VA	CKT BKR	CKT #	LOAD VA A	LOAD VA B	LOAD VA C	CKT #	CKT BKR	LOAD VA	LOAD SERVED
RECS: TELECOM BKBOARD	360	20/1	1	760			2	20/1	400	FACP (NOTE 1)
SPARE		20/1	3				4	20/1		SPARE
RECS: ELECTRICAL 109	540	20/1	5			900	6	20/1	360	RECS: DATA CABINET
RECS: CLASSROOMS	720	20/1	7	1,260			8	20/1	540	RECS: HALL 100
RECS: CLASSROOM 102	1,080	20/1	9		2,160		10	20/1	1,080	RECS: CLASSROOM 101
RECS: TELECOM BKBOARD	360	20/1	11			1,080	12	20/1	720	RECS: REST RMS & CUSTODIAN
SPARE		20/1	13	900			14	20/1	900	RECS: OFFICE 104
RECS: EXTERIOR	720	20/1	15		1,320		16	20/1	600	EWC
RECS: RECORDEX	720	20/1	17			1,444	18	20/1	724	LTG: OFFICE REST RM, ELECT RM
LTG: CLASSROOM 101	1,080	20/1	19	1,480			20	20/1	400	SECURITY PANEL
LTG: CLASSROOM 102	1,080	20/1	21		1,080		22	20/1		SPARE
LTG: HALL 100	381	20/1	23			581	24	20/1	200	CONTACTOR - EPO PANEL P2W
EXTERIOR LIGHTING	294	20/1	25	294			26	20/1		SPARE
SPARE		20/1	27				28	20/1		SPARE
SPARE		20/1	29				30	20/1		SPARE
SPARE		20/1	31				32	20/1		SPARE
SPARE		20/1	33				34	20/1		SPARE
SPARE		20/1	35				36	20/1		SPARE
SPARE		20/1	37				38	20/1		SPARE
SPARE		20/1	39				40	20/1		SPARE
SPARE		20/1	41				42	20/1		SPARE
NOTES:				4,694	4,560	4,005	TOTAL VOLT AMPS		200	A. BUS (COPPER)
1. PROVIDE CIRCUIT BREAKER LOCKING DEVICE WHERE NOTED AND FOR FACU.				39	38	33	CONN. AMPS		200	A. MAIN LUGS
									22	KAIC MIN.

PANEL P2W

TYPE: BOLT-ON
DOOR-IN-DOOR WITH-IN HINGED TRIM FRONT COVER
208 V, 3 PH, 4 WIRE
MOUNT: SURFACE
FEED:
PROVIDE IF CHECKED: XX / XX
EQUIP. GROUND BUS
NEUTRAL BUS
GUTTER TAPS
SUB-FEED LUGS

LOAD SERVED	LOAD VA	CKT BKR	CKT #	LOAD VA A	LOAD VA B	LOAD VA C	CKT #	CKT BKR	LOAD VA	LOAD SERVED
JOINTER	1,920	25/1	1	3,480			2	20/1	1,560	MITER SAW
SPARE		20/1	3		1,800		4	20/1	1,800	CUT OFF SAW
RECS: CONST TRADES 103 NORTH WALL	540	20/1	5			1,080	6	20/1	540	RECS: CONST TRADES 103 WEST WALL
RECS: CORD REELS TABLES	180	20/1	7	1,980			8	20/1	1,800	PLANER CORD REEL
RECS: CORD REELS TABLES	180	20/1	9		1,980		10	20/1	1,800	PORT TABLE SAW CORD REEL
RECS: CORD REELS TABLES	180	20/1	11			720	12	20/1	540	RECS: CONST TRADES 103 EAST WALL
RECS: CONST TRADES 103 EAST WALL	360	20/1	13	540			14	20/1	180	RECS: CORD REELS TABLES
TABLE SAW	2,364	30/2	15		2,544		16	20/1	180	RECS: CORD REELS TABLES
"	2,364	|	17			2,544	18	20/1	180	RECS: CORD REELS TABLES
RECS: CONST TRADES 103 SW CORNER	720	20/1	19	1,120			20	20/1	400	MOTORIZED DAMPER
LTG: CONST TRADES 103	1,188	20/1	21		1,188		22	20/1		SPARE
MOTORIZED OVERHEAD DOOR	1,920	25/1	23			1,920	24	20/1		SPARE
RECS: CONST TRADES 103 EAST WALL	360	20/1	25	360			26	20/1		SPARE
MOTORIZED OVERHEAD DOOR	1,920	20/1	27		1,920		28	20/1		SPARE
DRILL PRESS	864	20/1	29			864	30	20/1		SPARE
SPARE		20/1	31				32	20/1		SPARE
SPARE		20/1	33				34	20/1		SPARE
SPARE		20/1	35				36	20/1		SPARE
SPARE		20/1	37				38	20/1		SPARE
SPARE		20/1	39				40	20/1		SPARE
SPARE		20/1	41				42	20/1		SPARE
NOTES:				7,480	9,432	7,128	TOTAL VOLT AMPS		200	A. BUS (COPPER)
				62	79	59	CONN. AMPS		200	A. MAIN LUGS
									22	KAIC MIN.

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CAROLINA PROFESSIONAL SEAL 35230 ENGINEER PAUL FAMIGLIETTI
05/16/2023

NHCS Project No.
22-90458

Southeast Area Technical High School
SCIF Grant Addition

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

Issue Date: 5/16/2023

ELECTRICAL SCHEDULES

Rev.	Date	Notes

E-003-A

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Load Summary:
Existing 2000A Service

Voltage	Phase
480	3

EXISTING DEMAND LOAD		
(DETERMINED BY 1 YEAR POWER BILLS)	237,000	Watts
ASSUMED POWER FACTOR OF .8	296,250	VA
Existing Demand AMPS	356	Amps
x 125% (PER NEC 220.87)	445	Amps
HVAC		
DOAS	50,749	VA
MISC EQUIPMENT	8,653	VA
Sub-Total HVAC Demand	59,402	VA
Sub-Total HVAC Demand	71	Amps
EQUIPMENT		
Miscellaneous Equipment	11,200	VA
Sub-Total Equipment Demand	11,200	VA
Sub-Total Equipment Demand	13	Amps
Add for Largest Motor		Amps
Total Equipment Demand	13	Amps
KITCHEN EQUIPMENT		
Kitchen Equipment	11,243	VA
Sub-Total Equipment Demand	11,243	VA
Total Equipment Demand	14	Amps
Receptacles		
Receptacles	4,500	VA
Total Demand for Receptacle	4,500	VA
Total Demand for Receptacle	5	Amps
Total Building Amps	549	Amps
Total Building Load	456,657	VA

EXISTING PANEL RP-H

TYPE: 208 120 V, 3 PH, 4 WIRE — PROVIDE IF XX — EQUIP. GROUND BUS
BOLT-ON MOUNT: SURFACE — CHECKED: XX — NEUTRAL BUS
DOOR-IN-DOOR WITH-IN HINGED TRIM FRONT COVER FEED: — GUTTER TAPS — SUB-FEED LUGS

LOAD SERVED	LOAD VA	CKT BKR	CKT #	LOAD VA A	LOAD VA B	LOAD VA C	CKT #	CKT BKR	LOAD VA	LOAD SERVED
EWC	400	20/1	1	1,398			2	15/2	998	DHP05 (DAH05)
RCPS: HEALTH SCIENCE	360	20/1	3		1,358		4	|	998	|
RCPS: MECH	360	20/1	5			540	6	20/1	180	RCPS: TV LOBBY
RCPS: TV FITNESS CENTER	180	20/1	7	180			8	**100/2**		**COFFEE PANEL (NOTE 1)**
RCPS: MAKER SPACE	540	20/1	9		540		10	|		|
RCPS: MULTIPURPOSE	540	20/1	11			540	12	|		|
RCPS: MAKER SPACE	360	20/1	13	360			14	20/1		SPARE
RCPS: MAKER SPACE	540	20/1	15		540		16	20/1		SPARE
RCPS: MAKER SPACE	540	20/1	17			900	18	20/1	360	RCPS: HEALTH SCIENCE
RCPS: SOUND ROOM	360	20/1	19	900			20	20/1	540	RCPS: SOUND ROOM
RCPS: SOUND ROOM	360	20/1	21		2,610		22	30/2	2,250	WATER HEATER
RCPS: MULTIPURPOSE	540	20/1	23			2,790	24	|	2,250	|
RCPS: HEALTH SCIENCE	180	20/1	25	1,380			26	20/1	1,200	RCP: TREADMILL
RCPS: HEALTH SCIENCE	360	20/1	27		1,560		28	20/1	1,200	RCP: TREADMILL
RCPS: HEALTH SCIENCE	360	20/1	29			1,560	30	20/1	1,200	RCP: TREADMILL
RCPS: HEALTH SCIENCE	360	20/1	31	900			32	20/1	540	RCPS: MAKER SPACE
RCPS: HEALTH SCIENCE	360	20/1	33		900		34	20/1	540	RCPS: MAKER SPACE
RCPS: HEALTH SCIENCE	540	20/1	35			540	36	20/1		SPARE
RCPS: HEALTH SCIENCE	360	20/1	37	900			38	20/1	540	RCPS: MULTIPURPOSE
CORD REEL RCPS: HEALTH SCIENCE	180	20/1	39		360		40	20/1	180	CORD REEL RCPS: MAKER SPACE
CORD REEL RCPS: HEALTH SCIENCE	180	20/1	41			360	42	20/1	180	CORD REEL RCPS: MAKER SPACE
NOTES:				6,018	7,868	7,230	TOTAL VOLT AMPS		200	A. BUS (COPPER)
1. NEW BREAKER ADDED TO EXISTING PANELBOARD.				50	66	60	CONN. AMPS		200	A. MAIN CIRCUIT BREAKER
									10	KAIC MIN.

PANEL PC (COFFEE)

TYPE: 208 120 V, 3 PH, 4 WIRE — PROVIDE IF XX — EQUIP. GROUND BUS
BOLT-ON MOUNT: SURFACE — CHECKED: XX — NEUTRAL BUS
DOOR-IN-DOOR WITH-IN HINGED TRIM FRONT COVER FEED: — GUTTER TAPS — SUB-FEED LUGS

LOAD SERVED	LOAD VA	CKT BKR	CKT #	LOAD VA A	LOAD VA B	LOAD VA C	CKT #	CKT BKR	LOAD VA	LOAD SERVED
COFFEE MACHINE	1,920	20/1	1	2,280			2	20/1	360	RECS: UNDER COUNTER
ESPRESSO SIDE FRIDGE	1,920	20/1	3		3,840		4	20/1	1,920	POS STATION
ESPRESSO MACHINE (NOTE 1)	2,496	30/2	5			4,416	6	20/1	1,920	BLENDERS
"	2,496	|	7	2,496			8	20/1		SPARE
ICE MAKER	360	20/1	9		2,280		10	20/1	1,920	TEA BREWER
UNDER COUNTER REFRIGERATOR	240	20/1	11			870	12	20/1	630	GREASE INTERCEPTOR
CP1 MECH M7	125	20/1	13	125			14	20/1		SPARE
SPARE		20/1	15				16	20/1		SPARE
SPARE		20/1	17				18	20/1		SPARE
SPARE		20/1	19				20	20/1		SPARE
SPARE		20/1	21				22	20/1		SPARE
SPARE		20/1	23				24	20/1		SPARE
NOTES:				4,901	6,120	5,286	TOTAL VOLT AMPS		100	A. BUS (COPPER)
1. PROVIDE GFI CIRCUIT BREAKER.				41	51	44	CONN. AMPS		200	A. MAIN CIRCUIT BREAKER
									10	KAIC MIN.

EXISTING PANEL PP-G

TYPE: SQUARE D I-LINE — 480 277 V, 3 PH, 4 WIRE — PROVIDE IF XX — EQUIP. GROUND BUS
BOLT-ON MOUNT: SURFACE — CHECKED: XX — NEUTRAL BUS
FEED: — GUTTER TAPS — SUB-FEED LUGS

LOAD SERVED	LOAD VA	CKT BKR	CKT #	LOAD VA A	LOAD VA B	LOAD VA C	CKT #	CKT BKR	LOAD VA	LOAD SERVED
(X)SPARE		70/3	1	942			2	**15/3**	**942**	**KEF2 (NOTE 3)**
|		|	3		942		4	|	**942**	**"**
|		|	5			942	6	|	**942**	**"**
(X)SPARE		70/3	7				8	70/3		(X)SPARE
|		|	9				10	|		|
|		|	11				12	|		|
(X)SPARE		70/3	13				14	70/3		(X)SPARE
|		|	15				16	|		|
|		|	17				18	|		|
(X)SPARE		70/3	19				20	70/3		(X)SPARE
|		|	21				22	|		|
|		|	23				24	|		|
PANEL PP-H	13,944	200/3	25	**44,105**			26	200/3	30,161	PANEL PP-J
|	16,302	|	27		**45,343**		28	|	29,041	|
|	16,561	|	29			**31,292**	30	|	14,731	|
DOAS1 (NOTE 2)	**16,916**	100/3	31	**16,916**			32	100/3		(X)SPARE
|	**16,916**	|	33		**16,916**		34	|		|
|	**16,916**	|	35			**16,916**	36	|		|
(X)SPARE		100/3	37				38	100/3		(X)SPARE
|		|	39				40	|		|
|		|	41				42	|		|
(X)SPARE		100/3	43				44	100/3		(X)SPARE
|		|	45				46	|		|
|		|	47				48	|		|
NOTES:				**61,964**	**63,202**	**49,151**	TOTAL VOLT AMPS		600	A. BUS (COPPER)
1. HVAC & REFRIGERATION EQUIPMENT SHALL USE TYPE HACR BREAKERS.				**224**	**228**	**177**	CONN. AMPS		600	A. MAIN CIRCUIT BREAKER
2. USE EXISTING CIRCUIT BREAKER.										

EXISTING PANEL RP-J

TYPE: 208 120 V, 3 PH, 4 WIRE — PROVIDE IF XX — EQUIP. GROUND BUS
BOLT-ON MOUNT: SURFACE — CHECKED: XX — NEUTRAL BUS
DOOR-IN-DOOR WITH-IN HINGED TRIM FRONT COVER FEED: — GUTTER TAPS — SUB-FEED LUGS

LOAD SERVED	LOAD VA	CKT BKR	CKT #	LOAD VA A	LOAD VA B	LOAD VA C	CKT #	CKT BKR	LOAD VA	LOAD SERVED
(X)EWH2 D.S.	2,250	30/2	1	2,430			2	20/1	180	(X)RCPS: CULINARY
|	2,250	|	3		2,430		4	20/1	180	(X)RCPS: CULINARY
(X)DRYER	2,500	30/2	5			2,660	6	20/1	180	(X)RCPS: CULINARY
|	2,500	|	7	2,680			8	20/1	180	(X)RCPS: CULINARY
(X)WASHER	1,200	20/1	9		1,560		10	20/1	360	(X)RCPS: CULINARY
(X)DISPOSAL	1,500	20/1	11			1,860	12	20/1	360	(X)RCPS: CULINARY
(X)RANGE	4,000	50/2	13	4,180			14	20/1	180	(X)RCPS: CULINARY
|	4,000	|	15		4,180		16	20/1	180	(X)RCPS: MECH MEZZANINE
(SHUNT TRIP)		|	17			-1,200	18	20/1	1,200	(X)DISHWASHER
(X)RANGE	4,000	50/2	19	4,180			20	20/1	180	(X)RCP: CULINARY
|	4,000	|	21		4,180		22	20/1	180	(X)RCP: MECH LOFT
(SHUNT TRIP)			23				24	20/1		SPARE
(X)RANGE	4,000	50/2	25	4,000			26	20/1		SPARE
|	4,000	|	27		4,000		28	20/1		SPARE
(SHUNT TRIP)			29				30	20/1		SPARE
(X)COOKTOP	4,000	50/2	31	4,000			32	20/1		SPARE
|	4,000	|	33		4,000		34	20/1		SPARE
(SHUNT TRIP)			35				36	20/1		SPARE
SPARE		20/1	37				38	20/1		SPARE
SPARE		20/1	39				40	20/1		SPARE
SPARE		20/1	41				42	20/1	300	(X)EMERGENCY SHUT OFF CONTACTOR
NOTES:				21,470	20,350	6,040	TOTAL VOLT AMPS		200	A. BUS (COPPER)
1. HVAC & REFRIGERATION EQUIPMENT SHALL USE TYPE HACR BREAKERS.				179	170	50	CONN. AMPS		200	A. MAIN CIRCUIT BREAKER
2. NEW BREAKER ADDED TO EXISTING PANELBOARD.									10	KAIC MIN.

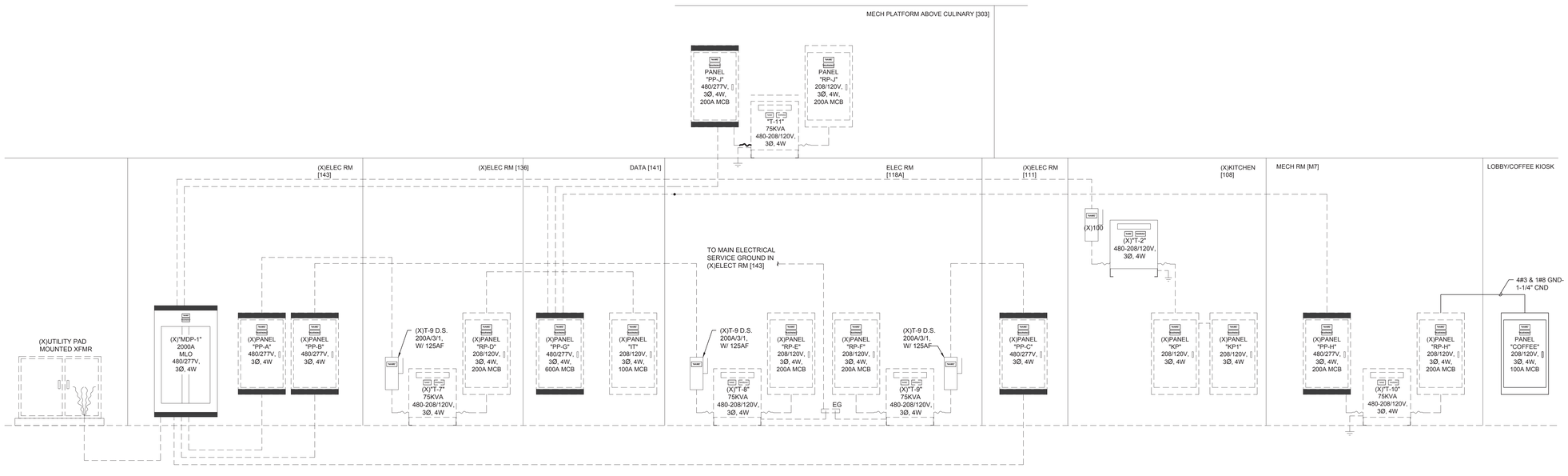
REVISED PANEL RP-J

TYPE: 208 120 VOLTS, 3 PHASE, 4 WIRE — PROVIDE XX EQUIPMENT GROUND BUS
BOLT-ON MOUNT: SURFACE — IF XX 100 % NEUTRAL BUS
HINGED TRIM FEED: TOP — CHECKED ULSE LABEL
NEMA - 1 ENCLOSURE — ISOLATED GROUND BAR

LOAD SERVED	LOAD VA	CKT BKR TRIP/POLES	CKT #	PHASE LOAD VA A	PHASE LOAD VA B	PHASE LOAD VA C	CKT #	CKT BKR TRIP/POLES	LOAD VA	LOAD SERVED
(X)EWH2 D.S. (NOTE 1)	2,250	30/2	1	5,412			2	**40/2**	**3,162**	**AH22 (NOTE 2)**
|	2,250	|	3		5,412		4	|	**3,162**	**"**
(X)DRYER (NOTE 1)	2,500	30/2	5			3,220	6	20/1	**720**	**RECS: CULINARY**
|	2,500	|	7	2,860			8	20/1	**360**	**RECS: CULINARY CLNG (NOTE 12)**
(X)WASHER (NOTE 1)	1,200	20/1	9		1,740		10	20/1	**540**	**RECS: CULINARY**
RECS: CULINARY	**720**	20/1	11			1,260	12	20/1	**540**	**RECS: CULINARY**
FREEZER	**1,800**	**20/1**	13	2,200			14	20/1	**400**	**HOOD CONTROL POWER**
DISH WASHER (NOTE 2)	**2,013**	**30/2**	15		2,193		16	20/1	180	(X)RCPS: MECH MEZZANINE (NOTE 1)
|	**2,013**	|	17			2,373	18	20/1	**360**	**RECS: CULINARY CLNG (NOTE 12)**
INDUCTION COOKTOP	**400**	**20/1**	19	400			20	20/1		SPARE
(SHUNT TRIP)		|	21		180		22	20/1	180	(X)RCP: MECH LOFT (NOTE 1)
INDUCTION COOKTOP	**400**	**20/1**	23			800	24	**20/1**	**400**	**INDUCTION COOKTOP**
(SHUNT TRIP)		|	25				26	|		**(SHUNT TRIP)**
EPO CULINARY	**200**	**20/1**	27		200		28	**20/1**		**SPARE**
INDUCTION COOKTOP	**400**	**20/1**	29			800	30	**20/1**	**400**	**INDUCTION COOKTOP**
(SHUNT TRIP)		|	31				32	|		**(SHUNT TRIP)**
REFRIGERATOR	**720**	**20/1**	33		720		34	**20/1**		**SPARE**
REFRIGERATOR	**720**	**20/1**	35			1,885	36	**25/2**	**1,165**	**HP22**
HOOD CONTROL POWER	**400**	20/1	37	1,565			38	|	**1,165**	**"**
KEF1 (ON ROOF)	**1,176**	20/1	39		1,176		40	20/1		SPARE
RECS: CULINARY RECORDEX	**540**	20/1	41			840	42	20/1	300	(X)EMERGENCY SHUT OFF CONTACTOR (NOTE 1)
NOTES (AS APPLICABLE):				12,430	11,621	11,176	TOTAL PHASE VA		200	A. BUS (COPPER, UNO)
1. EXISTING LOADS TO REMAIN.				104	97	93	TOTAL PHASE AMPS		200	A. MAIN LUGS AND/OR FEEDER RATING
2. COORDINATE CIRCUIT BREAKER TRIP WITH EQUIPMENT.				35%	33%	32%	PHASE BALANCE		10	KAIC MINIMUM RATING

DEMAND SUMMARY:		CONN. (VA)	DEMAND FACTOR	DEMAND (VA)
TOTAL RECEPTACLES (VA) =	4,140			
RECEPTACLES FIRST 10 KVA		4,140	1.00	4,140
RECEPTACLES > 10 KVA			0.50	
LIGHTING			1.25	
MISCELLANEOUS EQUIPMENT		11,200	1.00	11,200
OTHER EQUIPMENT (CONTINUOUS)			1.25	
LARGEST MOTOR			1.25	
HVAC EQUIPMENT (FLA = MCA X 0.8)		8,653	1.00	8,653
KITCHEN EQUIPMENT	13	11,243	0.65	7,308
TOTAL CONNECTED (VA)		35,236		
TOTAL DEMAND (VA)				31,301
TOTAL DEMAND (AMPERES)				86.9
PANEL DEMAND LOADING VS RATING		43.4%		

ADDITIONAL NOTES (AS APPLICABLE):
3. NUMBERS IN PARENTHASIS REPRESENT KITCHEN EQUIPMENT NUMBERS.
4. PROVIDE CIRCUIT BREAKER LOCKING DEVICE WHERE NOTED AND FOR FACU AND UNIT TYPE SMOKE DETECTOR CIRCUITS.
5. PROVIDE ARC FAULT CIRCUIT BREAKERS FOR ALL 120V, 15A & 20A PATIENT ROOM BRANCH CIRCUITS SUPPLYING OUTLETS AND DEVICES.
6. COORDINATE SPD CIRCUIT BREAKER TRIP WITH SPD PROVIDED.
7. SHUNT TRIP CIRCUIT BREAKER.
8. GFCI CIRCUIT BREAKER.
9. EXISTING LOADS ARE ESTIMATED.
10. KITCHEN EQUIPMENT DEMAND FACTOR PER NEC TABLE 220.56
11. THE MCB SHALL BE 100% RATED & PROVIDED WITH AN ARC ENERGY REDUCTION MAINTENANCE SWITCH PER NEC ART. 240.87.
12. PROVIDE CB WITH SHUNT TRIP ACCESSORY.
13. NEW LOAD TO UTILIZE EXISTING BREAKER.



1 **EXISTING BUILDING RISER DIAGRAM**
NOT TO SCALE

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SEAL 35230 — CAROLINA PROFESSIONAL ENGINEER — FAHOLCETH
05/16/2023

NHCS Project No. 22-90458

Southeast Area Technical High School
SCIF Grant Renovations

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

Issue Date: 5/16/2023

ELECTRICAL RISER DIAGRAM & DETAILS

Rev.	Date	Notes

E-003-B

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ELECTRICAL GENERAL NOTES:

1. 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 INCLUDING 0 DEGREE BALLASTS FOR FLUORESCENT.
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. ALL RACEWAYS SHALL BE CONCEALED WHERE. IF APPLICABLE, MATCH EXISTING RACEWAY INSTALLATION METHODS AND ROUTINGS AT OR NEAR EXISTING FACILITIES.
21. 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.
22. USE FLUSH MOUNTING OUTLET BOXES IN FINISHED AREAS AND FOR EXTERIOR DEVICES/LIGHT FIXTURES UNLESS NOTED OTHERWISE.
23. 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.
24. PATCHING OF WATERPROOFED SURFACES SHALL RENDER THE AREA OF THE PATCHING COMPLETELY WATERPROOF.
25. ALL MOTORS 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.
26. 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.
27. 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.
28. 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.
29. 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.
30. 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.
31. 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.
32. 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.
33. 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.
34. 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.
35. 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.
36. 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.
37. 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.
38. ALTERNATE MULTIWIRE RECEPTACLE CIRCUITS SUCH THAT ADJACENT RECEPTACLES ARE ON DIFFERENT CIRCUITS.
39. COMMON NEUTRAL MULTIWIRE RECEPTACLE BRANCH CIRCUITS ARE NOT PERMITTED. PROVIDE SEPARATE, INDIVIDUAL NEUTRAL CONDUCTORS FOR MULTIWIRE BRANCH CIRCUITS.
40. 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.
41. 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.
42. DO NOT COMBINE BRANCH CIRCUIT HOMERUNS UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS.
43. DO NOT CHANGE CIRCUITING SHOWN WITHOUT PERMISSION OF THE ARCHITECT/ENGINEER.
44. TROUGH TAPS SHALL BE AT SWITCH AMPACITY, UNLESS NOTED OTHERWISE.
45. 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.
46. 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.
47. IN AREAS IN WHICH DUAL LEVEL SWITCHING IS INDICATED (TYPICALLY BY 2 OR MORE ADJACENT, GANGED SWITCHES), PROVIDE THE APPROPRIATE NUMBER OF CONDUCTORS TO FACILITATE THIS FUNCTION (AS TYPICALLY SHOWN).
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, FOOD SERVICE, 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. ENERGIZE EQUIPMENT ONLY AFTER OBTAINING PERMISSION FROM THE CONTRACTOR PROVIDING THE EQUIPMENT.
57. 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.
58. 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.
59. COORDINATION WITH THE UTILITY COMPANY FOR PLACEMENT OF THE UTILITY'S FACILITIES AND THE CONTRACTOR'S SERVICE ENTRANCE RACEWAYS AND CONNECTIONS TO THE CONTRACTOR'S SERVICE ENTRANCE CONDUCTORS IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
60. TELECOMMUNICATIONS AND DATA CABLES WILL BE PROVIDED AND INSTALLED BY THE CONTRACTOR.
61. PROVIDE TELEPHONE, CABLE TELEVISION, FIBER AND DATA SERVICE ENTRANCE CONDUIT IN SIZES AND LOCATIONS AS SHOWN ON THE DRAWINGS AND AS REQUIRED BY THE OWNER AND THE SERVICE UTILITIES.
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. SHOP DRAWINGS MUST BE SUBMITTED BY THE FIRE ALARM CONTRACTOR COMPLYING WITH THE FIRE ALARM PLAN REVIEW REQUIREMENTS POLICY - JANUARY 2006 BEFORE PERMITTING BY THE NEW HANOVER COUNTY FIRE DEPARTMENT. THESE DRAWINGS DO NOT CONSTITUTE APPROVAL AND MAY CHANGE AFTER A FULL REVIEW BY THE WILMINGTON FIRE DEPARTMENT. A SEPARATE PERMIT MUST BE OBTAINED PRIOR TO INSTALLATION.
64. COORDINATE FIRE ALARM SYSTEM MODIFICATIONS WITH THE OWNER AND THE OWNER'S [TENANTS] FIRE ALARM SYSTEM VENDOR. THE EXISTING SYSTEM SHALL REMAIN OPERATIONAL AT ALL TIMES UNLESS PRIOR ARRANGEMENTS HAVE BEEN MADE WITH THE OWNER.
65. 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.
66. INSTALLATION INFORMATION PACKED WITH LIGHTING FIXTURES, DEVICES AND EQUIPMENT SHALL BE RETAINED FOR INCLUSION IN THE OPERATIONS AND MAINTENANCE MANUALS.
67. THE SURROUNDING FACILITIES WILL REMAIN OCCUPIED BY THE OWNER'S STAFF THROUGHOUT THE PROJECT. AS SUCH, WORK WILL REQUIRE SPECIAL EFFORT BY THIS CONTRACTOR TO ALLOW THE WORK TO PROCEED IN A TIMELY MANNER. ALL ELECTRICAL WORK SHALL BE COORDINATED WITH THE OWNER TO MINIMIZE DISRUPTION OF THE OWNER'S USE OF THE FACILITIES AND MAINTAIN THE APPROVED CONSTRUCTION SEQUENCE.
68. SAFETY: COMPLY WITH OSHA AND NEC ARC FLASH PROTECTION REQUIREMENTS.
69. ALL SWITCHES, RECEPTACLE AND LIGHTS SHALL COMPLY WITH ANSI 117.2 FOR ADA REQUIREMENTS.

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JOHN P. FAMIGLIETTI NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230
05/16/2023

NHCS Project No. 22-90458

Southeast Area Technical High School
SCIF Grant Addition

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

Issue Date: 5/16/2023

ELECTRICAL GENERAL NOTES

Rev.	Date	Notes

E-004-A

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ELECTRICAL GENERAL NOTES:

1. 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. 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.
7. ALL EQUIPMENT SHOWN DOTTED OR DASHED IS BY OTHERS OR IS EXISTING, AS NOTED.
8. 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.
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11. 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.
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25. 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.
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30. 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.
31. 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.
32. 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.
33. ALTERNATE MULTIWIRE RECEPTACLE CIRCUITS SUCH THAT ADJACENT RECEPTACLES ARE ON DIFFERENT CIRCUITS.
34. COMMON NEUTRAL MULTIWIRE RECEPTACLE BRANCH CIRCUITS ARE NOT PERMITTED. PROVIDE SEPARATE, INDIVIDUAL NEUTRAL CONDUCTORS FOR MULTIWIRE BRANCH CIRCUITS.
35. 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.
36. 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.
37. DO NOT COMBINE BRANCH CIRCUIT HOMERUNS UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS.
38. DO NOT CHANGE CIRCUITING SHOWN WITHOUT PERMISSION OF THE ARCHITECT/ENGINEER.
39. TROUGH TAPS SHALL BE AT SWITCH AMPACITY, UNLESS NOTED OTHERWISE.
40. 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.
41. 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.
42. IN AREAS IN WHICH DUAL LEVEL SWITCHING IS INDICATED (TYPICALLY BY 2 OR MORE ADJACENT, GANGED SWITCHES), PROVIDE THE APPROPRIATE NUMBER OF CONDUCTORS TO FACILITATE THIS FUNCTION (AS TYPICALLY SHOWN).
43. 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.
44. COORDINATE LIGHTING FIXTURE LOCATIONS WITH THE ARCHITECTURAL REFLECTED CEILING PLAN. IF CONFLICTS ARE NOTED, REQUEST CLARIFICATION FROM THE ARCHITECT/ENGINEER BEFORE PROCEDING.
45. ADJACENT SWITCHES SHALL BE GANGED. INSTALL BARRIERS BETWEEN UNLIKE VOLTAGE SECTIONS.
46. SEPARATE NEUTRALS ARE REQUIRED FOR ALL DIMMED LIGHTING CIRCUITS.
47. 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.
48. COORDINATE LOCATIONS OF PLUMBING, MECHANICAL, ELEVATOR, FOOD SERVICE, 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
49. 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.
50. 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.
51. ENERGIZE EQUIPMENT ONLY AFTER OBTAINING PERMISSION FROM THE CONTRACTOR PROVIDING THE EQUIPMENT.
52. 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.
53. 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.
54. COORDINATION WITH THE UTILITY COMPANY FOR PLACEMENT OF THE UTILITY'S FACILITIES AND THE CONTRACTOR'S SERVICE ENTRANCE RACEWAYS AND CONNECTIONS TO THE CONTRACTOR'S SERVICE ENTRANCE CONDUCTORS IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
55. TELECOMMUNICATIONS AND DATA CABLES WILL BE PROVIDED AND INSTALLED BY THE CONTRACTOR.
56. 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.
57. 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.
58. INSTALLATION INFORMATION PACKED WITH LIGHTING FIXTURES, DEVICES AND EQUIPMENT SHALL BE RETAINED FOR INCLUSION IN THE OPERATIONS AND MAINTENANCE MANUALS.
59. PROTECT ALL EXISTING POWER, COMMUNICATIONS, DATA, LIFE SAFETY SYSTEMS, FIRE ALARM AND PUBLIC ADDRESS SYSTEMS AND MAINTAIN THEM IN OPERATION THROUGHOUT THE PROGRESS OF THE WORK. NOTIFY THE OWNER AND ARCHITECT/ENGINEER IF SHUTDOWNS ARE REQUIRED PRIOR TO ANY OUTAGE OF SERVICE. WHERE THE DURATION OF A PROPOSED OUTAGE CANNOT BE TOLERATED BY THE OWNER, PROVIDE TEMPORARY CONNECTIONS AS REQUIRED TO MAINTAIN SERVICE.
60. THE CONTRACT REQUIRES SEVERAL NEW CIRCUITS BE ADDED TO EXISTING PANELBOARDS AND NUMEROUS EXISTING CIRCUITS' LOADING WILL CHANGE AS A RESULT OF THIS WORK. THE CONTRACTOR SHALL ENDEAVOR TO MAINTAIN PHASE BALANCE ON ALL PANELBOARDS AFFECTED BY THIS WORK. RECONNECT/MODIFY/EXTEND EXISTING CIRCUITING AS REQUIRED TO MAINTAIN SAFE CIRCUIT LOADING AND PHASE BALANCE. COORDINATE CONNECTIONS TO THE EXISTING ELECTRICAL DISTRIBUTION SYSTEM WITH THE OWNER AND ARCHITECT/ENGINEER. PROVIDE ACCURATE, UPDATED, TYPED PANEL SCHEDULES FOR ALL AFFECTED PANELS. NOTE ALL FINAL CIRCUIT CONFIGURATIONS ON AS-BUILT DRAWINGS.
61. THE CONTRACTOR SHALL PERFORM ALL CUTTING AND PATCHING NECESSARY TO INSTALL ALL EQUIPMENT AS REQUIRED AND SHALL REESTABLISH ALL FINISHES TO THEIR ORIGINAL CONDITION WHERE CUTTING AND PATCHING OCCUR. ALL CUTTING AND PATCHING SHALL BE DONE IN A THOROUGHLY WORKMANSHIP MANNER. SAW CUT CONCRETE AND MASONRY PRIOR TO BREAKING OUT SECTIONS. ALL PATCHING MATERIALS AND WORKMANSHIP SHALL BE PERFORMED BY TRADESMEN EXPERIENCED IN THAT WORK. ALL WORK SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT/ENGINEER.
62. CORE DRILL HOLES IN EXISTING CONCRETE WALLS AS REQUIRED.
63. CUT OPENINGS ONLY LARGE ENOUGH TO ALLOW EASY INSTALLATION OF THE CONDUIT.
64. WHEN INDICATED, CONNECT NEW LOADS TO EXISTING ABANDONED CIRCUITS SERVING THE SAME AREA AND NOTE CIRCUITS ON AS-BUILT DRAWINGS.
65. EXISTING CIRCUITING WHERE SHOWN IS FOR CONVENIENCE PURPOSES ONLY. VERIFICATION OF EXISTING WIRING DESTINATION, TERMINATION AND ADDITIONS OF NEW LOADS IS THE RESPONSIBILITY OF THE CONTRACTOR.
66. MAINTAIN CONTINUITY OF ALL EXISTING CIRCUITS TO REMAIN OR PORTIONS THEREOF AFFECTED BY THIS WORK.
67. DESIGN AND ADDITION OF NEW CIRCUITING IS BASED ON THE ENGINEER'S BEST INFORMATION REGARDING EXISTING CONDITIONS AND CURRENT DRAWINGS. AVAILABILITY OF ADEQUATE CIRCUIT BREAKER SPACE FOR NEW WORK IN EXISTING PANELBOARDS SHALL BE VERIFIED BY THE CONTRACTOR AFTER DEMOLITION OF THE EXISTING SPACE. IF ADEQUATE SPACE IS NOT AVAILABLE FOR NEW CIRCUIT BREAKERS THE CONTRACTOR SHALL NOTIFY THE ENGINEER FOR RESOLUTION.
68. ABANDONED POWER WIRING, RACEWAYS AND CONDUCTORS, SHALL BE REMOVED BACK TO THEIR SOURCE. THE ACCESSIBLE PORTIONS OF ABANDONED CABLES (VOICE, DATA, VIDEO, ALARM, ETC.) SHALL BE REMOVED.
69. TRACE OUT EXISTING WIRING THAT IS TO BE RELOCATED, OR REMOVED AND PERFORM THE RELOCATION OR REMOVAL WORK AS REQUIRED FOR A COMPLETE OPERATING AND SAFE SYSTEM.
70. INSOFAR AS POSSIBLE, MATCH EXISTING EXPOSED DEVICES IN FINISHED AREAS IN TYPE, COLOR AND FINISH.
71. THE EXISTING ELECTRICAL SYSTEMS DEPICTED ON THESE DRAWINGS HAVE BEEN COMPILED BY THE ENGINEER FROM THE OWNER'S RECORD DRAWINGS AND LIMITED FIELD VERIFICATION OF THE EXISTING CONDITIONS FOR THE PURPOSE OF INDICATING THE WORK REQUIRED AND ARE BELIEVED TO BE CORRECT. NOTWITHSTANDING, THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, POINTS OF ACCESS AND FIELD CONDITIONS AFFECTING HIS WORK.
72. THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE EXISTING ELECTRICAL SYSTEMS AND THE EXISTING BUILDING. THE SUBMISSION OF THE PROPOSAL BY THE CONTRACTOR SHALL BE CONSIDERED EVIDENCE THAT HE OR HIS REPRESENTATIVE HAS VISITED THE SITE AND BUILDINGS AND NOTED THE LOCATION AND CONDITIONS UNDER WHICH THE WORK WILL BE PERFORMED AND THAT HE TAKES FULL RESPONSIBILITY OF ALL FACTORS GOVERNING HIS WORK. EXTRAS WILL BE CONSIDERED BECAUSE OF ADDITIONAL WORK NECESSITATED BY EXISTING JOB CONDITIONS THAT ARE NOT INDICATED ON THE DRAWINGS.
73. SOME EXISTING RECEPTACLE, LIGHTING OR OTHER LOADS MAY BE SERVED BY CIRCUITS INDICATED TO BE REMOVED. IF SUCH CONDITIONS ARE DISCOVERED, REQUEST THE ARCHITECT/ENGINEER PROVIDE NEW CIRCUIT NUMBER FOR THE LOAD. DO NOT INDISCRIMINATELY CONNECT TO THE NEAREST CIRCUIT.
74. ALL UNUSED OUTLET BOXES SHALL BE REMOVED OR, WITH SPECIFIC APPROVAL OF THE ARCHITECT/ENGINEER, SHALL BE BLANKED WITH STAINLESS STEEL PLATES. ALL OPENINGS IN EXISTING WALLS AND CEILINGS MADE BY THIS CONTRACTOR SHALL BE REPAIRED TO AN EQUAL FINISH AS ADJACENT SURFACES.
75. PROVIDE ALL ELECTRICAL RELOCATION WORK ASSOCIATED WITH THE RELOCATING OF EQUIPMENT FOR THE EXISTING FACILITIES, INCLUDING DISCONNECTING ALL EXISTING WIRING AND CONDUITS AND PROVIDING NEW WIRING AND CONDUITS TO THE RELOCATED EQUIPMENT.
76. THE EXISTING FACILITIES WILL REMAIN OCCUPIED BY STUDENTS AND THE STAFF THROUGHOUT THE PROJECT. AS SUCH, WORK WILL [BE DONE IN PHASES AND WILL] REQUIRE SPECIAL EFFORT BY THIS CONTRACTOR TO ALLOW THE WORK TO PROCEED IN A TIMELY MANNER. ALL ELECTRICAL WORK SHALL BE COORDINATED WITH THE OWNER AND GENERAL CONTRACTOR SO AS TO MINIMIZE DISRUPTION OF THE OWNER'S USE OF THE FACILITIES AND MAINTAIN THE CONSTRUCTION SEQUENCE OF THE GENERAL CONTRACTOR. SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INSTRUCTIONS CONCERNING PHASING AND SEQUENCE OF WORK.
77. SAFETY: COMPLY WITH OSHA AND NEC ARC FLASH PROTECTION REQUIREMENTS.
78. ALL SWITCHES, RECEPTACLE AND LIGHTS SHALL COMPLY WITH ANSI 117.2 FOR ADA REQUIREMENTS.
79. FOOD SERVICE EQUIPMENT ELECTRICAL NOTES
    - A. THE ELECTRICAL CONTRACTOR SHALL MAKE FINAL ELECTRICAL CONNECTIONS TO ALL FOOD SERVICE AND RELATED KITCHEN EQUIPMENT.
    - B. THE CIRCLE SYMBOL WITH NUMBER IDENTIFIES FOOD SERVICE EQUIPMENT AS IT IS SHOWN ON THE FOOD SERVICE EQUIPMENT DRAWINGS. SEE FOOD SERVICE EQUIPMENT DRAWINGS FOR ADDITIONAL INFORMATION.
    - C. SEE FOOD SERVICE EQUIPMENT DRAWINGS FOR EXACT EQUIPMENT LOCATIONS, DIMENSIONS, CONNECTION TYPE, POWER AND CIRCUIT REQUIREMENTS, CIRCUIT BREAKER SIZE, WIRING DEVICE TYPE, RATING AND CONFIGURATION AND ROUGH-IN LOCATIONS AND PROVIDE SUITABLE ELECTRICAL EQUIPMENT, DEVICES, CONNECTIONS, CIRCUITS AS REQUIRED BY THE FOOD SERVICE EQUIPMENT DRAWINGS.
    - D. THE ELECTRICAL CONTRACTOR SHALL VERIFY ROUGH-IN REQUIREMENTS, LOCATIONS, MOUNTING HEIGHTS, ORIENTATION, VOLTAGE, PHASE, AMPS, HP, KW, ETC. FOR ALL FOOD SERVICE EQUIPMENT PRIOR TO ROUGH-IN.
    - E. PROVIDE LOCAL DISCONNECTING MEANS FOR EQUIPMENT AS REQUIRED BY CODES AND THE AHJ.
    - F. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL DISCONNECT SWITCHES, INTERLOCKS, CONDUIT, WIRING AND INSTALLATION AS SPECIFICALLY OUTLINED ON THE FOOD SERVICE EQUIPMENT DRAWINGS.
    - G. FINAL CONNECTION TO HARD WIRED FOOD SERVICE EQUIPMENT SHALL BE MADE WITH LIQUIDTIGHT FLEXIBLE CONDUIT.
    - H. COORDINATE ALL CONNECTIONS TO EQUIPMENT WITH THE FOOD SERVICE EQUIPMENT CONTRACTOR.
    - I. ENERGIZE EQUIPMENT ONLY AFTER OBTAINING PERMISSION FROM THE CONTRACTOR PROVIDING THE EQUIPMENT.
    - J. ALL CONVENIENCE OUTLETS IN THE KITCHEN SHALL BE INSTALLED HORIZONTALLY AND RATED 20 AMPS UNLESS NOTED OTHERWISE OR REQUIRED BY EQUIPMENT. ALL 125 VOLT RECEPTACLES MOUNTED IN THE KITCHEN SHALL BE GFCI TYPE. RECEPTACLES SHALL BE OF STANDARD NEMA CONFIGURATIONS.
    - K. ALL RACEWAYS SHALL BE CONCEALED IN WALLS WHERE POSSIBLE, OTHERWISE, STUB UP THROUGH FLOOR AT EQUIPMENT APPROX. 6" ABOVE FLOOR TO CLEAR EQUIPMENT BASES.
    - L. THE EXHAUST HOOD WILL BE FURNISHED PREWIRED BY THE FOOD SERVICE EQUIPMENT CONTRACTOR WITH LIGHT FIXTURES AND SWITCHES/CONTROLS FOR LIGHTS AND FANS. THE ELECTRICAL CONTRACTOR SHALL MAKE FINAL CONNECTIONS TO THE ELECTRICAL TERMINAL BOX PROVIDED WITH THE HOOD AND MAKE CONNECTIONS FROM THE TERMINAL BOX TO THE EXHAUST AND MAKE UP AIR FANS AS SHOWN.
    - M. FURNISH SHUNT TRIP CIRCUIT BREAKERS FOR ELECTRICAL FOOD SERVICE EQUIPMENT INSTALLED UNDER THE EXHAUST HOOD. CONNECT TO DE-ENERGIZE THESE UNITS UPON ACTIVATION OF THE EXHAUST HOOD FIRE SUPPRESSION SYSTEM. COORDINATE CONNECTIONS WITH THE FOOD SERVICE EQUIPMENT CONTRACTOR.

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230 JOHN P. FAMIGLIETTI
05/16/2023

NHCS Project No. 22-90458

Southeast Area Technical High School SCIF Grant Renovations

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

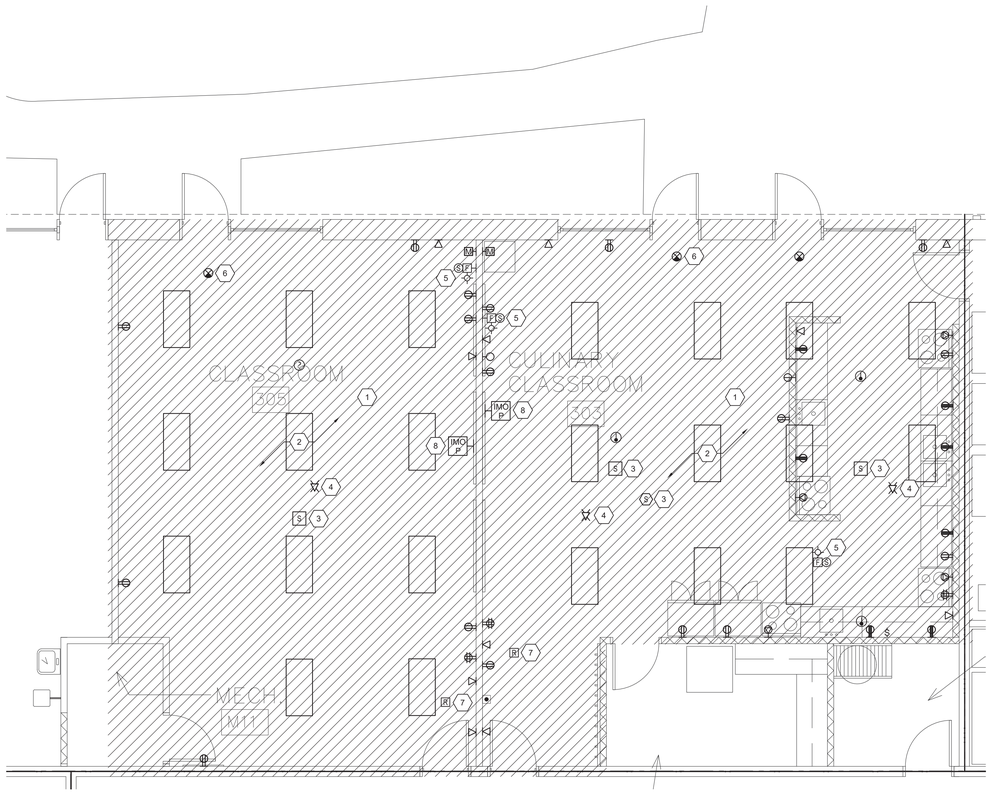
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ELECTRICAL GENERAL NOTES

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E-004-B

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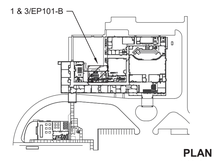


1 PARTIAL FLOOR PLAN
1/4" = 1'-0"
0 2' 4' 8'

PLAN NORTH

DEMOLITION NOTES

1. DEMOLISH ALL DEVICES, WIRING AND CONDUIT BACK TO SOURCE THAT ARE IN THIS AREA UNLESS NOTED OTHERWISE.
2. ALL LIGHTING FIXTURES TO REMAIN OR RELOCATED, REFER TO NEW WORK PLANS FOR RELOCATED LOCATIONS.
3. REMOVE AND PROTECT CEILING MOUNTED SPEAKER FOR RE-INSTALLATION, PROTECT WIRING DURING CONSTRUCTION FOR RECONNECTION.
4. REMOVE AND PROTECT CEILING MOUNTED WIRELESS ACCESS POINT. PROTECT WIRING DURING CONSTRUCTION FOR RECONNECTION.
5. REMOVE AND PROTECT FIRE ALARM DEVICE FOR RELOCATION ON NEW WORK PLANS.
6. REMOVE AND PROTECT EXIT SIGN FOR RELOCATION, REFER TO NEW WORK PLANS FOR RELOCATED POSITION.
7. REMOVE AND PROTECT FIRE ALARM RAIL FOR RELOCATION, REFER TO NEW WORK PLANS FOR RELOCATED POSITION.
8. TAKE DOWN WALL MOUNTED INTERACTIVE SCREEN AND TURN OVER TO THE OWNER FOR STORAGE.



0 KEYPLAN
NOT TO SCALE

PLAN NORTH

**ALL WORK ON THIS SHEET SHALL BE PRICED
AS ALTERNATE G-1 UNLESS NOTED OTHERWISE.

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230 JON P. FAMIGLIETTI
05/16/2023

NHCS Project No.
22-90458

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ELECTRICAL DEMOLITION FLOOR PLAN

Rev.	Date	Notes

ED101-B

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DC01

VFD

DC01 CONTROL

JOINTER LONG BED

PLANER

MITER SAW

TABLE SAW W/ EXT.

DRILL PRESS

PORTABLE TABLE SAW

STORAGE CABINET

CUT OFF SAW

CONSTRUCTION TRADES
103

CLASSROOM
102

CLASSROOM
101

HALL
100

TOILET
105

CUSTODIAN
106

OFFICE
104

ELECTRICAL
109

BOYS
107

GIRLS
108

PANEL P2W

PANEL P1W

PANEL MDPW

P1W-21

P1W-19

P1W-23

P1W-18

P1W-25

P2W-21

PV01

PW02

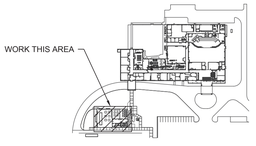
PW03

1 FLOOR PLAN

1/4" = 1'-0"

0 2' 4' 8'

PLAN NORTH



2 KEYPLAN

NOT TO SCALE

PLAN NORTH

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230 FAMIGLIETTI
05/16/2023

NHCS Project No.
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Southeast Area
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School
SCIF Grant Addition

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Construction Drawings

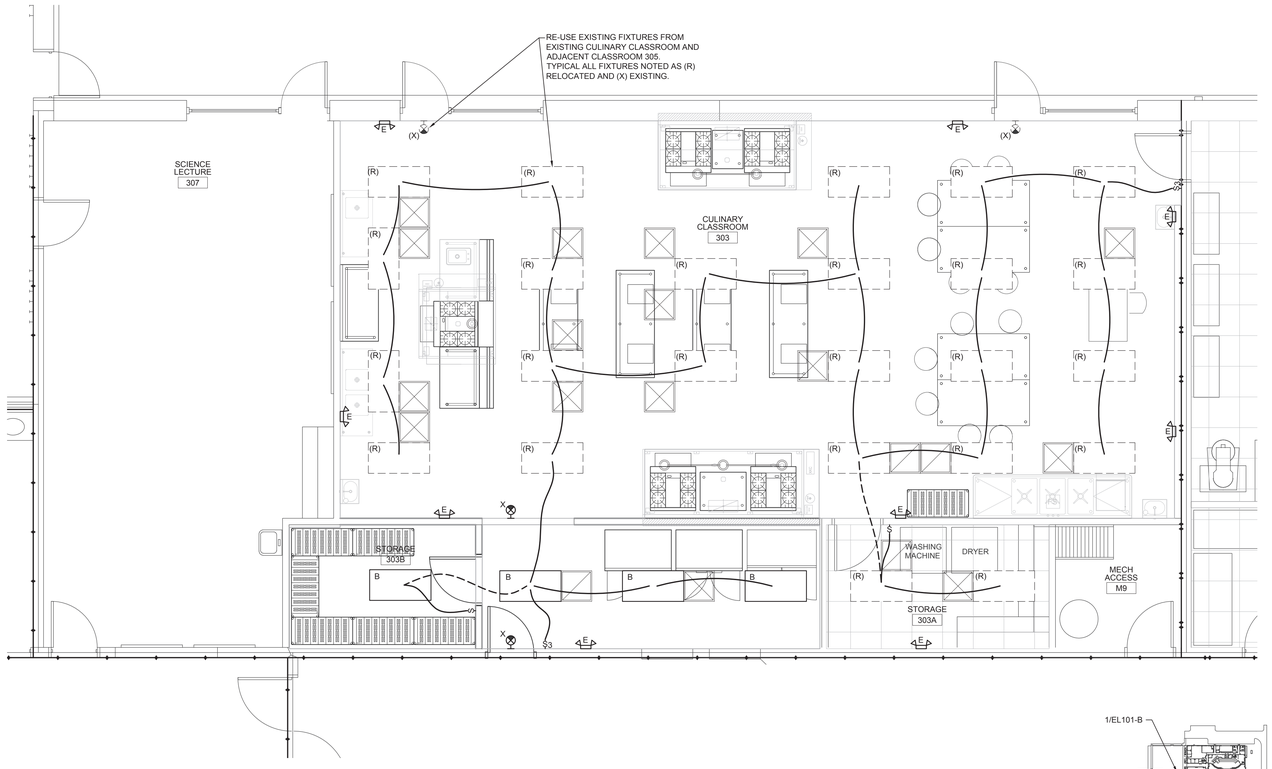
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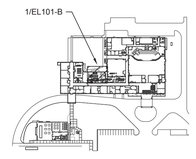
ELECTRICAL
LIGHTING
FIRST FLOOR PLAN

Rev.	Date	Notes

EL101-A

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1 **PARTIAL FLOOR PLAN**
1/4" = 1'-0" 0 2' 4' 8'
PLAN NORTH

****ALL WORK ON THIS SHEET SHALL BE PRICED AS ALTERNATE G-1 UNLESS NOTED OTHERWISE.**

2 **KEYPLAN**
NOT TO SCALE
PLAN NORTH

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05/16/2023

NHCS Project No. 22-90458

Southeast Area Technical High School
SCIF Grant Renovations

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Construction Drawings

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ELECTRICAL LIGHTING
ALT. G-1 CULINARY ARTS
RENOVATION FLOOR PLAN

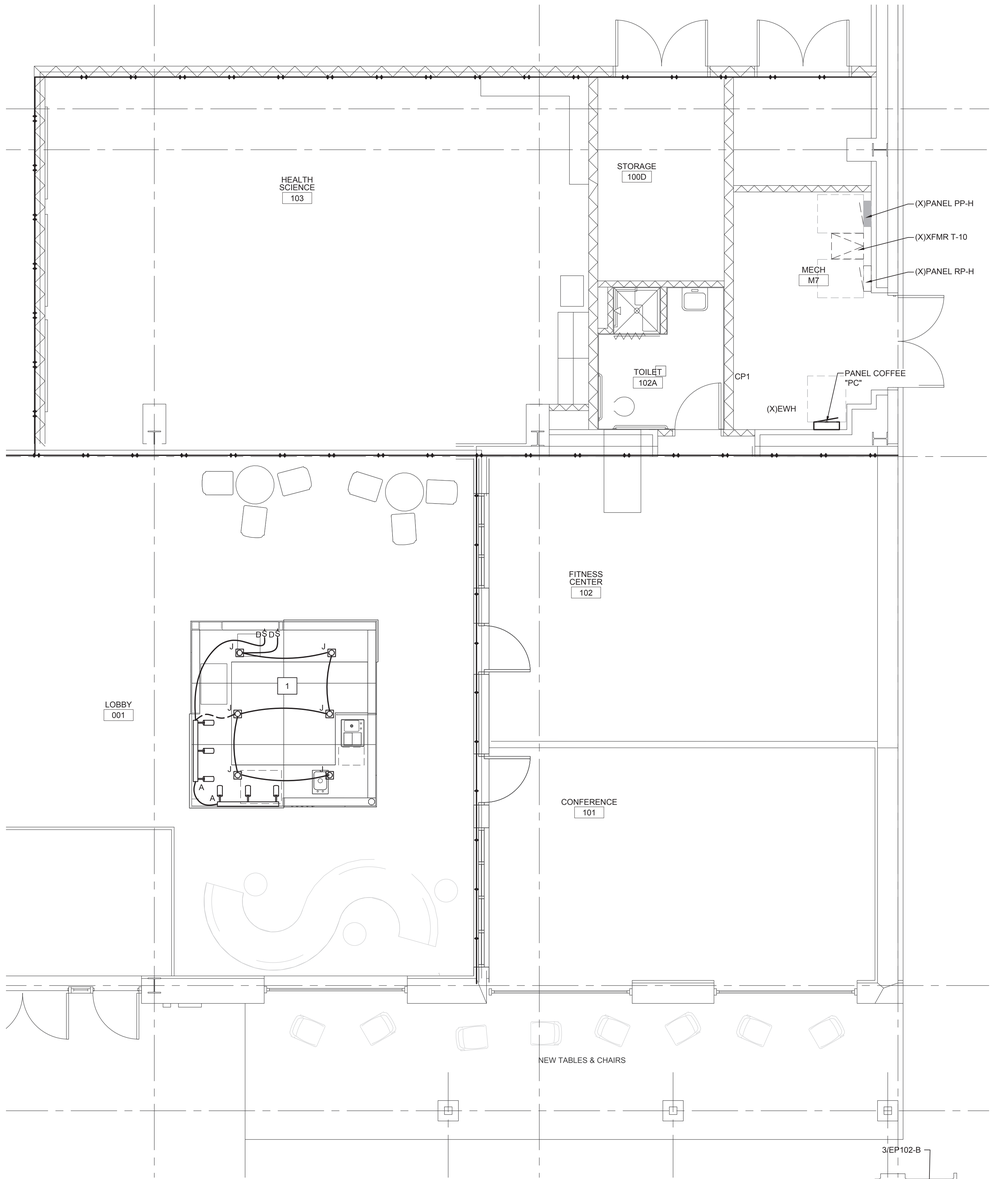
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KEYED NOTES

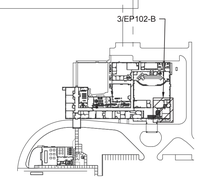
1	ALL LIGHTING FOR COFFEE BAR WILL BE FED FROM NEW PANEL COFFEE.



3 **PARTIAL FLOOR PLAN**
1/4" = 1'-0"

PLAN NORTH

**ALL WORK ON THIS FLOOR PLAN TO BE PRICED AS ALT. G-2 UNLESS NOTED OTHERWISE



0 **KEYPLAN**
NOT TO SCALE

PLAN NORTH

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05/16/2023

NHCS Project No.
22-90458

Southeast Area
Technical High
School
SCIF Grant
Renovations

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

Issue Date: 5/16/2023

ELECTRICAL
LIGHTING
ALT. G-2 COFFEE BAR

Rev.	Date	Notes

EL102-B

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System No. W-L-1054

January 21, 2020

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

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.
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.

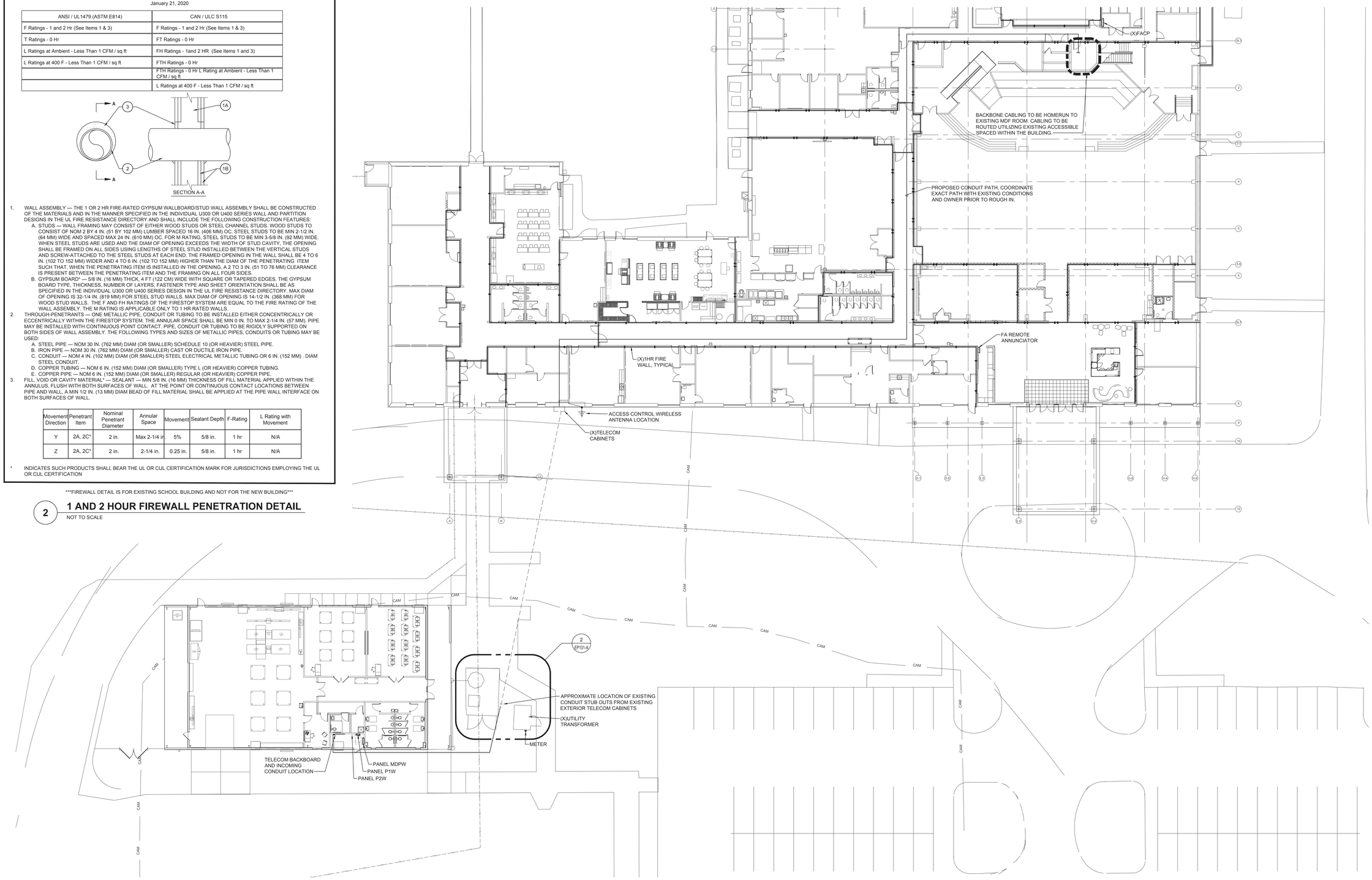
Movement Direction	Penetrant Item	Nominal Penetrant Diameter	Annular Space	Movement	Sealant Depth	F-Rating	L Rating with Movement
Y	2A, 2C*	2 in.	Max 2-1/4 in.	5%	5/8 in.	1 hr	N/A
Z	2A, 2C*	2 in.	2-1/4 in.	0.25 in.	5/8 in.	1 hr	N/A

* INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION

FIREWALL DETAIL IS FOR EXISTING SCHOOL BUILDING AND NOT FOR THE NEW BUILDING

2 1 AND 2 HOUR FIREWALL PENETRATION DETAIL

NOT TO SCALE



1 SITE PLAN

1/16" = 1'-0"

0 8' 16' 32'

PLAN NORTH

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230

05/16/2023

NHCS Project No. 22-90458

Southeast Area Technical High School SCIF Grant Addition

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Drawings

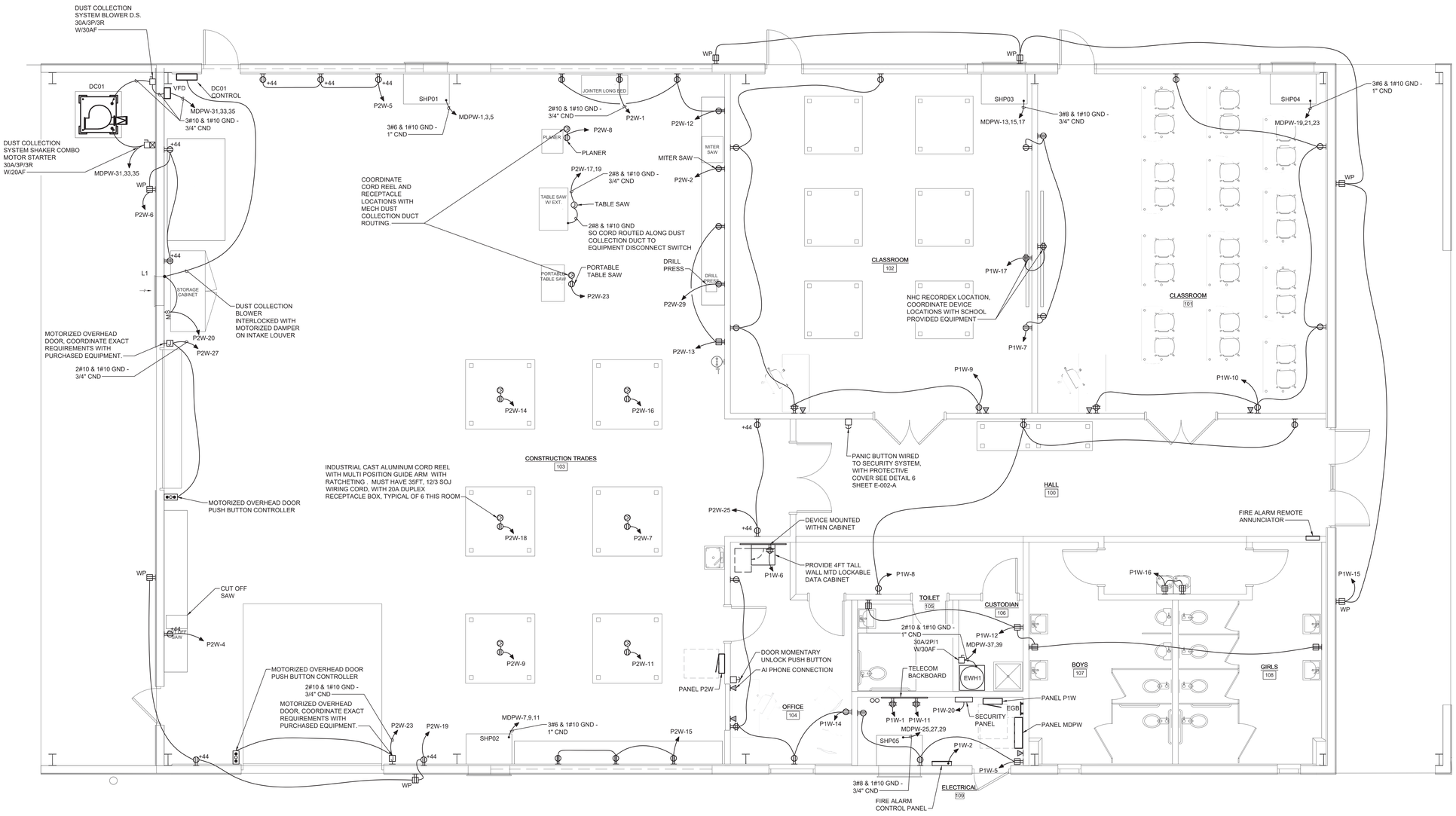
Issue Date: 5/16/2023

ELECTRICAL POWER SITE PLAN

Rev.	Date	Notes

EP100-A

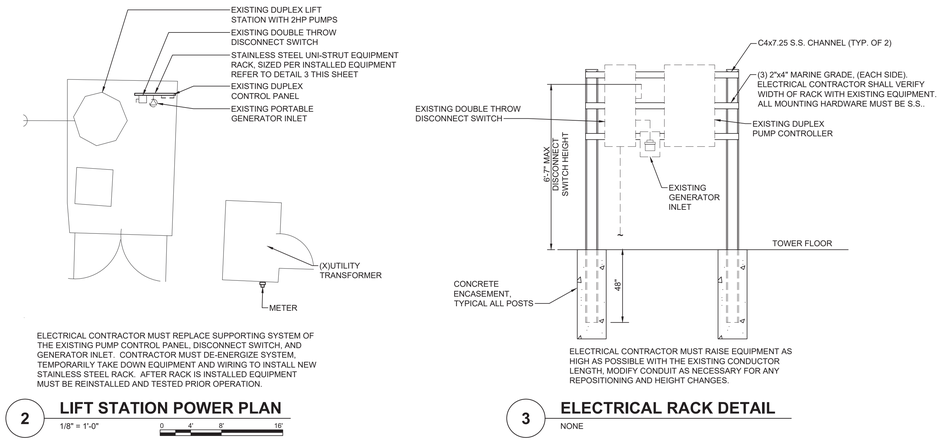
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1 FLOOR PLAN

1/4" = 1'-0"

PLAN NORTH



ELECTRICAL CONTRACTOR MUST REPLACE SUPPORTING SYSTEM OF THE EXISTING PUMP CONTROL PANEL, DISCONNECT SWITCH, AND GENERATOR INLET. CONTRACTOR MUST DE-ENERGIZE SYSTEM, TEMPORARILY TAKE DOWN EQUIPMENT AND WIRING TO INSTALL NEW STAINLESS STEEL RACK. AFTER RACK IS INSTALLED EQUIPMENT MUST BE REINSTALLED AND TESTED PRIOR OPERATION.

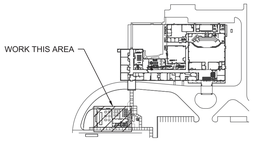
2 LIFT STATION POWER PLAN

1/8" = 1'-0"

ELECTRICAL CONTRACTOR MUST RAISE EQUIPMENT AS HIGH AS POSSIBLE WITH THE EXISTING CONDUCTOR LENGTH, MODIFY CONDUIT AS NECESSARY FOR ANY REPOSITIONING AND HEIGHT CHANGES.

3 ELECTRICAL RACK DETAIL

NONE



0 KEYPLAN

NOT TO SCALE

PLAN NORTH

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230 JOHN P. FAMIGLIETTI
05/16/2023

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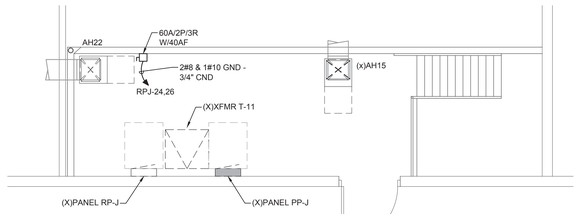
Issue Date: 5/16/2023

ELECTRICAL POWER FIRST FLOOR PLAN

Rev.	Date	Notes

EP101-A

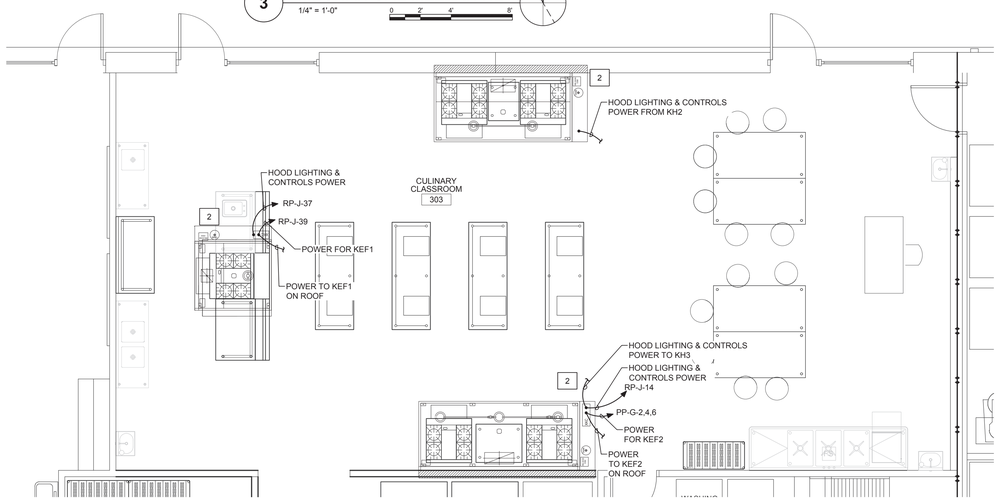
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PLAN NORTH

3 MECHANICAL MEZZANINE

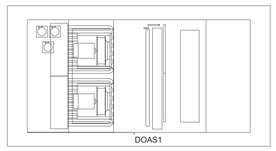
1/4" = 1'-0"

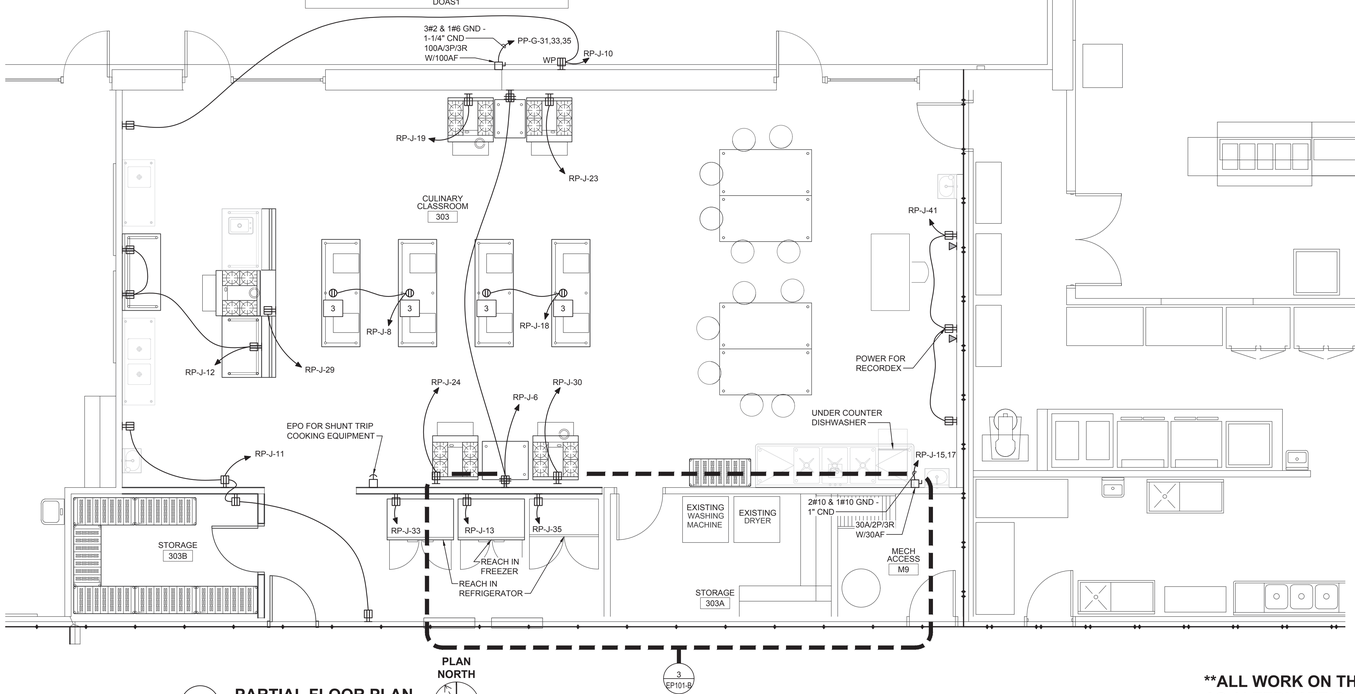


PLAN NORTH

2 PARTIAL KITCHEN HOOD POWER PLAN

1/4" = 1'-0"

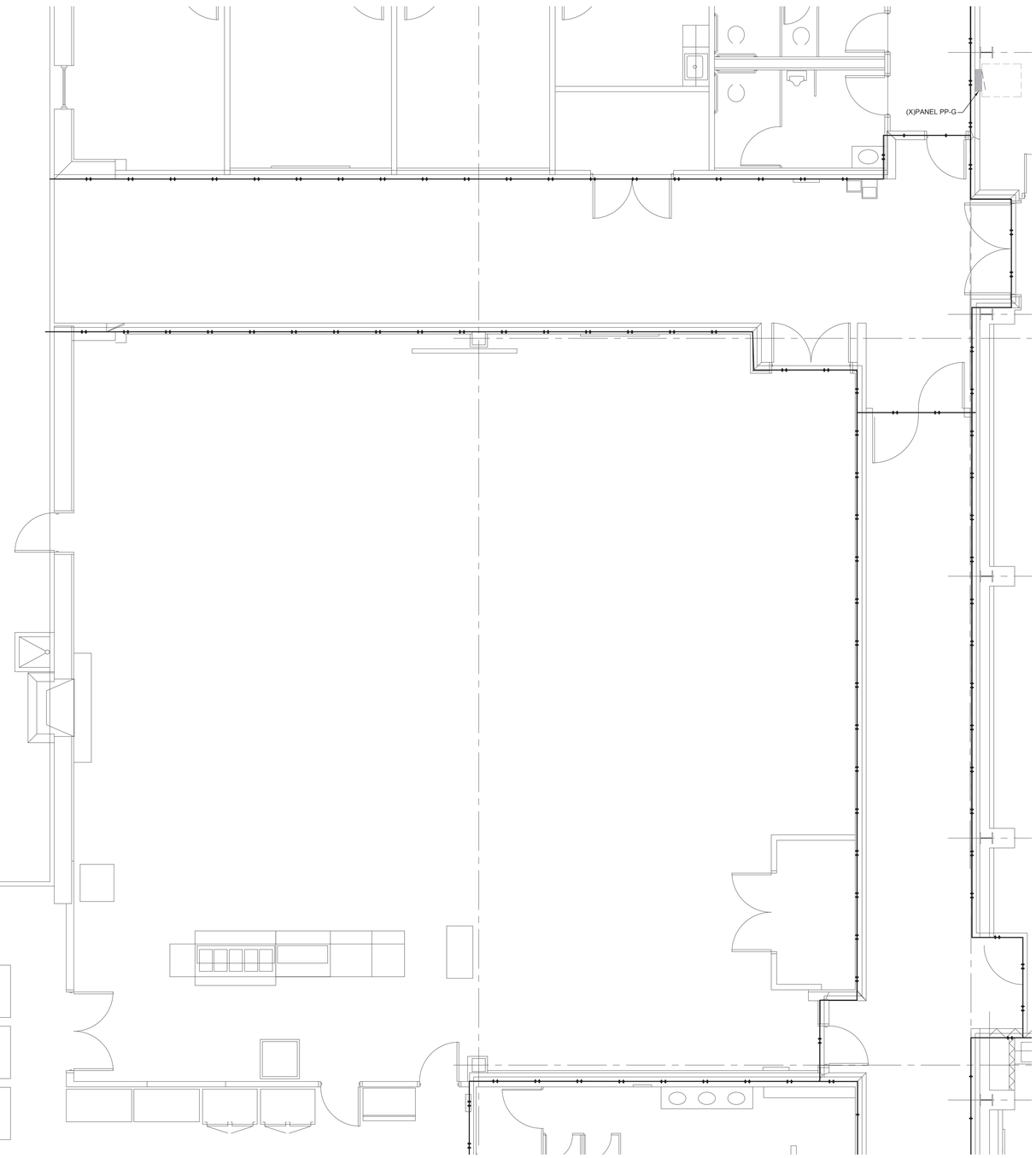




PLAN NORTH

1 PARTIAL FLOOR PLAN

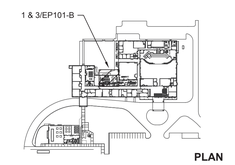
1/4" = 1'-0"



KEYED NOTES

1	ALL 120/208V POWER FOR EQUIPMENT, HOODS, CONTROLS, RECEPTACLES, ETC WILL BE FED FROM EXISTING PANEL RP-J.
2	CONNECT HOOD FIRE SUPPRESSION SYSTEM TO EXISTING FIRE ALARM SYSTEM.
3	PROVIDE AND INSTALL NEMA TWIST LOCK L5-20R RECEPTACLE IN CEILING. PROVIDE 12/3 SJO SERVICE CORD DROP WITH MATCHING L5-20P AND STANDARD 5-15R END. LENGTH AS REQUIRED FOR FINAL DEVICE MOUNTING HEIGHT 12" ABOVE WORK SURFACE. CIRCUIT MUST BE FED FROM GFI CIRCUIT BREAKER.

**ALL WORK ON THIS SHEET SHALL BE PRICED AS ALTERNATE G-1 UNLESS NOTED OTHERWISE.



PLAN NORTH

0 KEYPLAN

NOT TO SCALE

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230 JOSEPH FAMIGLIETTI
05/16/2023

NHCS Project No.
22-90458

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SCIF Grant
Renovations

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ELECTRICAL POWER
ALT. G-1 CULINARY ARTS
RENOVATION FLOOR PLAN

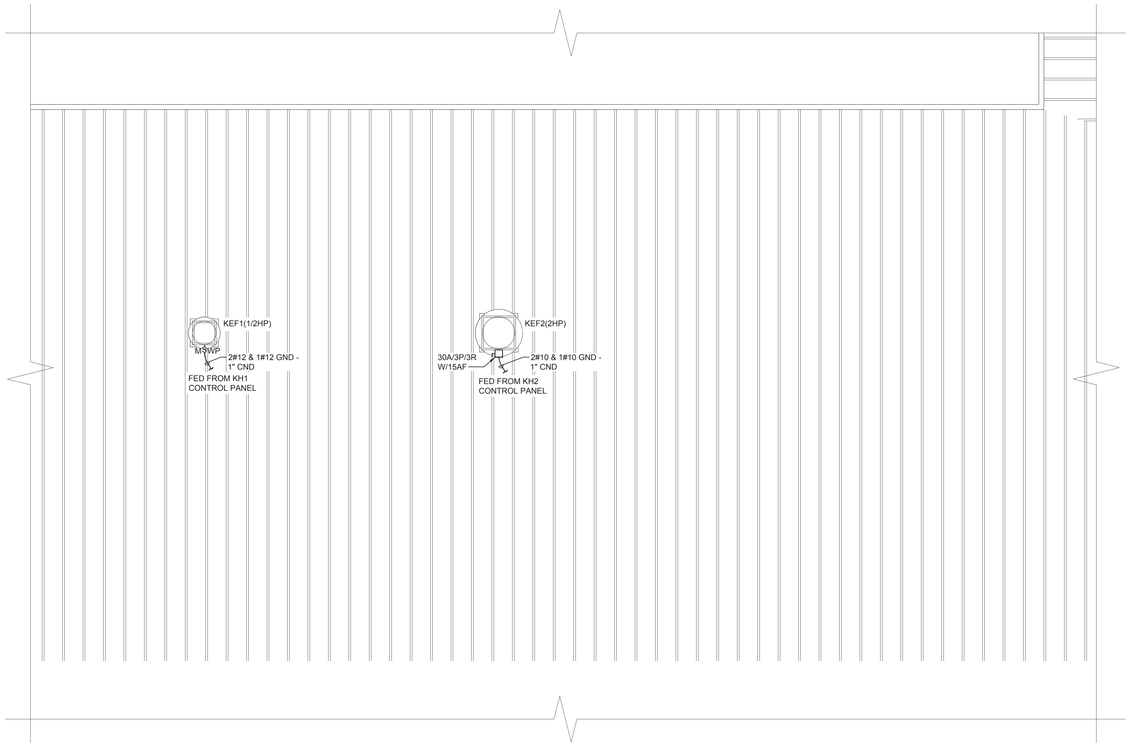
Rev.	Date	Notes

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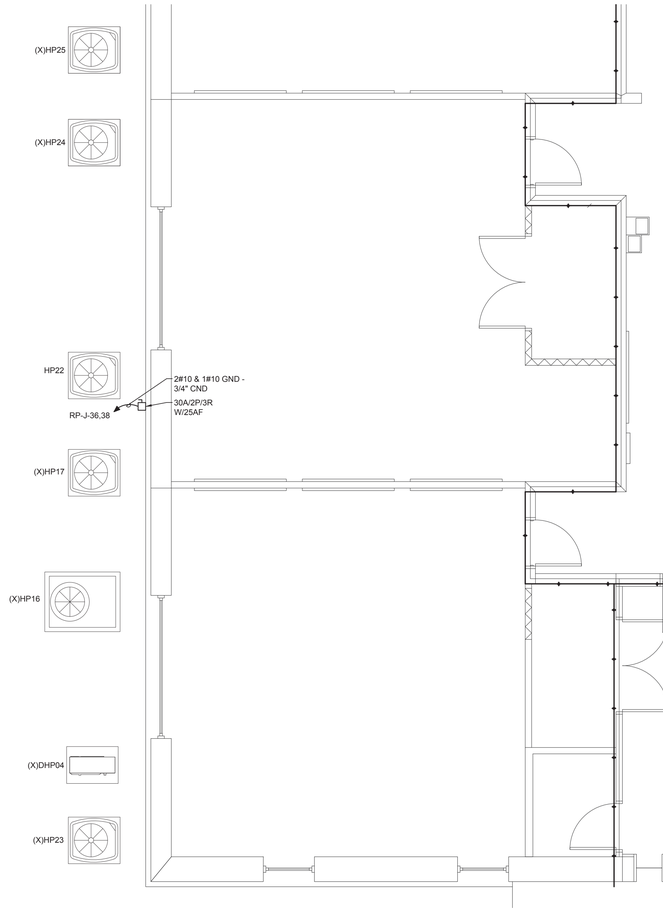
KEYED NOTES

1 MOUNT DISCONNECT SWITCH TO NEW EXTENSION OF MEZZANINE. COORDINATE EXACT LOCATIONS WITH CONTRACTOR PERFORMING MEZZANINE WORK.



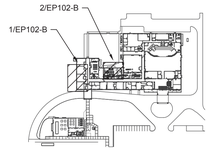
2 **PARTIAL ROOF PLAN**
1/4" = 1'-0"

PLAN NORTH



1 **PARTIAL FLOOR PLAN**
1/4" = 1'-0"

PLAN NORTH



0 **KEYPLAN**
NOT TO SCALE

PLAN NORTH

****ALL WORK ON THIS SHEET SHALL BE PRICED AS ALTERNATE G-1 UNLESS NOTED OTHERWISE.**

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35230 FAHOLCETT
05/16/2023

NHCS Project No. 22-90458

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SCIF Grant Renovations

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ELECTRICAL
PARTIAL ROOF PLAN

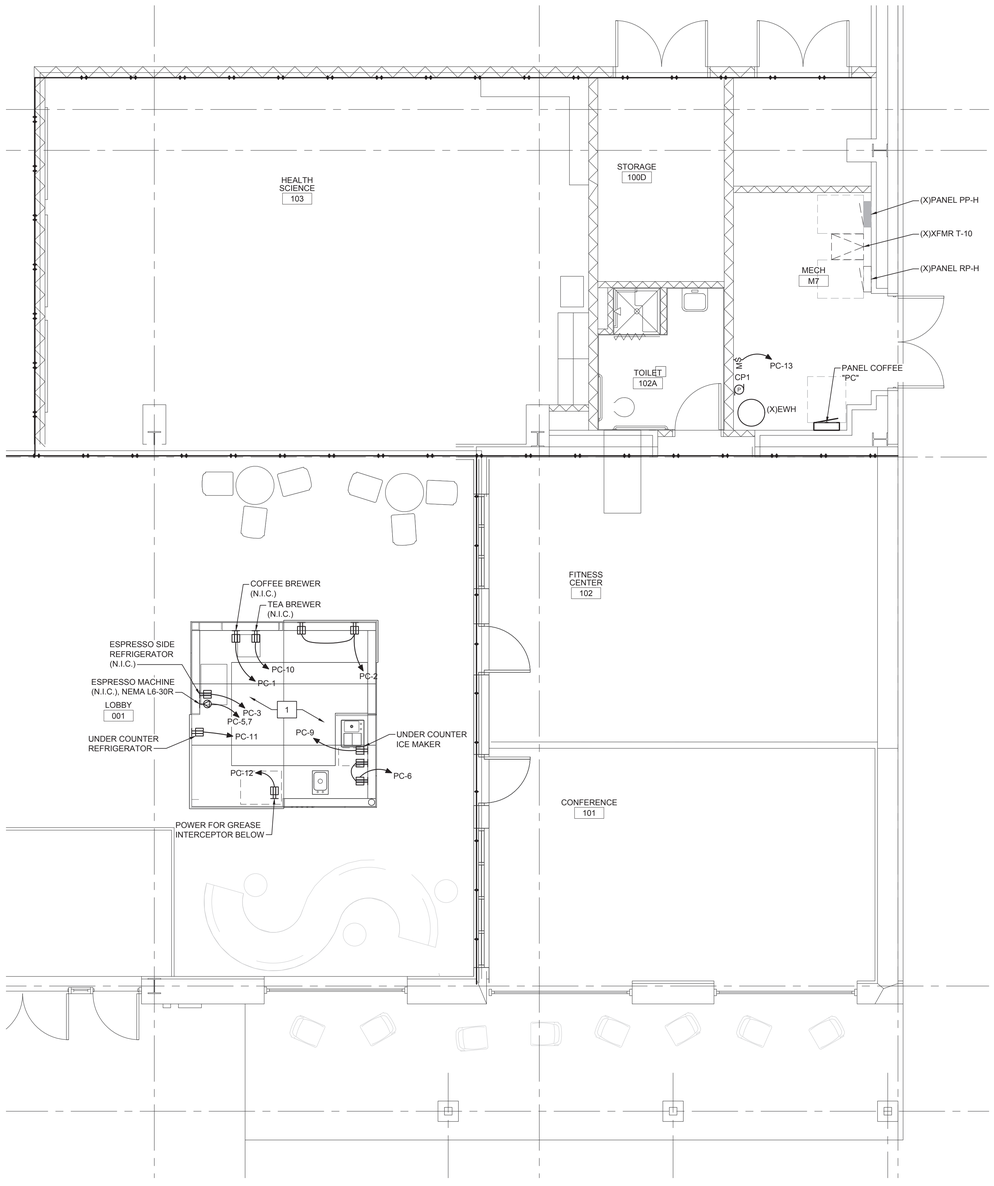
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KEYED NOTES

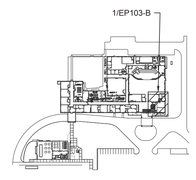
1 POWER FOR COFFEE BAR EQUIPMENT AND RECEPTACLES WILL BE FED FROM NEW PANEL - PANEL COFFEE "PC" FED FROM EXISTING PANEL RP-H. SPLIT COFFEE BAR CIRCUITS INTO THREE 3/4" CONDUITS AND PASS DOWN FROM THE CEILING TO THE COFFEE BAR WHERE INDICATED ON THE ARCHITECTURAL PLANS. ONCE WITHIN THE COFFEE BAR MILLWORK THE CONTRACTOR CAN DISTRIBUTE WITH MC CABLE.



1 **PARTIAL FLOOR PLAN**
1/4" = 1'-0" 0 2' 4' 8'

PLAN NORTH

**ALL WORK ON THIS FLOOR PLAN TO BE PRICED AS ALT. G-2 UNLESS NOTED OTHERWISE



0 **KEYPLAN**
NOT TO SCALE

PLAN NORTH

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05/16/2023

NHCS Project No. 22-90458

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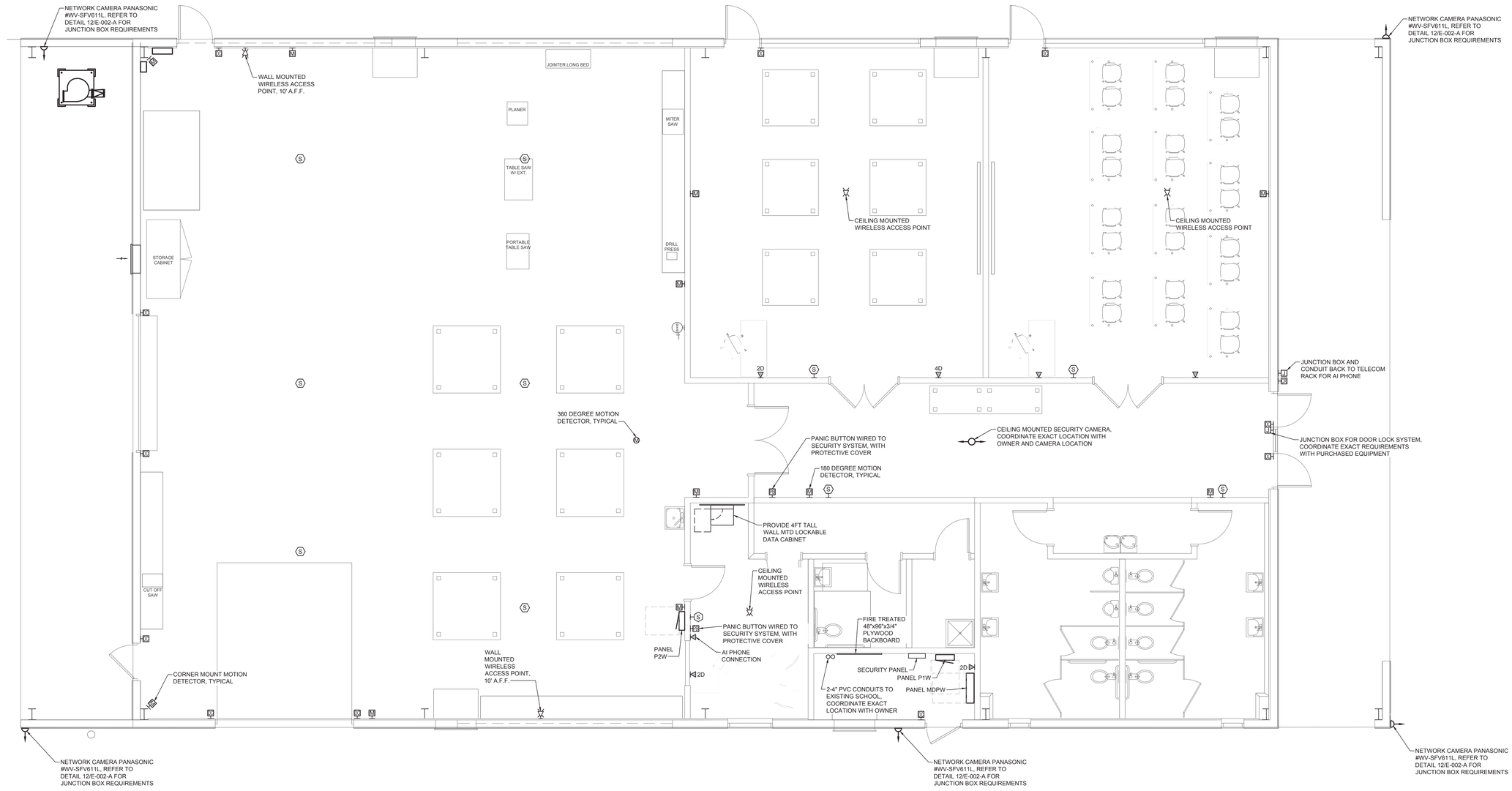
Issue Date: 5/16/2023

ELECTRICAL POWER
ALT. G-2 COFFEE BAR

Rev.	Date	Notes

EP103-B

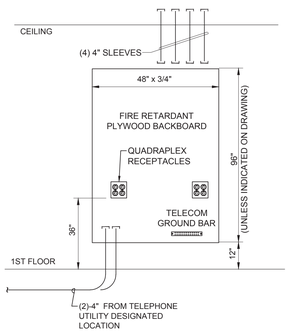
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1 FLOOR PLAN

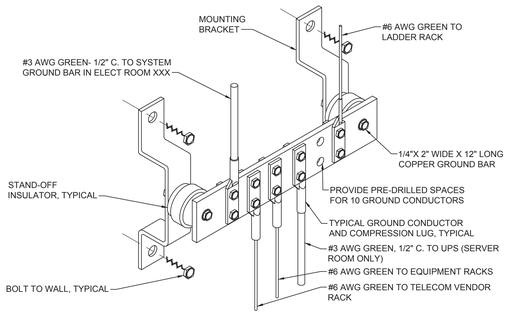
1/4" = 1'-0"

PLAN NORTH



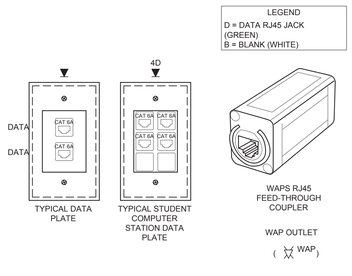
2 TELECOM BACKBOARD DETAIL

NOT TO SCALE



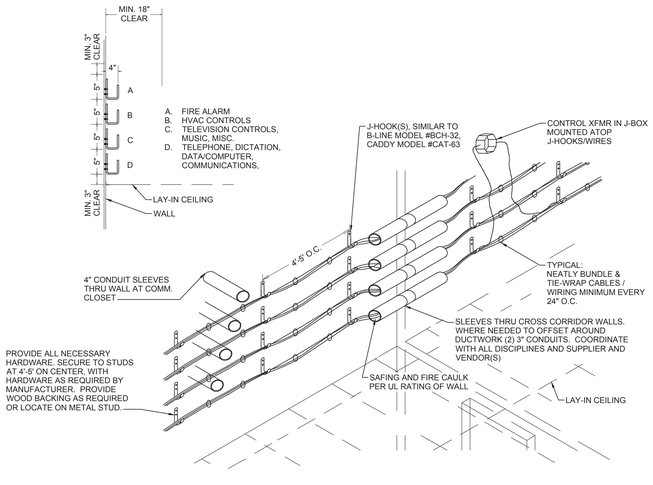
3 TELECOMMUNICATIONS GROUND BAR DETAIL

NOT TO SCALE



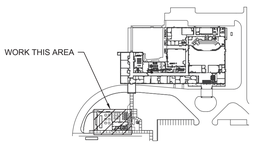
4 TYPICAL WALL PLATE DETAIL

NOT TO SCALE



5 LOW VOLTAGE WIRE MANAGEMENT DETAIL

NOT TO SCALE



0 KEYPLAN

NOT TO SCALE

PLAN NORTH

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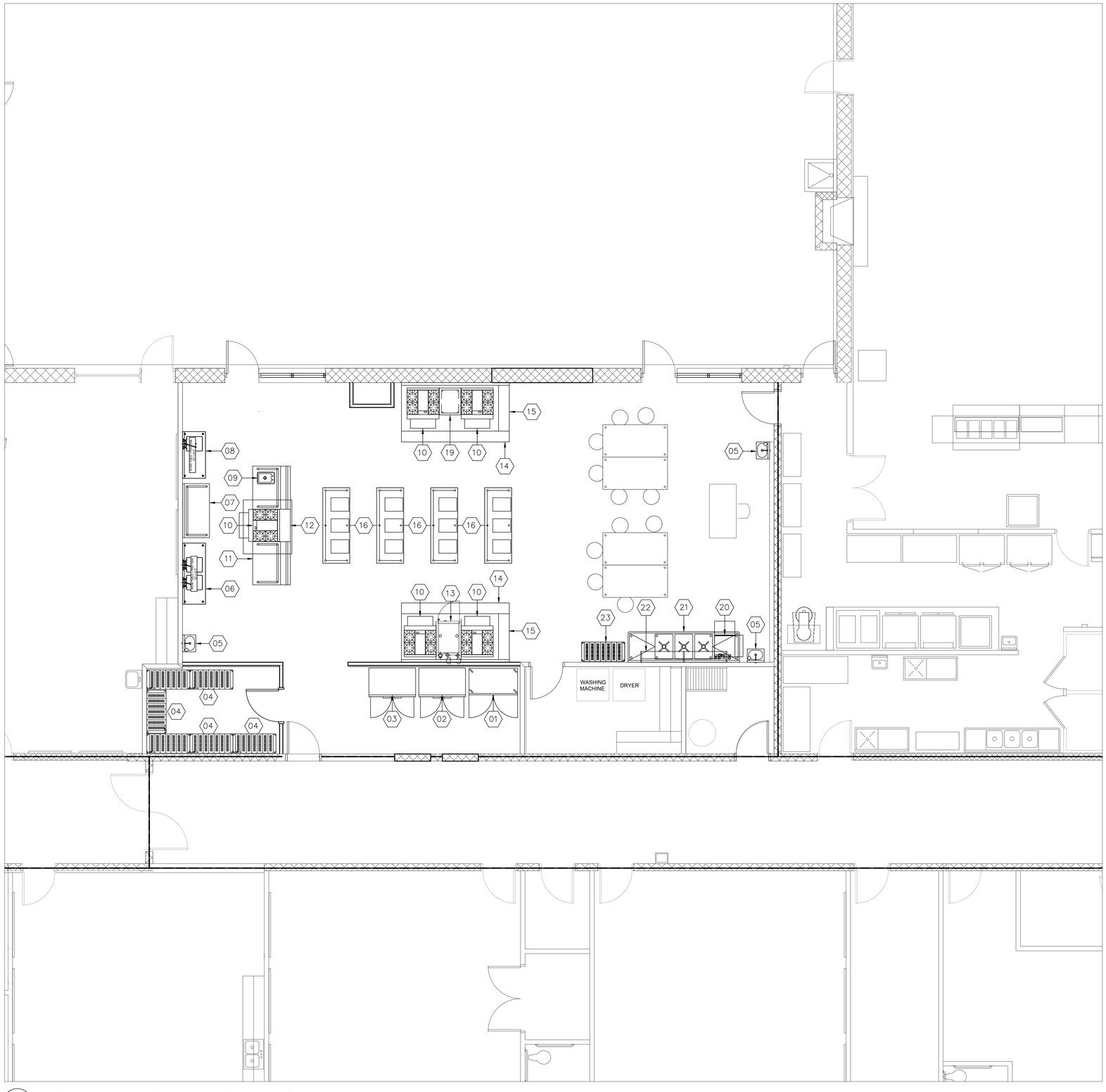
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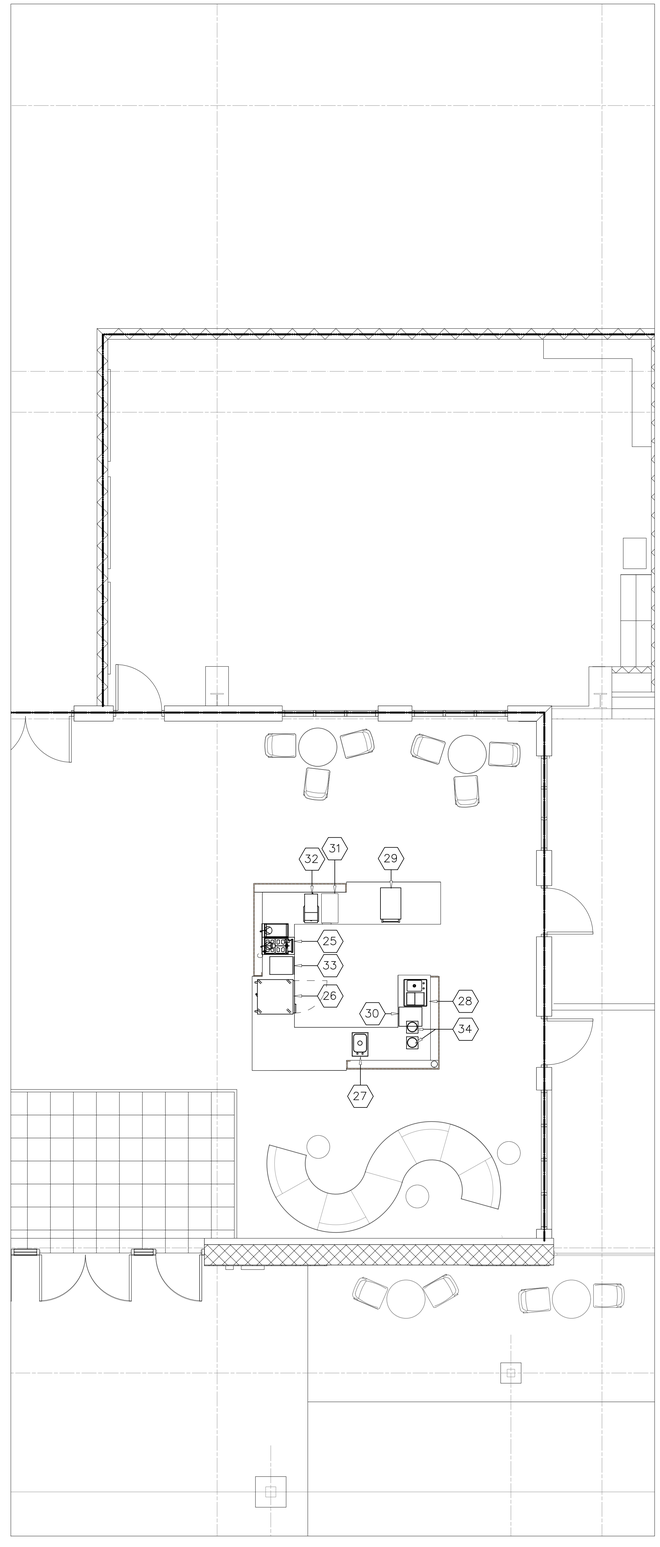
ELECTRICAL SYSTEMS FIRST FLOOR PLAN

Rev.	Date	Notes

ES101-A

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1 **Alt. G-1 Culinary Arts Food Service Equipment Plan**
Scale: 1/4"=1'-0"

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FOODESIGN

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Renovations

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Construction Documents

Issue Date: May 16, 2023

Alt. G-1 - Culinary Arts
Food Service
Equipment Plans

Rev.	Date	Notes

K1.1-B

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EQUIPMENT SCHEDULE

QTY	ITEM	DESCRIPTION	MANUFACTURER	MODEL	ELECTRICAL						PLUMBING				GAS		REMARKS
					AFF	KW	HP	AMP	VOLT	PH	HW/AFF	CW/AFF	W/AFF	IW	SIZE/A.F.F.	BTU/HR	
1	01	2–SECTION REFRIGERATOR, REACH–IN	EXISTING	RESET 01	24"			6.0	120	1							F.S.E.C. TO VERIFY EXISTING UTILITIES 01
1	02	2–SECTION REFRIGERATOR, REACH–IN	BEVERAGE AIR	HRPS2HC–1S 02	24"			6.0	120	1							NEMA 5–15P C&P, CASTERS 02
1	03	2–SECTION FREEZER, REACH–IN	BEVERAGE AIR	TMF2HC–1S 03	24"		(2)½		120	1							NEMA 5–15P C&P, CASTERS 03
N.I.K.C.	04	PLASTIC SHELVING UNIT	BY OWNER	N.I.K.C. 04													04
3	05	HAND SINK, WALL MOUNTED	EAGLE GROUP	HSA–10 05							½"+14"	½"+14"	1–1/2"+12"				FAUCET, SIDE SPLASH 05
1	06	2–COMPARTMENT SINK	EXISTING	RESET 06							½"+14"	½"+14"		F.S.			F.S.E.C. TO VERIFY EXISTING UTILITIES, FAUCET, LEVER DRAIN 06
N.I.K.C.	07	WORKTABLE	BY OWNER	N.I.K.C. 07													07
1	08	1–COMPARTMENT SINK	EXISTING	RESET 08							½"+14"	½"+14"		F.S.			F.S.E.C. TO VERIFY EXISTING UTILITIES, FAUCET, LEVER DRAIN 08
1	09	DROP–IN SINK	ADVANCE TABCO	DI–1–10 09							½"+U.C.	½"+U.C.		F.S.			FAUCET, LEVER DRAIN 09
5	10	OPEN BURNER RANGE WITH GRIDDLE	GARLAND RANGE	U36–4G12C 10	U.C./24"			3.4	120	1					3/4"+24"/U.C.	184,000	NEMA 5–15P C&P, CONVECTION OVEN, 12" GRIDDLE CENTERED, CASTERS 10
1	11	UNI WALL CHASE	EAGLE GROUP	UNI–WALL–CUSTOM 11													11
N.I.K.C.	12	EXHAUST HOOD, ISLAND TYPE	BY MECHANICAL	N.I.K.C. 12													REFER TO MECHANICAL DRAWINGS 12
N.I.K.C.	13	MULTI COOK OVEN W/STAND	FUTURE	N.I.K.C. 13	24"	10.1			208	3		2@¾"+48"		F.S.			NEMA 15–50P C&P, WATER FILTER, MODEL 5033339 EQUIPMENT STAND 13
N.I.K.C.	14	EXHAUST HOOD, WALL TYPE	BY MECHANICAL	N.I.K.C. 14													REFER TO MECHANICAL DRAWINGS 14
N.I.K.C.	15	FIRE SUPPRESSION SYSTEM	BY MECHANICAL	N.I.K.C. 15													15
N.I.K.C.	16	WORKTABLE	BY OWNER	N.I.K.C. 16													16
–	17	NOT USED	–	– 17													17
–	18	NOT USED	–	– 18													18
N.I.K.C.	19	WORKTABLE	BY OWNER	N.I.K.C. 19													19
N.I.K.C.	20	UNDERCOUNTER DISHWASHER	FUTURE	N.I.K.C. 20	24"			24.2	208	1	¾"+14"			F.S.			20
1	21	3–COMPARTMENT SINK	JOHN BOOS	43PB20284–2D30 21							2@½"+14"	2@½"+14"		F.S.			(2) FAUCETS, (3) LEVER DRAINS 21
1	22	WALL SHELF W/POT RACK	JOHN BOOS	BHS1296PR–16/304 22													MOUNT 5'–4" A.F.F. 22
N.I.K.C.	23	PLASTIC SHELVING UNIT	BY OWNER	N.I.K.C. 23													23
–	24	NOT USED	–	– 24													24
N.I.K.C.	25	ESPRESSO MACHINE	BY OWNER	N.I.K.C. 25	2@48"			A:30 B:15	A:208 B:120	A&B:1		⅜"+42"		F.S.			A: ESPRESSO MACHINE, NEMA L6–30P, B: SIDE REFRIG, NEMA 5–15P 25
1	26	UNDERCOUNTER REFRIGERATOR	BEVERAGE AIR	UCR27AHC 26	24"			2.0	120	1							NEMA 5–15P C&P, CASTERS 26
1	27	DROP–IN HAND SINK	ADVANCE TABCO	DI–1–10 27							½"+14"	½"+14"	1–1/2"+12"				FAUCET, SIDE SPLASH 27
1	28	DROP–IN ICE BIN W/DUMP SINK	BK RESOURCES	BK–DIBHL–2118–P–G 28							½"+14"	½"+14"		F.S.			FAUCET, LEVER WASTE 28
N.I.K.C.	29	UTILITY CART	BY OWNER	N.I.K.C. 29													29
1	30	UNDERCOUNTER ICE MAKER	EURODIB USA	CB249A BHC AWS 30	24"			3.0	120	1		⅜"+14"		F.S.			NEMA 5–15P C&P, WATER FILTER 30
N.I.K.C.	31	TEA BREWER	BY OWNER	N.I.K.C. 31	48"			20.0	120	1		¼"+42"		F.S.			VERIFY UTILITIES WITH OWNER 31
N.I.K.C.	32	COFFEE BREWER	BY OWNER	N.I.K.C. 32	48"			20.0	120	1		¼"+42"		F.S.			VERIFY UTILITIES WITH OWNER 32
N.I.K.C.	33	POS STATION	BY OWNER	N.I.K.C. 33	48"			10.0	120	1							VERIFY UTILITIES WITH OWNER 33
N.I.K.C.	34	BAR BLENDER	BY OWNER	N.I.K.C. 34	48"			12.0	120	1							VERIFY UTILITIES WITH OWNER 34

EXISTING EQUIPMENT:

TRADES TO DISCONNECT KITCHEN EQUIPMENT IN KITCHEN.

FOOD SERVICE EQUIPMENT CONTRACTOR TO MOVE & SET IN PLACE THOSE ITEMS INDICATED AS RESET.

G.C. TO REMOVE ALL EQUIPMENT FROM SITE UNLESS EQUIPMENT IS TO BE REUSED IN NEW LAYOUT. SEE SCHEDULE FOR EXISTING EQUIPMENT TO BE RESET.

THE DATA ON EXISTING EQUIPMENT IS THE BEST AVAILABLE AT THE TIME THESE DRAWINGS WHERE PREPARED, AND IS OFFERED FOR PLANNING PURPOSES ONLY. THE CONTRACTOR SHALL FIELD VERIFY ALL DATA PRIOR TO ROUGHING–IN UTILITIES FOR EXISTING EQUIPMENT.

ELECTRICAL LOADS ARE BASED ON MANUFACTURER'S INFORMATION. MINIMUM CIRCUIT AMPACITY AND OVERCURRENT PROTECTION TO BE DETERMINED BY CODE REQUIREMENTS AND/OR MANUFACTURER'S DIRECTIONS.

ABBREVIATIONS

ABV.	ABOVE
A.F.F.	ABOVE FINISHED FLOOR
CTR.	COUNTER MOUNTED
C.W.	COLD WATER
E.C.	ELECTRICAL CONTRACTOR
F.D.	FLOOR DRAIN
F.S.	FLOOR SINK
F.S.E.C.	FOOD SERVICE EQUIPMENT CONTRACTOR
G.C.	GENERAL CONTRACTOR
H.W.	HOT WATER
I.W.	INDIRECT WASTE
M.C.	MECHANICAL CONTRACTOR
N.I.K.C.	NOT IN KITCHEN CONTRACT
S/S	STAINLESS STEEL
ST.	STUB
U.C.	UTILITY CHASE
W.	WASTE

**GAS NOTE:

KITCHEN EQUIPMENT WILL BE PROVIDED WITH GAS PRESSURE REGULATORS DESIGNED TO OPERATE WITH 14" W.C. INCOMING GAS PRESSURE OR LESS. PLUMBER TO PROVIDE INTERMEDIATE REGULATORS, AS REQUIRED TO REDUCE INCOMING BUILDING PRESSURE TO LEVEL SUITABLE FOR EQUIPMENT.

140° F. HOT WATER REQUIREMENTS		GPH
POT SINKS	3 @ 30	90
PREP. SINKS	4 @ 20	80
DISHMACHINE	FROM BOOSTER @ 20 PSI	20.2
CAN WASH/MOP SINK	–	15
CLEANING	–	5
	TOTAL	210.2

110° F. HOT WATER REQUIREMENTS		GPH
HAND SINK	3 @ 5	15
	TOTAL	15

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CBHF Engineers, PLLC
PERFORMANCE BASED FIRE PROTECTION ENGINEERING, PLLC
FOODESIGN
FCSI Fellow

NHCS Project No.
22-90458

Southeast Area Technical High School
SCIF Grant Renovations

5301 Sidbury Rd.
Castle Hayne, NC 28429

Construction Documents

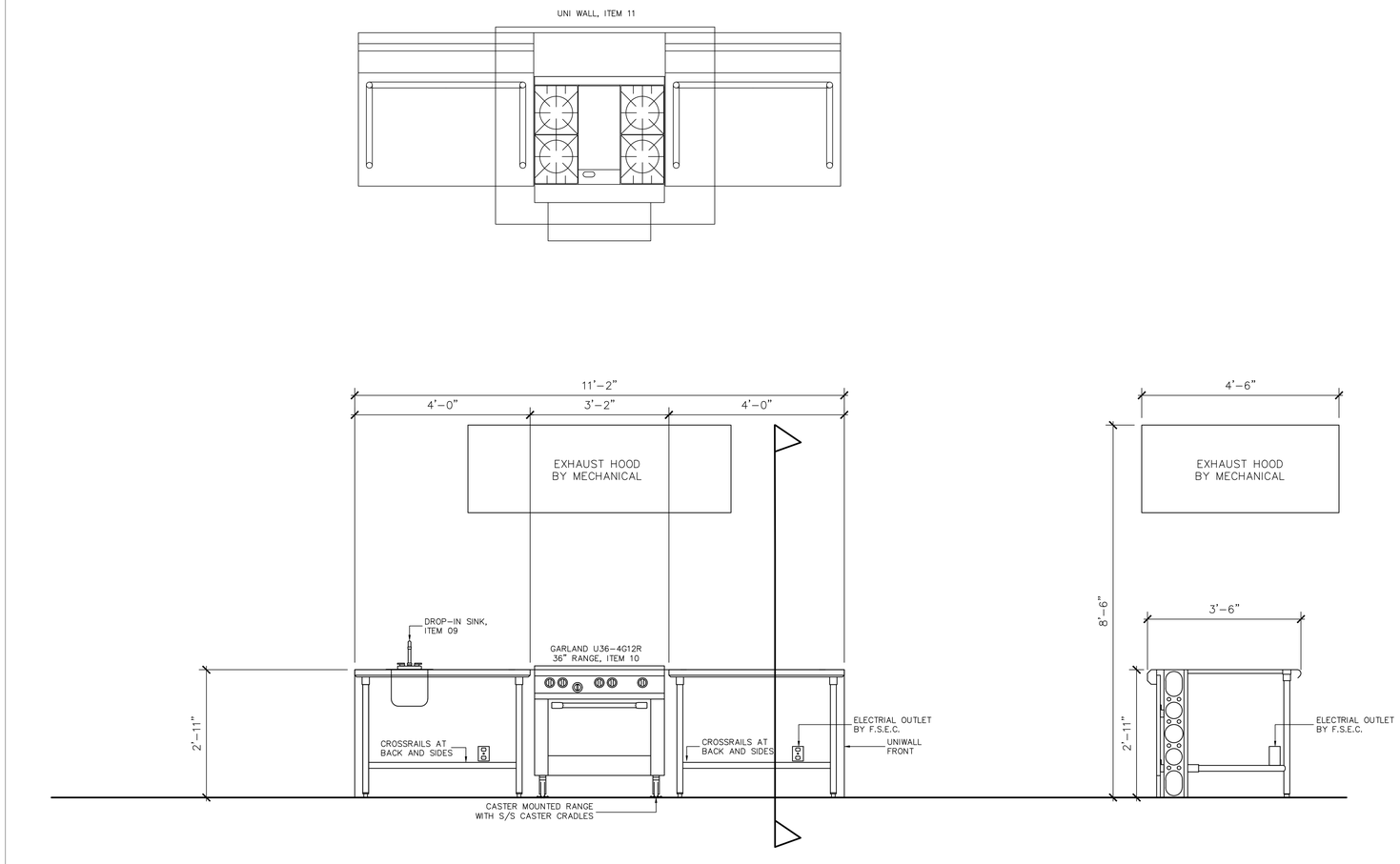
Issue Date: May 16, 2023

Alt. G-1 - Culinary Arts Food Service Equipment Schedule

Rev.	Date	Notes

K1.2-B

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1 **Alt. G-1 Demonstration Table Detail**
Scale: 1/4"=1'-0"

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Alt. G-1 - Demonstration Table Details

Rev.	Date	Notes

K1.3-B

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