SHEET LIST

UNC Pembroke
AMERICAN INDIAN HERITAGE CENTER

OLD MAIN BUILDING
1369 Old Main Road
Pembroke, NC, 28372

CONSTRUCTION DOCUMENTS SUBMITTAL

NOVEMBER 5, 2021

SCO ID: 21-23067-01
JPA PROJECT NO. : 21PEM587

OLD MAIN BUILDING
ASSUMED PROPERTY LINE

LOCATION MAP (NTS)

Jenkins • Peer *Architects*
112 South Tryon Street, Suite 1300
Charlotte, North Carolina 28284
(t) 704/372-6665

MUELLER ASSOCIATES, INC.
ENGINEER C-0979
1306 Concourse Dr #100,
Linthicum Heights, MD 21090
(t) 410/646-4500

1/10/2022

UNC PEMBROKE AMERICAN INDIAN HERITAGE CENTER
SCO ID#: 21-23067-01A

TAG	DESCRIPTION	DATE

Project: 21PEM587
Drawn By: RS/ DJ
Checked By: RH/JM
Date: 1/10/2022

COVER SHEET

PROJECT NORTH
TRUE NORTH

BID DOCUMENTS

G-001

ABBREVIATIONS

A	A - Area; Acre	
A	AB - Anchor Bolt	
A	ABV - Above	
A	AC - Air Conditioning	
A	ACC - Access	
A	ACOUST - Acoustical	
A	ACT - Actual	
A	AD - Area Drain	
A	ADA - Americans with Disabilities Act	
A	ADD - Addendum; Addition	
A	ADH - Adhesive	
A	ADJ - Adjust; Adjustable; Adjacent	
A	AFF - Above Finished Floor	
A	AGG - Aggregate	
A	AIA - American Institue of Architects	
A	ALT - Alternate; Alteration, Altitude	
A	ALUM - Aluminum	
A	AMP - Ampere; Ampacity	
A	AMT - Amount	
A	ANN - Annunciator	
A	ANOD - Anodized	
A	APPROX - Approximate	
A	APRVD - Approved	
A	AR - Abuse Resistant	
A	ARCH - Architect; Architectural	
A	ASPH - Asphalt	
A	ASSOC - Assocation; Associate	
A	ATC - Acoustical Tile Ceiling	
A	ATTEN - Attenuation	
A	AUTO - Automatic	
A	AVG - Average	
B	BD - Board	
B	BDRM - Bedroom	
B	BEV - Bevel	
B	BH - Bulkhead	
B	BLDG - Building	
B	BLKG - Blocking	
B	BM - Beam; Bench Mark	
B	BN - Bullnose	
B	BNT - Bent	
B	BOT - Bottom	
B	BRG - Bearing	
B	BRK - Brick	
B	BSMT - Basement	
B	BTWN - Between	
B	BOS - Basis of Design	
C	CAB - Cabinet	
C	CAD -Computer-Aided Drafting	
C	CG - Corner Guard	
C	CIP - Cast-in Place	
C	CJ - Control Joint	
C	CL - Centerline	
C	CLG - Ceiling	
C	CLO - Closet	
C	CLR - Clear	
C	CMU - Concrete Masonry Unit	
C	CNTR - Center; Counter	
C	C.O. - Cased Opening	
C	COL - Column	
C	CONC - Concrete	
C	CONST - Construction	
C	CONT - Continuous; Continue; Control	
C	CORR - Corridor	
C	COV - Cover	
C	CPT - Carpet	
C	CT - Ceramic Tile	
C	CW - Curtain Wall	
C	CYL - Cylinder	
C	COORD - Coordinate	
D	D - Deep; Depth; Drain	
D	DBL - Double	
D	DEMO - Demolition	
D	DEP - Depressed	
D	DEPT - Department	
D	DET - Detail	
D	DF - Drinking Fountain	
D	DIA - Diameter	
D	DIAG - Diagonal	
D	DIM - Dimension	
D	DISP - Dispenser	
D	DIV - Division	
D	DN - Down	
D	DR - Door; Drain	
D	DS - Downspout	
D	DTL - Detail	
D	DWG - Drawing	
D	DWGS - Drawings	
E	E - East; Enamel; Exhaust	
E	EA - Each	
E	EIFS - Exterior Insulation & Finish System	
E	EJ - Expansion Joint	
E	EL - Elevation; Elevator	
E	ELEC - Electrical	
E	ELEV - Elevator; Elevation	
E	EM - Emergency	
E	EMER - Emergency	
E	ENAM - Enamel	
E	ENG - Engineer	
E	ENTR - Entrance	
E	EQ - Equal	
E	EQUIP - Equipment	
E	EST - Estimate	
E	EWC - Electric Water Cooler	
E	EXIST - Existing	
E	EXP - Expansion; Exposed	
E	EXT - Exterior; Extinguish	
F	F - Degrees Fahrenheit; Fuse	
F	FA - Fire Alarm; Fresh Air	
F	FAB - Fabricate	
F	FAE - Fluid Applied Epoxy Flooring	
F	FAST - Fastener; Fasten	
F	FBRK - Fire Brick	
F	FD - Floor drain	
F	FDC - Fire Department Connection	
F	FDN - Foundation	
F	FE - Fire Extinguisher	
F	FEC - Fire Extinguisher Cabinet	
F	FFE - Finished Floor Elevation	
F	FF&E - Fixtures, Furnishings & Equipment	
F	FGR - Fiberglass reinforced	
F	FHC - Fire Hose Cabinet	
F	FIN - Finish; finished	
F	FIX - Fixture	
F	FLEX - Flexible	
F	FLG - Flashing	
F	FLR - Floor; Flooring	
F	FLUOR - Fluorescent	
F	FOM - Face of Masonry	
F	FOS - Face of Studs	
F	FT - Foot; Feet; Fully Tempered	
F	FTG - Footing	
F	FURN - Furnish; Furniture	
F	FURR - Furring	
F	FV - Field Verify	
G	GA - Gauge	
G	GALV - Galvanized	
G	GB - Grab Bar; Glass Block	
G	GC - General Contractor	
G	GEN - General; Generator	
G	GFRC - Glass Fiber Reinforced Concrete	
G	GL - Glass; Glazing	
G	GND - Ground	
G	GT - Grout	
G	GWB - Gypsum Wall Board	
G	GYP - Gypsum	
H	H - High	
H	HB - Hose Bib	
H	HC - Hollow Core; Handicapped Accessible	
H	HDCP - Handicapped Accessible	
H	HDR - Header	
H	HDW - Hardware	
H	HDWD - Hardwood	
H	HGT - Height	
H	HID - High Intensity Discharge	
H	HM - Hollow Metal	
H	HOR - Horizontal	
H	HR - Hour	
H	HT - Height	
H	HVAC - Heating, Ventilating & Air Conditioning	
I	ID - Inside Diameter	
I	IN - Inch	
I	INC - Incandescent	
I	INCL - Incline; Include	
I	INFO - Information	
I	INSUL - Insulation	
I	INT - Interior; Internal	
I	INV - Invert	
J	JAN - Janitor	
J	JB - Junction Box	
J	JC - Janitor's Closet	
J	JCT - Junction	
J	JST - Joist	
J	JT - Joint	
K	KIP - Kilopound (1000 pounds)	
K	KIT - Kitchen	
K	KP - Kickplate	
L	L - Length	
L	LAB - Laboratory; Labor	
L	LAD - Ladder	
L	LAM - Laminate; Laminated	
L	LAT - Lateral	
L	LAV - Lavatory	
L	LB - Pound (weight); Lag Bolt	
L	LCD - Liquid Crystal Diode	
L	LD - Leader Drain	
L	LH - Left Hand	
L	LIN - Linear	
L	LINO - Linoleum	
L	LL - Live Load	
L	LN - Length	
L	LNDG - Landing	
L	LT - Light	
L	LTG - Lighting	
L	LTL - Lintel	
L	LT WT - Lightweight	
L	LVR - Louver	
L	LW - Light Weight	
M	M - Meter	
M	MAINT - Maintenance	
M	MANF - Manufacturer	
M	MAS - Masonry	
M	MAT - Material	
M	MAX - Maximum	
M	MB - Marker Board	
M	ME - Mechanical Engineer	
M	MECH - Mechanical	
M	MED - Medium	
M	MET - Metal	
M	MEZZ - Mezzanine	
M	MFG - Manufacturer; Manufacturing	
M	MH - Manhole	
M	MIN - Minimum	
M	MIR - Mirror	
M	MISC - Miscellaneous	
M	MM - Millimeter	
M	MO - Masonry Opening	
M	MOD - Module	
M	MOV - Movable	
M	MPS - Motorize Projection Screen	
M	MR - Moisture Resistant	
M	MTD - Mounted	
M	MTL - Material; Metal	
M	MULL - Mullion	
N	N - North	
N	NAT - Natural	
N	NIC - Not In Contract	
N	NO - Number	
N	NOM - Nominal	
N	NRC - Noise Reduction Coefficient	
N	NTS - Not To Scale	
O	OA - Outside Air; Overall	
O	OC - On Center	
O	OD - Outside Diameter	
O	OFF - Office	
O	OH - Overhead	
O	OPG - Opening	
O	OPP - Opposite; Opposite Hand	
O	ORD - Overflow Roof Drain	
O	OTS - Open To Structure	
O	ORN - Ornamental	
O	OZ - Ounce	
O	OFOI Owner Furnished, Owner Installed	
P	PA - Public Address	
P	PBD - Particle Board	
P	PED - Pedestal; Pedestrian	
P	PERF - Perforate; Performance	
P	PERI - Perimeter	
P	PERP - Perpendicular	
P	PFN - Prefinished	
P	PKG - Parking	
P	PL - Plate; Property Line	
P	PLAM - Plastic Laminate	
P	PLAS - Plastic	
P	PLWD - Plywood	
P	PLUMB - Plumbing	
P	PNL - Panel	
P	PNT - Paint	
P	POL - Polish; Polished	
P	PR - Pair	
P	PRCST - Precast	
P	PRE - Prefinished	
P	PREFAB - Prefabricated	
P	PSC - Prestressed Concrete	
P	PSF - Pounds per square foot	
P	PSI - Pounds per square inch	
P	PT - Porcelain Tile; Pressure Treated	
P	PTD - Paper Towel Dispenser	
P	PTN - Partition	
P	PVC - Polyvinyl Chloride	
P	PVT - Private	
P	PWR - Power	
Q	QT - Quarry Tile; Quart	
Q	QTR - Quarter	
Q	QTY - Quantity	
Q	QTZ Quartz	
R	R - Riser; Radius; Resistance	
R	RA - Return Air; Registered Architect	
R	RAD - Radius; Radiator	
R	RB - Rubber; Rubber Base; Resilient Base	
R	RCP - Reflected Ceiling Plan	
R	RD - Roof Drain; Round	
R	REBAR - Reinforcing Bar	
R	RECEP - Receptacle	
R	REF - Refer; Reference; Refrigerator	
R	REG - Register; Regular	
R	REINF - Reinforcement; or Reinforce	
R	REQD - Required	
R	RES - Resilient	
R	RET - Retaining	
R	REV - Reverse; Revise; Revision	
R	RFG - Roofing	
R	RH - Right Hand	
R	RM - Room	
R	RO - Rough Opening	
R	ROW - Right of Way	
R	RR - Railroad	
R	RWL - Rain Water Leader	
S	S - South	
S	SAN - Sanitary	
S	SC - Solid Core; Sealed Concrete	
S	SCH - Schedule	
S	SCWD - Solid Core Wood	
S	SD - Soap Dispenser	
S	SE - Structural Engineer	
S	SEAL - Sealant	
S	SEC - Second; Section	
S	SECT - Section	
S	SERV - Service	
S	SF - Square Foot	
S	SG - Safety Glass	
S	SHR - Shower	
S	SHT - Sheet	
S	SHTHG - Sheathing	
S	SIM - Similar	
S	SND - Sanitary Napkin Dispenser	
S	SNR - Sanitary Napkin Receptacle	
S	SPEC - Specification	
S	SPECS - Specifications	
S	SPK - Speaker	
S	SQ - Square	
S	SS - Stainless Steel	
S	STC - Sound Transmission Class	
S	STD - Standard	
S	STL - Steel	
S	STOR - Storage	
S	STRL - Structural	
S	STRUCT - Structural	
S	SUPP - Supplementary; Supplement	
S	SUSP - Sheet Vinyl	
S	SV - Sheet Vinyl	
S	SYS - System	
T	T&G - Tongue & Groove	
T	TB - Tackboard; Towel Bar	
T	TBD - To Be Determined	
T	TEL - Telephone	
T	TEMP - Temporary; Tempered; Temperature	
T	THK - Thick; Thickness	
T	THRU - Through	
T	TLT - Toilet	
T	TO - Top Of	
T	TOC - Top Of Concrete	
T	TOF - Top Of Footing	
T	TOS - Top Of Steel	
T	TOW - Top Of Wall	
T	TPD - Toilet Paper Dispenser	
T	TPTN - Toilet Partition	
T	TRANS - Transformer; Translucent	
T	TRD - Tread	
T	TV - Television	
T	TYP - Typical	
T	TZ - Terrazzo	
U	UC - Undercut	
U	UL - Underwriters' Laboratories	
U	UNO - Unless Noted Otherwise	
U	UR - Urinal	
V	V - Volt; Valve	
V	VB - Vapor Barrier	
V	VCT - Vinyl Composition Tile	
V	VENT - Ventilate; Ventilator	
V	VERT - Vertical	
V	VEST - Vestibule	
V	VIF - Verify In the Field	
V	VIN - Vinyl	
V	VT - Vinyl Tile	
V	VTR - Vent Through Roof	
V	VWC - Vinyl Wall Covering	
W	W - West; Width; Wide	
W	W/ - With	
W	W/O - Without	
W	WAINS - Wainscot	
W	WC - Watercloset	
W	WD - Wood	
W	WF - Wide Flange (structural steel)	
W	WG - Wired Glass	
W	WH - Water Heater; Wall Hung; Wall Hydrant	
W	WIN - Window	
W	WP - Waterproof; Waterproofing	
W	WPT - Working Point	
W	WR - Water Resistant	
W	WS - Weatherstripping; Water Stop	
W	WSCT - Wainscot	
W	WT - Weight	
W	WW - Window Wall	
W	WWF - Welded Wire Fabric	
Y	YD - Yard	
Y	YR - Year	
Y	YH - Yard Hydrant	

5 4 3 2 1

A B C D

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: **American Indian Heritage Center**
Address: **1369 Old Main Road, Pembroke, NC** Zip Code **28372**
Owner/Authorized Agent: **UNC Pembroke – Travis Bryant** Phone # **(910) 521-6679** E-Mail **travis.bryant@uncp.edu**
Owned By: [ ] City/County [ ] Private [X] State
Code Enforcement Jurisdiction: [ ] City [ ] County [X] State

SUMMARY: INTERIOR DEMOLITION AND UPFIT OF AN EXISTING BUILDING TO:
1. 5,071 SF INTERIOR UPFIT AND HERITAGE CENTER WITH DETATCHED OFFICE SUITE
2. COMPUTER LAB AND CONFERENCE ROOM UPFIT
3. NO CHANGE IN USE, NO CHANGE IN OCCUPANCY
4. ADD KITCHENETTE/GALLEY TO SPACE
5. NEW SPRINKLERS ADDED IN 2005 TO EXISTING BUILDING, CODE SUMMARY REFERENCED FOR AREA AND OCCUPANCY

CONTACT:

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #	E-MAIL
Architectural	Jenkins Peer Architects	Victor Jones	9507	(704) 940 6931	rhsin@jenkinspeer.com
Civil	N/A			( )	
Electrical	Mueller Associates, Inc.	Adam Fry	051207	(410) 646 4500	afry@muellerassoc.com
Fire Alarm	Mueller Associates, Inc.	Kenneth Rock	026375	(410) 646 4500	krock@muellerassoc.com
Plumbing	Mueller Associates, Inc.	Steven Gillis	030275	(410) 646 4500	sgillis@muellerassoc.com
Mechanical	Mueller Associates, Inc.	Steven Gillis	030275	(410) 646 4500	sgillis@muellerassoc.com
Sprinkler-Standpipe	Mueller Assoc. Inc.	Steven Gillis	030275	(410) 646 4500	sgillis@muellerassoc.com
Structural	N/A			( )	
Retaining Walls >5' High	N/A			( )	
Other	N/A			( )	

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

2018 NC CODE FOR: [ ] New Construction [ ] Addition [X] Renovation
[ ] 1st Time Interior Completion
[ ] Shell/Core
[ ] Phased Construction – Shell/Core
[ ] Renovation

2018 NC EXISTING BUILDING CODE: [ ] Prescriptive [ ] Repair [ ] Chapter 14
Alteration: [ ] Level I [X] Level II [ ] Level III
[ ] Historic Property [ ] Change of Use

CONSTRUCTED:(date) **1923** **ORIGINAL OCCUPANCY(S)** (Ch. 3): **SCHOOL**
RENOVATED: (date) **2005** **CURRENT OCCUPANCY(S)** (Ch. 3): **BUSINESS**
RISK CATEGORY (table 1604.5) **Current:** [ ] I [X] II [ ] III [ ] IV
Proposed: [ ] I [X] II [ ] III [ ] IV

2018 NC Administrative Code and Policies — Appendix B for Building

BASIC BUILDING DATA
Construction Type: (check all that apply) [ ] I-A [ ] I-B [ ] II-A [X] II-B [ ] III-A [ ] III-B [ ] IV [ ] V-A [ ] V-B
Sprinklers: [ ] No [ ] Partial [X] Yes [X] NFPA 13 [ ] NFPA 13R [ ] NFPA 13D
Standpipes: [X] No [ ] Yes Class [ ] I [ ] II [ ] III [ ] Wet [ ] Dry
Fire District: [X] No [ ] Yes (Primary) **Flood Hazard Area:** [ ] No [ ] Yes
Special Inspections Required: [X] No [ ] Yes

Gross Building Area:

FLOOR	*EXISTING (SQ FT)	NEW (SQ FT)	RENO/ALTER (SQ.FT)	SUB-TOTAL
2nd Floor	9,499		5,072	14,571
Mezzanine				
1st Floor	21,110	N/A	N/A	21,110
Basement				
TOTAL	30,609		5,072	35,681

*NO WORK IN THIS AREA

ALLOWABLE AREA
Primary Occupancy Classification: **SELECT ONE**
Assembly [ ] A-1 [ ] A-2 [ ] A-3 [ ] A-4 [ ] A-5
Business [X]
* Business - occupancy and area determined in 2005 project Code Summary for **New Sprinkler Addition – Old Main**
Educational [ ]
Factory [ ] F-1 Moderate [ ] F-2 Low
Hazardous [ ] H-1 Detonate [ ] H-2 Deflagrate [ ] H-3 Combust [ ] H-4 Health [ ] H-5 HPM
Institutional [ ] I-1 Condition [ ] 1 [ ] 2
[ ] 1-2 Condition [ ] 1 [ ] 2
[ ] 1-3 Condition [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5
[ ] 1-4
Mercantile [ ]
Residential [ ] R-1 [ ] R-2 [ ] R-3 [ ] R-4
Storage [ ] S-1 Moderate [ ] S-2 Low [ ] High-piled
[ ] Parking Garage [ ] Open [ ] Enclosed [ ] Repair Garage
Utility and Miscellaneous [ ]
Accessory Occupancy Classification(s): ____
Incidental Uses (Table 509): ____
Special Uses (Chapter 4 – List Code Sections) ____
Special Provisions: (Chapter 5 – List Code Sections): ____
Mixed Occupancy: [X] No [ ] Yes Separation: ____ Hr. Exception: ____
[ ] Non-Separated Use (508.3)
The required type of construction for the building shall be determined by applying the height and area limitations for each of the applicable occupancies to the entire building. The most restrictive type of construction, so determined, shall apply to the entire building.
[ ] Separated Use (508.4) -
See below for area calculations for each story, the area of the occupancy shall be such that the sum of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1.

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

2018 NC Administrative Code and Policies — Appendix B for Building

____ + ____ + …… = ____ ≤ 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	*B - Business	21,110	69,000		69,000
2	*B – Business	14,389	69,000		69,000

* Business - occupancy and area determined in 2005 project Code Summary for **New Sprinkler Addition – Old Main**
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 (TABLE 503)	SHOWN ON PLANS	CODE REFERENCE
Building Height in Feet (Table 504.3)	75'	28'	
Building Height in Stories (Table 504.4)	4	2	

1 Provide code reference if the "Show 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

2018 NC Administrative Code and Policies — Appendix B for Building

FIRE PROTECTION REQUIREMENTS

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

* Indicate section number permitting reduction
**Existing condition infill provided per UL

PERCENTAGE OF WALL OPENING CALCULATIONS
NO WORK ON EXTERIOR

FIRE SEPARATION DISTANCE (FEET FROM PERPERTY LINES	DEGREES OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)

2018 NC Administrative Code and Policies — Appendix B for Building

LIFE SAFETY SYSTEM REQUIREMENTS
Emergency Lighting: [ ] No [X] Yes
Exit Signs: [ ] No [X] Yes
Fire Alarm: [ ] No [X] Yes
Smoke Detection Systems: [X] No [ ] Yes [ ] Partial ____
Carbon Monoxide Detection: [X] No [ ] Yes

LIFE SAFETY PLAN REQUIREMENTS
Life Safety Plan Sheet #: **G201**
- [X] Fire and/or smoke rated wall locations (Chapter 7)
- [X] Assumed and real property line locations (if not on the site plan) *Located on G001*
- [ ] Exterior wall opening area with respect to distance to assumed property lines (705.8)
- [X] Occupancy types for each area as it relates to occupant load calculation (Table 1004.1.2)
- [X] Occupant loads for each area
- [X] Exit access travel distances (1017)
- [X] Common path of travel distances (1006.2.1 & 2006.3.2(1))
- [X] Dead end lengths (1020.4)
- [X] Clear exit widths for each exit door
- [X] Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.3)
- [X] 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 and supporting construction for a fire barrier/fire partition/smoke barrier.
- [ ] 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

Section/Table/Note	Title

ACCESSIBLE DWELLING UNITS
(SECTION 1107)
[[NOT APPLICABLE]]

TOTAL UNITS	ACCESSIBLE UNITS REQUIRED	ACCESSIBLE UNITS PROVIDED	TYPE A UNITS REQUIRED	TYPE A UNITS PROVIDED	TYPE B UNITS REQUIRED	TYPE B UNITS PROVIDED	TOTAL ACCESSIBLE UNITS PROVIDED

2018 NC Administrative Code and Policies — Appendix B for Building

ACCESSIBLE PARKING
(SECTION 1106)

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

PLUMBING FIXTURE REQUIREMENTS
(TABLE 2902.1)

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

PLUMBING FIXTURE COUNT

PER 2018 NC EXISTING BUILDING CODE 810:
OCCUPANT INCREASE IS <20% THEREFORE NO FIXTURE COUNT CHANGES REQUIRED

EXISTING OCCUPANT LOAD = 413
NEW OCCUPANT LOAD PER THIS RENOVATION = 441
PERCENTAGE INCREASE = 7%

SPECIAL APPROVALS
Special approval: (Local Jurisdiction, Department of Insurance, SCO, DPI, DHHS, ICC, etc., describe below)

N/A NO WORK AT EXISTING ENVELOPE

ENERGY SUMMARY
ENERGY REQUIREMENTS:
The following data shall be considered minimum and any special attribute required to meet the **North Carolina Energy Conservation 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: [X] No [ ] Yes (The remainder of this section is not applicable)
NCEBC 2018, Section 811 Level 2 Alternations are permitted without requirement to comply with the energy requirements of the IECC. The alterations shall conform to the energy requirements of this section and Section 708. We are not altering the building envelope, therefore not required to update the envelope.

Exempt Building: [ ] No [ ] Yes (Provide Code or Statutory reference): ____
Climate Zone: [ ] 3A [ ] 4A [ ] 5A
Method of Compliance: Energy Code [ ] Performance [ ] Prescriptive
ASHRAE 90.1 [ ] Performance [ ] Prescriptive
(If "Other" specify source here) ____

THERMAL ENVELOPE (Prescriptive method only)

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

Exterior Walls (each assembly)
Description of assembly: ____
U-Value of total assembly: ____
R-Value of insulation: ____
Openings (windows or doors with glazing)
U-Value of assembly: ____
Solar heat gain coefficient: ____
Projection factor: ____
Door R-Values: ____

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

Floors over unconditioned space (each assembly)
Description of assembly: ____
U-Value of total assembly: ____
R-Value of insulation: ____

Floors slab on grade
Description of assembly: ____
U-Value of total assembly: ____
R-Value of insulation: ____
Horizontal/Vertical requirement: ____
Slab Heated: ____

2018 NC Administrative Code and Policies — Appendix B for Building

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
STRUCTURAL DESIGN
(PROVIDE ON THE STRUCTURAL SHEETS IF APPLICABLE)
[[NOT APPLICABLE]]

DESIGN LOADS:
Importance Factors: Snow (I_S) ____ Seismic (I_E) ____
Live Loads: Roof ____ psf; Mezzanine ____ psf; Floor ____ psf
Ground Snow Load: ____ psf
Wind Load: Ultimate Wind Speed ____ mph (ASCE-7); Exposure Category ____

SEISMIC DESIGN CATEGORY: [ ] A [ ] B [X] C [ ] D
Provide the following Seismic Design Parameters:
Occupancy Category (Table 1604.5) [ ] I [ ] II [ ] III [ ] IV
Spectral Response Acceleration S_S ____ %g S_1 ____ %g
Site Classification (ASCE 7) [ ] A [ ] B [ ] C [ ] D [ ] E [ ] F
Data Source: [ ] Field Test [ ] Presumptive [ ] Historical Data
Basic structural system [ ] Bearing Wall [ ] Dual w/Special Moment Frame
[ ] Building Frame [ ] Dual w/Intermediate R/C or Special Steel
[ ] Moment Frame [ ] Inverted Pendulum
Analysis Procedure: [ ] Simplified [ ] Equivalent Lateral Force [ ] Dynamic
Architectural, Mechanical, Components anchored? [ ] Yes [ ] No

LATERAL DESIGN CONTROL: Earthquake [ ] Wind [ ]

SOIL BEARING CAPACITIES:
Field Test (provide copy of test report) ____ psf
Presumptive Bearing capacity ____ psf
Pile size, type, and capacity ____

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

Thermal Zone
winter dry bulb: 26° F
summer dry bulb: 93° F

Interior design conditions
winter dry bulb: 70° F
summer dry bulb: 75° F
relative humidity: 50%

Building heating load: Existing; approximately 1150 MBH; includes reheat for ventilation

Building cooling load: Existing; approximately 1310 MBH; includes dehumidification loads

Mechanical Spacing Conditioning System
Unitary
description of unit: Existing AHU-1 w/ Chilled and Heating Water Coil, serving a VAV system on the second floor . Unit equipped with VFD controls
heating efficiency: N/A; Heating Water Coil
cooling efficiency: N/A; Chilled Water Coil
size category of unit: N/A
Boiler
Size category. If oversized, state reason.: One Existing Boiler (approx 1150 MBH capacity) serves the entire building heating requirements, including new VAV ATUs with reheat coils fitted with 2-way modulating valves for serving the partial Level 2 renovation area
Chiller
Size category. If oversized, state reason.: One Existing Chiller (approx 100-tons) serves entire building cooling requirements, including the existing VAV AHU that serves the partial Level 2 renovation area.
List equipment efficiencies: N/A No new equipment provided under this project.

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

Method of Compliance: Energy Code: [X] Prescriptive [ ] Performance
ASHRAE 90.1: [ ] Prescriptive [ ] Performance

Lighting schedule (each fixture type) See Fixture Schedule on Drawing E201
lamp type required in fixture
number of lamps in fixture
ballast type used in the fixture
number of ballasts in fixture
total wattage per fixture
total interior wattage specified vs. allowed (whole building or space by space) Specified : 3693W vs Allowed: 4988W
total exterior wattage specified vs. allowed N/A

Additional Efficiency Package Options
(When using the 2018 NCECC; not required for ASHRAE 90.1)
- [ ] C406.2 More Efficient Mechanical Equipment
- [X] C406.3 Reduced Lighting Power Density
- [ ] C406.4 Enhanced Digital Lighting Controls
- [ ] C406.5 On-Site Renewable Energy
- [ ] C406.6 Dedicated Outdoor Air System
- [ ] C406.7 Reduced Energy Use in Service Water Heating

Jenkins • Peer Architects
112 South Tryon Street, Suite 1300
Charlotte, North Carolina 28284
(t) 704/372-6665

MUELLER ASSOCIATES, INC.
ENGINEER C-0979
1306 Concourse Dr #100,
Linthicum Heights, MD 21090
(t) 410/646-4500

1/10/2022

UNC PEMBROKE

UNC PEMBROKE AMERICAN INDIAN HERITAGE CENTER

SCO ID#: 21-23067-01A

TAG	DESCRIPTION	DATE

Project: 21PEM587
Drawn By: RS/ DJ
Checked By: RS/ JM
Date: 1/10/2022

CODE SUMMARY (APPENDIX B) & UL DETAILS

PROJECT NORTH — TRUE NORTH

BID DOCUMENTS

G-101

DIVISION 01 - GENERAL REQUIREMENTS

Summary (01 10 00)

- Old Main 2nd Floor Renovations will include 5,072 SF of interior office upfit. This includes demolition of existing interior spaces and providing new academic office space. Mechanical, Electrical and Fire protection will be updated throughout the upfit space.
- Contract type: Single Prime
- Contractor's Working Hours: 7am-5pm The University reserves the right to limit the Contractors' activities when they conflict with the University operations.
- Prior to initial occupation of the site, coordinate with PDC and check in at the PDC office.
- Utilities outages must be coordinated with PDC at least 48 hours prior to the period of the outage. For some critical circuits, longer lead times may be necessary.
- Parking and laydown area available per Attachment A. Plywood required as indicated to protect grass and landscape area.
- No sub-contractor shall use any facility beyond the limits of construction and restroom available on second floor. GC is responsible for maintaining and stocking restrooms for duration of construction and provide final cleaning before final turnover to UNCP.
- The GC will maintain safe pedestrian ways around the project site. All existing egress paths must be maintained by a clearly defined means of egress during the duration of the project.
- GC shall establish and maintain a functioning safety program including safety meetings and site inspections for the purpose of controlling unsafe acts and conditions at the work site.

Price and Payment Procedures (01 20 00)
See Supplementary General Conditions

Unit Prices (01 22 00)

- Unit Prices included on the Bid Form shall include full compensation for all required labor, products, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.
- Measurement methods delineated in the individual specification sections complement the criteria of this section. In the event of conflict, the requirements of the individual specification section govern.
- Take all measurements and compute quantities. Measurements and quantities will be verified by Architect.
- Assist by providing necessary equipment, workers, and survey personnel as required.
- Payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities of Work that is incorporated in or made necessary by the Work and accepted by the Architect, multiplied by the unit price.
  - Value of allowances in section 012100 shall be determined by the allowance quantity indicated multiplied by the associated unit price value provided by the contractor on the bid form.
- Payment will not be made for any of the following:
  - Products wasted or disposed of in a manner that is not acceptable.
  - Products determined as unacceptable before or after placement.
  - Products remaining on hand after completion of the Work.
  - Loading, hauling, and disposing of rejected Products.
- UNIT PRICES SCHEDULE
  - Unit Price No. 1: Exit Sign
    - Description: Wall-mounted exit sign fixture
    - Unit price includes fixture, 50 linear feet of conduit and conductor
    - Unit price is for electrical scope only
    - Unit price includes containment, material handling, transportation, disposal and Contractor overhead and profit.
    - Provide unit price per each
  - Unit Price No. 2: Fire Alarm Pull Station
    - Description: Wall-mounted pulls station
    - Unit price includes pull station device, 50 linear feet of conduit and conductor
    - Unit price includes containment, material handling, transportation, disposal and Contractor overhead and profit.
    - Provide unit price per each
  - Unit Price No. 3: Fire Alarm Horn/Strobe Device
    - Description: Wall-mounted horn/strobe
    - Unit price includes device, 50 linear feet of conduit and conductor
    - Unit price is for electrical scope only
    - Unit price includes containment, material handling, transportation, disposal and Contractor overhead and profit.
    - Provide unit price per each
  - Unit Price No. 4: Electrical Outlet
    - Description: Duplex receptacle device & cover plate, as specified
    - Unit price includes device, cover plate 50 linear feet of conduit and conductor
    - Unit price is for electrical scope only
    - Unit price includes containment, material handling, transportation, disposal and Contractor overhead and profit.
    - Provide unit price per each
  - Unit Price No. 5: Data outlet
    - Description: Single data jack device & cover plate, as specified
    - Unit price includes device, cover plate, 50 linear feet of conduit and cabling
    - Unit price is for electrical scope only
    - Unit price includes containment, material handling, transportation, disposal and Contractor overhead and profit.
    - Provide unit price per each
  - Unit Price No. 6: Concrete Moisture Remediation
    - Description: Topical treatment of concrete or gypsum topping necessary to correct relative humidity or PH levels for the installation of specified flooring products where specified testing indicates levels above specified requirements. Testing and provision of environmental conditions MUST be in place as required for testing results to be considered valid and allowance to be applicable for remediation.
    - Unit price includes containment, material handling, transportation, disposal and Contractor overhead and profit.
    - Provide unit price per 50 square feet of topical treatment
  - Unit Price No. 7: Fire Extinguisher Bracket
    - Description: Wall-mounted Extinguisher Bracket, as specified
    - Unit price includes blocking
    - Unit price includes containment, material handling, transportation, disposal and Contractor overhead and profit.
    - Provide unit price per each

Alternates (01 23 00)-

- SECTION INCLUDES:
  - Alternate submission procedures.
  - Documentation of changes to Contract Sum and Contract Time.
- RELATED REQUIREMENTS
  - Instructions to Bidders and General Conditions of the Contract (OC-15): Instructions for preparation of pricing for alternates.
  - Bid Forms: List of alternates on the Bid Form.
- ACCEPTANCE OF ALTERNATES
  - Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option. Accepted alternates will be identified in the Owner-Contractor Agreement.
  - Coordinate related work and modify surrounding work to integrate the Work of each alternate
  - Proposed cost of each Alternate is turnkey and includes all material, labor, overhead, profit, freight etc. No additional costs will be accepted for any accepted alternate other than the cost included on the bid form.
- SCHEDULE OF ALTERNATES
  - Alternate No. 1 (Owner Preferred): CPT-1:Provide UNCP standard carpet: Tarkett, UNCP Facilities Tile, Reverse, 111478512-20, with Omnicoat Technology, CPT-2 provide Tarkett Tile with Omnicoat Technology, color to be selected from standard tile colors contact info: Lisa Ellis- 919-606-6639, in lieu of other approved equals per specification section 09 68 13
  - Alternate No. 2 (Owner Preferred): Provide owner preferred pricing for door hardware and locksets as follows:
    - Best Cores
  - Alternate No. 3 Provide Wood Curved feature and desk elements in lieu of base bid aluminum. Provide credit or additional cost as applicable.
  - Alternate No. 4(Owner Preferred): Provide the following LVT flooring in lieu of approved equals:
    - LVT-1 Shaw Cove- Plaster (27111) 9"x48"
    - LVT-2 Shaw Cove – Silt (27504) 9"x48"
    - LVT-3 Shaw COREtec Cover – Secure (07068) 7"X 48"

Submittal Procedures (01 33 00)

- Package electronic files for each submittal individually. Each submittal shall include the contractor's transmittal and shall be packaged as a single file. Submittals received with separate or detached files will be returned without review. Bundle all required submittals from each individual specification section together as a single package with bookmarks. Provide separate identifier numbers for each individual element of each bundled package (i.e., identify product data, shop drawings etc. as separate sub-items within a specification section submittal package. Incomplete packages or packages missing required submittals shall be returned without review. Transmit each submittal using a transmittal form. Architect will return submittals, without review, received from sources other than CM.
- **DO NOT SUBMIT MSDS SHEETS TO THE ARCHITECT. SUBMITTALS CONTAINING MSDS SHEETS WILL BE DISCARDED WITHOUT REVIEW. PROVIDE MSDS ONLY FOR CLOSEOUT DOCUMENTS AND OWNER'S INFORMATION.**

Quality Requirements (01 40 00)

- General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or products that are similar to those indicated for this Project in material, design, and extent.
- Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.
  - NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
  - NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

Indoor Air Quality Controls (01 57 21)

- HVAC Equipment Protection: Prevent deposition of dust and other particulates in HVAC ducts and equipment.
  - Cleaning of ductwork is not contemplated under this Contract: Contractor shall bear the cost of cleaning required due to failure to protect ducts and equipment from construction dust.
- HVAC Protection: Identify temporary ventilation measures during construction, protection of installed equipment and ducts and filtration measures.
- Use temporary ventilation units during construction
  - If HVAC equipment must be operated during construction, returns must be closed or equipped with filtration media rating MERV 8 or better.
  - At completion of construction and cleaning and before occupancy, all filtration media must be replaced with final set of filtration rating MERV 13.

Waste Management Requirements (01 74 19)

- Minimize trash/waste disposal in landfills; reuse, salvage, or recycle as much waste as economically feasible.

Closeout Procedures (01 77 00)

- Advise Owner of pending insurance changeover requirements.
- Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
- Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
- Prepare and submit Project As-built Documents, operation and maintenance manuals, Final Completion construction photographs, damage or settlement surveys, property surveys, and similar final record information.
- Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
- Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
- Complete startup testing of systems.
- Submit test/adjustment/balance records.
  - All building control work must be complete prior to performing Test and Balance.
  - Control work and Test and Balance must be complete prior to start of commissioning.
- Terminate and remove temporary facilities from Project site, along with construction tools, and similar elements.
- Advise Owner of changeover in heat and other utilities.
- Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
- Complete final cleaning requirements, including touchup painting.
- Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- Submit a final Application for Payment according to "Price and Payment Procedures."
- Submit certified copy of Architect's Pre-Final inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect.
- Submit evidence of final, continuing insurance coverage complying with insurance requirements.

DIVISION 02 – EXISTING CONDITIONS

- Notice of Differing Conditions Submit a written notification if, during the work of demolition and cutting, conditions are discovered which significantly vary from those shown on the drawings. Do not commence work until approval of Architect.
- Hazardous materials may be encountered during demolition operations including asbestos; comply with applicable regulations, laws and ordinances concerning removal, handling and protection against exposure or environmental pollution.
- Known Asbestos-
  - All mastic under non-asbestos 12x12 floor tile is throughout the building 3-5% asbestos
  - All existing 12x12 floor tile and associated mastic shall not be disturbed.

DIVISION 03 – CONCRETE(None)

DIVISION 04 – MASONRY(None)
DIVISION 05 – METALS

Miscellaneous Metal Fabrications (05 50 00)

- Work of this section includes all labor, materials, equipment and services necessary to complete the miscellaneous metal work as indicated on the drawings and/or specified herein, including but not limited to, the following:
  - Light steel framing and supports, not included as part of work of other trades
  - Miscellaneous steel trim, corner guards angle guards and channels
  - Countertop supports

Related Sections:

- Painting- Section 09 90 00

Quality Assurance:

- Field Measurements: Take field Measurements prior to preparation of shop drawings and fabrication, where possible. Do not delay job progress; allow for trimming and fitting where taking field measurement before fabrication might delay work.

Reference Standards: The work is subject to requirements of applicable portions of the following standards:

- "Manual of Steel Construction," American Institute of Steel Construction.
- AWS D1-1 "Structural Welding Code," American Welding Society.
- SSPC SP-3 "Surface Preparation Specification No. 3, Power Tool Cleaning," Steel Structures Painting Council
- "Handbook on Bolt, Nut and Revet Standard," Industrial Fasteners Institute.

Submittals:

- Manufacturer's Literature: Submit manufacturer's specifications, load tables, dimension diagrams, anchor details and installation instructions for products to be used in the fabrication of miscellaneous metal work, including paint products.
- Shop Drawings: Shop drawings for the fabrication and erection of all assemblies of miscellaneous work which are not completely shown by the manufacturer's data sheets. Include plans and elevations at not less than 1-inch to 1-foot-0-inch scale, and include details of sections and connections at not less than 3-inch to 1-foot-0inch scale. Show anchorage and accessory items.
- Welding shall be indicated on shop drawings using AWS symbols showing length, size and spacing (if not continuous). Auxiliary views shall be shown to clarify all welding. Notes such as 1/4"-inch weld, weld and tack weld are not acceptable.

PRODUCTS:
Materials

- Metals
  - Steel plates, shapes, and bars: ASTM A 36
  - Steel Tubing: Cold formed, ASTM A 500 or hot rolled ASTM A 501
  - Steel Sheet: Hot rolled ASTM A 570
  - Galvanized Structural Steel sheet: ASTM A 924. Coating designation G90.
  - Steel Pipe: ASTM A 53, schedule 40 unless noted otherwise.
- Fasteners
  - General: Provide zinc-coated fasteners for exterior use or where built into exterior walls. Select fasteners for the type, grade and class required.
  - Bolts and Nuts: Regular hexagon head type, ASTM a 307, Grade A
  - Anchor Bolts: ASTM F 1554, Grade 36
  - Lag Bolts: ASME B 18.2.1
  - Machine Screws: ASME B18.6.3
  - Plain Washers: Round, carbon steel, ASME B18.22.1
  - Masonry Anchorage Devices: Expansion shields, FS FF-S-325
  - Toggle Bolts: Tumble-wing type, FS FF-B-588, type, class and style required
  - Lock Washers: Helical spring type carbon steel, ASME B12.21.1

- Shop Paint: Shop prime all non-galvanized miscellaneous metal items using Series 88 Azeron Primer mad by Tnemech, ICI Devoe "Rust Guard" quick dry alkyd shop coat No. 41403, or "Interlac 393" by International Protection Coatings.
  - If steel is to receive high performance coating as noted in Section 09 90 00, shop prime using primer note in Section 09 90 00.

Countertop Supports: Steel framing as indicated or required to support countertops. Provide support to withstand a concentrated load of not less than three hundred (300) lbs. applied at any point with a deflection not to exceed L/240 for the length of the countertop.

Decorative Wood Look Aluminum System (05 70 05)

- Summary
  - Extent of Decorative Wood Look Aluminum System design intent is as shown on drawings and schedules. Full design of system, including but not limited to the structural support shall be provided by manufacturer's designated structural engineer. System is to be independently supported from the building structure.
- Submittals
  - Manufacturer's Literature and Data:
    - Product Data: Submit manufacturer's technical data and brochures for each type of beam size required.
  - Shop Drawings:
    - Shop drawings shall show thickness, alloys, dimensions, sizes, joints, finishes, attachments and relationship of adjoining work.
    - Coordination Drawings: Floor plans and Reflected ceiling plans, drawn to scale, showing curved wood panels and the following items:
      - Soffits
      - Floor Pattern
      - Relationship to HM frame and glass
    - Include Design engineer's stamp or seal on each sheet of shop drawings and structural analysis data signed and sealed by the engineer responsible for their preparation. Engineer shall be licensed in the State of North Carolina
  - Samples:
    - Samples shall include a 12" x 12" piece of each type of metal and finish specified.
    - Samples shall include samples of all support materials to be used.
- Delivery, Storage and Handling
  - All materials shall be protected during fabrication, shipment, site storage and erection to prevent damage to the finished work form other trades. Materials to be stored in fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination and other causes.
- Products
  - Manufacturers: Subject to compliance requirements, provide Decorative Wood Look Aluminum the following:
    - Southeastern Architectural Systems (SEAS) – Charlotte, NC (Basis of Design) Drew Rochester (704)-661-8765 or Mac Winget (704)516-6599 www.seas-tr.com
    - Speedwell Machine Works – Gastonia, NC
    - Cardinal Fabrication, Charlotte NC
- Product Description: Curved Decorated Wood Look Beams
  - Material: Aluminum (architectural grade)
  - Finish to be determined by architect to match control sample provided
  - Tube Thickness: 1/8"
  - Tube Sizes: As indicated on drawings
- Installation
  - Aluminum Beams: Install components in accordance with approved Shop Drawings and Manufacturer's recommended installation instructions.
  - Beams shall be erected plumb, level, square, true to line, securely anchored and in proper alignment and relationship to work of other trades.
  - Beams shall be inspected before installation to be free of dents, scratches and other defects prior to installation.
- Cleaning and Protection
  - Removal of protective covering shall occur immediately after installation
  - Protection of Fins from damage by other trades after installation to be provided by
  - the General Contractor.
  - Clean all surfaces following installation.

DIVISION 06 – WOODS, PLASTICS & COMPOSITES

Carpentry (06 20 00)

- Standards: Comply with PS 20 for lumber and PS 1 for plywood and the APA.
- Blocking: utility grade Coastal Douglas Fir or Southern Pine, free from knots, shakes, rot or other defects, straight, square edges and straight grain, air seasoned with maximum moisture content of nineteen (19) percent. Wood shall be S4S, S-Dry, complying with PS-20.
- For plastic laminate countertops or vanities provide 3/4" thick B-B EXT-APA plywood, fire retardant treated as specified herein, or "Duraflake FR" fire retardant composite board with hardwood edge, density of forty-five (45) lbs./cubic foot, made by Willamette Industries, Inc.
- Plywood and rough carpentry for telephone and electric closets, provide 3/4" thick C-D EXT-APA plywood, fire retardant treated as specified herein.
- All interior wood material specified herein shall be fire retardant treated to comply with the AWPA standard U1 to achieve a flame spread rating of not more than 25 (UL Class "FR-S") when tested in accordance with UL Test 723 or ASTM E 84. The fire-retardant chemicals used to treat the lumber must comply with FR-1 of AWPA Standard P49 and be free of halogens, sulfates and ammonium phosphate.
  - After treatment, kiln dry to a moisture content of fifteen (15) percent; if wood is to be painted or finished, kiln dry to a moisture content of twelve (12) percent. Treatment shall be equal to "Dricon" made by Arch Wood Protection Inc. or approved equal. Provide UL approved identification on treated materials.
- Treated wood which is cut or otherwise damaged shall be further treated in accordance with the AWPA Standard M-4.

Cabinetry and Millwork (06 20 23)

- Submittals
  - Shop Drawings: Before any cabinetry and millwork are fabricated and delivered to the job site, submit complete Shop Drawings to the Architect for approval.
  - Quality Certification: Submit fabricator's certification stating that the fabricated work meets the woodwork grade specified and that the wood used is fire retardant treated in accordance with these specifications.
  - Samples: Submit samples of all proposed materials to the Architect for the selection of actual colors and patterns.
- General
  - Fabricate all cabinetry and millwork to the "Premium" grade standards of the AWI, Section 10.
  - Wood core to receive plastic laminate finish shall be fire retardant treated in accordance with the requirements of Section 062000. Particleboard or plywood core conforming to AWI standard noted herein; particleboard shall be equal to "Duraflake FR," 45 lbs. per cubic foot density, made by Willamette Industries, or approved equal.
  - Face construction of cabinets shall be "Flush Overlay."
  - Provide 3/4" thick doors, drawer fronts and fixed panels (including thickness of plastic) except where required to be thicker by Standards; and provide flush units.
  - Provide dust panels of 1/4" thick plywood or tempered hardboard above compartment and drawers, except where located directly below countertops.
  - Exposed Edges: Plastic laminate matching exposed panel surfaces. Ease exposed edge of overlap sheet.
- Plastic Laminate
  - Plastic Laminate for Horizontal Surfaces: 0.050" thick, General Purpose Type (high pressure).
  - Plastic Laminate for External Vertical Surfaces: 0.028" thick, General Purpose Type (high pressure).
  - Plastic Laminate for Postforming: 0.042" thick, Postforming (high pressure).
  - Plastic Laminate for Cabinet Linings: 0.020" thick, Cabinet Liner (high pressure).
  - Plastic Laminate for Concealed Panel Backing: 0.020" thick, Backer Type (high pressure).
  - Plastic Laminate Colors and Patterns: As selected by the Architect, manufactured by Nevamar, WilsonArt, Formica, or approved equal.
- Cabinet Hardware
  - General: Provide complete cabinet hardware and accessory material associated with cabinetry and millwork and as required for installation and operation of cabinets. Hardware design shall be as selected by the Architect.
  - Hardware Standards: Comply with ANSI A156.9 "American National Standard for Cabinet Hardware." Quality Level: Type 2 (Institutional).
  - Cabinet Door Hardware: Provide hinges, catches and pulls to properly accommodate each door size and style.
  - Sliding Door Hardware: Provide sets including pulls, to properly accommodate each pair of sliding doors.
  - Drawer Hardware: Provide slides and pulls to properly accommodate each drawer size and style. Equip each drawer with side mounted, full extension, ball bearing, nylon roller drawer slides.
  - Locks: Provide standard pin-type or disc-type (5 pins or discs) tumbler locks, keyed individually except as otherwise indicated.
  - Shelf Supports: Where shelving is indicated as "adjustable," provide slotted type needed to properly support the shelves with uniform forty (40) lbs. per square foot loading.
  - Exposed Hardware Finish: Provide exposed hardware with BHMA Code 626 satin chrome plate finish (US26D).
- Plastic Laminate Countertops
  - Grade: Same as AWI grade required for cabinet work; plastic laminate finish.
  - Construction
    - Provide back-splash and end-splash, where detailed; top-mounted square butt joint, fully covered with matching plastic laminate, eased edges.
    - Exposed Counter Edges: Plastic laminate matching surface, except as otherwise indicated. Provide edge detail as indicated in drawings.
    - Cut openings for equipment to be installed. Comply with equipment manufacturer's requirements, but provide internal corners of 1/8" minimum radius. Smooth saw cut and ease edges.
    - Seal cut edges of counter at openings for sinks and other "wet" equipment, using waterproofing compound recommended by plastic manufacturer and compatible with laminating adhesive.

Penetration Firestopping (07 84 13)

- All penetrations through fire barriers to be in compliance with ASTM E 814, ASTM E 119, UL2079, ASTM E 1399, and ASTM G 21

Joint Systems (07 92 00)

- Interior Sealant: Provide a one (1) part acrylic-based sealant conforming to ASTM C 834, equal to "AC-20+ Silicone" made by Pecora, Masterseal NP 520 by BASF or equal made by Tremco.
- Pre-Compressed Joint Filler: Provide "Seismic Colorseal" as manufactured by Emseal Inc. or equal by Sealtite, WillSeal color as selected by the Owner.
- Colors: Colors selected from manufacturer's standard selection.

DIVISION 08 – OPENINGS

Hollow Metal Frames (08 11 11)

Jenkins • Peer *Architects*
112 South Tryon Street, Suite 1300
Charlotte, North Carolina 28284
(t) 704/372-6665

MUELLER ASSOCIATES, INC.
ENGINEER C-0979
1306 Concourse Dr #100,
Linthicum Heights, MD 21090
(t) 410/646-4500

1/10/2022

UNC PEMBROKE

UNC PEMBROKE AMERICAN INDIAN HERITAGE CENTER

SCO ID#: 21-23067-01A

TAG	DESCRIPTION	DATE

Project: 21PEM587
Drawn By: RS/ DJ
Checked By: RH/ JM
Date: 1/10/2022

SPECIFICATIONS

PROJECT NORTH
TRUE NORTH

BID DOCUMENTS

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- Testing Agency Qualifications: An independent agency qualified according to ASTM E 329 for testing indicated, as documented according to ASTM E 548.

- SUBMITTALS
  - Product Data: Include construction details, material descriptions, core descriptions, label compliance, compliance with standards referenced herein, sound and fire- resistance ratings, and finishes for each type of door and frame specified.
  - Shop Drawings: Show fabrication and installation of doors and frames. Include details of each frame type, elevations of door design types, conditions at openings, details of construction, reinforcement for surface applied hardware, dimensions of profiles and hardware preparation, location and installation requirements of door and frame hardware and reinforcements, and details of joints and connections. Show anchorage and accessories.
  - Door Schedule: Submit schedule of doors and frames using same reference numbers for details and openings as those on Drawings.
    - Coordinate glazing frames and stops with glass and glazing requirements.
- QUALITY ASSURANCE
  - Manufacturer Qualifications: A firm experienced in manufacturing custom steel doors and frames similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
  - Testing Agency Qualifications: An independent agency qualified according to ASTM E 329 for testing indicated, as documented according to ASTM E 548.
  - Source Limitations: Obtain custom steel doors and frames through one source from a single manufacturer.
- DELIVERY, STORAGE, AND HANDLING
  - Deliver doors and frames palleted, wrapped, or crated to provide protection during transit and Project site storage. Do not use nonvented plastic.
  - Inspect doors and frames, on delivery, for damage. Minor damage may be repaired provided refinished items match new work and are approved by Architect; otherwise, remove and replace damaged items as directed.
  - Store doors and frames under cover at building site. Conform to the requirements of ANSI A 250-11-2001 for site storage unless more stringent requirements are noted herein. Place units on minimum 4-inch-high wood blocking. Avoid using nonvented plastic or canvas shelters that could create a humidity chamber. If wrappers on doors become wet, remove cartons immediately. Provide minimum 1/4-inch spaces between stacked doors to permit air circulation.
- FABRICATION – GENERAL
  - Fabricate hollow metal units to be rigid, neat in appearance and free from defects, warp or buckle. Accurately form metal to required sizes and profiles. Weld exposed joints continuously, grind, dress, and make smooth, flush and invisible. Metallic filler to conceal manufacturing defects is not acceptable.
  - Unless otherwise indicated, provide countersunk flat Phillips or Jackson heads for exposed screws and bolts.
  - Prepare hollow metal units to receive finish hardware, including cutouts, reinforcing, drilling and tapping in accordance with Finish Hardware Schedule and templates provided by hardware suppliers. Comply with applicable requirements of ANSI A115 "Specifications for Door and Frame Preparation for Hardware."
  - Locate finish hardware as shown on final shop drawings in accordance with locations noted herein.

- Manufacturers
  - Provide products manufactured by Steelcraft, Curries, Ceco Door Products, Fleming or approved equal meeting these specifications.
- Interior Frames
  - Frames:
    - Materials: Metallic-coated, steel sheet, minimum thickness of 0.053 inch.
    - Construction: Full profile welded.
  - Exposed Finish: Prime.

  - Testing Agency Qualifications: An independent agency qualified according to ASTM E 329 for testing indicated, as documented according to ASTM E 548.

- Installation
  - General: Provide doors and frames of sizes, thicknesses, and designs indicated. Install steel doors and frames plumb, rigid, properly aligned, and securely fastened in place; comply with Drawings and manufacturer's written instructions.
  - Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.
    - Install frames in accordance with ANSI 250.11-20001, Recommended Erection Instructions for Steel Frames, unless more stringent requirements are specified herein.
    - Install frames with removable glazing stops located on secure side of opening.
    - Remove temporary braces necessary for installation only after frames have been properly set and secured.
    - Check plumb, squareness, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.
  - Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor and secure with post-installed expansion anchors.
    - Floor anchors may be set with powder-actuated fasteners instead of post-installed expansion anchors if so indicated and approved on Shop Drawings.
  - Metal-Stud Partitions: Solidly pack mineral-fiber insulation behind frames conforming to the requirements of Section 072100, "Thermal Insulation."
  - In-Place Gypsum Board Partitions: Secure frames in place with post-installed expansion anchors through floor anchors at each jamb. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.
  - Ceiling Struts: Extend struts vertically from top of frame at each jamb to supporting construction above, unless frame is anchored to masonry or to other structural support at each jamb. Bend top of struts to provide flush contact for securing to supporting construction above. Provide adjustable wedged or bolted anchorage to frame jamb members.
  - Installation Tolerances: Adjust steel door frames for squareness, alignment, twist, and plumb to the tolerance given in HMMA 841 of ANSI/NAAMM, current edition.
  - Glazing: Comply with installation requirements in Division 8 Section "Glass and Glazing" and with standard steel door and frame manufacturer's written instructions.
    - Secure stops with countersunk flat- or oval-head machine screws spaced uniformly not more than 9 inches o.c., and not more than 2 inches o.c. from each corner.
  - Adjustments: Check and readjust operating finish hardware items just prior to final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including frames which are warped, bowed or otherwise unacceptable.

Wood Doors (08 14 16)

- Wood doors: Comply with AWI's "Architectural Woodwork Quality Standards Illustrated"; latest edition "Premium" grade and WDMA "Extra Heavy Duty" Performance Level.
- Finish- Custom color stain to on Birch Veneer to match paint color of Hollow Metal Frames.
- SUBMITTALS
  - Product Data: Submit door manufacturer's product data, specifications and installation instructions for each type of wood door.
    - Include details of core and edge construction and trim for openings.
    - Include factory finish specifications.
    - Include certifications to show compliance with specifications.
    - Include certification to show compliance with AWI and WDMA requirements specified herein.
  - Shop Drawings: Submit shop drawings indicating location and size of each door, elevation of each kind of door, details of construction, location and extent of hardware blocking, fire ratings, requirements for finishing and other pertinent data.
    - Include requirements for veneer matching.
  - Submit the following
    - Factory finishes applied to actual door face materials, approximately 8 by 10 inches for each material and finish. For each wood species and transparent finish, provide set of three samples showing typical range of color and grain to be expected in the finished work. SOLID CORE FLUSH WOOD DOORS: Provide AWI PC-5 Premium Grade hot pressed 5-ply solid core particleboard doors, 1-3/4" thick, conforming to standards specified herein. The following manufacturers are acceptable: Masonite Architectural, Inc., VT Industries, or approved equal.
    - Doors with custom color transparent finish to match Hollow Metal Frame paint color. Veneer to conform to AWI, "AA" grade veneer with 3" wide leaf. Minimum veneer thickness shall be not less than 1/50" after sanding.
    - Where glass lites are noted, factory cut openings. Trim openings with solid hardwood moldings of same type of wood as face veneer.
    - Transparent Finish: Finish in the shop with clear satin catalyzed polyurethane finish conforming to AWI System "Catalyzed Polyurethane Transparent".

Access Panels and Frames (08 31 16)

- Work of this Section includes all labor, materials equipment and services necessary to complete the access doors as indicated on the drawings and/or specified herein, including, but not limited to the following:
  - Farmless recessed panel access doors at drywall ceiling and walls.
  - Framed flush panel access doors at masonry walls.
  - Provide access doors and frames for access from occupied spaces to the following, where indicated or required and as directed by the trades of Division 23 and 26.
    - All shutoff or balancing valves
    - Fire dampers, as required.
    - Points of duct access
    - Pull boxes
    - Controls of mechanical and electrical items
    - Masonry shafts for pipes and conduits, as required
    - Pipe spaces, if required.
    - Inlets of fans.
    - Equipment not otherwise accessible
- Submittals
  - Before any materials of this Section are delivered to the job site, submit complete manufacturer's literature to the Architect. Submit plans and schedules showing size and location of each and every access door Architect's acceptance prior to installation.
- Materials and Fabrication
  - Provide access door assembly manufactured by Milcor Inc, or equal made by Nystrom Inc., Karp Associates, Inc. or approved equal. Assembly shall be an integral unit complete with all parts and ready for installation.
  - Fabricate units of continuous welded steel construction. Grind welds smooth and flush with adjacent surfaces. Provide attachment devices and fasteners of the type required to secure access panes lot the types of supports shown.
  - Frameless Units for Drywall Surfaces (recessed Panel Units); Provide access doors without exposed frames for the drywall adhered to recessed panel.
  - Panels: Fabricate from fourteen (14) gauge steel, with concealed spring hinges set to open 175 degrees. Provide removable pin type hinges of the quantity require to support the access panel sized used in the work. Finish with Manufacturer's factory applied banked enamel prime coat applied over phosphate protective coating on steel.

  - Locking Devices; For non-rated access doors, provide flush, screwdriver operated cam locks of number required to hold door in flush, smooth plane when closed.
- Coordination
  - Coordinate all work with the mechanical trades to insure proper locations and in a timely manner to permit orderly progress of the total work.
  - Set frames accurately in position and securely attach to support with face panels plumb or level in relation to adjacent finish surfaces.
  - Adjust hardware and panels after installation for proper operation.
    Remove and replace panels or fames which are warped, bowed or otherwise damaged.

Door Hardware (08 71 00)

- Section includes:
  - Mechanical and electrified door hardware for:
    - Swinging doors.
  - Electronic access control system components, including:
    - Electronic access control devices.
  - The intent of the hardware specification is to specify the hardware for interior and exterior doors, and to establish a type, continuity, and standard of quality. However, it is the door hardware supplier's responsibility to thoroughly review existing conditions, schedules, specifications, drawings, and other Contract Documents to verify the suitability of the hardware specified.

- References
  - DHI - Door and Hardware Institute
    - Sequence and Format for the Hardware Schedule
    - Recommended Locations for Builders Hardware
    - Key Systems and Nomenclature
  - ANSI - American National Standards Institute
    - ANSI/BHMA A156.1 - A156.29, and ANSI/BHMA A156.31 - Standards for Hardware and Specialties
- Submittals
  - General:
    - Highlight, encircle, or otherwise specifically identify on submittals deviations from Contract Documents, issues of incompatibility or other issues which may detrimentally affect the Work.
    - Prior to forwarding submittal, comply with procedures for verifying existing door and frame compatibility for new hardware, as specified in PART 3, "EXAMINATION" article, herein.
    - .
  - Action Submittals:
    - Product Data: Technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.
    - Riser and Wiring Diagrams: After final approval of hardware schedule, submit details of electrified door hardware, indicating:
      - Wiring Diagrams: For power, signal, and control wiring and including:
        - Details of interface of electrified door hardware and building safety and security systems.
        - Schematic diagram of systems that interface with electrified door hardware.
        - Point-to-point wiring.
        - Risers.
    - Samples for Verification: If requested by Architect, submit production sample or sample installations of each type of exposed hardware unit in finish indicated, and tagged with full description for coordination with schedule.
    - Samples will be returned to supplier. Units that are acceptable to Architect may, after final check of operations, be incorporated into Work, within limitations of key coordination requirements.
- Door Hardware Schedule: Submit schedule with hardware sets in vertical format as illustrated by Sequence of Format for the Hardware Schedule as published by the Door and Hardware Institute. Indicate complete designations of each item required for each door or opening, include:
  - Door Index; include door number, heading number, and Architects hardware set number.
  - Opening Lock Function Spreadsheet: List locking device and function for each opening.
  - Quantity, type, style, function, size, and finish of each hardware item.
  - Name and manufacturer of each item.
  - Fastenings and other pertinent information.
  - Location of each hardware set cross-referenced to indications on Drawings.
  - Explanation of all abbreviations, symbols, and codes contained in schedule.
  - Mounting locations for hardware.
  - Door and frame sizes and materials.
  - Name and phone number for local manufacturer's representative for each product.
  - Operational Description of openings with any electrified hardware (locks, exits, electromagnetic locks, electric strikes, automatic operators, door position switches, magnetic holders or closer/holder units, and access control components). Operational description should include operational descriptions for: egress, ingress (access), and fire/smoke alarm connections.
    - Submittal Sequence: Submit door hardware schedule concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate fabrication of other work that is critical in Project construction schedule.
- Key Schedule:
  - After Keying Conference, provide keying schedule listing levels of keying as well as explanation of key system's function, key symbols used and door numbers controlled.
  - Use ANSI/BHMA A156.28 "Recommended Practices for Keying Systems" as guideline for nomenclature, definitions, and approach for selecting optimal keying system.
  - Provide 3 copies of keying schedule for review prepared and detailed in accordance with referenced DHI publication. Include schematic keying diagram and index each key to unique door designations.
  - Index keying schedule by door number, keyset, hardware heading number, cross keying instructions, and special key stamping instructions.
  - Provide one complete bitting list of key cuts and one key system schematic illustrating system usage and expansion.
    - Forward bitting list, key cuts and key system schematic directly to Owner, by means as directed by Owner.
  - Prepare key schedule by or under supervision of supplier, detailing Owner's final keying instructions for locks.

- Templates: After final approval of hardware schedule, provide templates for doors, frames and other work specified to be factory or shop prepared for door hardware installation.
- Informational Submittals:

  - Qualification Data: For Supplier, Installer and Architectural Hardware Consultant.
  - Product data for electrified door hardware:
    - Certify that door hardware approved for use on types and sizes of labeled fire-rated doors complies with listed fire-rated door assemblies.
  - Warranty: Special warranty specified in this Section.
- Closeout Submittals:
  - Operations and Maintenance Data: Provide in accordance with Division 01 and include:
    - Complete information on care, maintenance, and adjustment; data on repair and replacement parts, and information on preservation of finishes.
    - Catalog pages for each product.
    - Factory order acknowledgement numbers (for warranty and service)
    - Name, address, and phone number of local representatives for each manufacturer.
    - Parts list for each product.
    - Final approved hardware schedule, edited to reflect conditions as-installed.
    - Final keying schedule
    - Copies of floor plans with keying nomenclature
    - Copy of warranties including appropriate reference numbers for manufacturers to identify project.

- QUALITY ASSURANCE
  - Supplier Qualifications and Responsibilities: Recognized architectural hardware supplier with record of successful in-service performance for supplying door hardware similar in quantity, type, and quality to that indicated for this Project and that provides certified Architectural Hardware Consultant (AHC) or Door Hardware Consultant (DHC) available to Owner, Architect, and Contractor, at reasonable times during the Work for consultation.
    - Warehousing Facilities: In Project's vicinity.
    - Scheduling Responsibility: Preparation of door hardware and keying schedules.
    - Engineering Responsibility: Preparation of data for electrified door hardware, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.
    - Coordination Responsibility: Assist in coordinating installation of electronic security hardware with Architect and electrical engineers and provide installation and technical data to Architect and other related subcontractors.
      - Upon completion of electronic security hardware installation, inspect and verify that all components are working properly.
    -
  - Architectural Hardware Consultant Qualifications: Person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and meets these requirements:
    - For door hardware, DHI-certified, Architectural Hardware Consultant (AHC) or Door Hardware Consultant (DHC).
    - Can provide installation and technical data to Architect and other related subcontractors.
  - Can inspect and verify components are in working order upon completion of installation.Single Source Responsibility: Obtain each type of door hardware from single manufacturer.
  - Electrified Door Hardware: Listed and labeled as defined in NFPA 70, Article 100, by testing agency acceptable to authorities having jurisdiction.
  - Accessibility Requirements: For door hardware on doors in an accessible route, comply with governing accessibility regulations cited in "REFERENCES" article, herein.
- Keying Conference
  - Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including:
    - Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
    - Preliminary key system schematic diagram.
    - Requirements for key control system.
    - Requirements for access control.
    - Address for delivery of keys.
- Pre-installation Conference
  - Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
  - Inspect and discuss preparatory work performed by other trades.
  - Inspect and discuss electrical roughing-in for electrified door hardware.
  - Review sequence of operation for each type of electrified door hardware.
  - Review required testing, inspecting, and certifying procedures.
- Coordination Conferences:
  - Installation Coordination Conference: Prior to hardware installation, schedule and hold meeting to review questions or concerns related to proper installation and adjustment of door hardware.
  - Electrified Hardware Coordination Conference: Prior to ordering electrified hardware, schedule and hold meeting to coordinate door hardware with security, electrical, doors and frames, and other related suppliers.

- Delivery, Storage, And Handling
  - Inventory door hardware on receipt and provide secure lock-up for hardware delivered to Project site.
  - Tag each item or package separately with identification coordinated with final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.
    - Deliver each article of hardware in manufacturer's original packaging.
  - Project Conditions:
    - Maintain manufacturer-recommended environmental conditions throughout storage and installation periods.
    - Provide secure lock-up for door hardware delivered to Project. Control handling and installation of hardware items so that completion of Work will not be delayed by hardware losses both before and after installation.
  - Protection and Damage:
    - Promptly replace products damaged during shipping.
    - Handle hardware in manner to avoid damage, marring, or scratching. Correct, replace or repair products damaged during Work.
    - Protect products against malfunction due to paint, solvent, cleanser, or any chemical agent.
    - Deliver keys and permanent cores to Owner by registered mail or overnight package service.

- Coordination
  - Installation Templates: Distribute for doors, frames, and other work specified to be factory or shop prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.
  - Security: Coordinate installation of door hardware, and keying, with Owner's security consultant.
  - Existing Openings: Where existing doors, frames and/or hardware are to remain, field verify existing functions, conditions and preparations and coordinate to suit opening conditions and to provide proper door operation.

  - Electrical System Roughing-In: Coordinate layout and installation of electrified door hardware with connections to power supplies and building safety and security systems.

- Warranty
  - Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.
    - Warranty Period: Beginning from date of Substantial Completion, for durations indicated.
      - Closers:
        - Mechanical: 30 years.
      - Locksets:
        - Mechanical: 3 years.
      - Continuous Hinges: Lifetime warranty.
      - Key Blanks: Lifetime

- Warranty does not cover damage or faulty operation due to improper installation, improper use or abuse.Maintenance
  - Maintenance Tools: Furnish complete set of special tools required for maintenance and adjustment of hardware, including changing of cylinders.

- Manufacturers
  - Approval of manufacturers and/or products other than those listed as "Scheduled Manufacturer" or "Acceptable Manufacturers" in the individual article for the product category shall be in accordance with QUALITY ASSURANCE article, herein.
  - Approval of products from manufacturers indicated in "Acceptable Manufacturers" is contingent upon those products providing all functions and features and meeting all requirements of scheduled manufacturer's product.
  Where specified hardware is not adaptable to finished shape or size of members requiring hardware, furnish suitable types having same operation and quality as type specified, subject to Architect's approval.

- Materials
  - Fasteners
    - Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation.
    - Furnish screws for installation with each hardware item. Finish exposed (exposed under any condition) screws to match hardware finish, or, if exposed in surfaces of other work, to match finish of this other work including prepared for paint surfaces to receive painted finish.
    - Provide concealed fasteners for hardware units exposed when door is closed except when no standard units of type specified are available with concealed fasteners. Do not use thru-bolts for installation where bolt head or nut on opposite face is exposed in other work unless thru-bolts are required to fasten hardware securely. Review door specification and advise Architect if thru-bolts are required.
    - Install hardware with fasteners provided by hardware manufacturer.
  - Provide screws, bolts, expansion shields, drop plates and other devices necessary for hardware installation.
    - Where fasteners are exposed to view: Finish to match adjacent door hardware material.

- HINGES
  - Manufacturers and Products:
    - Scheduled Manufacturer and Product: Ives 5BB series.
    - Acceptable Manufacturers and Products: Hager BB series, Stanley FBB Series.
  - Requirements:

Jenkins • Peer *Architects*
112 South Tryon Street, Suite 1300
Charlotte, North Carolina 28284
(t) 704/372-6665

MUELLER ASSOCIATES, INC.
ENGINEER C-0979
1306 Concourse Dr #100,
Linthicum Heights, MD 21090
(t) 410/646-4500

1/10/2022

UNC PEMBROKE

UNC PEMBROKE AMERICAN INDIAN HERITAGE CENTER

SCO ID#: 21-23067-01A

TAG	DESCRIPTION	DATE

Project: 21PEM587
Drawn By: RS/ DJ
Checked By: RH/ JM
Date: 1/10/2022

SPECIFICATIONS

PROJECT NORTH
TRUE NORTH

BID DOCUMENTS

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- Provide hinges conforming to ANSI/BHMA A156.1.
- Provide hinges as specified in hardware sets.
- Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:
  - Steel Hinges: Steel pins
  - Non-Ferrous Hinges: Stainless steel pins
  - Out-Swinging Interior Lockable Doors: Non-removable pins
  - Interior Non-lockable Doors: Non-rising pins
- Width of hinges: 4-1/2 inches (114 mm) at 1-3/4 inch (44 mm) thick doors, and 5 inches (127 mm) at 2 inches (51 mm) or thicker doors. Adjust hinge width as required for door, frame, and wall conditions to allow proper degree of opening.

- Flush Bolts
  - Manufacturers:
    - Scheduled Manufacturer: Ives.
    - Acceptable Manufacturers: Burns, ABH.
  - Requirements:
    - Provide automatic, constant latching, and manual flush bolts with forged bronze or stainless-steel face plates, extruded brass levers, and with wrought brass guides and strikes. Provide 12 inch (305 mm) steel or brass rods at doors up to 90 inches (2286 mm) in height. For doors over 90 inches (2286 mm) in height increase top rods by 6 inches (152 mm) for each additional 6 inches (152 mm) of door height. Provide dust-proof strikes at each bottom flush bolt.

- Coordinators
  - Manufacturers:
    - Scheduled Manufacturer: Ives.
    - Acceptable Manufacturers: Burns, ABH.
  - Requirements:
    - Where pairs of doors are equipped with automatic flush bolts, an astragal, or other hardware that requires synchronized closing of the doors, provide bar-type coordinating device, surface applied to underside of stop at frame head.
  - Provide filler bar of correct length for unit to span entire width of opening, and appropriate brackets for parallel arm door closers, surface vertical rod exit device strikes or other stop mounted hardware. Factory-prepared coordinators for vertical rod devices as specified.

- MORTISE LOCKS
  - Manufacturers and Products:
    - Scheduled Manufacturer and Product: Schlage L9000 series.
    - Acceptable Manufacturers and Products: Best 45H series, Sargent 8200 series.
  - Requirements:
    - Provide mortise locks conforming to ANSI/BHMA A156.13 Series 1000, Grade 1, and UL Listed for 3-hour fire doors.
    - Provide locks manufactured from heavy gauge steel, containing components of steel with a zinc dichromate plating for corrosion resistance.
    - Provide lock case that is multi-function and field reversible for handing without opening case. Cylinders: Refer to "KEYING" article, herein.
    - Provide locks with standard 2-3/4 inches (70 mm) backset with full 3/4 inch (19 mm) throw stainless steel mechanical anti-friction latch bolt. Provide deadbolt with full 1 inch (25 mm) throw, constructed of stainless steel.
    - Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.
    - Provide electrified options as scheduled in the hardware sets. Where scheduled, provide switches and sensors integrated into the locks and latches.

    - Lever Trim: Solid brass, bronze, or stainless steel, cast or forged in design specified, with wrought roses and external lever spring cages. Provide thru-bolted levers with 2-piece spindles.
      - Lever Design: Schlage 17A..

- Cylinders
  - Manufacturers:
    - Scheduled Manufacturer: Best.
  - Requirements:
    - Provide interchangeable cylinders/cores to match Owner's existing "Best" key system, compliant with ANSI/BHMA A156.5; latest revision; cylinder face finished to match lockset, manufacturer's series as indicated.
  - Construction Keying:
    - Replaceable Construction Cores.
      - Provide temporary construction cores replaceable by permanent cores, furnished in accordance with the following requirements.
        - 3 construction control keys
        - 6 construction change (day) keys.
      - Owner or Owner's Representative will replace temporary construction cores with permanent cores.

- Keying
  - Provide cylinders/cores keyed into Owner's existing factory registered keying system.
  - Comply with guidelines in ANSI/BHMA A156.28, incorporating decisions made at keying conference.
  - Requirements:
    - Provide permanent cylinders/cores keyed by the manufacturer according to the following key system.
      - Master Keying system as directed by the Owner.
    - Forward bitting list and keys separately from cylinders, by means as directed by Owner. Failure to comply with forwarding requirements will be cause for replacement of cylinders/cores involved at no additional cost to Owner.
    - Provide keys with the following features:
      - Material: Nickel silver; minimum thickness of .107-inch (2.3mm)
      - Patent Protection: Keys and blanks protected by one or more utility patent(s).
    - Identification:
      - Mark permanent cylinders/cores and keys with applicable blind code per DHI publication "Keying Systems and Nomenclature" for identification. Do not provide blind code marks with actual key cuts.
      - Identification stamping provisions must be approved by the Architect and Owner.
      - Stamp cylinders/cores and keys with Owner's unique key system facility code as established by the manufacturer; key symbol and embossed or stamped with "DO NOT DUPLICATE" along with the "PATENTED" or patent number to enforce the patent protection.
      - Failure to comply with stamping requirements will be cause for replacement of keys involved at no additional cost to Owner.
      - Forward permanent cylinders/cores to Owner, separately from keys, by means as directed by Owner.
    - Quantity: Furnish in the following quantities.
      - Change (Day) Keys: 3 per cylinder/core.
      - Permanent Control Keys: 3.
      - Master Keys: 6.

- Magnetic Locks
  - Magnetic Locks – Surface Type:
    - Manufacturers and Products:
      - Scheduled Manufacturer and Product: Schlage M490 series.
      - Acceptable Manufacturers and Products: Dynalock 3000 series, Security Door Controls 1510 series.
    - Requirements:
      - Provide magnetic locks certified to meet ANSI/BHMA A156.23 classification criteria including minimum holding force of 1500 LBF. Provide magnetic locks equipped with SPDT Magnetic Bond Sensing device, where specified, to monitor whether sufficient magnetic holding force exists to ensure adequate locking and SPDT Door Status Monitor device, where specified, to monitor whether door is open or closed. Provide bond sensors fully concealed within electromagnet to resist tampering or damage.
      - Provide magnetic locks certified to meet UL10C, and UL1034 for burglary-resistant electronic locking mechanisms.
      - Provide fasteners, mounting brackets, and spacer bars required for mounting and details.
      - Provide power supply recommended and approved by manufacturer of magnetic locks.
      - Where magnetic locks are scheduled, provide complete assemblies of controls, switches, power supplies, relays, and parts/material recommended and approved by manufacturer of magnetic locks for each individual leaf. Switches control both doors simultaneously at pairs. Locate controls as directed by Architect.

- Passive Infrared Motion Sensors
  - Manufacturers and Products:
    - Scheduled Manufacturer and Product: Schlage SCAN II Series.
    - Acceptable Manufacturers and Products: RCI 915 Series, Security Door Controls MD-31D Series.
  - Requirements:
    - Provide motion sensors as specified in hardware groups.

- Power Supplies
  - Manufacturers and Products:
    - Scheduled Manufacturer and Product: Schlage/Von Duprin PS900 series.
    - Acceptable Manufacturers and Products: Dynalock 5000 series, Security Door Controls 600 series.
  - Requirements:
    - Provide power supplies approved by manufacturer of supplied electrified hardware.
    - Provide appropriate quantity of power supplies necessary for proper operation of electrified locking components as recommended by manufacturer of electrified locking components with consideration for each electrified component using power supply, location of power supply, and approved wiring diagrams. Locate power supplies as directed by Architect.
    - Provide regulated and filtered 24 VDC power supply, and UL class 2 listed.
    - Provide power supplies with the following features:
      - 12/24 VDC Output, field selectable.
      - Class 2 Rated power limited output.
      - Universal 120-240 VAC input.
      - Low voltage DC, regulated and filtered.
      - Polarized connector for distribution boards.
      - Fused primary input.
      - AC input and DC output monitoring circuit w/LED indicators.
      - Cover mounted AC Input indication.
      - Tested and certified to meet UL294.
      - NEMA 1 enclosure.
      - Hinged cover w/lock down screws.

      - High voltage protective cover.

- Door Closers
  - Manufacturers and Products:
    - Scheduled Manufacturer and Product: LCN 4010/4110/4020 series.
    - Acceptable Manufacturers and Products: Corbin-Russwin DC8000 series, Sargent 281 series.
  - Requirements:
    - Provide door closers conforming to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory. Certify surface mounted mechanical closers to meet fifteen million (15,000,000) full load cycles. ISO 9000 certify closers. Stamp units with date of manufacture code.
    - Provide door closers with fully hydraulic, full rack and pinion action with high strength cast iron cylinder, and full complement bearings at shaft.
    - Cylinder Body: 1-1/2-inch (38 mm) diameter with 11/16-inch (17 mm) diameter double heat-treated pinion journal.
    - Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.
    - Spring Power: Continuously adjustable over full range of closer sizes, and providing reduced opening force as required by accessibility codes and standards.
    - Hydraulic Regulation: By tamper-proof, non-critical valves, with separate adjustment for latch speed, general speed, and backcheck.
    - Provide closers with solid forged steel main arms and factory assembled heavy-duty forged forearms for parallel arm closers. When closers are parallel arm mounted, provide closers which mount within 6-inch (152 mm) top rail without use of mounting plate so that closer is not visible through vision panel from pull side.
    - Pressure Relief Valve (PRV) Technology: Not permitted.
    - Finish for Closer Cylinders, Arms, Adapter Plates, and Metal Covers: Powder coating finish which has been certified to exceed 100 hours salt spray testing as described in ANSI/BHMA Standard A156.4 and ASTM B117, or has special rust inhibitor (SRI).
    - Provide special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.

- Protection Plates
  - Manufacturers:
    - Scheduled Manufacturer: Ives.
    - Acceptable Manufacturers: Burns, Hiawatha.
  - Requirements:
    - Provide kick plates minimum of 0.050 inch (1 mm) thick, beveled four edges as scheduled. Furnish with sheet metal or wood screws, finished to match plates.
    - Sizes of plates:
      - Kick Plates: 10 inches (254 mm) high by 2 inches (51 mm) less width of door on single doors, 1 inch (25 mm) less width of door on pairs

- Door Stops and Holders
  - Manufacturers:
    - Scheduled Manufacturer: Ives.
    - Acceptable Manufacturers: Burns, ABH.
      - Provide door stops at each door leaf:
        - As specified in hardware sets.

- Thresholds, Seals, Door Sweeps, Automatic Door Bottoms, and Gasketing
  - Manufacturers:
    - Scheduled Manufacturer: Zero International.
    - Acceptable Manufacturers: National Guard, Reese.
  - Requirements:
    - Provide thresholds, weather-stripping (including door sweeps, seals, and astragals) and gasketing systems (including smoke, sound, and light) as specified and per architectural details. Match finish of other items.
    - Smoke- and Draft-Control Door Assemblies: Where smoke- and draft-control door assemblies are required, provide door hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105.

- Silencers
  - Manufacturers:
    - Scheduled Manufacturer: Ives.
    - Acceptable Manufacturers: Steelcraft, Republic.
  - Requirements:
    - Provide "push-in" type silencers for hollow metal or wood frames.
    - Provide one silencer per 30 inches (762 mm) of height on each single frame, and two for each pair frame.
    - Omit where gasketing is specified.

- Coat Hooks
  - Manufacturers:
    - Scheduled Manufacturer: Ives.
    - Acceptable Manufacturers: Burns, Trimco.
  - Provide coat hooks as specified.

- FINISHES
  - Finish: BHMA 626/652 (US26D); except:
    - Protection Plates: BHMA 630 (US32D)
    - Door Closers: Powder Coat to Match
    - Wall Stops: BHMA 630 (US32D)
    - Door hardware to match frame as noted in Door schedule.

- Examination
  - Prior to installation of hardware, examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance.
  - Field verify existing doors and frames receiving new hardware and existing conditions receiving new openings. Verify that new hardware is compatible with existing door and frame preparation and existing conditions.
  - Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.
  - Proceed with installation only after unsatisfactory conditions have been corrected.

- Installation
  - Mount door hardware units at heights to comply with the following, unless otherwise indicated or required to comply with governing regulations.
    - Standard Steel Doors and Frames: ANSI/SDI A250.8.
    - Custom Steel Doors and Frames: HMMA 831.
    - Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
  - Install each hardware item in compliance with manufacturer's instructions and recommendations, using only fasteners provided by manufacturer.

  - Do not install surface mounted items until finishes have been completed on substrate. Protect all installed hardware during painting.
  - Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate as necessary for proper installation and operation.
  - Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
  - Install operating parts so they move freely and smoothly without binding, sticking, or excessive clearance.
  - Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than quantity recommended by manufacturer for application indicated or one hinge for every 30 inches (750 mm) of door height, whichever is more stringent.
  - Lock Cylinders: Install construction cores to secure building and areas during construction period.
    - Replace construction cores with permanent cores as indicated in keying section.
  - Door Closers: Mount closers on room side of corridor doors, inside of exterior doors, and stair side of stairway doors from corridors. Mount closers so they are not visible in corridors, lobbies and other public spaces unless approved by Architect.
  - Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they may impede traffic or present tripping hazard.
  - Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.

- Field Quality Control
  - Engage qualified manufacturer trained representative to perform inspections and to prepare inspection reports.
    - Representative will inspect door hardware and state in each report whether installed work complies with or deviates from requirements, including whether door hardware is properly installed and adjusted.

- Adjusting
  - Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.
    - Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.
  - Occupancy Adjustment: Approximately three to six months after date of Substantial Completion, Installer's Architectural Hardware Consultant must examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors and door hardware.

- Cleaning And Protection
  - Clean adjacent surfaces soiled by door hardware installation.
  - Clean operating items as necessary to restore proper function and finish.
  - Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

- Door Hardware Schedule
  - Hardware items are referenced in the following hardware. Refer to the above-specifications for special features, options, cylinders/keying, and other requirements.
  - Hardware Sets:

HARDWARE GROUP NO. 01
Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
8	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	MAGNETIC LOCK	M492P ATS/LED-2 12/24 VDC	628	SCE
2	EA	PUSH PLATE	8200 4" X 16"	630	IVE
2	EA	LONG DOOR PULL	9266F 18" l	630-316	IVE
2	EA	SURFACE CLOSER	4111 SCUSH	689	LCN
2	EA	MEETING STILE	34AA	AA	ZER
1	EA	PUSH BUTTON	621RDEX 12/24 VDC	630	SCE
1	EA	MOTION SENSOR	SCANII	WHT	SCE
1	EA	POWER SUPPLY	PS902 900-FA 900-KL 900-BBK 120/240 VAC		VON
1	SET	WIRING DIAGRAMS	DOOR ELEVATION AND POINT-TO-POINT		SCE
1		CARD READER BY OTHERS			

OPERATIONAL DESCRIPTION: DURING BUSINESS HOURS, DOORS CLOSED AND UNLOCKED. FREE ACCESS/EGRESS BY PUSH PLATES OR PULLS. AFTER HOURS, DOORS CLOSED AND LOCKED BY MAGNETIC LOCK. AUTHORIZED ACCESS BY VALID CREDENTIAL, WHICH UNLOCKS MAGNETIC LOCKS, ALLOWING DOORS TO BE PULLED OPEN. FREE EGRESS BY MOTION SENSOR AND AUXILIARY EXIT PUSH BUTTON, WHICH CUT POWER TO LOCKS, ALLOWING DOORS TO BE PUSHED OPEN. CONNNECTION TO FIRE ALARM FOR IMMEDIATE EGRESS IN CASE OF FIRE OR LOSS OF POWER.

HARDWARE GROUP NO. 02
Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	OFFICE/ENTRY LOCK	L9050HD 17A 09-544	626	SCH
1	EA	PERM. CYLINDER CORE	AS REQUIRED	626	BES
1	EA	WALL STOP	WS406/407CVX	630	IVE
1	EA	COAT AND HAT HOOK	507	626	IVE

OMIT COAT & HAT HOOK @ DOOR 244.

HARDWARE GROUP NO. 03
Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1SC 4.5	652	IVE
1	EA	PASSAGE SET	L9010 17A	626	SCH
1	EA	OH STOP	100S	630	GLY
1	EA	GASKETING	488SBK PSA	BK	ZER

HARDWARE GROUP NO. 04
Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	CLASSROOM LOCK	L9070HD 17A	626	SCH
1	EA	PERM. CYLINDER CORE	AS REQUIRED	626	BES
1	EA	SURFACE CLOSER	4011	689	LCN
1	EA	WALL STOP	WS406/407CVX	630	IVE
1	EA	GASKETING	488SBK PSA	BK	ZER

HARDWARE GROUP NO. 05
Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	STOREROOM LOCK	L9080HD 17A	626	SCH
1	EA	PERM. CYLINDER CORE	AS REQUIRED	626	BES
1	EA	WALL STOP	WS406/407CVX	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE GROUP NO. 08
Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
1	EA	STOREROOM LOCK	L9080HD 17A	626	SCH
1	EA	PERM. CYLINDER CORE	AS REQUIRED	626	BES
1	EA	WALL STOP	WS406/407CVX	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE GROUP NO. 09
Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	STOREROOM LOCK	L9080HD 17A	626	SCH
1	EA	PERM. CYLINDER CORE	AS REQUIRED	626	BES
1	EA	OH STOP	450S	630	GLY
3	EA	SILENCER	SR64	GRY	IVE

Jenkins • Peer *Architects*
112 South Tryon Street, Suite 1300
Charlotte, North Carolina 28284
(t) 704/372-6665

MUELLER ASSOCIATES, INC.
ENGINEER C-0979
1306 Concourse Dr #100,
Linthicum Heights, MD 21090
(t) 410/646-4500

1/10/2022

UNC PEMBROKE

UNC PEMBROKE AMERICAN INDIAN HERITAGE CENTER

SCO ID#: 21-23067-01A

TAG	DESCRIPTION	DATE

Project: 21PEM587
Drawn By: RS/ DJ
Checked By: RH/ JM
Date: 1/10/2022

SPECIFICATIONS

PROJECT NORTH
TRUE NORTH

BID DOCUMENTS

G-104

D C B A

5 4 3 2 1

HARDWARE GROUP NO. 10- NOT USED

HARDWARE GROUP NO. 11

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
6	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
1	SET	CONST LATCHING BOLT	FB61P	630	IVE
1	EA	DUST PROOF STRIKE	DP1	626	IVE
1	EA	CLASSROOM LOCK	L9070HD 17A	626	SCH
1	EA	PERM. CYLINDER CORE	AS REQUIRED	626	BES
1	EA	COORDINATOR	COR X FL	US26D	IVE
2	EA	SURFACE CLOSER	4111 EDA	689	LCN
2	EA	WALL STOP/HOLDER	WS40	626	IVE
1	EA	MEETING STILE	383AA	AA	ZER
2	EA	SILENCER	SR64	GRY	IVE

HARDWARE GROUP NO. 12

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	CLASSROOM LOCK	L9070HD 17A	626	SCH
1	EA	PERM. CYLINDER CORE	AS REQUIRED	626	BES
1	EA	OH STOP	100S	630	GLY
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE GROUP NO. 13

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	CLASSROOM LOCK	L9070HD 17A	626	SCH
1	EA	PERM. CYLINDER CORE	AS REQUIRED	626	BES
1	EA	SURFACE CLOSER	4111 CUSH	689	LCN
1	EA	GASKETING	488SBK PSA	BK	ZER

END OF SECTION

Glazing (08 80 00)

- Select minimum glass thicknesses to comply with ASTM E 1300, according to the following requirements:
  - Specified Design Wind Loads: 30 psf or greater if required by Code.
- Probability of Breakage for Vertical Glazing:
  - 8 lites per 1000 for lites set vertically or not more than 15 degrees off vertical and under wind action.
  - 1 lite per 1000 for lites installed 15 degrees from the vertical land and under wind action.
  - Load Duration: 60 seconds or less.
- Maximum Lateral Deflection: For glass supported on all four edges, provide thickness required that limits center deflection at design wind pressure to 1/100 times the short side length or 0.5", whichever is less.
- Thermal Movements: Provide glazing that allows for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures acting on glass framing members and glazing components. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
  - Temperature Change (Range): 120 deg. F ambient; 180 deg F, material surfaces.
- Glass units shall be annealed, heat strengthened, fully tempered or laminated where required to meet wind and/or snow loads and safety glazing requirements, as shown, specified or recommended by the glass fabricator and as required by the prevailing Building Code.
- SUBMITTALS
  - Initial Selection Samples: Submit samples of each glass and glazing material showing complete range of colors, textures, and finishes available for each material used.
    - Submit complete range of samples of translucent privacy film showing variations of patterns and opacity achieved.
  - Verification Samples: Submit representative samples of each glass and glazing material that is to be exposed in completed work. Show full color ranges and finish variations expected. Provide glass samples having minimum size of 144 sq. in. and 6 in. long samples of sealants and glazing materials; all samples shall bear the name of the manufacturer, brand name, thickness, and quality.
- Clear Float Glass: ASTM C 1036, Type I (Transparent, Flat), Class 1 (Clear), Quality q3, minimum 1/4" thick.
- Clear Tempered Glass: ASTM C 1048, Condition A (Uncoated), Type I (Transparent, Flat), Class 1 (Clear), Quality q3, Kind FT, minimum 1/4" thick. Tempered glass must be certified by SGCC to meet applicable standards. Tempered glass shall also conform to the following:
  - Length and Width: For 2.9 mm to 6.0 mm; +/-1.6 mm.
  - Diagonal: +/- 3.0 mm.
  - Edgework: Belt seaming or diamond wheels. 1.5 mm seam of upper and lower glass edges. No sharp edges.
  - Corners: No more than 3.0 mm from square.
  - Float Glass Defects: Must meet the requirements of ASTM C 1036. The most common defects are scratches, stones gaseous bubbles and edge chips. Tables in the glass standards have limits for size/quantity of defects.
  - Tempered glass shall have a minimum surface compression of 10,000 psi.
  - Tempered glass to be heat-treated by horizontal (roller hearth) process with inherent roller- wave distortion parallel to the bottom edge of the glass when installed.
- Flatness Tolerances
  - Roller-Wave or Ripple: The deviation from flatness at any peak shall be targeted not exceed 0.003" as measured per peak to valley for 1/4" (6mm) thick glass.
  - Bow and Warp: The bow and warp tolerances shall not exceed 1/32" per linear foot.
  - Fully tempered glass shall be heat soaked to EN 14179-1:2005-European Heat Soaking Standard.

DIVISION 09 – FINISHES
Gypsum Board (09 29 00)

- System Design Load
  - Provide standard drywall wall assemblies designed and tested by manufacturer to withstand a lateral load of 5 lbs. per sq. ft. for the maximum wall height required, and with deflection limited to L/240 of partition height.
    - Drywall assemblies with tile finish shall have a deflection limit of L/360.
  - Provide drywall ceiling assemblies designed, fabricated and installed to have a deflection not to exceed L/360.
- Fire-Resistance Rating: Where gypsum drywall with fire resistance ratings are indicated, provide materials and installations which are identical with those of applicable assemblies tested per ASTM E 119 by fire testing laboratories, or to design designations in UL "Fire Resistance Directory" or in listing of other testing agencies acceptable to authorities having jurisdiction, and compliant with UL Test #2079; criteria for cycle movement for all field height wall sections requiring allowance for vertical deflection within framing details.
- Installer: Firm with not less than 5 years of successful experience in the installation of specified materials.
- Code-Compliance Certification of Studs and Tracks: Provide documentation that framing members are certified according to the product-certification program of the Steel Framing Industry Association (SFIA) or be a part of a similar organization that provides verifiable code compliance program.
- Job Mock-Up
  - At a suitable location, where directed by the Architect, lay up a portion of a finished wall and ceiling demonstrating the quality of work, including finishing, to be obtained under this Section. Omit drywall boards in locations as directed by the Architect to show stud spacing and attachments; after acceptance, complete assembly.
  - Adjust the finishing techniques as required to achieve the finish required by the Architect as described in this Section of these specifications.
  - Upon approval of the mock-up, the mock-up may be left in place as a portion of the finished work of this Section.
  - All drywall work shall be equal in quality to approved mock-up.
- Manufacturers
  - Acceptable Manufacturers for Gypsum Drywall Panels and Accessories: U.S. Gypsum Co., Georgia Pacific, CertainTeed Corporation, Continental Building Products, or National Gypsum Co.
  - Acceptable Manufacturers for Metal Supports of Drywall Assemblies: provide products manufactured by ClarkDietrich, Super Stud Building Products, Marino/Ware, or approved equal.
- Metal Supports
  - Metal Floor and Ceiling Runners
    - Drywall Track: Formed from 0.0312 inch (20 U.S. Std. gauge) (unless otherwise noted) cold formed steel, width to suit shaped metal studs. Use 20 ga. top runners with 1-1/4" minimum flanges.
    - Deflection track or head of wall connections at rated partitions shall conform to UL #2079 for cycle movement. Provide positive mechanical connection of framing to structure, allowing for vertical movement within connections. Minimum of 0.0312 (20 ga.) cold formed steel for clips, 25 ga. cold formed steel for deflection track.
    - Product: ClarkDietrich; [BlazeFrame DSL] [MaxTrak] Slotted Deflection Track As manufactured by the Steel Network, VertiClip or VertiTrack or equal made by Metal-Lite Inc.
    - FireTrak (including stud clips) by FireTrakCorp. or equal made by Metal-Lite Inc.
  - Metal Studs, Framing and Furring
    - C-Shaped Studs: Channel type with holes for passage of conduit formed from minimum 0.0312 inch (20 U.S. Std. gauge) (unless heavier gauge is required to meet deflection limits) cold formed steel, width as shown on drawings.
    - Furring Channels: Hat shaped, formed from galvanized steel, 25 U.S. Std. gauge.
      - Product: ClarkDietrich; Furring Channel, or comparable product.
    - "C-H," "CT," or "I" Type Stud: 1-1/2" x 2-1/2", 4" or 6" wide (to suit detail) galvanized steel. Use for shaft wall construction; gauge and size as required to meet deflection limits given herein.
      - Product: ClarkDietrich; CT Stud, or a comparable product.
    - Continuous 16-gauge x 8" wide steel wall plate screwed to studs as required for support of railings, toilet partitions and other items supported on drywall partitions and walls.
  - Suspended Ceiling and Fascia Supports
    - Main Runners: 1-1/2" steel channels, cold rolled at 0.475 lbs. per ft., rust-inhibitive paint finish.
    - Furring Members: Screw-type hat-shaped furring channels of 25 ga. zinc-coated steel; comply with ASTM C 645.
    - Hangers: Galvanized, 1" x 3/16" flat steel slats capable of supporting 5x calculated load supported.
    - Hanger Anchorages: Provide inserts, clips, bolts, screws and other devices applicable to the required method of structural anchorage for ceiling hangers. Size devices for 5x calculated load supported.
    - Furring Anchorages: 16 ga. galvanized wire ties, manufacturer's standard clips, bolts or screws as recommended by furring manufacturer.
- Gypsum Wallboard Types
- Gypsum Wallboard: 1/2" thick and 5/8" thick as indicated on drawings, "Sheetrock" by USG, "Gold Bond" by National Gypsum, or "Regular Gypsum" by CertainTeed Corp., 48" wide, in maximum lengths available to minimize end-to-end butt joints.
- Fire-Rated Gypsum Wallboard: 1/2" thick and 5/8" thick as indicated on drawings, "Sheetrock Firecode C" by USG, "Firecheck Type C" by Lafarge/Continental, "Gold Bond Fireshield" by National Gypsum, or "Type C" and "Type X" by CertainTeed Corp., 48" wide, in maximum lengths available to minimize end-to-end butt joints.
- Moisture/Mold-Resistant Gypsum Wallboard at locations listed below, unless otherwise shown on drawings: 1/2" thick and 5/8" thick as indicated on drawings, "Mold Tough" or "Mold Tough FR" by U.S. Gypsum, "DensArmor Plus" by Georgia Pacific, "Mold Defense" and/or "Mold Defense Type X" by Lafarge/Continental, or "Gold Bond EXP Interior Extreme Gypsum Board" by National Gypsum, 48" wide, in maximum lengths available to minimize end-to-end butt joints. Board must have a rating of 10 per ASTM D 3273 with a core that meets ASTM C 1396, Section 6 or ASTM C 1658.
  - Walls and ceilings of spaces containing condensers, water tanks, water pumps and pressure reduction valves.
  - All perimeter walls and wet shafts.
- ACCESSORIES
- Acoustical Insulation: Paper-less, non-combustible, semi-rigid mineral fiber mat, 2" thick, in walls (unless otherwise indicated), 3 lb./cu. ft. maximum density; Thermafiber LLC "Thermafiber," or approved equal.
- Fasteners for Wallboard: USG Brand Screws; Type S Bugle Head for fastening wallboard to lighter gauge interior metal framing (up to 20 ga.). Type S-12 Bugle Head for fastening wallboard to heavier gauge interior metal framing (20 ga. to 12 ga.); Type S and Type S-12 Pan Head for attaching metal studs to door frames and runners; and Type G Bugle Head for fastening wallboard to wallboard. Lengths specified below under "Part 3 - Execution" Articles and as recommended by drywall manufacturer.
  - For Portland cement base boards, fasteners shall be equal to Durock Steel Screws by U.S. Gypsum.
- Laminating Adhesive: "Sheetrock Brand Joint Compound."
- Metal Trim - Corner Beads: For 90-degree External Corners - ClarkDietrich; 103 Deluxe Cornerbead or "Dur-A-Bead" No. 103, 26 U.S. Std. ga. galvanized steel, 1-1/4" x 1-1/4", for 90-degree external corners.
- Metal Trim - Edge Beads: "Sheetrock Brand Paper Faced Metal Bead and Trim."
- Partition/Concrete Ceiling Trim: Trim-Tex Super Seal Tear Away or approved equal.
- Metal Trim Treatment Materials and Joint Treatment Materials for Gypsum Drywall Boards: Paper tape for joint reinforcing; Setting Type (Durabond 90) or Lightweight Setting Type Joint Compound for taping and topping; and Ready Mix Compound for finishing.
  - For mold-resistant drywall, water resistant drywall, and tile backer board, use glass mesh tape with setting joint compound that is rated 10 when tested in accordance with ASTM D 3273 and evaluated in accordance with ASTM D 3274. Acceptable joint compound is "Rapid Set One Pass" made by CTS Cement Manufacturing Corp. or "Rapid Joint" manufactured by Lafarge North America or approved equal meeting standards noted herein.
- Control Joints: ClarkDietrich; #093 Control Joint or No. 0.093, USG.
- Acoustical Sealant: USG "Acoustical Sealant" or "Tremco Acoustical Caulking" of Tremco Mfg. Co., Masterseal NP520 by BASF or approved equal.
- Neoprene Gaskets: Conform to ASTM D 1056.
- Protective Coating: All cold-formed steel members shall have coating conforming to AISI S220; ASTM A 653, G60 or coating with equivalent corrosion resistance of ASTM A653/A653M, G60. Galvannealed products are not acceptable.

- General Installation Requirements
  - General
    - Install drywall work in accordance with drywall manufacturer's printed instructions and as indicated on drawings and specified herein.
    - All metal framing for drywall partitions shall extend from floor to underside of structural deck above. Provide for vertical deflection with positive mechanical connections of framing members to structure.
    - Provide concealed reinforcement, 16 ga. thick by eight (8) inches wide or as detailed or as recommended by manufacturer, for attachment of railings, toilet partitions, and other items to be supported on the partitions which cannot be attached to the metal framing members. Concealed reinforcement shall span between metal studs and be attached thereto using two (2) self-tapping pan head screws at each stud.
      - Back of drywall shall be scored or notched to prevent bulging out where reinforcement plate occurs.
    - Fire-Rated Assemblies: Install fire-rated assemblies in accordance with requirements of authorities having jurisdiction, Underwriters' Laboratories and test results obtained and published by the drywall manufacturer, for the fire-rated drywall assembly types indicated on the drawings.
  - Furred Walls and Partitions
    - Use specified metal furring channels. Run metal furring channel framing members vertically, space sixteen (16) inches o.c. maximum. Fasten furring channels to concrete or masonry surfaces with power-driven fasteners or concrete stub nails spaced sixteen (16) inches o.c. maximum through alternate wing flanges (staggered) of furring channel. Furring channels shall be shimmed as necessary to provide a plumb and level backing for wallboard. At inside of exterior walls, an asphalt felt protection strip shall be installed between each furring channel and the wall. Furring channel and splices shall be provided by nesting channels at least eight (8) inches and securely anchoring to concrete or masonry with two (2) fasteners in each wing.
    - Wallboard Installation: Same as specified under "Metal Stud Partitions."
  - Metal Stud Partitions
    - Unless otherwise noted, steel framing members shall be installed in accordance with ASTM C 754.
    - Runner Installation: Use channel type. Align accurately at floor according to partition layout. Anchor runners securely sixteen (16) inches o.c. maximum with power-driven anchors to floor slab, with power-driven anchors to structural slab above. See "Stud Installation" below for runners over heads of metal door frames. Where required, carefully remove sprayed-on fireproofing to allow partition to be properly installed.
    - Stud Installation
      - Use channel type, positioned vertically in runners, spaced as noted on drawings, but not more than sixteen (16) inches o.c.
      - Anchor studs to floor runners with screw fasteners. Provide snap-in or slotted hole slip joint bolt connections of studs to ceiling runners leaving space for movement. Anchor studs at partition intersections, partition corners and where partition abuts other construction to floor and ceiling runners with sheet metal screws through each stud flange and runner flange.
      - Connection at ceiling runner for non-rated partitions shall be snap-in or slotted hole slip joint bolt connection that shall allow for movement. Seal studs abutting other construction with 1/8" thick neoprene gasket continuously between stud and abutting construction.
      - Connections for fire rated partitions at ceiling runners shall conform to UL Design #2079.
      - Install metal stud horizontal bracing wherever vertical studs are cut or wallboard is cut for passage of pipes, ducts or other penetrations, and anchor horizontal bracing to vertical studs with sheet metal screws.
      - At jambs of door frames and borrowed light frames, install doubled-up studs (not back-to-back) from floor to underside of structural deck, and securely anchor studs to jamb anchors of frames and to runners with screws. Provide cross braces from hollow metal frames to underside of slab.
      - Over heads of door frames, install cut-to-length section of runner with flanges slit and web bent to allow flanges to overlap adjacent vertical studs, and securely anchor runner to adjacent vertical studs with sheet metal screws. Install cut-to-length vertical studs from runner (over heads of door frame) to ceiling runner sixteen (16) inches maximum o.c. and at vertical joints of wallboard, and securely anchor studs to runners with sheet metal screws.
      - At control joints, in field of partition, install double-up studs (back-to-back) from floor to ceiling runner, with 1/4" thick continuous compressible gasket between studs. When necessary, splice studs with eight (8) inches minimum nested laps and attach flanges together with two (2) sheet metal screws in each flange. All screws shall be self-tapping sheet metal screws.
  - Runners and Studs at Chase Wall: As specified above for "Runners" and "Studs" and as specified herein. Chase walls shall have either a single or double row of floor and ceiling runners with metal studs sixteen (16) inches o.c. maximum and positioned vertically in the runners so that the studs are opposite each other in pairs with the flanges pointing in the same direction. Anchor all studs to runner flanges with sheet metal screws through each stud flange and runner flange following requirements of paragraph 3.4, B. Provide cross bracing between the rows of studs by attaching runner channels or studs set full width of chase attached to vertical studs with one self-tapping screw at each end. Space cross bracing not over thirty-six (36) inches o.c. vertically.
  - Wallboard Installation - Single Layer Application (Screw Attached)
    - Install wallboard with long dimension parallel to framing member and with abutting edge joints over web of framing member. Install wallboard with long dimension perpendicular to framing members above and below openings in drywall extending to second stud at each side of opening. Joints on opposite sides of wall shall be arranged so as to occur on different studs.
    - Boards shall be fastened securely to metal studs with screws as specified. Where a free end occurs between studs, back blocking shall be required. Center abutting ends over studs. Correct work as necessary so that faces of boards are flush, smooth, true.
    - Wallboard screws shall be applied with an electric screw gun. Screws shall be driven not less than 3/8" from ends or edges of board to provide uniform dimple not over 1/32" deep.
    - Screws shall be spaced twelve (12) inches o.c. in the field of the board and 8" o.c. staggered along the abutting edges.
    - All ends and edges of wallboard shall occur over screwing members (studs or furring channels). Boards shall be brought into contact but shall not be forced into place. Where ends or edges abut, they shall be staggered. Joints on opposite sides of a partition shall be so arranged as to occur on different studs.
    - At locations where piping receptacles, conduit, switches, etc., penetrate drywall partitions, provide non-drying sealant and an approved sealant stop at cut board locations inside partition.
- Finishing
  - Taping: A thin, uniform layer of compound shall be applied to all joints and angles to be reinforced. Reinforcing tape shall be applied immediately, centered over the joint, seated into the compound. A skim coat shall follow immediately, but shall not function as a fill or second coat. Tape shall be properly folded and embedded in all angles to provide a true angle.
  - Filling: After initial coat of compound has hardened, additional compound shall be applied, filling the board taper flush with the surface. The fill coat shall cover the tape and feather out slightly beyond the tape. On joints with no taper, the fill coat shall cover the tape and feather out at least four (4) inches on either side of the tape. No fill coat is necessary on interior angles.
  - After compound has hardened, a finishing coat of compound shall be spread evenly over and extending slightly beyond the fill coat on all joints and feathered to a smooth, uniform finish. Over tapered edges, the finished joint shall not protrude beyond the plane of the surface. All taped angles shall receive a finish coat to cover the tape and taping compound, and provide a true angle. Where necessary, sanding shall be done between coats and following the final application of compound to provide a smooth surface, ready for painting.
  - Fastener Depressions: Compound shall be applied to all fastener depressions followed, when hardened by at least two (2) coats of compound, leaving all depressions level with the plane of the surface.
  - Finishing Beads and Trim: Compound shall be applied to all bead and trim and shall be feathered out from the ground to the plane of the surface. When hardened, this shall be followed by two (2) coats of compound each extending slightly beyond the previous coat. The finish coat shall be feathered from the ground to the plane of the surface and sanded as necessary to provide a flat, smooth surface ready for decoration.
  - Except as otherwise noted, level of finish for surface exposed to view shall conform to Level 4 of ASTM C 840 and GA-214 of the Gypsum Association.
  - Drywall construction with defects of such character which will mar appearance of finished work, or which is otherwise defective, will be rejected and shall be removed and replaced at no expense to the Owner.

Tile (09 30 00)

- Work of this Section includes all labor, materials, equipment, and services necessary to complete the ceramic tile as shown on the drawings and/or specified herein, including, but not limited to, the following:
  - Floor tile.
  - Setting beds, grout and sealant.
  - Isolation Membrane
- References
  - ANSI A108 Series/A118 Series - American National Standards for Installation of Ceramic Tile.
  - ANSI A136.1 - American National Standards for Organic Adhesives for Installation of Ceramic Tile.
  - ASTM C 144 - Standard Specification for Aggregate for Masonry Mortar.
  - ASTM C 150 - Standard Specification for Portland Cement.
  - TCNA - Handbook for Ceramic, Glass and Stone Tile Installation; Tile Council of North America, latest 2017 Edition.
  - ISO 13007 - International Standards Organization; classification for Grout and Adhesives.
- Quality Assurance
  - Qualifications of Installers: For cutting, installing and grouting of ceramic tile, use only thoroughly trained and experienced journeyman tile setters who are completely familiar with the requirements of this work, and the recommendations contained in the referenced standards, and the installers are Certified Ceramic Tile Installer (CTI) through the Ceramic Tile Education Foundation (CTEF) or Tile Installer Thin Set Standards (ITS) verification through the University of Ceramic Tile and Stone.
  - Codes and Standards: In addition to complying with all pertinent codes and regulations, comply with the following:
    - Manufacture all tile in accordance with Standard Grade Requirements of ANSI A-137.1.
    - Install all ceramic tile in accordance with the recommendations contained in Handbook for Ceramic, Glass and Stone Tile Installation of the Tile Council of North America, Inc., latest edition noted herein and ANSI A108/A118/A136.
  - Flooring surfaces shall have a minimum wet DCOF AcuTest value of 0.42 and tested per ANSI A326.3 Dynamic Coefficient of Friction of Hard Surface FlooringMaterials.
- Submittals
  - Samples
    - Before any tile is delivered to the job site, submit to the Architect sample panels, approx. 12" x 12", mounted on hardboard back-up with selected grout color for each
    - Submit 12" x 12" samples of waterproofing membrane.
  - Master Grade Certificates: Prior to opening ceramic tile containers, submit to the Architect a Master Grade Certificate, signed by an officer of the firm manufacturing the ceramic tile used, and issued when the shipment is made, stating the grade, kind of tile, identification marks for tile containers, and the name and location of the project.
  - Mock-ups
    - At an area on the site where approved by the Architect, provide a mock-up ceramic tile installation.
      - Make the mock-up approximately 3'0" x 3'0" in dimension.
      - Provide one mock-up for each type, class, and color of installation required under this Section.
      - The mock-ups may be used as part of the Work, and may be included in the finished Work, when so approved by the Architect.
      - Revise as necessary to secure the Architect's approval.
    - The mock-ups, when approved by the Architect, will be used as datum for comparison with the remainder of the work of this Section for the purposes of acceptance or rejection.
    - If the mock-up panels are not permitted to be part of the finished Work, completely demolish and remove them from the job site upon completion and acceptance of the work of this Section.
- Product Handling
  - Delivery and Storage
    - Deliver all materials of this Section to the job site in their original unopened containers with all labels intact and legible at time of use.
    - Store all materials under cover in a manner to prevent damage and contamination; store only the specified materials at the job site.
  - Protection: Use all means necessary to protect the materials of this Section before, during and after installation and to protect the installed work and materials of all other trades.
  - Replacements: In the event of damage, immediately make all repairs and replacements necessary.
- Project Conditions
  - Maintain environmental conditions and protect work during and after installation to comply with referenced standards and manufacturer's printed recommendations.
  - Vent temporary heaters to exterior to prevent damage to tile work from carbon dioxide buildup.
  - Maintain temperatures at not less than 50 deg. F. in tiled areas during installation and for 7 days after completion.
- Manufacturers Of Tile
  - Subject to compliance with requirements, provide products by one of the following:
  - Basis-of-Design Product: Subject to compliance with requirements, provide Crossville Esedra in color and sizes as indicated on the finish schedule in the drawings or comparable product one of the following:
    - Marca Crona Stoneline

Jenkins • Peer *Architects*
112 South Tryon Street, Suite 1300
Charlotte, North Carolina 28284
(t) 704/372-6665

MUELLER ASSOCIATES, INC.
ENGINEER C-0979
1306 Concourse Dr #100,
Linthicum Heights, MD 21090
(t) 410/646-4500

1/10/2022

UNC PEMBROKE

UNC PEMBROKE AMERICAN INDIAN HERITAGE CENTER

SCO ID#: 21-23067-01A

TAG	DESCRIPTION	DATE

Project: 21PEM587
Drawn By: RS/ DJ
Checked By: RH/ JM
Date: 1/10/2022

SPECIFICATIONS

PROJECT NORTH
TRUE NORTH

BID DOCUMENTS

G-105

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A B C D

- Lea Cliffstone
- Mortar Bed, Bond Coat and Grout
  - Latex – Portland Cement Bond Coat, complying with ANSI A118.4 and ISO 13007, C2ES2P2 with minimum compressive strength of 400 psi.
    - MAPEI, Keralastic System thin set mortar, consisting of Kerabond dry-set mortar and Keralastic latex admixture.
    - Laticrete; 211 dry-set mortar and 4237 latex admixtures.
    - Pro Spec – Permalastic System consisting of Permalastic Dryset Mortar and Permalastic Admixture
  - Floor Tile: Set floor tile using thin set latex Portland cement bond coat, Basis of Design, MAPEI, Kerabond/Keralastic System, conforming to ANSI A118.4, ISO 13007-C2ES2P2, conforming to TCA Detail F-113A-17 with F125 Full membrane option.
  - Water: Clean, fresh and suitable for drinking.
  - Grout complying with A118.7; and ISO 13007, CG2WAF: For grouting ceramic tile, provide "Flexcolor CQ" made by MAPEI or equal by Laticrete or Custom or approved equal; color as selected by the Architect. Add latex additive to grout made by same manufacturer as grout.
  - Crack Isolation Membrane
    - Manufacturer's standard product that complies with ANSI A118.12 for standard performance and is recommended by the manufacturer for the application indicated. Include reinforcement and accessories recommended by manufacturer.
  - Physical Properties: The setting beds and grouts must meet the following physical requirements:
    - Compressive Strength – 3000 psi min.
    - Shear Bond Strength – 500 psi min.
    - Water Absorption – 4.0% max.
    - Service Rating (ASTM C 627) – Extra Heavy Duty.
  - Temporary Protective Coating: Either product indicated below that is applied in the tile manufacturer's factory and formulated to protect exposed surfaces of tile against adherence of mortar and grout; compatible with tile, mortar, and grout products; and easily removable after grouting is completed without damaging grout or tile.
    - Petroleum paraffin wax, applied hot, fully refined and odorless, containing at least 0.5 percent oil with a melting point of 120 to 140 deg. F. per ASTM D 87.
    - Grout release in form of manufacturer's standard proprietary liquid coating that is specially formulated and recommended for use as temporary protective coating for tile.
  - Tile Cleaner: A neutral cleaner capable of removing soil and residue without harming tile and grout surfaces, equal to "Concentrated Stone & Tile Cleaner" made by Aqua-Mix or approved equal, specifically approved for materials and installations indicated by tile and grout manufacturers.
- Condition Of Surfaces
  - Allowable Variations in Substrate Levels
    - Floors: + 1/8" in 10'-0" distance and 1/4" total max. variation from levels shown.
  - Grind or fill concrete and masonry substrates as required to comply with allowable variations.
  - Concrete substrates must meet ANSI A108.01 tolerances and surface textures in preparation for tile work; coordinate with concrete trades.
- Preparation
  - Etch concrete substrate as may be required to remove curing compounds or other substances that would interfere with proper bond of setting bed. Rinse with water to remove all traces of treatment. Surface must meet finish requirements as noted in ANSI 108.01.
  - Blending: for tile exhibiting color variations, verify that tile has been factory blended and packaged so tile units taken from one package show same range of colors as those taken from other packages and match approved samples. If not factory blended, either return to manufacturer or blend tiles at project site before installing.
  - Field Applied Temporary Protective Coating: Pre-coat tile with continuous film of temporary protective coating, taking care not to coat unexposed tile surfaces.
- Joints In Tile Work
  - Joint Widths: 1/8" wide in ceramic tile.
  - Movement Joints: Conform to TCA Detail EJ171. Locate where movement joints are in back-up material. Provide movement joint at joints between mop receptors and ceramic tile. Provide movement joint at all vertical internal joints of wall tile. Movement joints 1/8" wide in ceramic tile. Fill all movement joints with specified backing and sealant. Use bond breaker where sufficient space for joint backing does not exist.
    - Provide sealant between ceramic tile and plumbing fixtures, mirrors, pipes, countertops and other dissimilar materials penetrating or adjacent to ceramic tile.
- Comply with the following installation standards
  - Backs of tile must be cleaned before installation.
  - All setting beds and/or adhesives shall provide for an average contact area of not less than 95% coverage.
  - Allowable Variations in Finished Work: Do not exceed the following deviations from level and plumb, and from elevations, locations, slopes and alignment shown.
    - Floors: 1/8" in 10'-0" run, any direction; +/- 1/8" at any location; 1/32" offset at any location.
    - Walls: 1/8" in 8'-0" run, any direction; 1/8" at any location; offset at any location, 1/32".
    - Joints: +/- 1/32" joint width variation of any location; 1/16" in 3'-0" run deviation from plumb and true.
- Cleaning And Protection
  - Cleaning: On completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.
    - Remove grout residue from tile as soon as possible.
    - Clean grout smears and haze from tile according to tile and grout manufacturer's written instructions but no sooner than 10 days after installation. Use cleaners only after determining that cleaners are safe to use by testing on samples of tile and other surfaces to be cleaned. Protect metal surfaces and plumbing fixtures from effects of cleaning. Flush surfaces with clean water before and after cleaning to insure removal of all cleaning material.
    - Remove temporary protective coating by method recommended by coating manufacturer and that is acceptable to tile and grout manufacturer. Trap and remove coating to prevent drain clogging.
  - Protect installed tile work with Kraft paper or other heavy covering during construction period to prevent staining, damage, and wear. Apply coat of sealer to all grout joints and all unglazed tile.
  - Prohibit foot and wheel traffic from tiled floors for at least seven days after grouting is completed.
  - Before final inspection, remove protective coverings from tile surfaces.
  - Leave finished installation clean and free of cracked, chipped, broken, unbonded or otherwise defective tile work.

END OF SECTION

ACOUSTIC PANEL CEILINGS (09 51 13)

- See finished schedule for acoustical unit.
- Provide exposed "T" suspension system, steel, with low sheen white baked enamel finish per finish schedule exposed tee 2-way grid system made by Armstrong World Industries, or equal made by USG Interiors, Inc. or Chicago Metallic Corp.
- Provide manufacturer's standard wall moldings with white baked enamel finish to match suspension systems. For circular penetrations of ceilings, provide edge moldings fabricated to diameter required to fit penetration exactly.
- Provide Axiom Vector trim as indicated on drawings.
- Suspension systems shall conform to ASTM C 635, intermediate duty.
- Extra Stock: Deliver stock of maintenance material to Owner. Furnish maintenance material matching products installed, packaged with protective covering for storage and identified with appropriate labels.
- Acoustical Ceiling Units: Furnish quantity of full-size units equal to 2.0% of amount installed.
- Codes and Standards: Install materials in accordance with manufacturer's printed instructions, and to comply with governing regulations and industry standards.
- Install suspension systems to comply with ASTM C 636, with wire hangers supported only from building structural members. Locate hangers not more than 6" from each end and spaced 4'-0" along direct-hung runner, leveling to tolerance of 1/8" in 12'-0".
- Secure wire hangers by looping and wire-tying, either directly to structures or to inserts, eye-screws, or other devices which are secure and appropriate for substrate, and which will not deteriorate or fail with age or elevated temperatures.
- Install hangers plumb and free from contact with insulation or other objects within ceiling plenum which are not part of supporting structural or ceiling suspension system. Splay hangers only where required to miss obstructions and offset resulting horizontal force by bracing, reinforcing, countersplaying or other equally effective means.
- Install edge moldings at edges of each acoustical ceiling area, and at locations where edge of acoustical units would otherwise be exposed after completion of the work.
  - Secure moldings to building construction by fastening through vertical leg. Space holes not more than 3" from each end and not more than sixteen (16) inches o.c. between end holes. Fasten tight against vertical surfaces.
  - Level moldings with ceiling suspension system, to a level tolerance of 1/8" in 12'-0".
- Install acoustical units in coordination with suspension system, with edges concealed by support of suspension members. Scribe and cut panels to fit accurately at borders and at penetrations.
- Install hold-down clips in toilet areas, and in areas where required by governing regulations; space 2'-0" o.c. on all cross tees.
- Light fixtures or other ceiling apparatus shall not be supported from main beams or cross tees if their weight causes the total load to exceed the deflection capability of the ceiling suspension system. In such cases the load shall be supported by supplemental hangers furnished and installed by this Section of work.
- Where fixture or ceiling apparatus installation causes eccentric loading on runners, provide stabilizer bars to prevent rotation.
- Clean exposed surfaces of acoustical ceilings, including trim, edge molding, and suspension members; comply with manufacturer's instructions for cleaning and touch-up of minor finish damage. Remove and replace work which cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

Suspended Curved Wood (09 54 63) (Alternate #3)

- Administrative Requirements
  - To extent practical, schedule installation of curved wood panels after work above ceiling is complete.
  - Preinstallation Meeting: Include installers of suspension system and curved wood panels.
- Summary
  - Extent of Decorative Wood System design intent is as shown on drawings and schedules. Full design of system, including but not limited to the structural support shall be provided by manufacturer's designated structural engineer. System is to be independently supported from the building structure.
- Submittals
  - Manufacturer's Literature and Data:
    - Product Data: Submit manufacturer's technical data and brochures for each type of beam size required.
  - Shop Drawings:
    - Shop drawings shall show thickness, dimensions, sizes, joints, finishes, attachments and relationship of adjoining work.
    - Coordination Drawings: Floor plans and Reflected ceiling plans, drawn to scale, showing curved wood panels and the following items:
      - Soffits
      - Floor Pattern
      - Relationship to HM frame and glass
    - Include Design engineer's stamp or seal on each sheet of shop drawings and structural analysis data signed and sealed by the engineer responsible for their preparation. Engineer shall be licensed in the State of North Carolina
  - Samples:
    - Samples shall include a 12" x 12" piece of each type of wood and finish specified.
    - Samples shall include samples of all support materials to be used.
- Delivery, Storage, and Handling
  - Deliver curved wood panels after building is enclosed, concrete, plaster, and gypsum board work is complete, and HVAC system is operating and maintaining temperature and humidity at occupancy levels.
  - Store curved wood panels in conditioned space. Keep panels dry.
- Products
  - Acceptable Products:
    - Basis of Design: Custom Curved Wood; Madrid Inc.
      Address: 7800 Industry Ave., Pico Riviera, CA 90660
      Phone: (562) 404-9941.
      Email: info@madridinc.com.
      Website: www.madridinc.com.
    - Approved equals: Armstrong Custom Wood or 5th Wall designs
- Performance Criteria
  - Surface-Burning Characteristics: Comply with ASTM E 84.
    - Flame-Spread Index: 25 or less.
    - Smoke-Developed Index: 65 or less.
- Materials
  - Core: Provide products made with binder containing no urea formaldehyde.
    - Hardwood Core
    - Veneer selected from Manufacturers full range
- Curved Wood Panels
  - Molded Veneer-Faced Panels: Made with no added urea formaldehyde.
    - Edges: Wood veneer matching of veneer face.
- Suspension System
  - Support system to be designed and provided by product manufacturer.
- Fabrication
  - Curved Wood Panels: Molded-veneer panels formed to shape(s) indicated.
- Finishing
  - Transparent Finish: Waterborne, UV-curable acrylated epoxy, polyester, or urethane.
  - Stain: None required
  - Sheen: Satin
  - Apply finish to all exposed surfaces and back of panel.
- Examination
  - Examine areas, including structural framing, for compliance with requirements.
- Preparation
  - Condition curved wood panels by placing panels into spaces where they will be installed at least 72 hours prior to installation.
  - Suspension System Installation
- Install: **hanger rod** suspension system(s) as specified by installers engineer."
- Suspension System Installation
  - Install **hanger rod** suspension system(s) as designed by manufacturer's structural engineer.
- Curved Wood Panel Schedule
  - Shape: As indicated on Drawings.
  - Face Dimensions: As indicated on Drawings
  - Core: Particle board.
  - Thickness: 1-1/2 inch
  - Suspension System: Hanger rod.
  - Mounting Method: Metal bracket

Resilient Tile Flooring (09 65 00)

- Submittals
  - Samples
    - Submit full-size sample tiles for each type and color required, representative of the expected range of color and pattern variation. Sample submittals will be reviewed for color, texture and pattern only. Compliance with all other requirements is the exclusive responsibility of the Contractor.
    - Submit six (6) inch long samples of base and strips.
- Warranty
  - Provide manufacturers 5-year limited warranty.
- Tile
  - See finish schedule.
- Base
  - Provide four (4) inches high, 1/8" thick, continuous vinyl, top set cove base with pre-formed internal and external corner pieces, color as selected by the Architect. For areas to receive carpet, provide flat base, no cove. Base shall conform to ASTM F 1861, Type TV, Group 1 as manufactured by Burke Mercer, Marley Flexco, Johnsonite, Armstrong, or approved equal.
- Accessories
  - Adhesives: Waterproof, stabilized type, as recommended by the tile manufacturer for the type of service indicated.
  - Concrete Slab Primer: Non-staining type recommended by the tile manufacturer.
  - Leveling Compound: Latex/Portland cement flash patching and leveling compound equal to No. DSP-520 made by H.B. Fuller or No. 226 with 3701 admixture made by Laticrete or equal made by Mapei, or approved equal.
  - Edging Strips: 1/8" thick, homogeneous vinyl or rubber composition, tapered or bullnose edge, color as selected by the Architect from manufacturer's standards.
- Condition of Surfaces
- Patch and repair existing floor to provide smooth surface for new floor finishes.
- Preparation
  - Prepare substrates according to floor tile manufacturer's written instructions to ensure adhesion of resilient products.
  - Concrete Substrates: Prepare according to ASTM F 710.
    - Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
    - Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by floor tile manufacturer. Do not use solvents.
  - Alkalinity and Adhesion Testing: Perform tests recommended by floor tile manufacturer. Proceed with installation only after substrate alkalinity falls within range on pH scale recommended by manufacturer in writing, but not less than 5 or more than 9 pH.
  - Moisture Testing: Proceed with installation only after substrates pass testing according to floor tile manufacturer's written recommendations, but not less stringent than the following:
    - Perform anhydrous calcium chloride test according to ASTM F 1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb. of water/1000 sq. ft. in 24 hours.
    - Perform relative humidity test using in situ probes according to ASTM F 2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level.
  - Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.
  - Do not install floor tiles until they are the same temperature as the space where they are to be installed.
  - At least 48 hours in advance of installation, move resilient floor tile and installation materials into spaces where they will be installed.
  - Immediately before installation, sweep and vacuum clean substrates to be covered by resilient floor tile.
- Installation
  - Install tile only after all finishing operations, including painting, have been completed and permanent heating system is operating. Moisture content of concrete slabs, building air temperature and relative humidity must be within limits recommended by tile manufacturer.
  - Place tile units with adhesive cement in strict compliance with the manufacturer's recommendations. Butt tile units tightly to vertical surfaces, thresholds, nosings and edgings. Scribe around obstructions and to produce neat joints, laid tight, even and in straight, parallel lines. Extend tile units into toe spaces, door reveals, and into closet and similar openings.
  - Maintain reference markers, holes, or openings that are in place or plainly marked for future cutting by repeating on the finish tile as marked in the subfloor. Use chalk or other non- permanent marking devices.
  - Lay tile from center marks established with principal walls, discounting minor off-sets, so that tile at opposite edges of the room are of equal width. Adjust as necessary to avoid use of cut widths less than 1/2 tile at room perimeters. Lay tile square to room axis, unless otherwise shown.
  - Match tiles for color and pattern by using tile from cartons in the same sequence as manufactured and packaged. Cut tile neatly to and around all fixtures. Broken, cracked, chipped or deformed tile is not acceptable.
  - Tightly cement tile to sub-base without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks through tile, or other surface imperfections.
  - Lay tile with grain in all tile running in the same direction.
  - Place resilient edge strips tightly butted to tile and secure with adhesive. Provide edging strips at all unprotected edges of tile, unless otherwise shown.
  - Bases: In all spaces where base is indicated, install bases tight to walls, partitions, columns, built-in cabinets, etc., without gaps at top or bulges at bottom, with tight joints and flush edges, with molded corner pieces at internal and external corners. Provide end stops adjacent to flush type door frames and where base does not terminate against an adjacent surface. Keep base in full contact with walls until adhesive sets.

Carpet Tile (09 68 13)

- Installer Qualifications: Firm with not less than five (5) years of experience in installation of commercial carpeting of type, quantity and installation methods similar to work of this Section.
- Carpet used on Project must be from same dye lot for each carpet type.
- Submittals
  - Product Data: Submit manufacturer's complete technical product data for each type of carpet, cushion and accessory item required.
  - Samples: Submit full size samples of carpet tile and six (6) inches long samples of each type exposed edge stripping.
  - Maintenance Data: Submit manufacturer's printed maintenance recommendations, including methods and frequency recommended for maintaining carpet in optimum conditions under anticipated traffic and use conditions.
- Extra Stock
  - Produce and deliver to project at least five (5) percent overrun on calculated yardage. Provide required overrun exclusive of carpet needed for proper installation, waste and usable scraps
- Provide special project warranty, signed by Contractor and Manufacturer (Carpet Mill), agreeing to repair or replace defective materials and workmanship of carpeting work during two (2) year warranty period following substantial completion. Attach copies of product warranty.
- Carpet Tile
  - See finish schedule.
- Accessories
  - Adhesive for Carpet Tile: Provide release type adhesive as recommended by the carpet tile manufacturer for use with carpet tile specified. Provide adhesive which complies with flame spread rating required for the carpet installation.
  - Miscellaneous Materials: Provide the types of adhesives and tape, and other accessory items recommended by the carpet manufacturer and Installer for the conditions of installation and use.
  - Leveling Compound: Latex/Portland cement flash patching and leveling compound equal to No. DSP-520 made by H.B. Fuller or No. 226 with 3701 admixture made by Laticrete or equal made by Mapei, or approved equal.
- Pre-Installation Requirements
  - Floor shall be clean and free of cracks and protrusions. Any gaps or cracks more than 1/16" wide to be filled in with latex leveling compound. Protrusions must be sanded down smooth, the floor cleanly swept and vacuumed if necessary to remove all dust and grit.
  - Floor temperature shall be 65 deg., at least 24 hrs. prior to installation; and 48 hrs. after carpet is installed.
  - Alkalinity and Adhesion Testing: Perform tests recommended by carpet manufacturer. Proceed with installation only after substrate alkalinity falls within range on pH scale recommended by manufacturer in writing, but not less than 5 or more than 9 pH.
  - Moisture Testing: Proceed with installation only after substrates pass testing according to floor carpet manufacturer's written recommendations, but not less stringent than the following:
    - Perform anhydrous calcium chloride test according to ASTM F 1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb. of water/1000 sq. ft. in 24 hours.
    - Perform relative humidity test using in situ probes according to ASTM F 2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level.
  - Moisture Testing: Proceed with installation only after substrates pass testing according to floor tile manufacturer's written recommendations, but not less stringent than the following:
    - Perform anhydrous calcium chloride test according to ASTM F 1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb. of water/1000 sq. ft. in 24 hours.
    - Perform relative humidity test using in situ probes according to ASTM F 2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level.
  - Sequence carpeting with other work so as to minimize possibility of damage and soiling of carpet during remainder of construction period.
- Installation
  - Comply with manufacturer's instructions and recommendations. Maintain direction of pattern and texture, including lay of pile.
  - Adhere all tiles with a full spread of adhesive. Dry-fit cut tiles and apply adhesive to tile back after tile has been cut.
  - Tiles shall be installed in a monolithic corner to corner manner following arrows printed on back of each tile indicating pile direction. Tiles shall be installed to achieve patterns as directed by the Architect.
  - Vinyl reducer strips shall be used along any necessary open edges so as to maintain the fixed perimeter.
- Upon completion of the carpeting installation in each area, visually inspect all carpet installed in that area and immediately remove all dirt, soil, and foreign substance from the exposed face; inspect all adjacent surfaces and remove all marks and stains caused by the carpet installation: remove all packaging materials, carpet scraps, and other debris from the carpet installation to the area of the job site set aside for its storage

Painting (09 90 00)

- Work of this Section includes all labor, materials, equipment, and services necessary to complete the painting and finishing as shown on the drawings and/or specified herein, including, but not limited to, the following:
  - Prime painting unprimed surfaces to be painted under this section.
  - Painting all items furnished with a prime coat of paint, including touch up of or repairing of abraded, damaged or rusted prime coats applied by others.
  - Painting all ferrous metal (except stainless steel) exposed t view.
  - Painting gypsum drywall exposed to view.
  - Painting pipes, pipe coverings, conduit, ducts, insulation, hangers, supports and other mechanical and electrical items and equipment exposed to view.
  - Painting surfaces above, behind or below grilles, gratings, diffusers, louvers, lighting fixtures and the like, which are exposed to view through these items.
  - Incidental painting and touching up as required to produce proper finish for painted surfaces, including touch up of factory finished items.
  - Painting of any surface not specifically mentioned to be painted herein or on drawings, but for which painting is obviously necessary to complete the job, or work which comes within the intent of these specifications, shall be included as though specified.
- Materials and Equipment Not to be Painted
  - Items of equipment furnished with complete factory finish, except for items specified to be given a finish coat under this Section.
  - Factory-finished acoustical tile.
  - Non-ferrous metals, except for items specified and/or indicated to be painted.
  - Finished hardware, excepting hardware that is factory primed.
  - Surfaces not to be painted shall be left completely free of droppings and accidentally applied materials resulting from work of this Section.
- Quality Assurance
  - Qualification of Painters: Use only qualified journeyman painters for the mixing and application of paint on exposed surfaces.
  - Paint Coordination: Provide finish coats which are compatible with the prime paints used. Review other Sections of these specifications in which prime paints are to be provided to ensure compatibility of the total coatings system for the various substrates. Upon requires from other subcontractor, furnish information on the characteristics of the finish material proposed to be used, to ensure that compatible prime coats are used. Provide barrier coats over incompatible primers or remove and re-prime as required. Notify the Architect in writing of any anticipated problems using the coating systems as specified with substrates primed by others.
- Submittals
  - Materials List
    - Before any paint materials are delivered to the job site, submit to the Architect a complete list of all materials proposed to be furnished and installed under this portion of work.
    - This shall in no way be construed as permitting substitution of materials for those specified or accepted for this work by the Architect
  - Samples
    - Upon direction of the Architect, prepare and deliver to the Architect two (2) identical sets of Samples of each of the selected colors and glosses painted onto 8-1/2" x 11" x ¼" thick material; whenever possible, the material for Samples shall be the same material as that on which the coating will be applied in the work.
- Job Conditions

Jenkins • Peer *Architects*
112 South Tryon Street, Suite 1300
Charlotte, North Carolina 28284
(t) 704/372-6665

MUELLER ASSOCIATES, INC.
ENGINEER C-0979
1306 Concourse Dr #100,
Linthicum Heights, MD 21090
(t) 410/646-4500

1/10/2022

UNC PEMBROKE

UNC PEMBROKE AMERICAN INDIAN HERITAGE CENTER

SCO ID#: 21-23067-01A

TAG	DESCRIPTION	DATE

Project: 21PEM587
Drawn By: RS/ DJ
Checked By: RH/ JM
Date: 1/10/2022

SPECIFICATIONS

PROJECT NORTH
TRUE NORTH

BID DOCUMENTS

G-106

A B C D

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- Apply water-based paints only when the temperature of the surfaces to be painted and the surrounding air temperatures are between 50 degrees F. and 90 degrees F., unless otherwise permitted by the paint manufacturer's
    - Do not apply paint when the relative humidity exceeds eighty-five (85) percent; or to damp or wet surfaces; unless otherwise permitted by the paint manufacturer's printed instructions.
- Paint Manufacturers
    - Except as otherwise noted, provide the painting products listed for all required painting made by one of the manufacturers listed in the paint schedule. These companies are Benjamin Moore, Akzo Nobel Paint (Glidden Professional), and Sherwin Williams (S-W). Comply with number of coats and required minimum mill thicknesses as specified herein.
- Materials
    - Provide undercoat paint produced by the same manufacturer as the finish coats. Us only thinners approved by the paint manufacturer, and use only to recommended limits.
    - Coloring Pigment: Products of or furnished by the manufacturer of the paint or enamel approved for the work.

- Interior Drywall / Flat Finish/Vinyl Acrylic Latex
    - Primer: Benj. Moore Ultra Spec 500 Interior Latex Primer (N534) PPG Speedhide Zero Interior Latex Primer 6-4900XI S-W ProMar 200 Zero VOC Interior Latex Primer, B28-2600
    - First Coat: Benj. Moore Ultra Spec 500 Latex Flat (N536) PPG Speedhide Zero Interior Latex Flat 6-4110XI S-W ProMar 200 Zero VOC Interior Latex Flat, B30-12600 Series
    - Second Coat: Benj. Moore Ultra Spec 500 Latex Flat (N536) PPG Speedhide Zero Interior Latex Flat 6-4110XI S-W ProMar 200 Zero VOC Interior Latex Flat, B30-12600 Series. Total DFT not less than: 3.6 mils
- Interior Drywall / Eggshell Finish/Vinyl Acrylic Latex
    - Primer: Benj. Moore Ultra Spec 500 Interior Latex Primer (N534) PPG Speedhide Zero Interior Latex Primer 6-4900XI S-W ProMar 200 Zero VOC Interior Latex Primer, B28-2600
    - First Coat: Benj. Moore Ultra Spec 500 Interior Latex Eggshell (N538) PPG Speedhide Zero Interior Latex Eggshell 6-4310XI S-W ProMar 200 Zero VOC Interior Latex Eg-Shel, B20-1900 Series
    - Second Coat: Benj. Moore Ultra Spec 500 Interior Latex Eggshell (N538) PPG Speedhide Zero Interior Latex Eggshell 6-4310XI S-W ProMar 200 Zero VOC Interior Latex Eg-Shel, B20-1900 Series. Total DFT not less than: 3.8 mils
- PIPING AND MECHANICAL EQUIPMENT EXPOSED TO VIEW
    - Paint all exposed piping, conduits, ductwork and mechanical and electrical equipment. Use heat resisting paint when applied to heating lines and equipment. The Contractor is cautioned not to paint or otherwise disturb moving parts in the mechanical systems. Mask or otherwise protect all parts as required to prevent damage.
    - Exposed Uncovered Ductwork, Piping, Hangers and Equipment: Latex Enamel Undercoater and one (1) coat Acrylic Latex Flat.
    - Exposed Covered Piping, Duct Work and Equipment: Primer/Sealer and one (1) coat Acrylic Latex Flat.
    - Panel Boards, Grilles and Exposed Surfaces of Electrical Equipment: Latex Enamel Undercoater and two (2) coats Latex Semi-Gloss.
    - Equipment or Apparatus with Factory-Applied Paint: Refinish any damaged surfaces to match original finish. Do not paint over name plates and labels.
    - All surfaces of insulation and all other work to be painted shall be wiped or washed clean before any painting is started.
    - All conduit, boxes, distribution boxes, light and power panels, hangers, clamps, etc., are included where painting is required.
    - All items of Mechanical and Electrical trades which are furnished painted under their respective Contracts shall be carefully coordinated with the work of this Section so as to leave no doubt as to what items are scheduled to be painted under this Section.

DIVISION 10 – SPECIALTIES (None)
DIVISION 11 – EQUIPMENT (None)
DIVISION 12 – FURNISHINGS

Simulated Stone Countertops (12 36 61))

- Work of this Section includes all labor, materials, equipment, and services necessary to complete the simulated stone countertops as shown on the drawings and/or specified herein including, but not limited to, the following:
    - Quartz stone surface counters.
    - Stainless steel anchoring and fastening devices.
- Quality Assurance
    - Fire Test Response Characteristics: Provide with the following Class A (Class I) surface burning characteristics as determined by testing identical products per UL 723 (ASTM E 84) or another testing and inspecting agency acceptable to authorities having jurisdiction:
        - Flame Spread Index: 25 or less.
        - Smoke Developed Index: 450 or less.
- Submittals
    - Shop Drawings for Engineered Stone: Submit complete cutting and setting drawings to the Architect for approval. Show sizes, shapes, thicknesses, jointing, anchoring, connection with other work, typical and special anchoring details, supports, dimensions, setting numbers, and color range for stone. Clearly indicate dimensions for locating cutouts in stone. Do not fabricate any stone tops (except for samples) until shop drawings have been approved by the Architect.
    - Samples
        - Stone: Submit 3 sets of 12" x 12" samples of engineered stone. Include full range of color and texture to be expected. Architect will review for color and texture only. Compliance with all other requirements is the exclusive responsibility of the Contractor.
- Product Data
    - Stone: Submit manufacturer's product data, fabrication and installation instructions.
    - Accessories: Submit manufacturer's product data and installation instructions.
- Product Delivery, Storage and Handling
    - Protect stone during storage and construction against wetting, soiling, staining and damage.
    - Handle stone to prevent chipping, breakage, soiling or other damage. Do not use pinch or wrecking bars without protecting edges of stone with wood or other rigid materials.
    - Store stone on wood skids or pallets, covered with non-staining, waterproof membrane. Place and stack skids and stones to distribute weight evenly and to prevent breakage or cracking of stones. Protect stored stone from weather with waterproof, non-staining covers or enclosures, but allow air to circulate around stones.

- Quartz Stone
    - Provide 1-1/2" thick quartz stone surfacing equal to Caesarstone Quartz Surfacing, Zodiaq by Dupont, or Silestone; finish to be polished on all exposed surfaces.
        - Exposed Edges and Corners:
    - Countertops:
        - Edges: As indicated on drawings

- Accessories
    - Mounting Adhesives: Provide structural-grade silicone or epoxy adhesives of type recommended by manufacturer for application and conditions of use.
        - Acceptable Silicone Manufacturers:
            - Dow Corning.
            - GE Sealants and Adhesives.
        - Acceptable Epoxy Manufacturers:
            - Akemi North America.
            - Bonstone Material Corporation.
            - Tenax USA.
        - Provide spacers, if required, of type recommended by adhesive manufacturer.
        - Color: Adhesive or sealant which will be visible in finished work shall be tinted to match quartz surfacing.
    - Fasteners: Type 304, stainless steel meeting ASTM A 666.
    - Joint Sealants: Provide anti-bacterial type.
        - Acceptable Manufacturers:
            - Dow Corning.
            - GE Sealants and Adhesives.

    - Solvent: Product recommended by adhesive manufacturer to clean surface of quartz surfacing to assure adhesion of adhesives [and sealants].
    - Cleaning Agents: Non-abrasive, soft-scrub type kitchen cleansers.
- Fabrication
    - Fabricator: Firm shall have five years experience fabricating stone and shall have water-cooled cutting tools.
    - Shop Assembly: Observe proper safety procedures and comply with manufacturer's instructions.
    - Layout: Layout joints to minimize joints and to avoid L-shaped pieces of quartz surfacing.
    - Inspection: Inspect material for defects prior to fabrication.
        - Color Match: Materials throughout Project shall be from the same batch and shall bear labels with same batch number. Visually inspect materials to be used for adjacent pieces to assure acceptable color match. Inspect in lighting conditions similar to those on Project.
        - Variation in distribution of aggregates in quartz surfacing which are within manufacturer's tolerances is not a defect.
    - Tools: Cut and polish with water-cooled power tools.
    - Cutouts
        - Cutouts shall have 3/8" minimum inside corner radius. Inside corners shall be reinforced in an acceptable manner to prevent cracking.
        - Exposed edges of cutout to be polished.
        - If the remaining material outside a cutout is less than three inches wide, reinforce area by laminating it with a strip of stone.

- Setting Stone Countertops and Counter Fascia
    - Cut-outs and Drilling: Provide countertops with cut-outs or as drawn. Cut-outs shall be carefully made in accordance with templates. Stone shall be drilled as required to receive anchoring and fastening devices.
    - Setting: Set countertops in required pattern over steel supports using stainless steel anchors and mounting adhesive. Set countertops level, plumb and square.
    - Joints: Maintain an even joint between units, 1/16" max. Point joints with approved elastic non-staining mastic pointing compound, color to match stone. Tool joints flush. Clean exposed surfaces carefully.

- Repair, Cleaning and Sealing
    - Remove and replace stone units which are broken, chipped, stained or otherwise damaged. Where directed, remove and replace units which do not match adjoining stonework. Patching or hiding chips or cracks in stone will not be permitted. Provide new matching units, install as specified and reseal joints to eliminate evidence of replacement. Reseal defective and unsatisfactory joints to provide a neat, uniform appearance.
    - Clean and seal stonework after completion using cleaner and sealer specified herein and as recommended by stone manufacturer; follow manufacturer's instructions.

- Protection

A. After installation and cleaning, protect stone work from damage during subsequent construction activities.

B. Provide protection for finished work such as exposed edges, corners, and all other stone liable to physical injury or staining. Protection shall include, but is not limited to, non- staining approved coverings.

END OF SECTION

DIVISION 13 –SPECIAL CONSTRUCTION (None)

DIVISION 14 – CONVEYING EQUIPMENT(None)

ATTACHMENT A-

Laydown area:

Jenkins • Peer Architects
112 South Tryon Street, Suite 1300
Charlotte, North Carolina 28284
(t) 704/372-6665

MUELLER ASSOCIATES, INC.
ENGINEER C-0979
1306 Concourse Dr #100,
Linthicum Heights, MD 21090
(t) 410/646-4500

JENKINS-PEER ARCHITECTS, P.A. REGISTERED ARCHITECTURE CORPORATION CERT. NO. 50260 NORTH CAROLINA CHARLOTTE, NC

VICTOR A. JONES, JR REGISTERED ARCHITECT 9507 NORTH CAROLINA CHARLOTTE, NC

1/10/2022

UNC PEMBROKE

UNC PEMBROKE AMERICAN INDIAN HERITAGE CENTER

SCO ID#: 21-23067-01A

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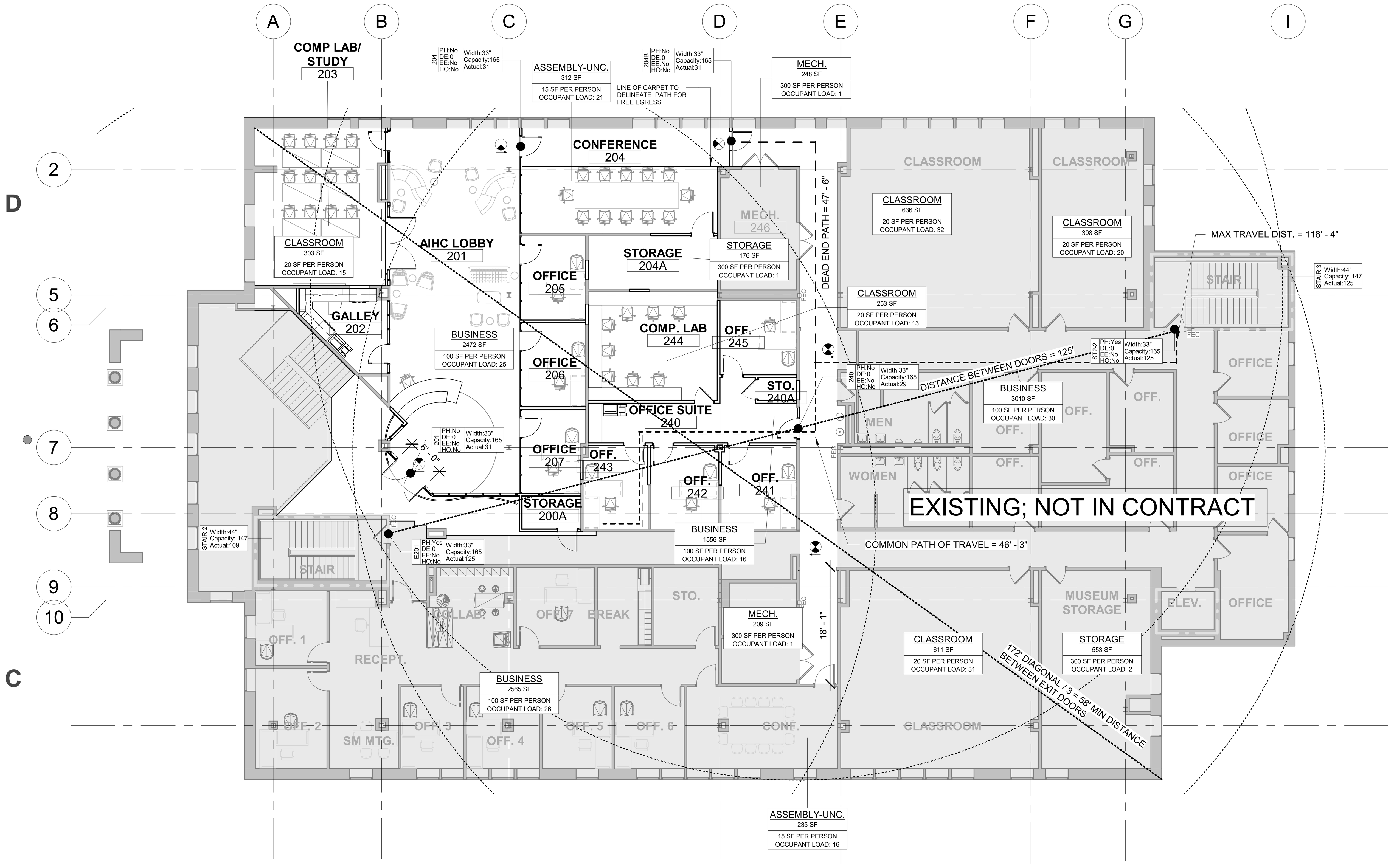
SPECIFICATIONS

PROJECT NORTH   TRUE NORTH

BID DOCUMENTS

G-107



C5 LEVEL 2
3/32" = 1'-0"

LIFE SAFETY LEGEND

OCCUPANT AREA TAG
AREA SIZE
NCBC T1004.1.1 ALLOWANCE PER OCC.
OCCUPANT COUNT

EGRESS DOOR TAG
DOOR NUMBER
DOOR WIDTH
MAXIMUM EXITING CAPACITY
ACTUAL EGRESS UTILIZATION
PH: PANIC HARDWARE
DE: DELAYED EGRESS IN SECOND (0 = NO DELAYED EGRESS)
EE: ELECTRONIC EGRESS
HO: MAGNETIC HOLD OPEN

EGRESS STAIR TAG
STAIR NUMBER
STAIR WIDTH
MAXIMUM EXITING CAPACITY
ACTUAL EGRESS UTILIZATION

EXIT SIGNS (⟶ DIRECTIONAL ARROW)
FIRE EXTINGUISHER (CABINET) EXISTING, NIC
75' FEC RADIUS
COMMON PATH OF TRAVEL
EXIT ACCESS TRAVEL DISTANCE
DEAD END PATH DISTANCE
1 HOUR FIRE RATED
EXISTING - NOT IN CONTRACT

NCBC 2018
MAX DEADEND COR. LENGTH = 50'
MAX EXIT DISTANCE = 300'
COMMON PATH = 100'

OCCUPANCY LOAD CALCULATIONS - EXISTING

T1004.1.2 SPACE FUNCTION	*LEVEL 1		LEVEL 2		TOTALS	
	AREA	OCCUPANTS	AREA	OCCUPANTS	AREA	OCCUPANTS
CORE / SHAFTS	1,953 SF	--	1,034 SF	--	3,209 SF	--
BUSINESS (1/100 GROSS)	19,157 SF	192	12,204 SF	122	31,180 SF	314
MECH/STORAGE (1/300 NET)	--	--	1,332 SF	--	1,332 SF	--
ASSEMBLY UNC. (1/15 NET)	--	--	1,332 SF	--	1,332 SF	--
CLASSROOMS (1/20 NET)	--	--	1,971 SF	99	1,971 SF	99
TOTALS	21,110 SF	192*	14,570 SF	221	35,680 SF	413

*BUSINESS - OCCUPANCY AND AREA INFORMATION FROM 2005 PROJECT CODE SUMMARY FOR NEW SPRINKLER ADDITION – OLD MAIN

OCCUPANCY LOAD CALCULATIONS - RENOVATION

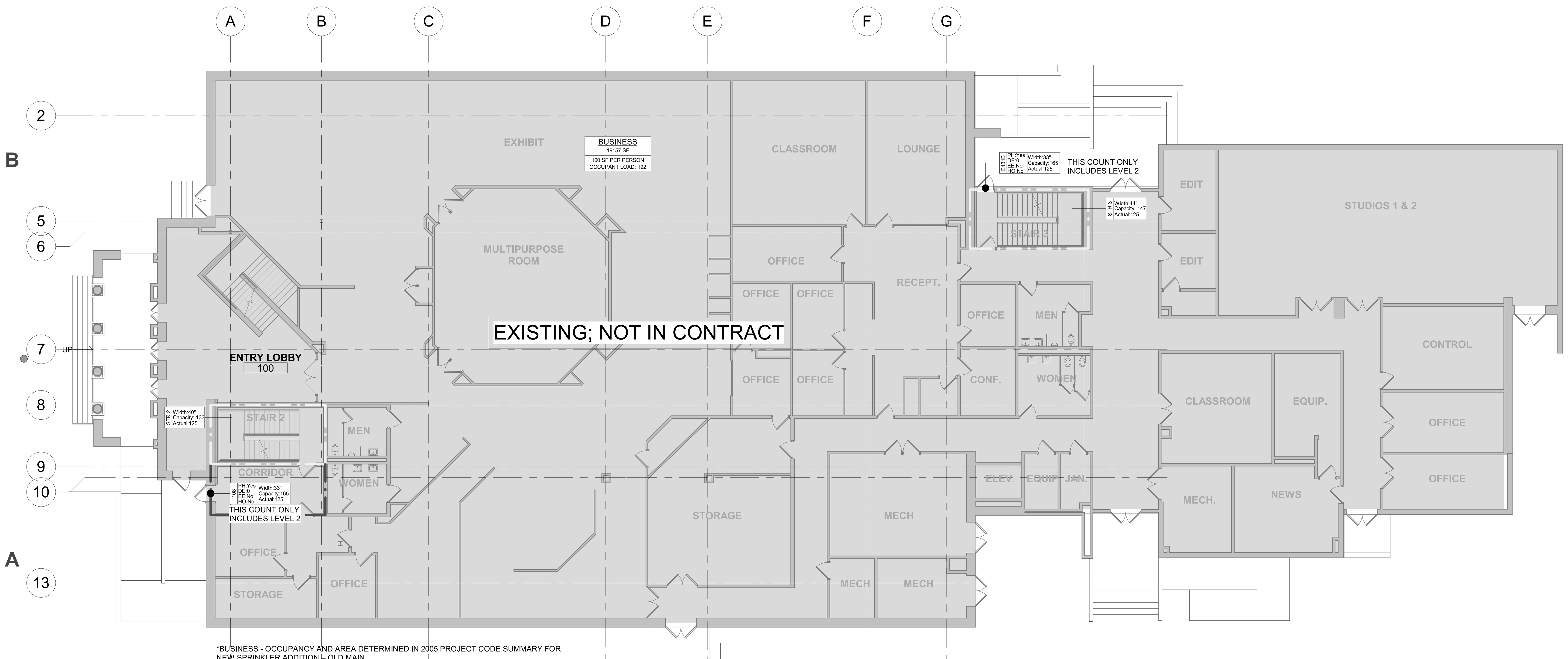
T1004.1.2 SPACE FUNCTION	*LEVEL 1 - EX. NOT IN SCOPE		LEVEL 2 - EX. NOT IN SCOPE		LEVEL 2 - RENOVATION		LEVEL 2 TOTALS		TOTALS	
	AREA	OCCUPANTS	AREA	OCCUPANTS	AREA	OCCUPANTS	AREA	OCCUPANTS	AREA	OCCUPANTS
CORE / SHAFTS	1,953 SF	--	1,034 SF	--	--	--	1,034 SF	--	2,987 SF	--
BUSINESS (1/100 GROSS)	19,157 SF	192	5,575 SF	56	4,028 SF	41	9,603 SF	97	28,760 SF	289
CLASSROOMS (1/20 NET)	--	--	1,645 SF	83	556 SF	28	2,201 SF	111	2,201 SF	111
ASSEMBLY UNC. (1/15 NET)	--	--	235 SF	16	312 SF	21	547 SF	37	547 SF	37
MECH/STORAGE (1/300 NET)	--	--	1,010 SF	3	176 SF	1	1,186 SF	4	1,186 SF	4
TOTALS	21,110 SF	192*	9,499 SF	159	5,072 SF	91	14,571 SF	249	35,681 SF	441

*BUSINESS - OCCUPANCY AND AREA INFORMATION FROM 2005 PROJECT CODE SUMMARY FOR NEW SPRINKLER ADDITION – OLD MAIN

PLUMBING FIXTURE COUNT

PER 2018 NC EXISTING BUILDING CODE 810: OCCUPANT INCREASE IS <20% THEREFORE NO FIXTURE COUNT CHANGES REQUIRED

EXISTING OCCUPANT LOAD = 413
NEW OCCUPANT LOAD PER THIS RENOVATION = 441
PERCENTAGE INCREASE = 7%



*BUSINESS - OCCUPANCY AND AREA DETERMINED IN 2005 PROJECT CODE SUMMARY FOR NEW SPRINKLER ADDITION – OLD MAIN

A5 LEVEL 1
3/32" = 1'-0"

5 4 3 2 1

Jenkins • Peer Architects
112 South Tryon Street, Suite 1300
Charlotte, North Carolina 28284
(t) 704/372-6665

MUELLER ASSOCIATES, INC.
ENGINEER C-0979
1306 Concourse Dr #100,
Linthicum Heights, MD 21090
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UNC PEMBROKE

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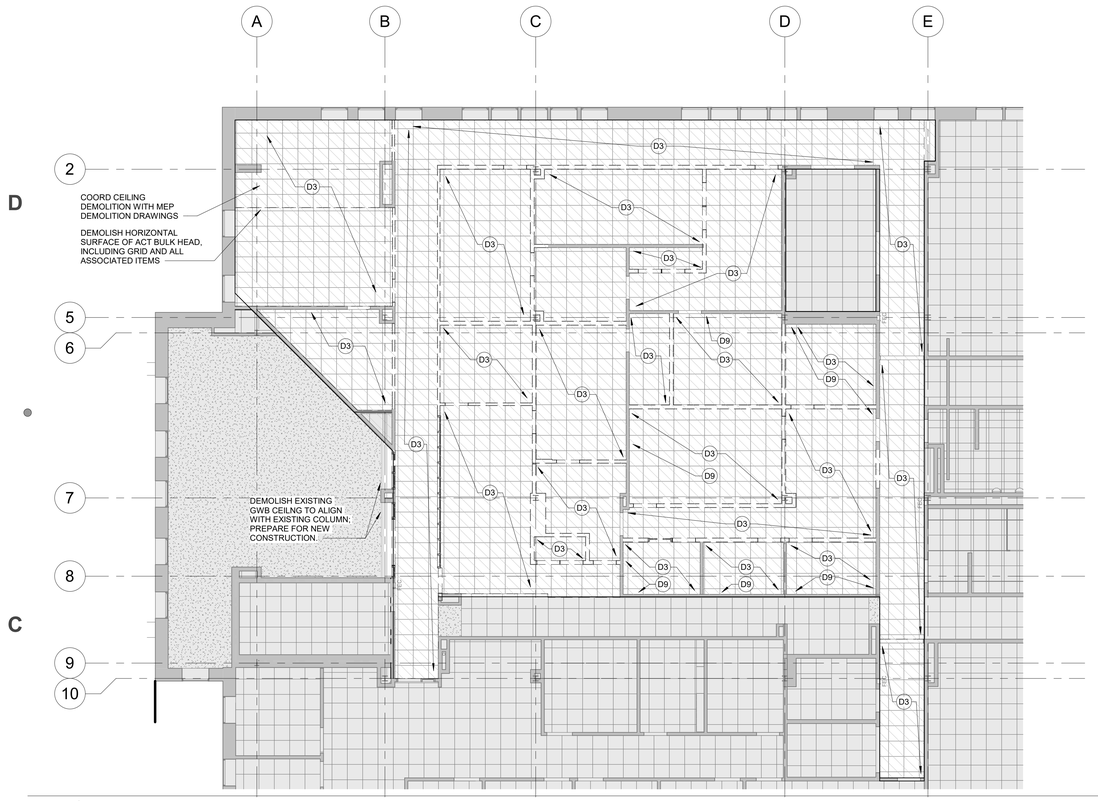
LIFE SAFETY PLANS

PROJECT NORTH TRUE NORTH

BID DOCUMENTS

G-201



C5 LEVEL 2 DEMOLITION REFLECTED CEILING PLAN
1/8" = 1'-0"

A5 LEVEL 2 DEMOLITION FLOOR PLAN
1/8" = 1'-0"

5 4 3 2 1

DEMOLITION GENERAL NOTES

1. ELEMENTS TO BE DEMOLISHED ARE SHOWN WITH DASHED LINES UNLESS OTHERWISE INDICATED ON DRAWINGS.
2. NO LOAD BEARING WALLS, STRUCTURE, STRUCTURAL FLOOR OR STRUCTURAL ELEMENT SHALL BE WEAKENED OR REMOVED UNLESS NOTED OTHERWISE BY THE STRUCTURAL ENGINEER.
3. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS. ANY DISCREPANCIES OR INCONSISTENCIES BETWEEN THE CONTRACT DOCUMENTS AND THE ACTUAL EXISTING CONDITIONS SHALL BE DOCUMENTED AND NOTICE MADE TO THE ARCHITECT PRIOR TO COMMENCEMENT OF WORK.
4. DIMENSIONS GIVEN ON DEMOLITION PLAN SHALL BE FIELD VERIFIED AND COORDINATED WITH FLOOR PLANS FOR NEW LAYOUT PRIOR TO DEMOLITION. CONTRACTOR SHALL DOCUMENT AND NOTIFY ARCHITECT OF ANY DISCREPANCIES OR INCONSISTENCIES PRIOR TO DEMOLITION.
5. ANY OPENINGS CREATED OR EXPOSED IN THE BUILDING ENVELOPE (EXISTING FLOORS, WALLS AND ROOFS) TO REMAIN SHALL BE SEALED WITH TEMPORARY WEATHERTIGHT INFILL CONSTRUCTION SIMULTANEOUS WITH DEMOLITION TO RESIST INTRUSION OF MOISTURE, WEATHER AND PESTS.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING DEMOLITION SUCH THAT DUST, SMOKE, AND OTHER CONTAMINANTS ARE NOT INTRODUCED TO ANY OCCUPIED SPACE. NEWLY MADE, NEWLY UNCOVERED, EXISTING ABANDONED AND EXISTING UNPROTECTED PENETRATIONS IN FLOORS, WALLS, AND PARTITIONS SHALL BE PATCHED. INFILL SHALL BE FOR FIRE RATED CONSTRUCTION WHERE REQUIRED.
7. REFERENCE MECHANICAL /ELECTRICAL DRAWINGS FOR EXTENTS OF MEP DEMOLITION NOT SHOWN HERE.
8. REFERENCE MECHANICAL & ELECTRICAL DRAWINGS FOR DEMOLITION OF EQUIPMENT WITHIN ROOMS & ABOVE CEILING & ON ROOF, AS WELL AS ASSOCIATED CEILING MODIFICATIONS NECESSARY FOR ACCESS & INSTALLATION OF NEW EQUIPMENT.
9. EXISTING STRUCTURE AND FINISHED SURFACES SCHEDULED TO REMAIN WHICH ARE DAMAGED IN THE COURSE OF DEMOLITION SHALL BE REPAIRED OR REPLACED WHERE REPAIRS ARE OBJECTIONABLE TO ARCHITECT.
10. PATCH, REWORK, SKIM EXISTING WALLS WHERE REQ'D FOLLOWING DEMOLITION OF FINISHES TO REMAIN- TOUCH UP AS NEEDED.
11. PROTECT WALLS, CEILINGS FLOORS AND OTHER EXISTING FINISH WORK THAT ARE TO REMAIN OR THAT ARE EXPOSED DURING DEMOLITION WORK.
12. CONTRACTOR SHALL NOTIFY OWNER & ARCHITECT PROMPTLY OF ANY CONDITION UNCOVERED WHICH SHOWS EVIDENCE OF DETERIORATED STRUCTURE, BUILDING ENVELOPE OR LIFE SAFETY ELEMENT WHICH IS SLATED TO REMAIN.
13. IN ALL WALLS INDICATED TO BE REMOVED, CONTRACTOR IS RESPONSIBLE FOR DISCONNECTING TO NEAREST JUNCTION BOX AND REMOVING OR CAPPING ANY ELECTRICAL AND PLUMBING LINES BACK TO PANEL OR RISER.
14. MASTIC UNDER 12X12 VCT FLOOR TILE IS DEEMED HAZARDOUS. FLOOR TILE AND MASTIC NOT TO BE DISTURBED. IF WORK REQUIRES DISTURBANCE OF THIS MATERIAL, STOP ACTIVITY AND IMMEDIATELY NOTIFY ARCHITECT AND OWNER OF DISCOVERED CONDITION.

DEMOLITION PLAN LEGEND

- DOOR TO BE REMOVED
- EXISTING DOOR TO REMAIN
- EXISTING WALL TO BE DEMOLISHED
- PARTITION TO REMAIN
- DEMOLISH EXISTING ACT CEILING AND ALL ASSOCIATED ITEMS INCLUDING GRID AND SUSPENSION SYSTEM IDENTIFIED IN HATCHED EXTENTS
- EXISTING - NOT IN CONTRACT

DEMOLITION KEY NOTES

- D1 DEMOLISH DOORS, FRAMES, AND DOOR HARDWARE. PREP FOR INFILL WITH METAL STUD AND GWB WHERE INDICATED FOR NEW WORK. PATCH & REPAIR WALL TO RECEIVE NEW FINISH FOR WALLS TO REMAIN AS INDICATED IN NEW WORK.
- D2 DEMOLISH WALLS TO THE EXTENTS INDICATED. SEE MEP DRAWINGS FOR EXTENT OF REMOVAL AND RELOCATION OF UTILITIES.
- D3 DEMOLISH EXISTING ACT CEILING AND ALL ASSOCIATED ITEMS INCLUDING GRID AND SUSPENSION SYSTEM IN ITS ENTIRETY AS IDENTIFIED IN HATCHED EXTENTS.
- D4 REMOVE ALL BUILT IN FURNITURE, CASEWORK, AND ACCESSORIES IN THEIR ENTIRETY WHERE APPLICABLE. SEE MEP DRAWINGS FOR EXTENT OF REMOVAL AND RELCATION OF UTILITIES.
- D5 DEMOLISH HM FRAME, GLAZING, AND ALL ASSOCIATED ITEMS.
- D6 DISCONNECT & REMOVE EXPOSED ASSOCIATED WIRING & CONDUIT BACK TO SOURCE.
- D7 DEMOLISH EXISTING CARPET ABOVE VCT FLOOR TILE IN ALL LOCATIONS WITHIN SCOPE. REFER TO GENERAL DEMOLISH NOTE 14 REGARDING NOT DISTURBING EXISTING HAZARDOUS FLOORING BENEATH CARPET.
- D8 DEMOLISH COVE/WOOD BASE AND MOULDING/RAILS AS APPLICABLE. PREPARE EXISTING WALLS TO REMAIN FOR NEW FINISH.
- D9 PREPARE EXISTING WALL TO REMAIN FOR EXTENSION TO UNDERSIDE OF EXISTING GWB

Jenkins • Peer *Architects*
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Drawn By: RS/ DJ
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Date: 1/10/2022

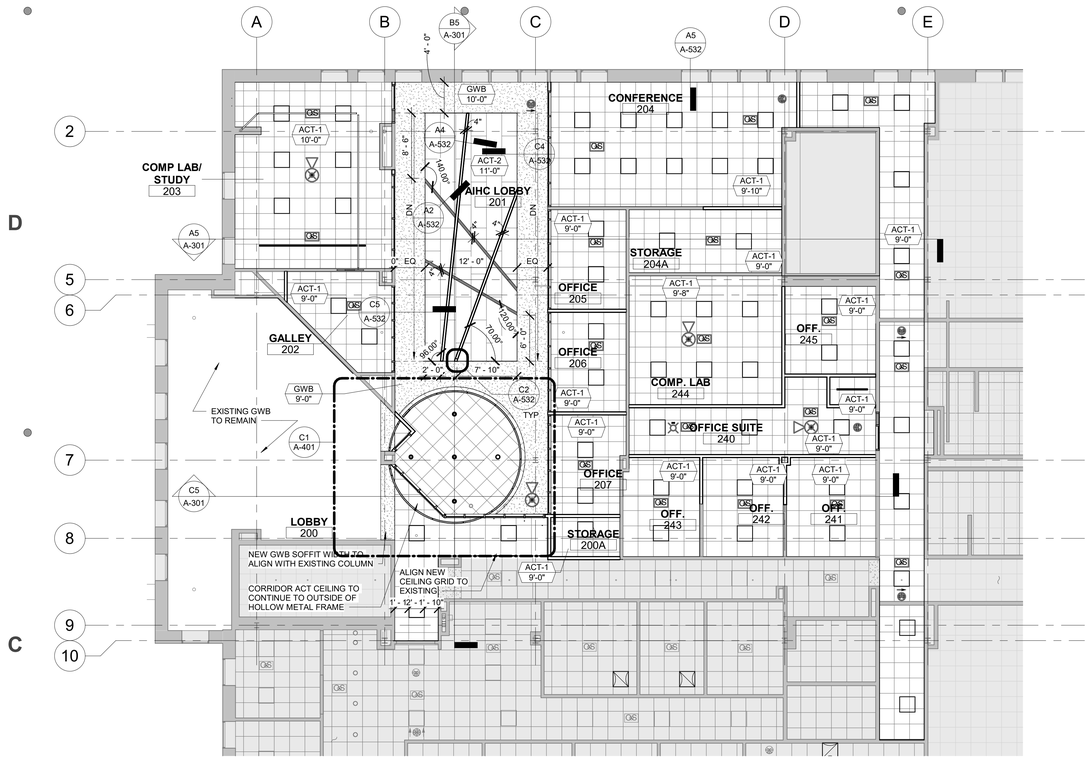
DEMOLITION PLANS

1" = 50'-0"

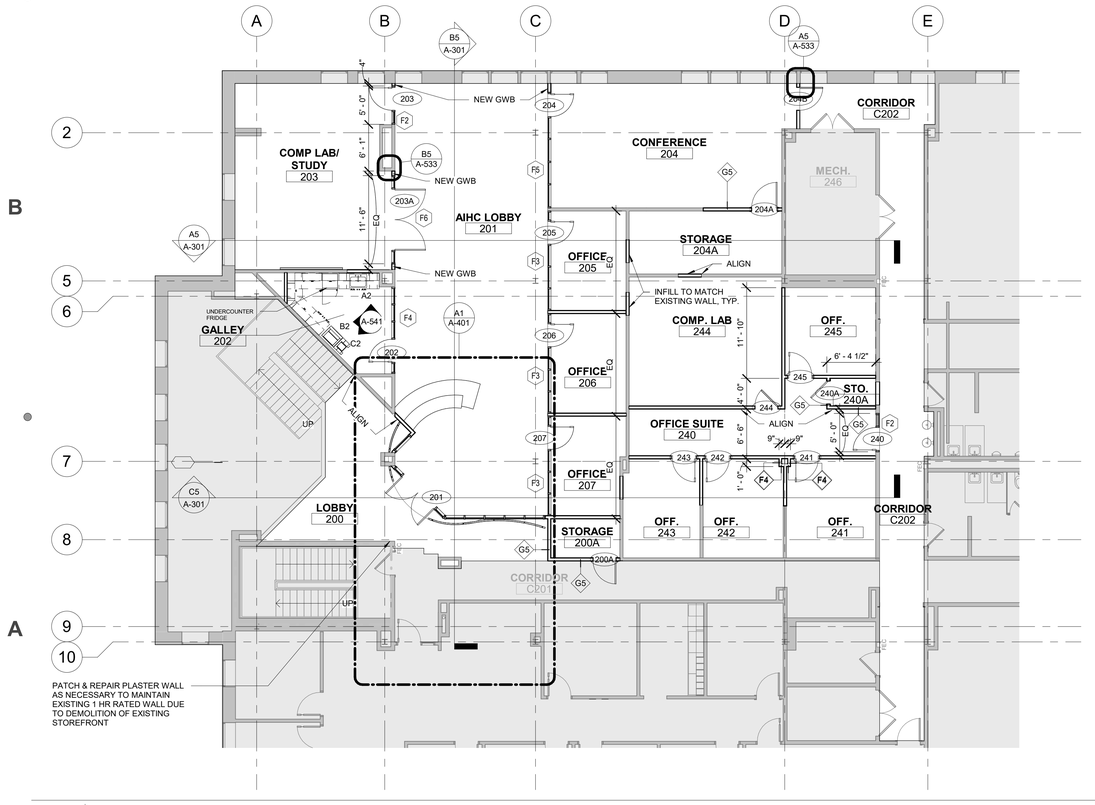
PROJECT NORTH
TRUE NORTH

BID DOCUMENTS

AD101



C5 LEVEL 2 REFLECTED CEILING PLAN
1/8" = 1'-0"



A5 LEVEL 2 PLAN
1/8" = 1'-0"

GENERAL FLOOR PLAN NOTES

1. REFER TO SHEET A-101 FOR THE WALL & PARTITION TYPES SCHEDULE.
2. EXISTING WALLS TO REMAIN ARE INDICATED IN HALFTONE. ALL OTHER WALLS SHOWN ARE NEW.
3. REFER TO LIFE SAFETY PLANS FOR FIRE EXTINGUISHERS AND FIRE EXTINGUISHER CABINET LOCATIONS.
4. DIMENSIONS ARE TAKEN TO FINISH FACE OF WALLS AND PARTITIONS UNLESS NOTED OTHERWISE.
5. REFER TO ENLARGED PLANS FOR CONTINUATION OF WALL TYPES AND DIMENSIONS
6. DOOR JAMBS SET 4" FROM FACE OF ADJACENT WALL TYP. U.N.O.
7. BLOCKING SHALL BE PROVIDED FOR ALL WALL AND CEILING MOUNTED ACCESSORIES, EQUIPMENT, HANDRAILS, FIXTURES, CABINETS, CASEWORK, SHELVING, ETC. SHOWN ON ANY DRAWING.
8. COORDINATE WITH FURNITURE, AND EQUIPMENT PLANS FOR MARKER BOARDS, TACK BOARDS, WALL MOUNTED EQUIPMENT, AND CARD READER LOCATIONS.
9. ENCLOSE ALL EXPOSED DUCTS, PIPES CONDUITS, ETC. IN FINISHED SPACE WITH CONSTRUCTION & FINISH TO MATCH ADJACENT CONSTRUCTION U.N.O.
10. PROVIDE ACCESS DOORS OF APPROPRIATE SIZE, TYPE & FIRE RATING FOR ALL CONCEALED ITEMS THAT REQUIRE ADJUSTMENT, MAINTENANCE, MONITORING, ETC. COORDINATE LOCATIONS WITH ARCHITECT.
11. COORDINATE WITH ELECTRICAL DWGS FOR FLOOR BOX QUANTITES AND TYPE. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS. COORDINATE FINAL LOCATIONS WITH THE ARCHITECT.
12. ALL EXTERIOR WINDOWS IN IDENTIFIED PROJECT SCOPE LIMITS TO RECEIVE HORIZONTAL ALUMINUM WINDOW BLINDS UNO. BLINDS ARE NOT REQUIRED AT LOBBIES AND CORRIDORS.
13. DO NOT DETERMINE DIMENSIONS AND SIZE OF THE GRAPHIC REPRESENTATIONS SHOWN ON THE DRAWINGS BY USING MEASURING DEVICE (DO NOT "SCALE"). RELY ON THE NUMERIC DIMENSIONS SHOWN ON THE DRAWINGS FOR MEASUREMENT.
14. SIGNAGE TO BE PROVIDED AND INSTALLED BY OWNER.

FLOOR, RCP, AND FURNITURE PLAN LEGEND

- NEW DOOR - SHOWN WITH DOOR TAG, LOCATE JAMB OF DOOR 4" FROM PERPENDICULAR WALL, UNO
- EXISTING DOOR - SHOWN WITHOUT DOOR TAG
- (0000A) DOOR TAG - REFER TO DOOR SCHEDULE
- FE / FEC FIRE EXTINGUISHER (CABINET)
- E8 WALL TAG - REFER TO PARTITION SCHEDULE
- PARTITION TO BE PROVIDED
- EXISTING PARTITION TO REMAIN
- 1t 00' - 00" CEILING HEIGHT TAG
- F4 HM FRAME TYPE TAG: REF A-611
- 2' x 2' ACOUSTIC PANEL CEILING (ACT-1)
- 2' x 6' ACOUSTIC PANEL CEILING (ACT-2)
- GYPSUM CEILING OR SOFFIT
- INSET GRID LIGHT FIXTURE - COORD W ELEC DWGS
- STROBE
- OS OCCUPANCY SENSOR
- EMERGENCY EXIT LIGHT - COORD W ELEC DWGS
- MECH EQUIPMENT - COORD W MECH DRAWINGS

WALL & PARTITION NOTES

1. REFERENCE FLOOR PLANS FOR CORRESPONDING WALL TAGS.
2. ALL WALL TYPES G4 U.N.O.
3. INFILL ALL OPENINGS DEMOLISHED TO MATCH ADJACENT EXISTING WALL THICKNESS. PROVIDE CONTINUITY OF RATING AS APPLICABLE.
4. REFERENCE FURNITURE PLANS AND FINISH SCHEDULE FOR WALL FINISHES.
5. ALL GYPSUM WALL BOARD IS 5/8" THICK UNLESS OTHERWISE INDICATED.
6. ALL PARTITIONS TO BE BRACED TO STRUCTURE AS SPECIFIED
7. METAL STUD PARTITION TO EXTEND TO UNDERSIDE OF EXISTING SUB-CEILING. GWB & BATT INSULATION TO STOP 6" ABOVE ADJACENT FINISHED CEILING.
8. ALL FIRE-RATED WALLS AND SMOKE WALLS ARE TO BE SEALED TO DECK ABOVE AND ALL PENETRATIONS SEALED.
9. ALLOW 1/4" GAP AT BASE AND HEAD TRACK FOR ALL ACOUSTICALLY RATED WALLS FOR SEALANT.
10. SEAL ALL OPENINGS, GAPS, PENETRATIONS, AND JOINTS IN PARTITION TYPES AS FOLLOWS:
    A. FIRE RATED BARRIERS: SEAL IN ACCORDANCE WITH THE REQUIREMENTS SPECIFIED IN THE DIVISION 07 SPECIFICATION SECTIONS FOR PENETRATION FIRESTOP SYSTEMS AND FIRE RESISTIVE JOINTS SYSTEMS. REFER TO CODE COMPLIANCE DRAWINGS FOR LOCATIONS OF SMOKE BARRIERS.
    B. OTHER LOCATIONS: SEAL AS INDICATED AND REQUIRED ELSEWHERE BY THE CONTRACT DOCUMENTS.

WALL & PARTITION TAG LEGEND

Wall Partition Mark/Tag Example:

G = Wall or Partition Assembly Type
4 = Sequence Number (Core size or NIC Value)
b = Rating or Height

G4b

Wall or Partition Assembly Type:

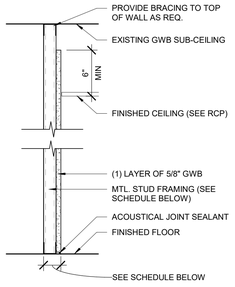
F = Furring / Single Sided Gypsum Wall
G = Gypsum & Metal Stud

Sequence Number:

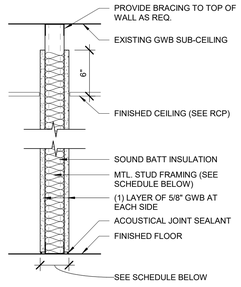
The number of the assembly, which also correlates to the thickness of the structural core member of the wall, or the NIC value for the acoustic walls.

Rating (Fire/Smoke and Height:

A5 = No Rating - Full Height
A5r = No Rating - 6" Above Ceiling
A5s = No Rating - Partition Height Specified on Plans



TYPE	STUD SIZE	TOTAL THICK.	BATT INSUL.
F4	3 5/8"	4 1/4"	NONE



TYPE	STUD SIZE	TOTAL THICK.	SOUND BATT INSUL.
G4	3 5/8"	4 7/8"	YES
G5	3 5/8"	4 7/8"	NO

B3 WALL & PARTITION TYPES
1 1/2" = 1'-0"

Jenkins • Peer *Architects*
112 South Tryon Street, Suite 1300
Charlotte, North Carolina 28284
(t) 704/372-6665

MUELLER ASSOCIATES, INC.
ENGINEER C-0979
1306 Concourse Dr #100,
Linthicum Heights, MD 21090
(t) 410/646-4500

1/10/2022

UNC PEMBROKE

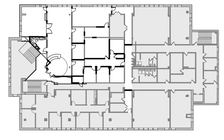
UNC PEMBROKE AMERICAN INDIAN HERITAGE CENTER

SCO ID#: 21-23067-01A

TAG	DESCRIPTION	DATE

Project: 21PEM587
Drawn By: RS/ DJ
Checked By: RH/ JM
Date: 1/10/2022

FLOOR PLANS & PARTITION TYPES

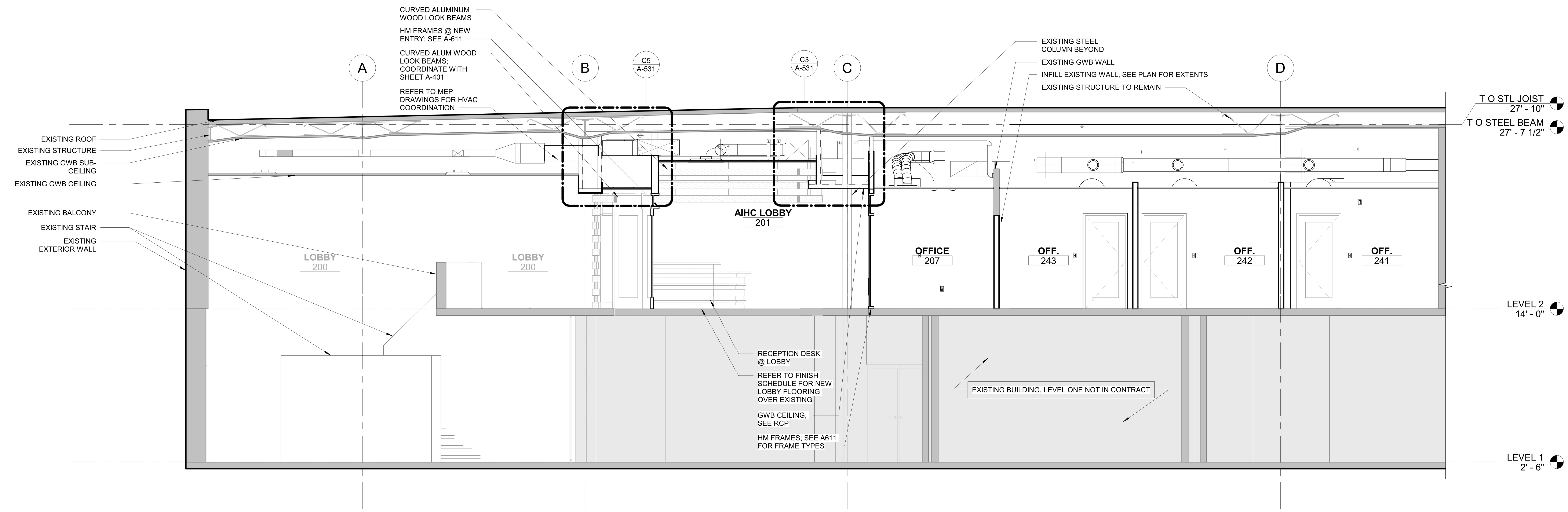


1" = 50'-0"

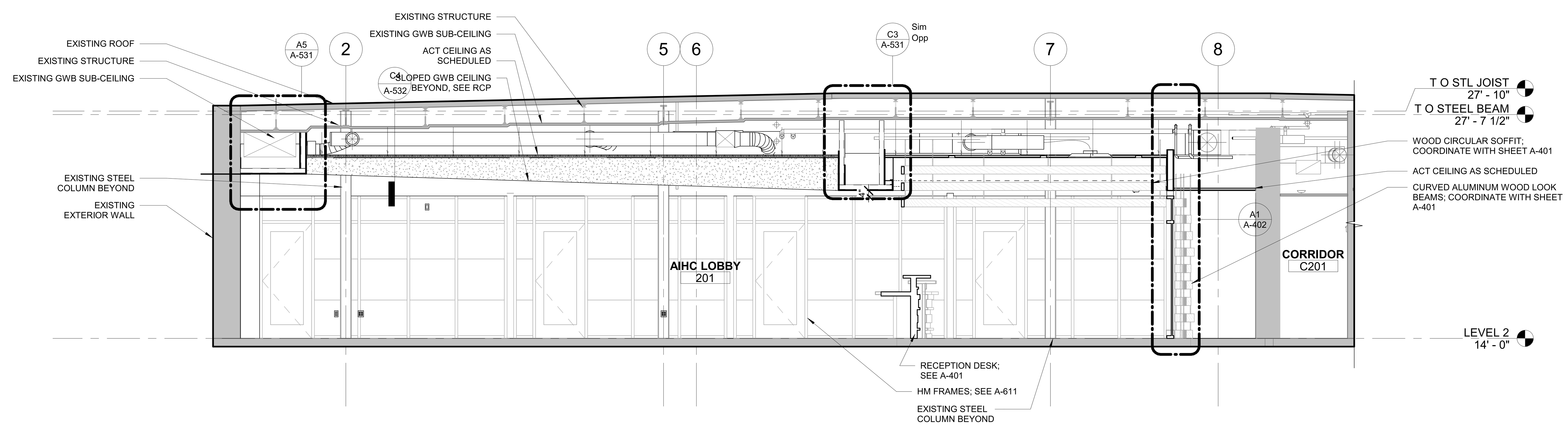
PROJECT NORTH
TRUE NORTH

BID DOCUMENTS

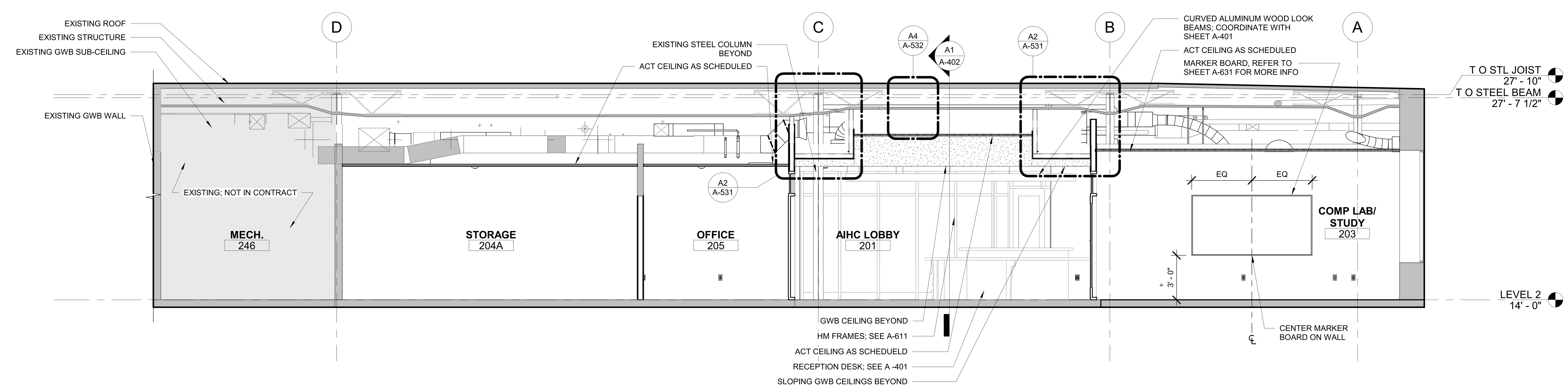
A-101



C5 NS SECTION 2
1/4" = 1'-0"



B5 EW SECTION 1
1/4" = 1'-0"



A5 NS SECTION 1
1/4" = 1'-0"

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112 South Tryon Street, Suite 1300
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SCO ID#: 21-23067-01A

TAG	DESCRIPTION	DATE

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BUILDING SECTIONS

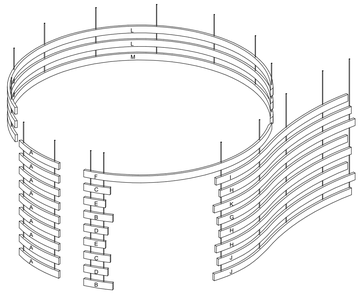
PROJECT NORTH
TRUE NORTH

BID DOCUMENTS

A-301

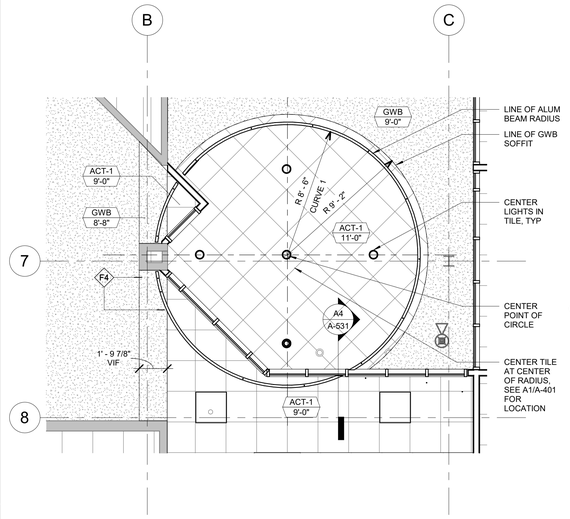
CURVED WOOD SIZING SCHEDULE			
DESCRIPTION	DIMENSION	QUANTITY	COMMENTS
A	6"H x 2"D x 4'-2"L +/-	9	CURVE 1
B	6"H x 2"D x 2'-0"L +/-	2	CURVE 1
C	6"H x 2"D x 1'-10"L +/-	2	CURVE 1
D	6"H x 2"D x 1'-8"L +/-	2	CURVE 1
E	6"H x 2"D x 1'-6"L +/-	2	CURVE 1
F	6"H x 2"D x 16'-2"L +/-	1	CURVE 1/ CURVE 2
G	6"H x 2"D x 14'-6"L +/-	1	CURVE 1/ CURVE 2
H	6"H x 2"D x 14'-8"L +/-	3	CURVE 1/ CURVE 2
I	6"H x 2"D x 14'-9"L +/-	1	CURVE 1/ CURVE 2
J	6"H x 2"D x 15'-2"L +/-	2	CURVE 1/ CURVE 2
K	6"H x 2"D x 15'-6"L +/-	1	CURVE 1/ CURVE 2
L	6"H x 2"D x 30'-0"L +/-	2	CURVE 2
M	6"H x 2"D x 30'-2"L +/-	1	CURVE 2
N	4"H x 1"D x 7'-4 1/8"L +/-	1	CURVE 1 - DESK
O	4"H x 1/8"D x 7'-5"L +/-	1	CURVE 1 - DESK
P	3 1/2"H x 2"D x 9'-0 1/2"L +/-	1	CURVE 1 - DESK
Q	6"H x 1"D x 9'-0 3/4"L +/-	1	CURVE 1 - DESK
R	1 1/2"H x 2"D x 9'-0 1/2"L +/-	1	CURVE 1 - DESK
S	3 1/2"H x 1/8"D x 9'-0 7/8"L +/-	1	CURVE 1 - DESK
T	6"H x 1"D x 9'-0 3/4"L +/-	1	CURVE 1 - DESK
U	4"H x 1/8"D x 9'-0 7/8"L +/-	1	CURVE 1 - DESK
V	1 1/2"H x 2"D x 9'-0 1/2"L +/-	1	CURVE 1 - DESK
W	2 1/2"H x 1/8"D x 9'-0 7/8"L +/-	1	CURVE 1 - DESK
X	3 1/2"H x 1"D x 9'-0 3/4"L +/-	1	CURVE 1 - DESK
Y	3 1/2"H x 2"D x 2'-6"L +/-	1	STRAIGHT - SIDE OF DESK
Z	6"H x 1"D x 2'-5"L +/-	1	STRAIGHT - SIDE OF DESK
AA	1 1/2"H x 2"D x 2'-6"L +/-	1	STRAIGHT - SIDE OF DESK
BB	3 1/2"H x 1/8"D x 2'-4"L +/-	1	STRAIGHT - SIDE OF DESK
CC	6"H x 1"D x 2'-5"L +/-	1	STRAIGHT - SIDE OF DESK
DD	4"H x 1/8"D x 2'-4"L +/-	1	STRAIGHT - SIDE OF DESK
EE	1 1/2"H x 2"D x 2'-6"L +/-	1	STRAIGHT - SIDE OF DESK
FF	2 1/2"H x 1/8"D x 2'-4"L +/-	1	STRAIGHT - SIDE OF DESK
GG	3 1/2"H x 1"D x 2'-5"L +/-	1	STRAIGHT - SIDE OF DESK

GENERAL NOTES
1. FIELD VERIFY ALL DIMENSIONS
2. SEE SHEET A-402 FOR DIMENSIONS FOR DESK AND FURTHER INFORMATION.

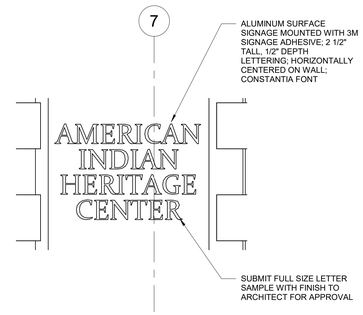


GENERAL NOTES:
- PROVIDE SHOP DRAWINGS TO CLEARLY INDICATE HOW THREADED RODS WOULD BE USED FOR SUPPORT
- 6" WOOD SIZE ADJUSTMENT FOR WOOD NOMINAL SIZE
- STAGGERED HAIRLINE JOINTS AS REQUIRED BY MATERIAL

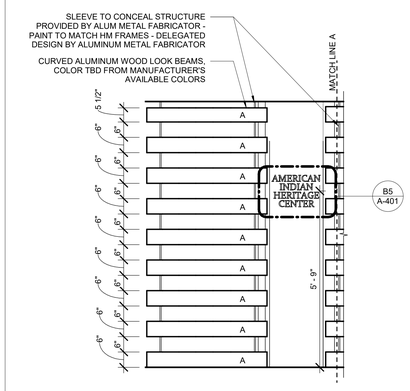
D3 3D REFERENCE 1



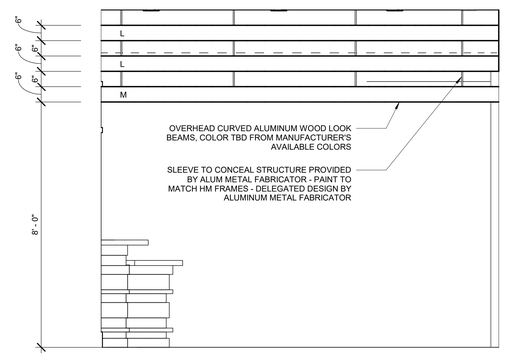
C1 ENLARGED ENTRY RCP - WOOD FEATURE
1/4" = 1'-0"



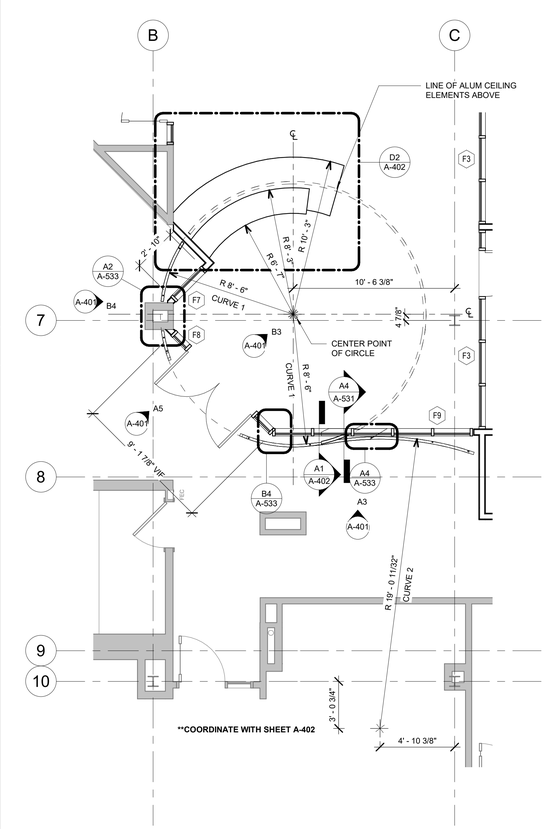
B5 ENTRY SIGN ELEVATION
1 1/2" = 1'-0"



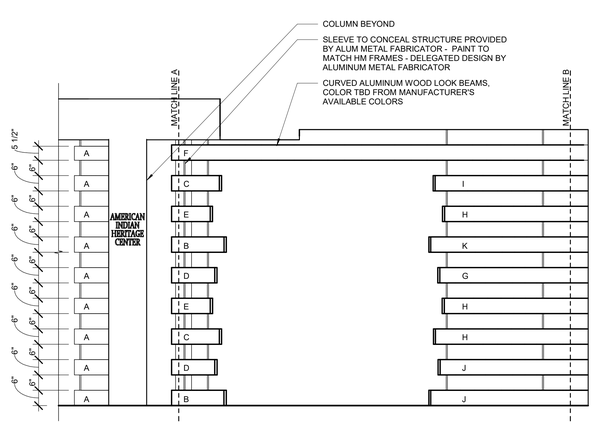
B4 WD FEATURE ELEV @ PLAN LEFT
1/2" = 1'-0"



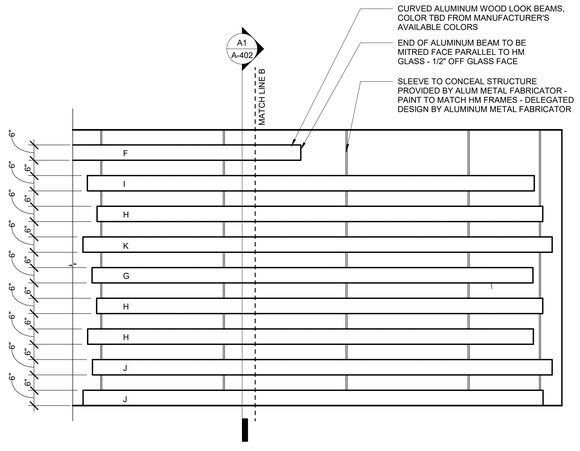
B3 WOOD FEATURE ELEVATION AT CEILING DETAIL/ DESK
1/2" = 1'-0"



A1 ENLARGED ENTRY PLAN - WOOD FEATURE
1/4" = 1'-0"



A5 WOOD FEATURE ELEVATION @ ENTRANCE
1/2" = 1'-0"



A3 WOOD FEATURE ELEVATION @ PLAN RIGHT
1/2" = 1'-0"

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112 South Tryon Street, Suite 1300
Charlotte, North Carolina 28284
(t) 704/372-6665

MUELLER ASSOCIATES, INC.
ENGINEER C-0979
1306 Concourse Dr #100,
Linthicum Heights, MD 21090
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1/10/2022

UNC PEMBROKE

UNC PEMBROKE AMERICAN INDIAN HERITAGE CENTER

SCO ID#: 21-23067-01A

TAG	DESCRIPTION	DATE

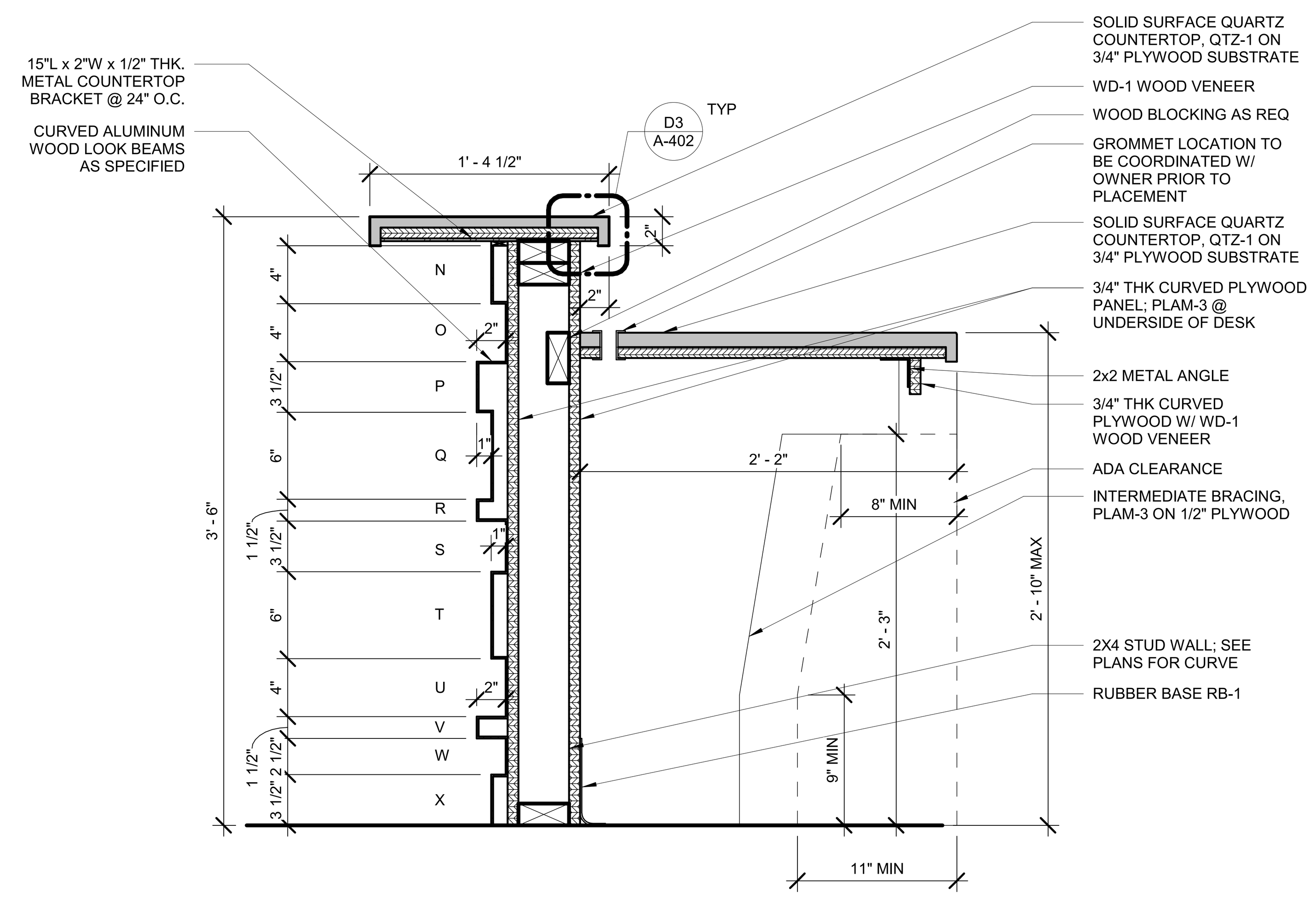
Project: 21PEM587
Drawn By: RS/ DJ
Checked By: RH/ JM
Date: 1/10/2022

ENLARGED PLANS, ELEVATIONS & SIGNAGE AT ENTRY - BASE BID

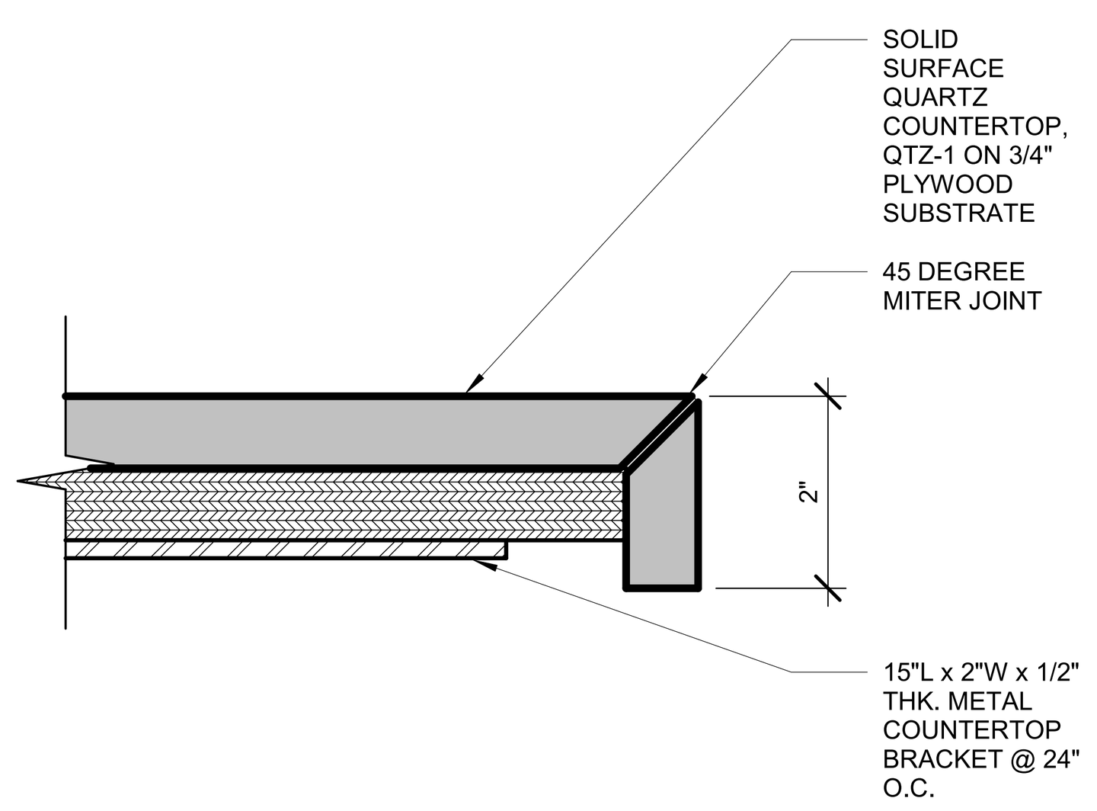
PROJECT NORTH
TRUE NORTH

BID DOCUMENTS

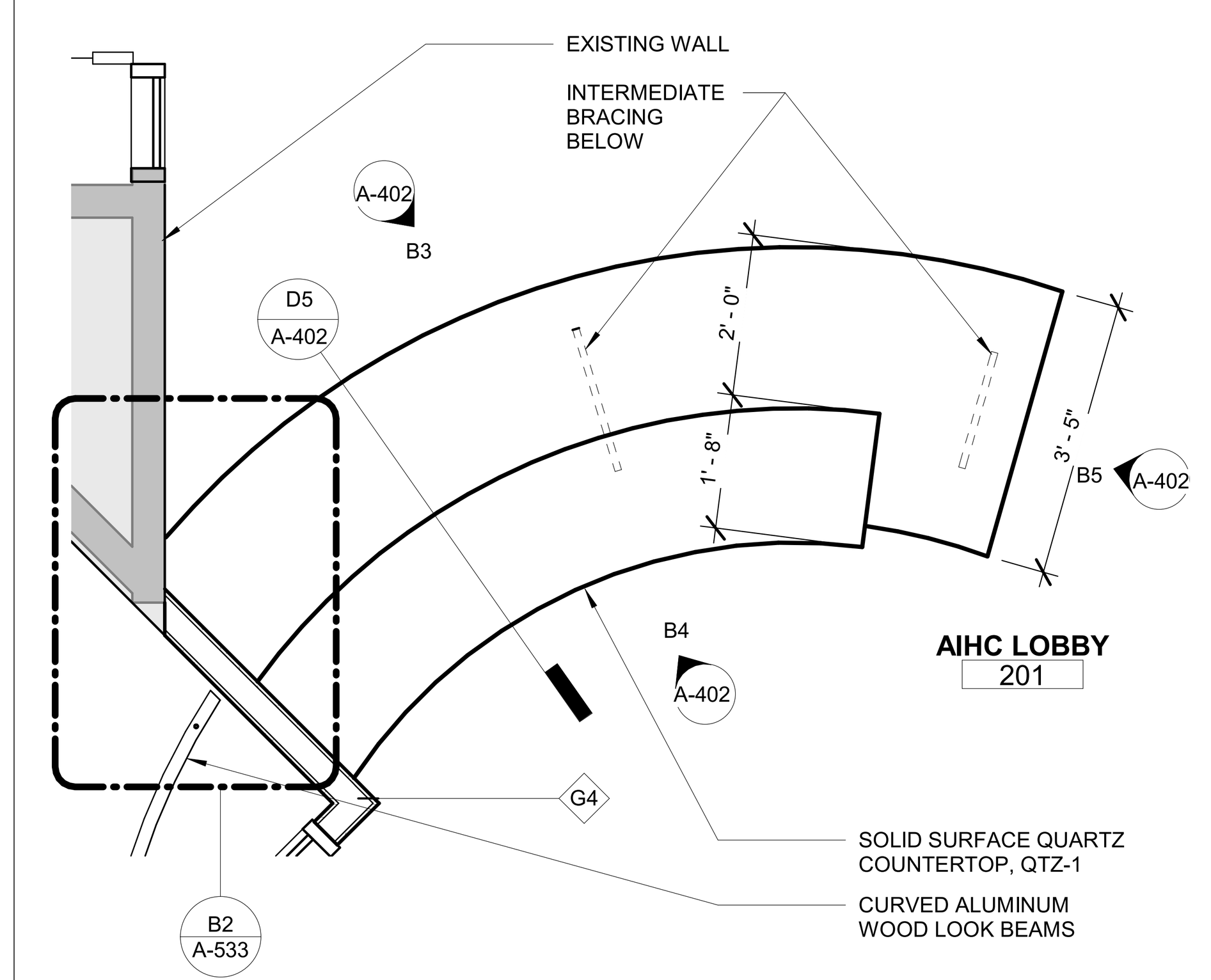
A-401



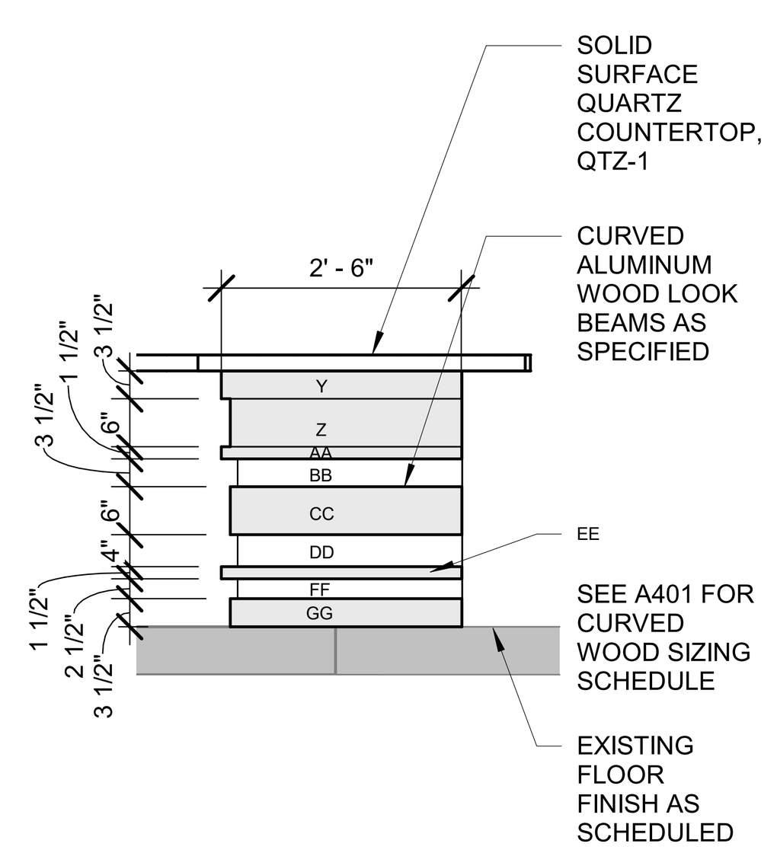
D5 TYP SECTION @ RECEPTION DESK
1 1/2" = 1'-0"



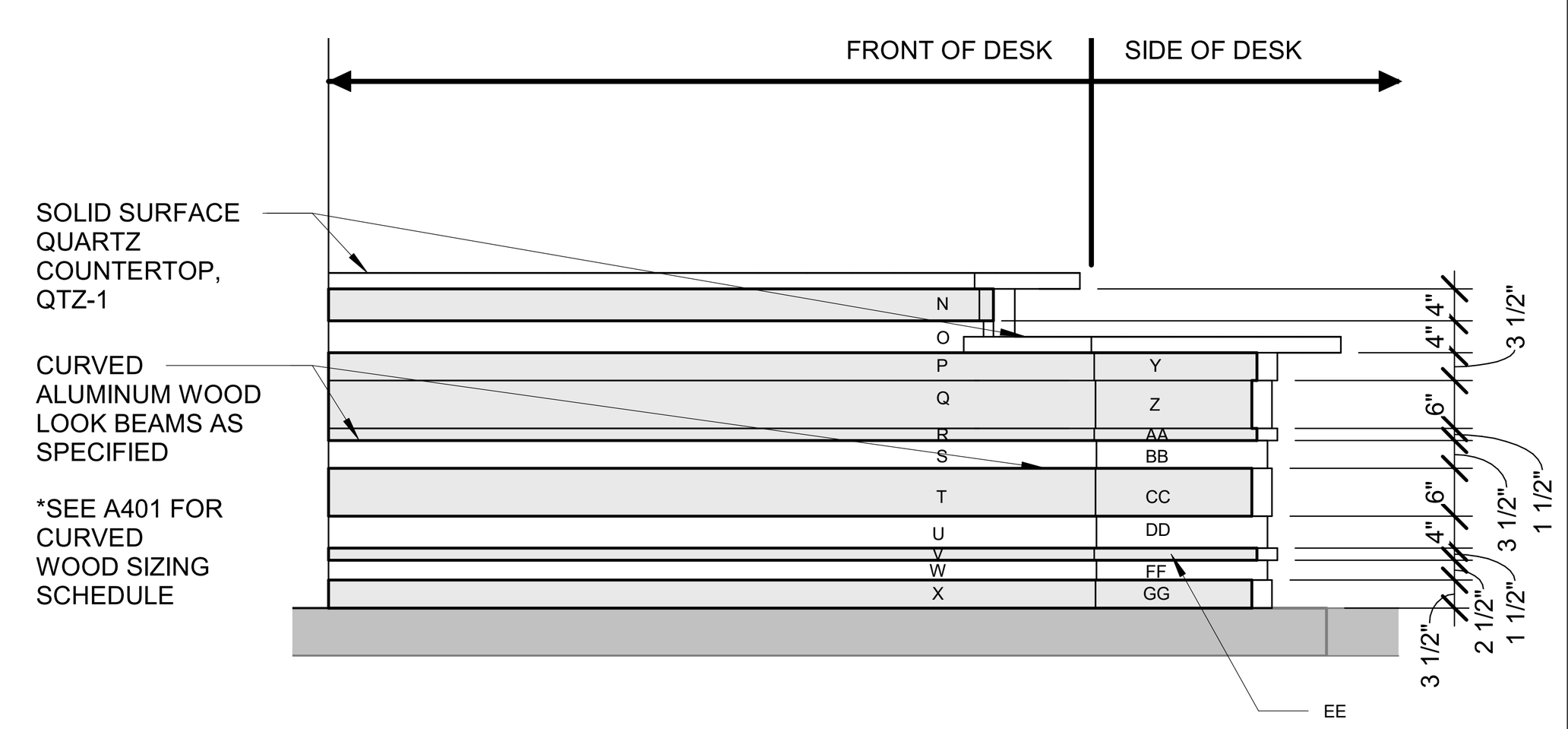
D3 QUARTZ COUNTERTOP CORNER
6" = 1'-0"



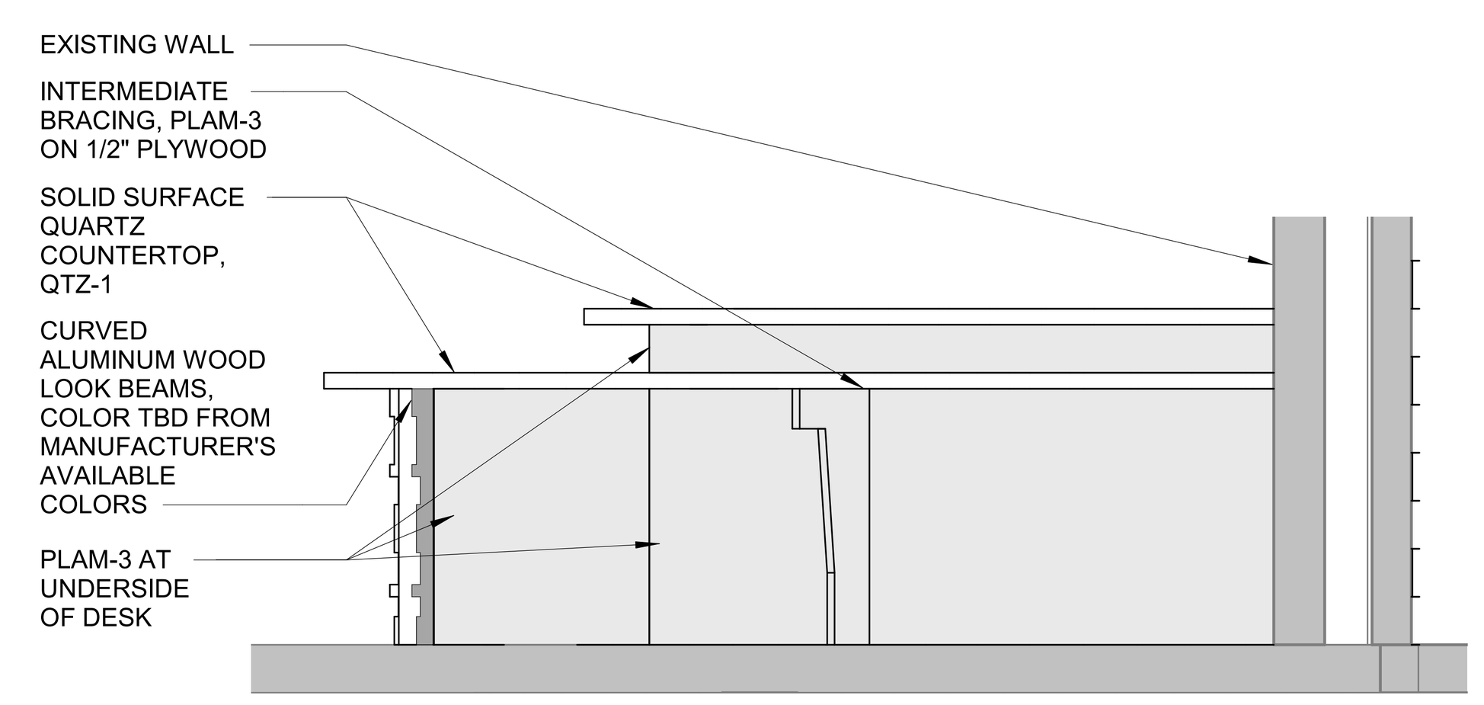
D2 ENLARGED PLAN AT RECEPTION DESK
1/2" = 1'-0"



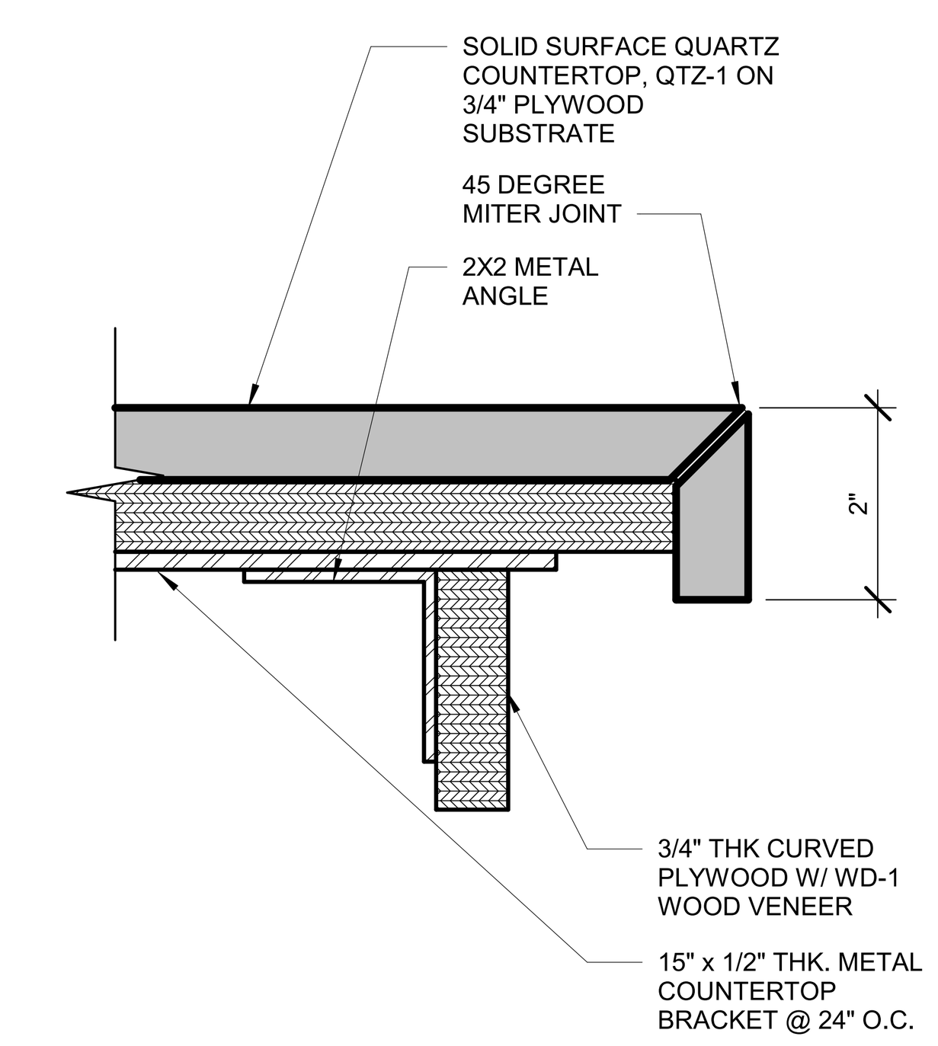
B5 DESK SIDE ELEVATION
1/2" = 1'-0"



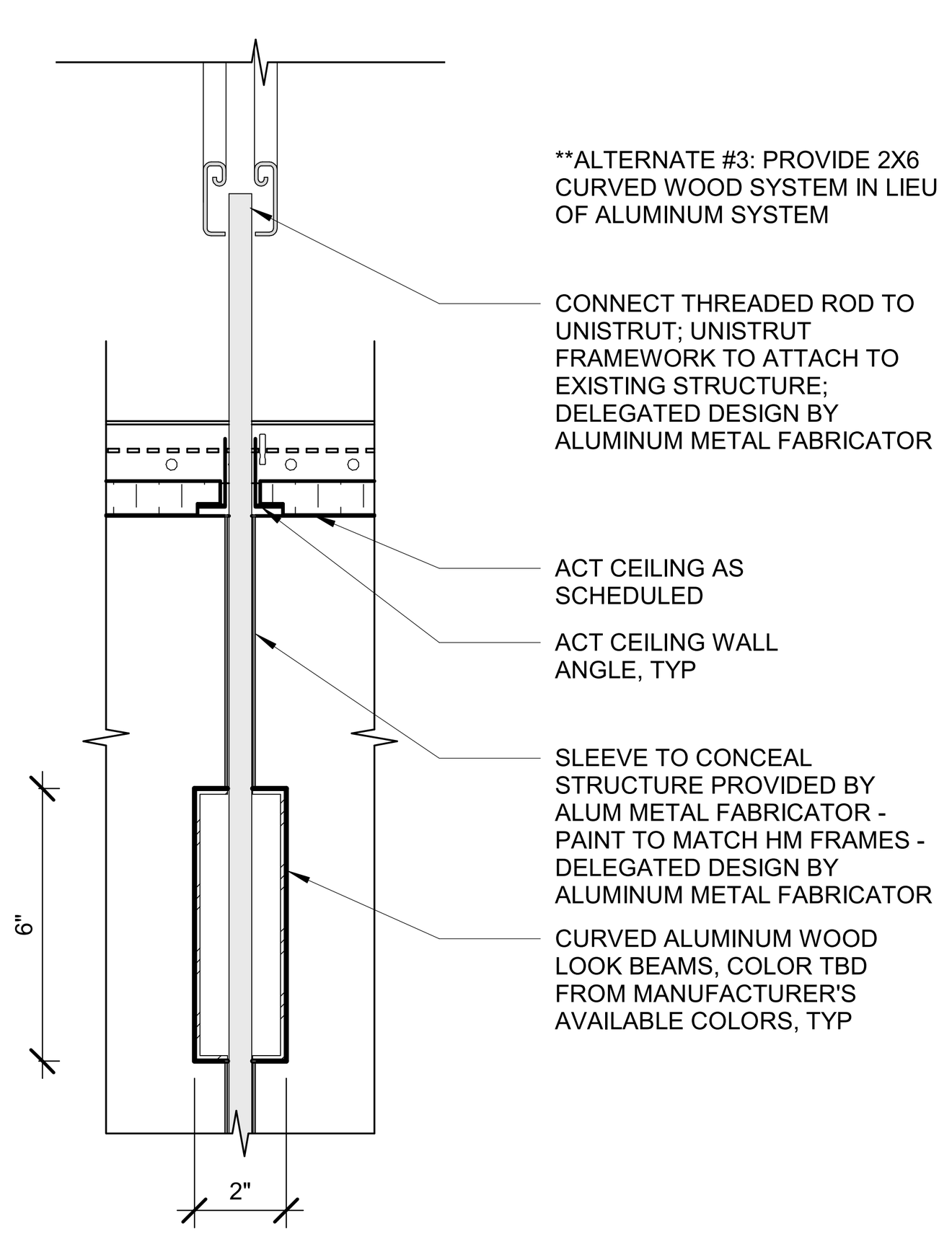
B4 DESK FRONT/ SIDE ELEVATION
1/2" = 1'-0"



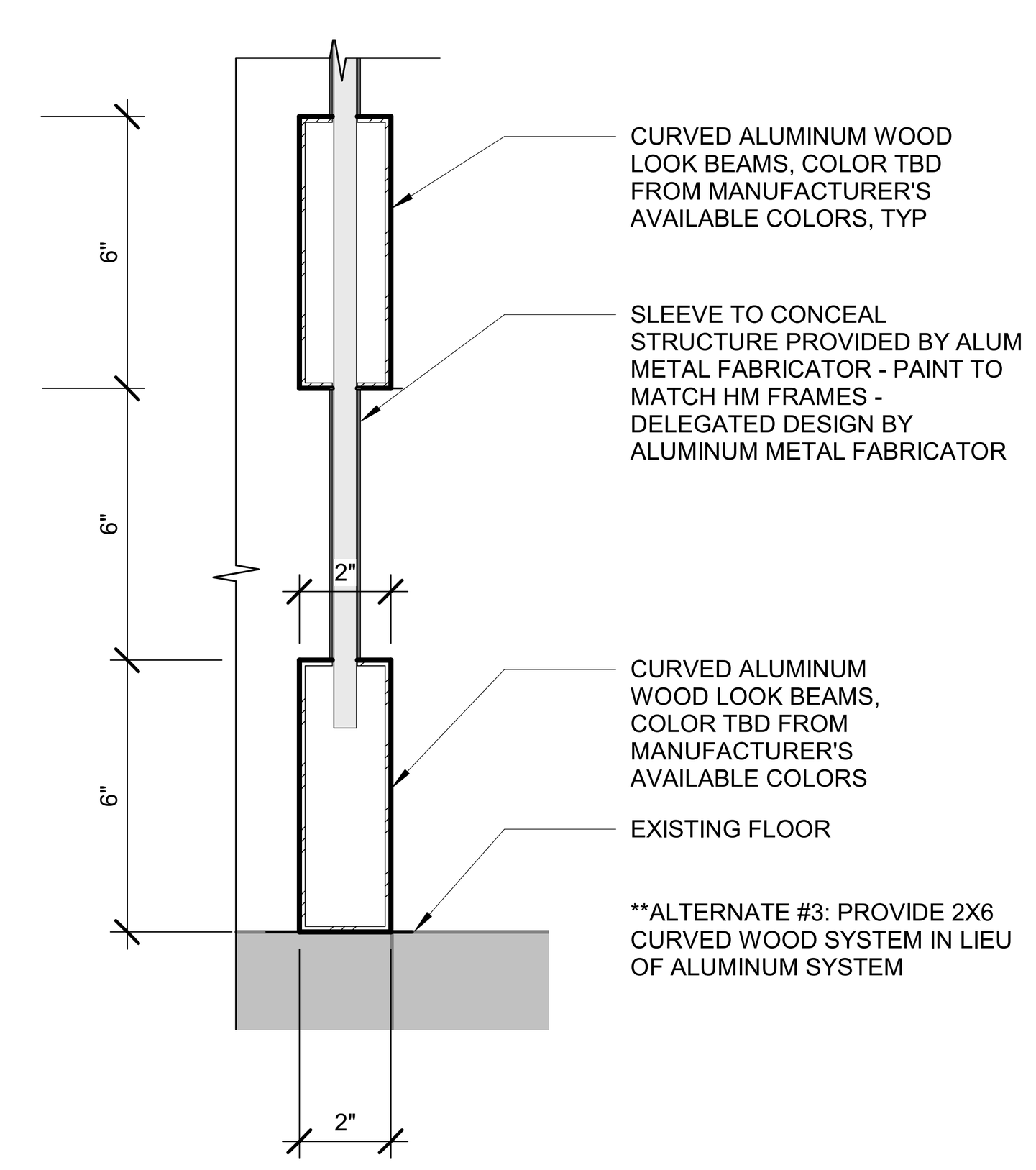
B3 DESK BACK ELEVATION
1/2" = 1'-0"



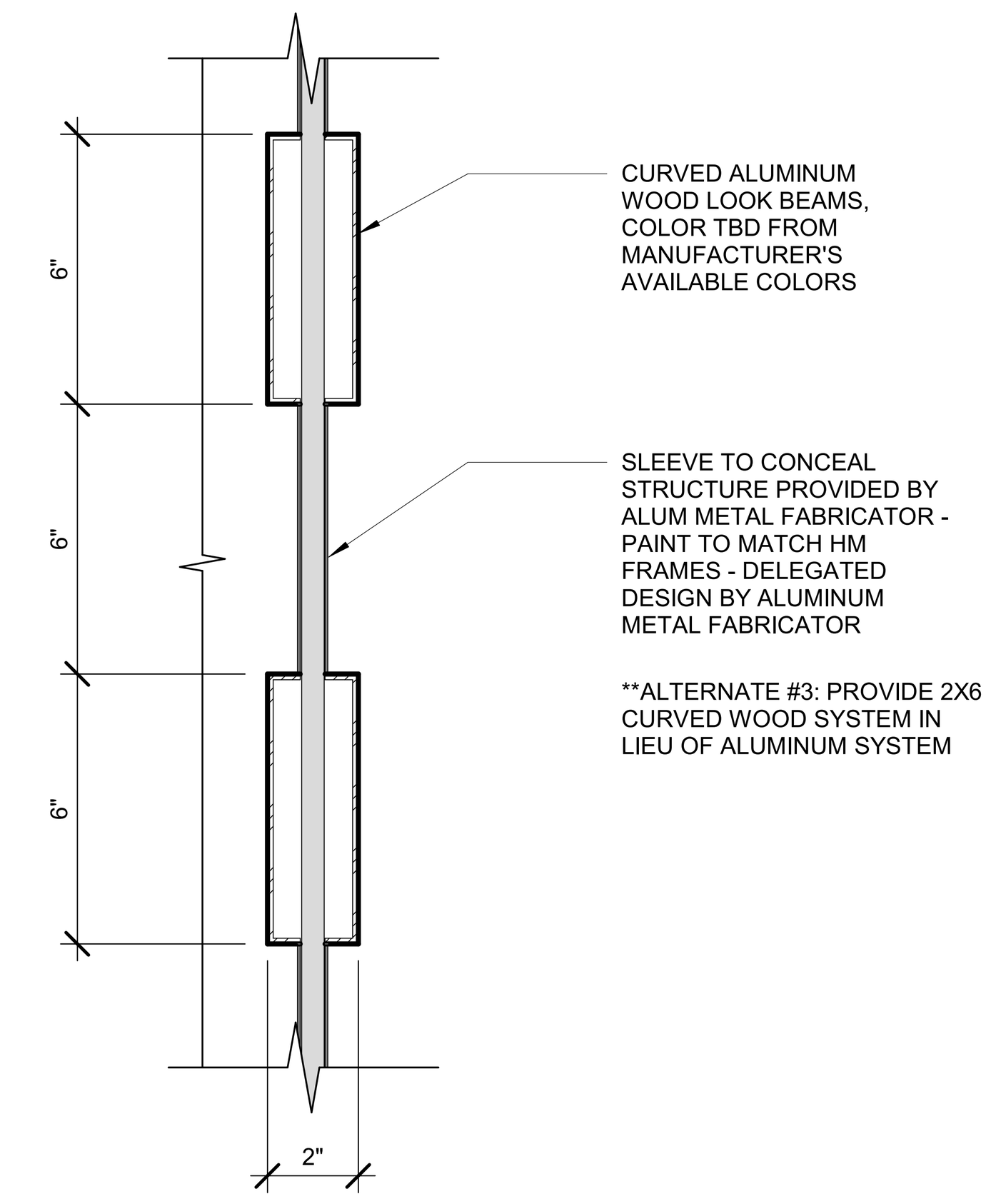
B2 QUARTZ COUNTERTOP CORNER
6" = 1'-0"



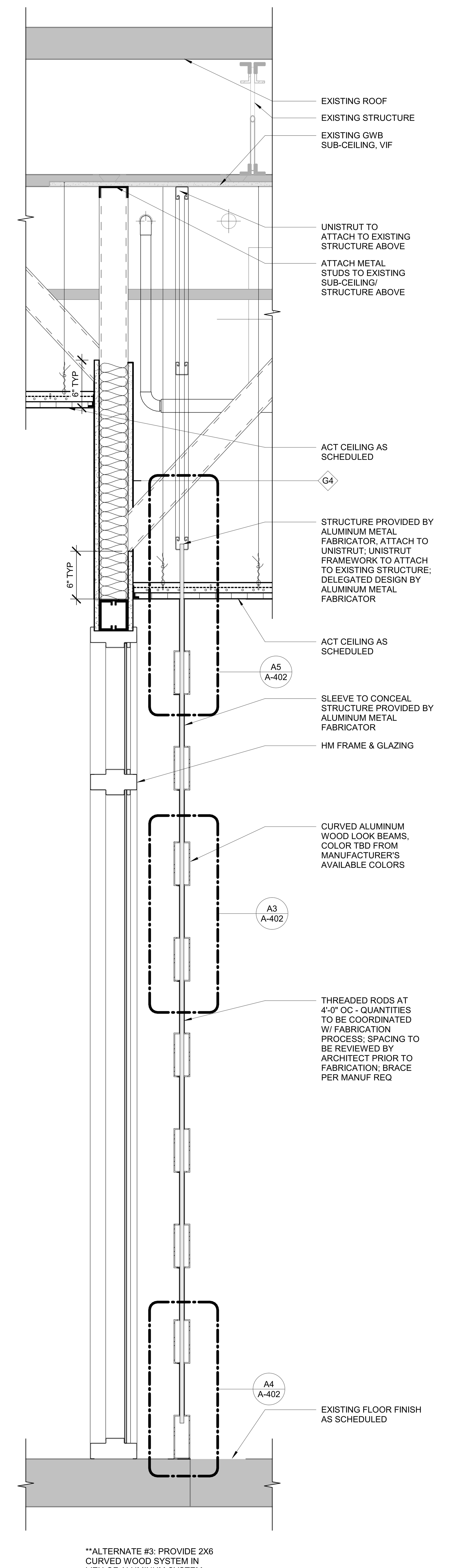
A5 CURVED WOOD LOOK TOP DETAIL
3" = 1'-0"



A4 CURVED WOOD LOOK BASE DETAIL
3" = 1'-0"



A3 CURVED WOOD LOOK TYP DETAIL
3" = 1'-0"



A1 CURVED WOOD LOOK WALL SECTION
1 1/2" = 1'-0"

Jenkins • Peer Architects
112 South Tryon Street, Suite 1300
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1/10/2022

UNC PEMBROKE

UNC PEMBROKE AMERICAN INDIAN HERITAGE CENTER

SCO ID#: 21-23067-01A

TAG	DESCRIPTION	DATE

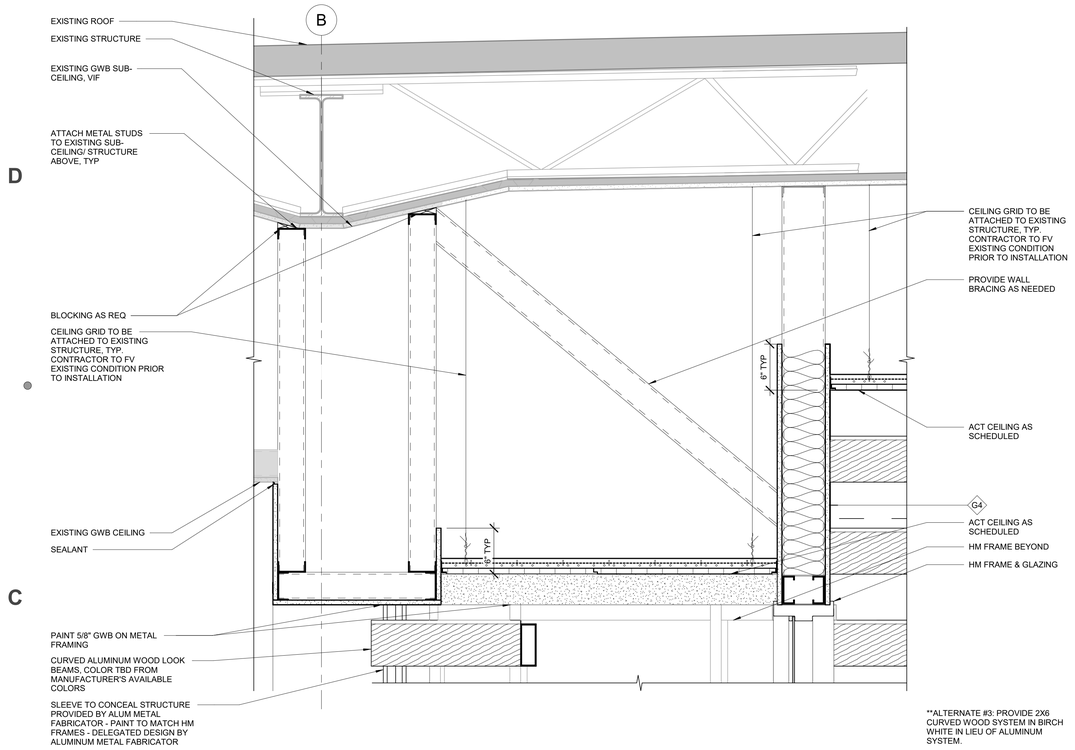
Project: 21PEM587
Drawn By: RS/ DJ
Checked By: RH/ JM
Date: 1/10/2022

ENLARGED WOOD ENTRY DETAILS - BASE BID

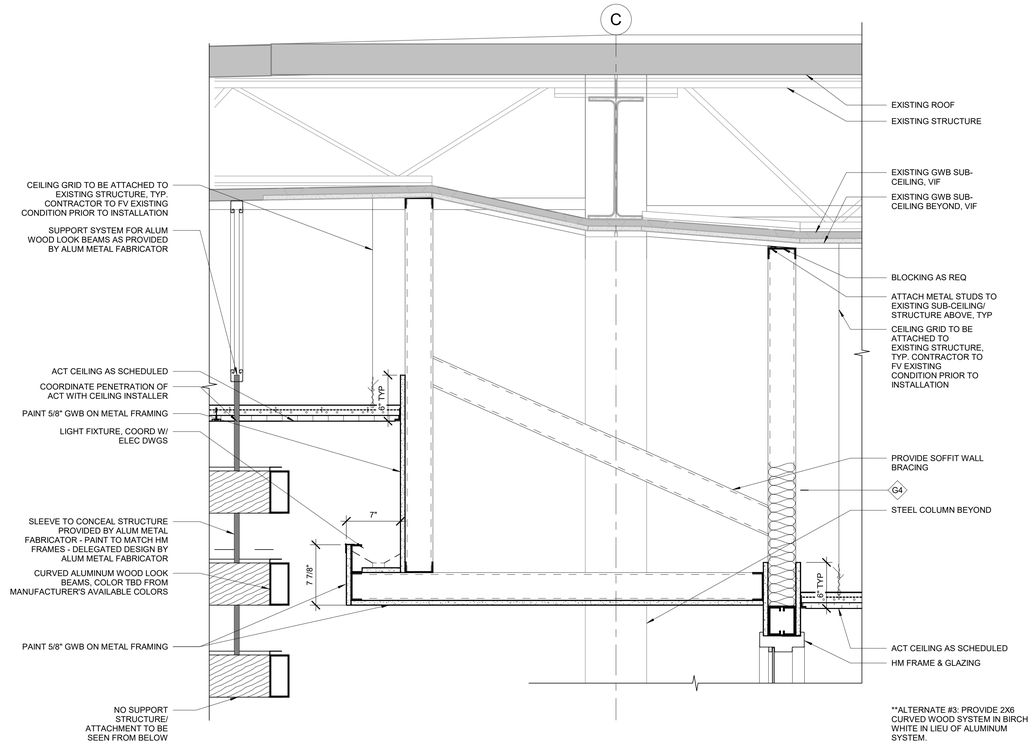
PROJECT NORTH
TRUE NORTH

BID DOCUMENTS

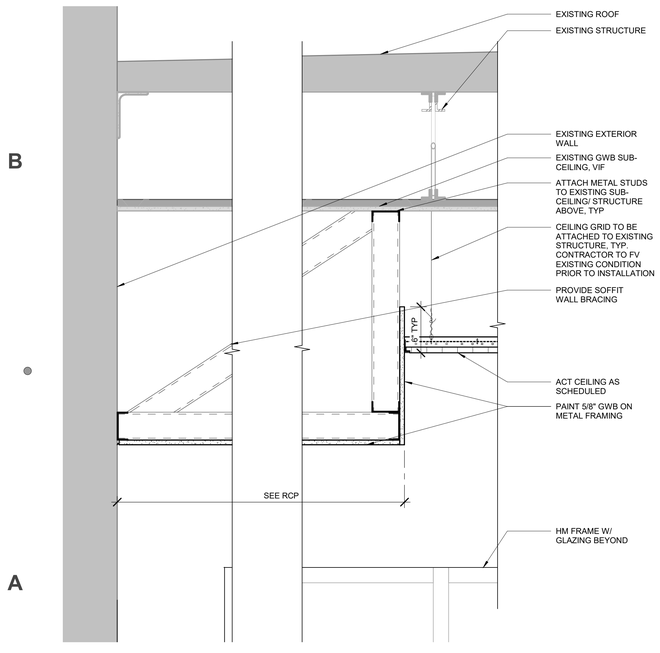
A-402



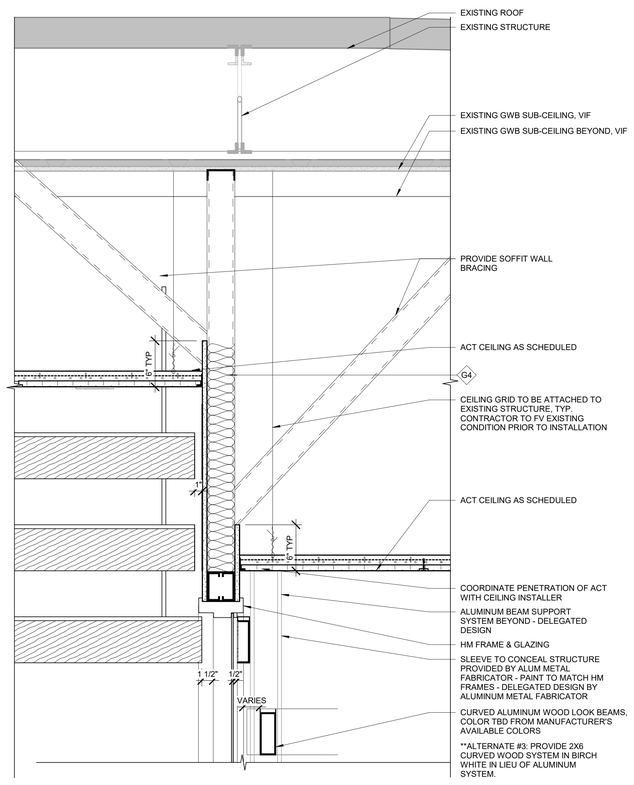
C5 SOFFIT AT ENTRY
1 1/2" = 1'-0"



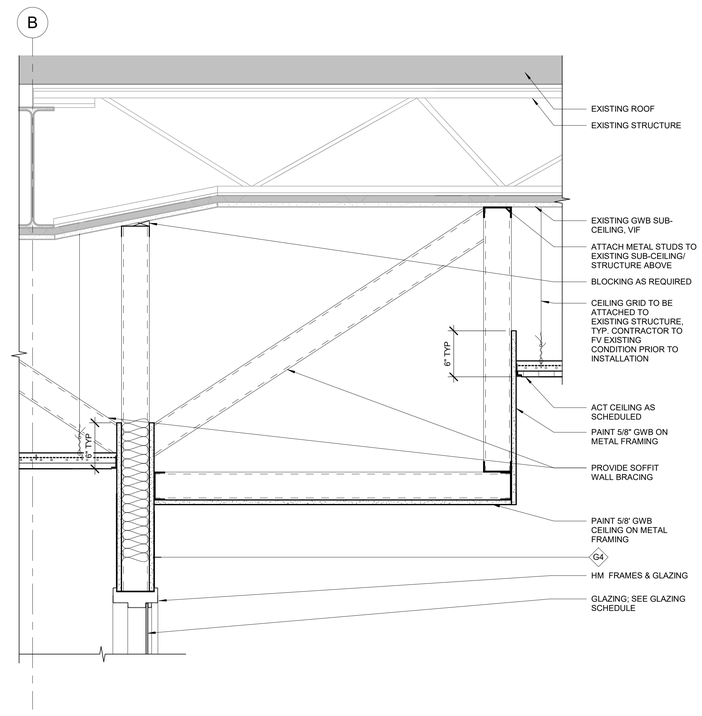
C3 DETAIL @ LIGHT COVE
1 1/2" = 1'-0"



A5 SOFFIT AT EXTERIOR WALL
1 1/2" = 1'-0"



A4 HM FRAME @ CURVED WOOD PLANKS
1 1/2" = 1'-0"



A2 SLOPED CEILING SOFFIT IN LOBBY
1 1/2" = 1'-0"

5 4 3 2 1

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(t) 410/646-4500

1/10/2022

UNC PEMBROKE

UNC PEMBROKE AMERICAN INDIAN HERITAGE CENTER

SCO ID#: 21-23067-01A

TAG	DESCRIPTION	DATE

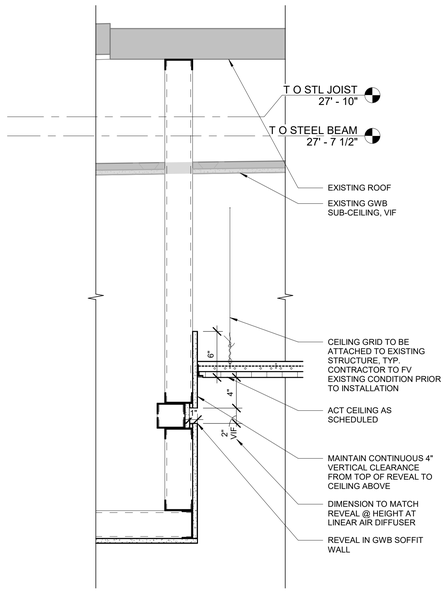
Project: 21PEM587
Drawn By: RS/ DJ
Checked By: RH/ JM
Date: 1/10/2022

INTERIOR DETAILS

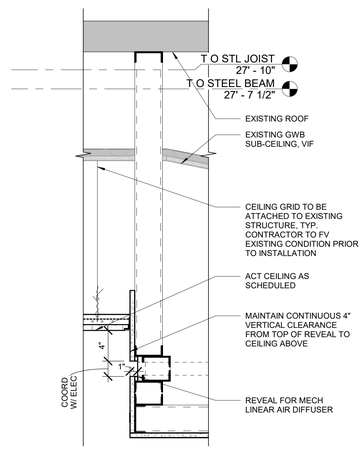
PROJECT NORTH
TRUE NORTH

BID DOCUMENTS

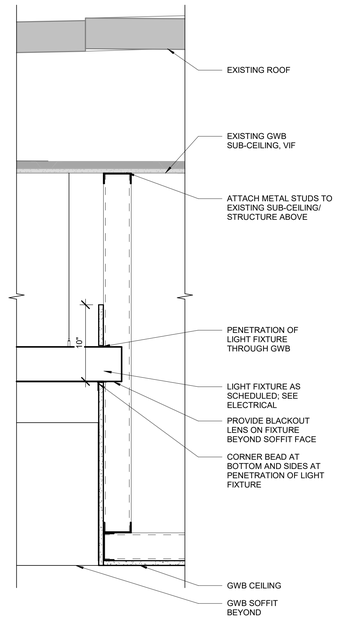
A-531



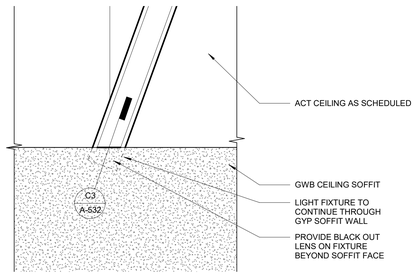
C5 DETAIL @ GWB SOFFIT REVEAL
1 1/2" = 1'-0"



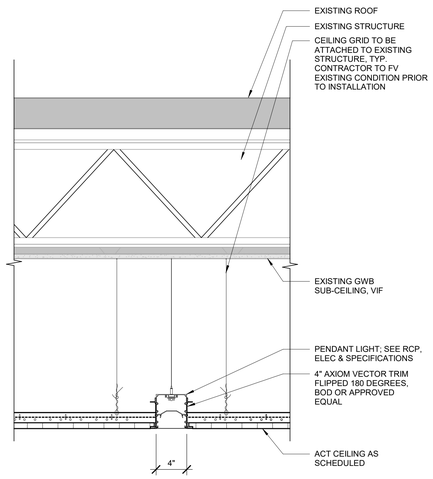
C4 DETAIL @ LINEAR AIR DIFFUSER
1 1/2" = 1'-0"



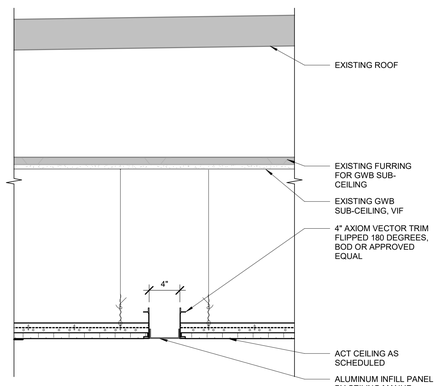
C3 LIGHT FIXTURE/SOFFIT SECTION DETAIL
1 1/2" = 1'-0"



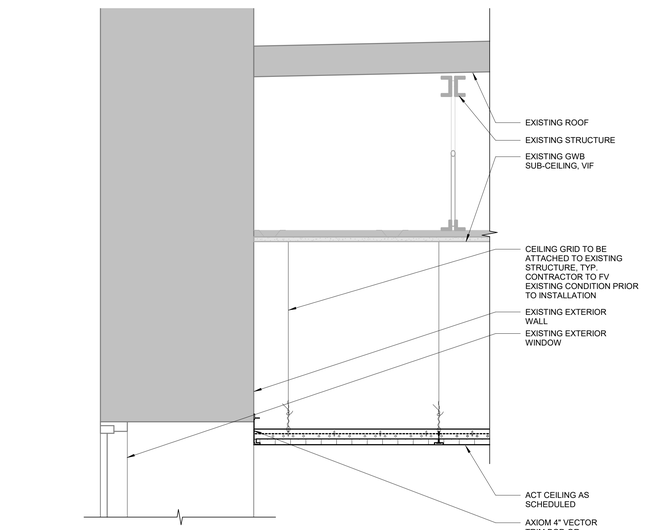
C2 LIGHT FIXTURE/ SOFFIT PLAN DETAIL
1 1/2" = 1'-0"



A4 SECTION AT PENDANT LIGHTS
1 1/2" = 1'-0"



A2 CEILING TRIM DETAIL
1 1/2" = 1'-0"



A5 CEILING DETAIL AT ROOM 204
1 1/2" = 1'-0"

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UNC PEMBROKE

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INTERIOR DETAILS

PROJECT NORTH
TRUE NORTH

BID DOCUMENTS

A-532

5 4 3 2 1

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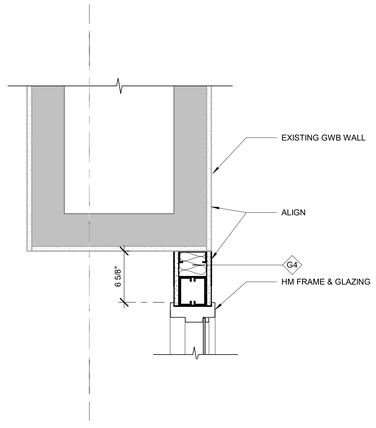
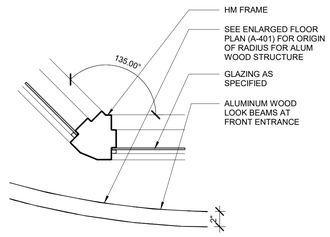
D

C

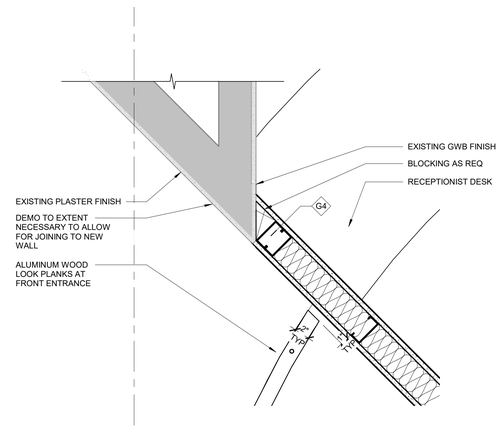


B

B5 HM FRAME @ EXISTING WALL
1 1/2" = 1'-0"

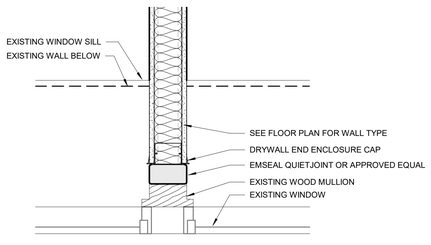


B4 ENTRY DETAIL AT HM FRAME ANGLE
1 1/2" = 1'-0"

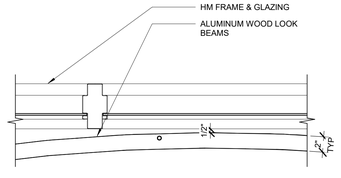


B2 PLAN DETAIL AT RECEP DESK
1 1/2" = 1'-0"

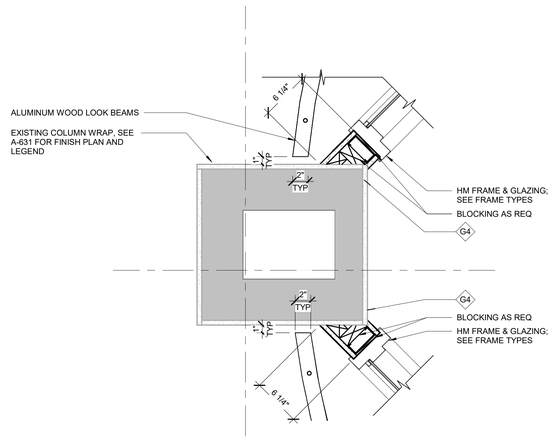
A



A5 WALL AT WINDOW
1 1/2" = 1'-0"



A4 HM FRAME AT CURVED WOOD
1 1/2" = 1'-0"



A2 PLAN DETAIL AT ENTRY COLUMN
1 1/2" = 1'-0"

5 4 3 2 1

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INTERIOR DETAILS

PROJECT NORTH
TRUE NORTH

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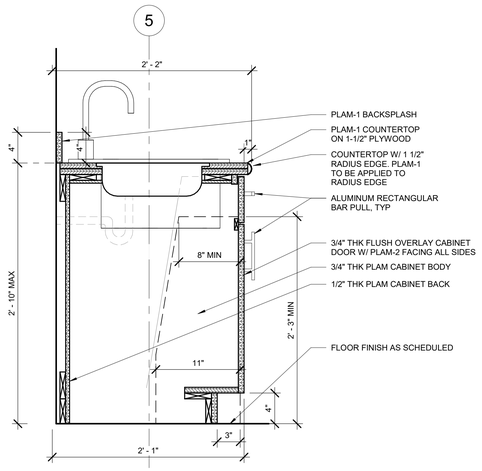
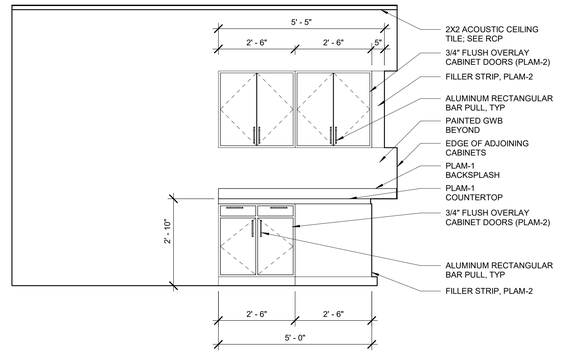
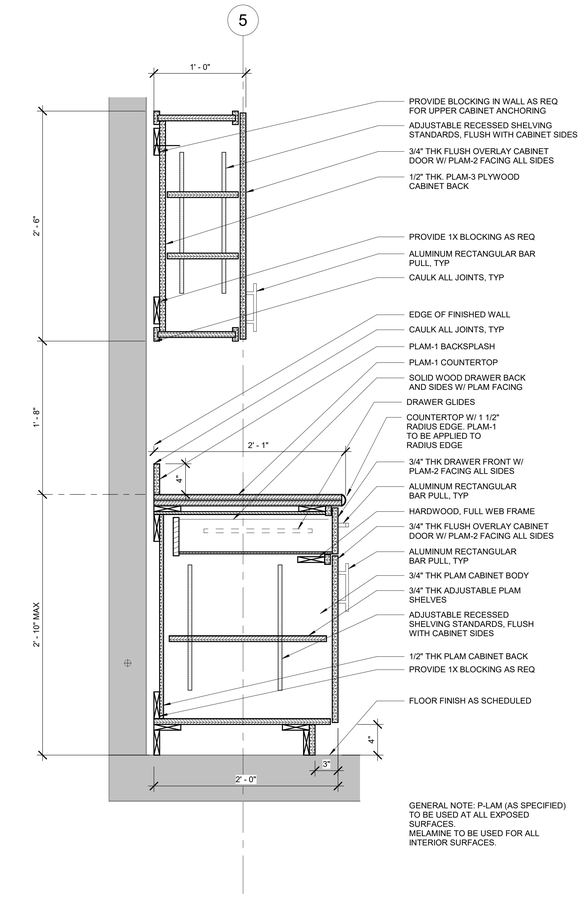
A-533



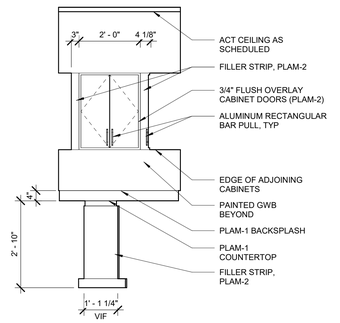
C4 TYPICAL SINK DETAIL
1 1/2" = 1'-0"



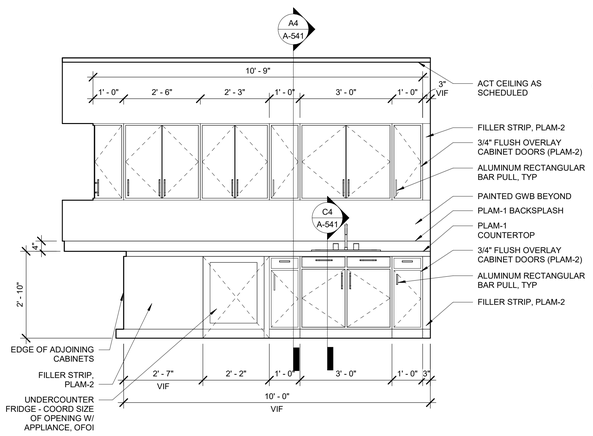
C2 MILLWORK ELEVATION - LEFT
1/2" = 1'-0"



A4 TYP CABINET SECTION
1 1/2" = 1'-0"



B2 MILLWORK ELEVATION - REAR
1/2" = 1'-0"



A2 MILLWORK ELEVATION - RIGHT
1/2" = 1'-0"

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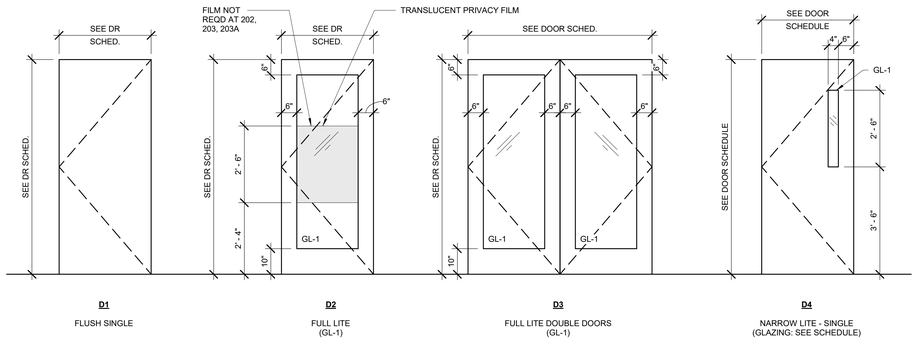
MILLWORK ELEVATIONS & DETAILS

PROJECT NORTH
TRUE NORTH

BID DOCUMENTS

A-541



D1 FLUSH SINGLE

D2 FULL LITE (GL-1)

D3 FULL LITE DOUBLE DOORS (GL-1)

D4 NARROW LITE - SINGLE (GLAZING: SEE SCHEDULE)

DOOR TYPES
1/2" = 1'-0"

DOOR SCHEDULE GENERAL NOTES

SCHEDULE ABBREVIATIONS:
- **HM** HOLLOW METAL
- **WD** SOLID CORE WOOD
- **PR** PAIR

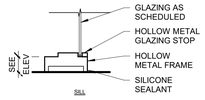
1. FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.
2. PRIME AND PAINT ALL INTERIOR HM FRAMES & DOORS. SEE FINISH SCHEDULE FOR PAINT SELECTION.

GLAZING SCHEDULE

GL-1 1/4" CLEAR GLASS - TEMPERED

GL-2 1/4" CLEAR GLASS

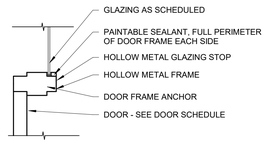
TRANSLUCENT PRIVACY FILM ON CORRIDOR SIDE OF GLAZING



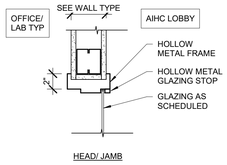
D4 HM GLAZING SILL
1 1/2" = 1'-0"

DOOR SCHEDULE												
	DOOR					FRAME						
		SIZE						DETAILS			HDW	
MARK	TYPE	WIDTH	HEIGHT	THK	MATL.	TYPE	MATL.	HEAD	JAMB	THRESHOLD	SET	COMMENTS
200A	D1	3' - 0"	7' - 0"	1 3/4"	WD	F1	HM	C5/A611	B5/A611	T1	05	
201	D3	6' - 0"	7' - 6"	1 3/4"	WD	F8	HM	D5/A611	D5/A611	T1	01	3'-0" PAIR DOORS; NOTE 1
202	D2	3' - 0"	7' - 0"	1 3/4"	WD	F4	HM	D5/A611	D5/A611	T1	04	NOTE 1
203	D2	3' - 0"	7' - 0"	1 3/4"	WD	F2	HM	D5/A611	B5/A611 & C5/A611	T2	12	NO PRIVACY FILM; NOTE 1
203A	D3	8' - 0"	7' - 0"	1 3/4"	WD	F6	HM	D5/A611	D5/A611	T2	11	NOTE 1; 4'-0" PAIR DOORS HOLD OPEN/ NO PRIVACY FILM
204	D2	3' - 0"	7' - 0"	1 3/4"	WD	F5	HM	D5/A611	B5/A611 & C5/A611	T2	03	NOTE 1
204A	D1	3' - 4"	7' - 0"	1 3/4"	WD	F1	HM	C5/A611	B5/A611	T1	08	NOTE 1
204B	D4	3' - 0"	7' - 0"	1 3/4"	WD	F1	HM	C5/A611	B5/A611	T2	13	NOTE 1
205	D2	3' - 0"	7' - 0"	1 3/4"	WD	F3	HM	D5/A611	D5/A611	T2	02	NOTE 1
206	D2	3' - 0"	7' - 0"	1 3/4"	WD	F3	HM	D5/A611	D5/A611	T2	02	NOTE 1
207	D2	3' - 0"	7' - 0"	1 3/4"	WD	F3	HM	D5/A611	D5/A611	T2	02	NOTE 1
240	D2	3' - 0"	7' - 0"	1 3/4"	WD	F2	HM	D5/A611	B5/A611 & C5/A611	T2	04	
240A	D1	3' - 0"	7' - 0"	1 3/4"	WD	F1	HM	C5/A611	B5/A611	T1	09	
241	D2	3' - 0"	7' - 0"	1 3/4"	WD	F1	HM	C5/A611	B5/A611	T1	02	
242	D2	3' - 0"	7' - 0"	1 3/4"	WD	F1	HM	C5/A611	B5/A611	T1	02	
243	D2	3' - 0"	7' - 0"	1 3/4"	WD	F1	HM	C5/A611	B5/A611	T1	02	
244	D4	3' - 0"	7' - 0"	1 3/4"	WD	F1	HM	C5/A611	B5/A611	T1	02	
245	D2	3' - 0"	7' - 0"	1 3/4"	WD	F1	HM	C5/A611	B5/A611	T1	02	

**NOTE 1: DARK BRONZE HARDWARE

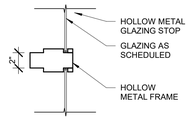


D5 HM DOOR HEAD/JAMB
1 1/2" = 1'-0"



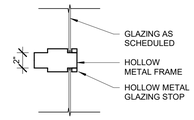
HEAD/ JAMB

C4 HM GLAZING H/J
1 1/2" = 1'-0"



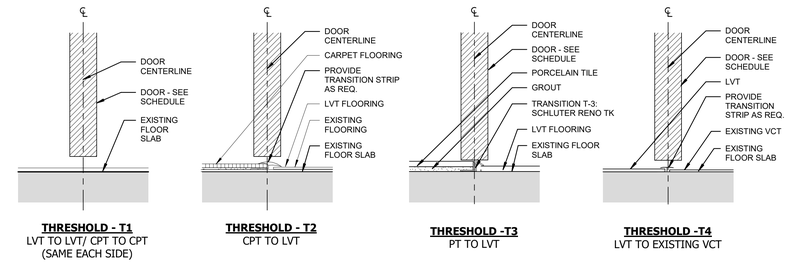
HORIZONTAL MULLION

C3 HM GLAZING H MULLION
1 1/2" = 1'-0"



VERTICAL MULLION

C2 HM GLAZING V MULLION
1 1/2" = 1'-0"



THRESHOLD - T1 LVT TO LVT/ CPT TO CPT (SAME EACH SIDE)

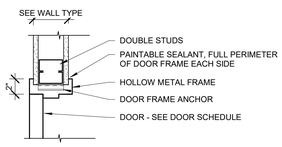
THRESHOLD - T2 CPT TO LVT

THRESHOLD -T3 PT TO LVT

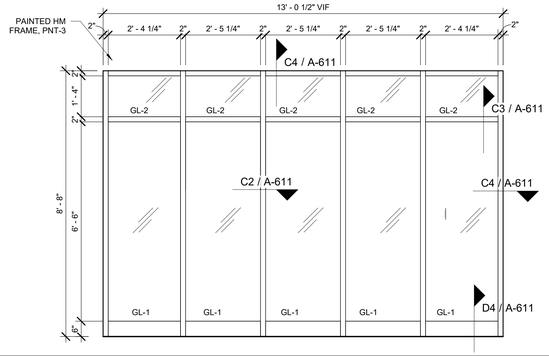
THRESHOLD -T4 LVT TO EXISTING VCT

C1 DOOR TRANSITION DETAILS
3" = 1'-0"

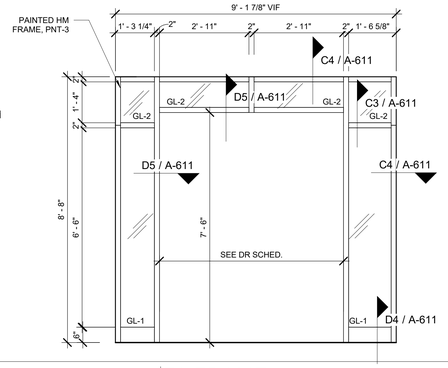
C5 HM DOOR HEAD
1 1/2" = 1'-0"



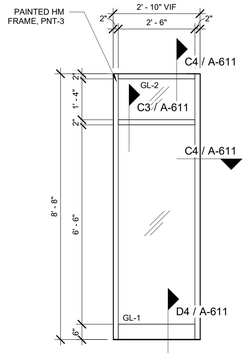
B5 HM DOOR JAMB
1 1/2" = 1'-0"



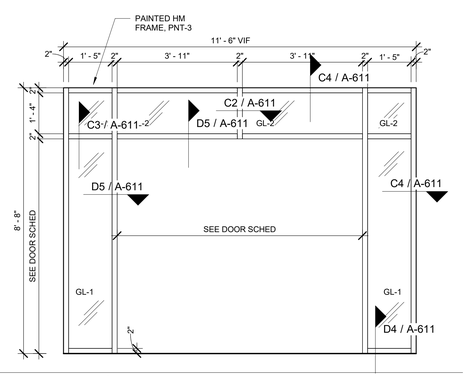
B4 F9 FRAME
1/2" = 1'-0"



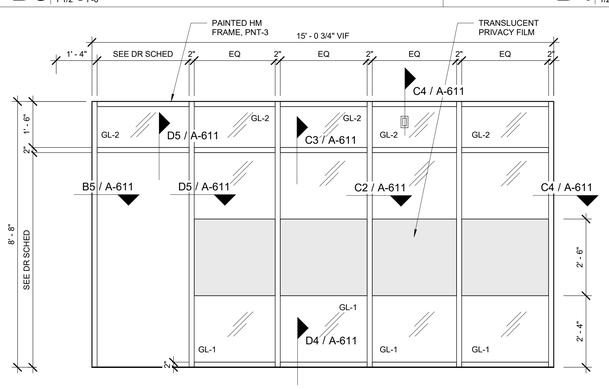
B3 F8 FRAME
1/2" = 1'-0"



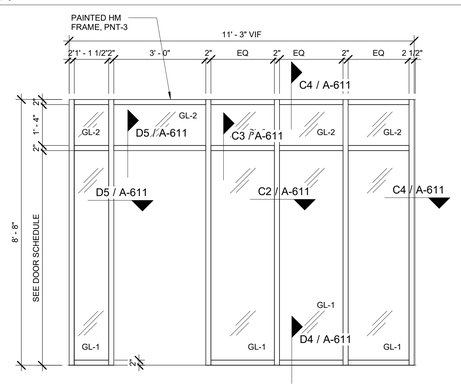
B2 F7 FRAME
1/2" = 1'-0"



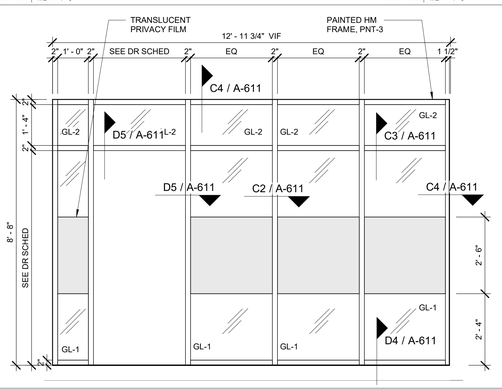
B1 F6 FRAME
1/2" = 1'-0"



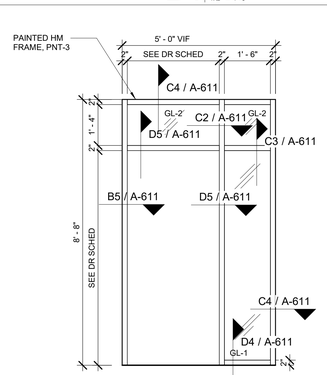
A5 F5 FRAME
1/2" = 1'-0"



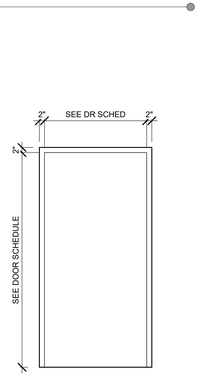
A4 F4 FRAME
1/2" = 1'-0"



A3 F3 FRAME
1/2" = 1'-0"



A2 F2 FRAME
1/2" = 1'-0"



A1 F1 FRAME
1/2" = 1'-0"

5 4 3 2 1

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1/10/2022

UNC PEMBROKE

UNC PEMBROKE AMERICAN INDIAN HERITAGE CENTER

SCO ID#: 21-23067-01A

TAG	DESCRIPTION	DATE

Project: 21PEM587
Drawn By: RS/ DJ
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Date: 1/10/2022

DOOR & FRAME TYPE DIAGRAM SCHEDULE

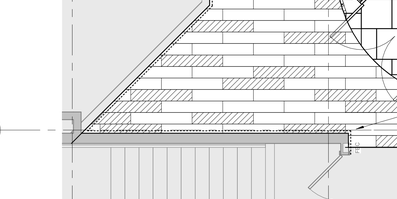
PROJECT NORTH

TRUE NORTH

BID DOCUMENTS

A-611

FINISH SCHEDULE									
Number	Name	Base Finish	Floor Finish	Wall Finish E	Wall Finish W	Wall Finish N	Wall Finish S	Ceiling Finish	Comments
200	LOBBY	RB-1	LVT-1/ LVT-2/ PT-1	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	PNT-3 @ HM FRAMES & COLUMN, REFER TO FINISH PLAN
200A	STORAGE	RB-1	LVT-1	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	
201	AIHC LOBBY	RB-1	LVT-3/ PT-1	PNT-1	PNT-2	PNT-1	PNT-1	ACT-2/GWB	PNT-3 @ EXPOSED STEEL & HM FRAMES/ PNT-4 @ GWB CEILING
202	GALLEY	RB-1	LVT-3	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	
203	COMP LAB/ STUDY	RB-1	CPT-1	PNT-1	PNT-2	PNT-1	PNT-1	ACT-1	
204	CONFERENCE	RB-1	CPT-1/CPT-2	PNT-1	PNT-2	PNT-1	PNT-1	ACT-1	CPT-2 LOCATIONS SHOWN ON FINISH PLANS
204A	STORAGE	RB-1	CPT-1	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	
205	OFFICE	RB-1	CPT-1	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	
206	OFFICE	RB-1	CPT-1	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	
207	OFFICE	RB-1	CPT-1	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	
240	OFFICE SUITE	RB-1	CPT-1	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	
240A	STO.	RB-1	CPT-1	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	
241	OFF.	RB-1	CPT-1	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	
242	OFF.	RB-1	CPT-1	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	
243	OFF.	RB-1	CPT-1	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	
244	STO.	RB-1	CPT-1	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	
244	COMP. LAB	RB-1	CPT-1	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	
245	OFF.	RB-1	CPT-1	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	



NOTE:
- ROOM SIGNAGE OFOI

EDGE OF LVT

RUBBER TRANSITION STRIP

C5 TRANSITION AT EXISTING TERRAZZO
12" = 1'-0"

A5 ENTRY ENL. FINISH PLAN
1/4" = 1'-0"

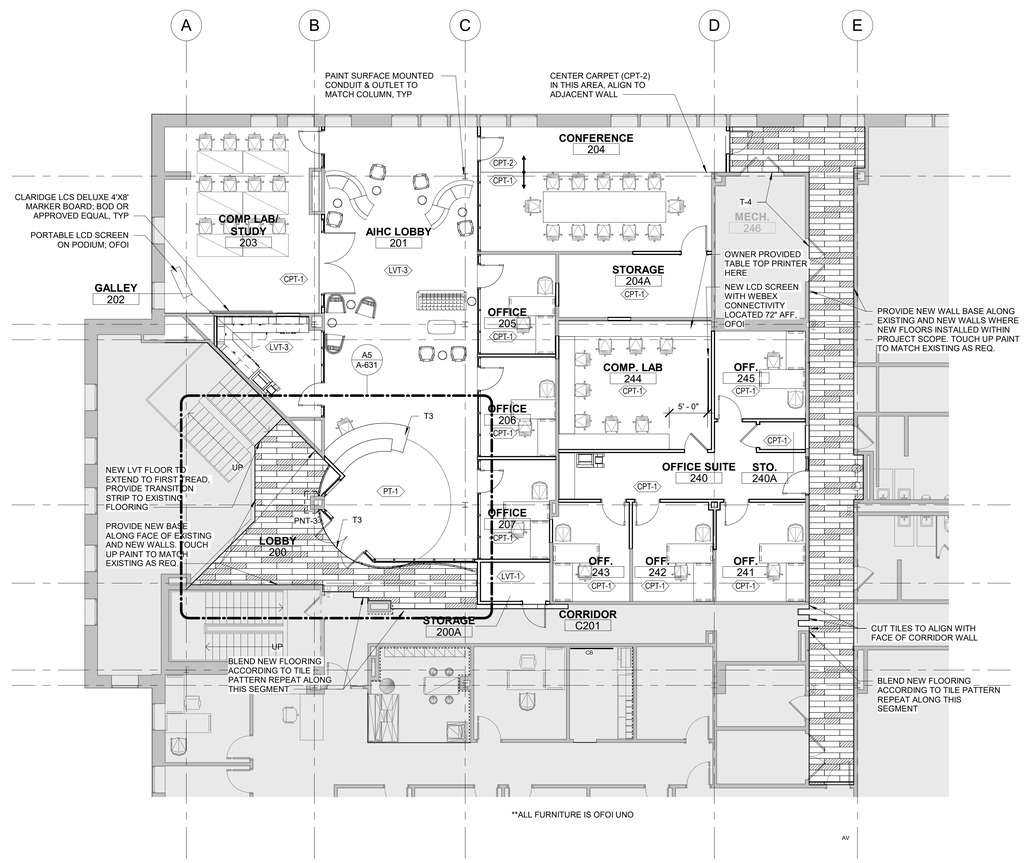
FINISH LEGEND - BASIS OF DESIGN					
ITEM	DESCRIPTION	MANUFACTURER	STYLE # / COLOR	FINISH	NOTES
PNT-1	PAINT - WALLS/PRIMARY	SHERWIN WILLIAMS	SW7646 - FIRST STAR	EGGSHELL	
PNT-2	PAINT - WALLS/ACCENT	SHERWIN WILLIAMS	SW9114 - FALLEN LEAVES	EGGSHELL	
PNT-3	PAINT - ACCENT STRUCTURE & HM FRAMES	SHERWIN WILLIAMS	SW7048 - URBANE BRONZE	EGGSHELL	PAINT ENTRY COLUMN AT WOOD FEATURE AND ALL HM STOREFRONT MULLIONS
PNT-4	PAINT - CEILING	SHERWIN WILLIAMS	SW7000 - IBIS WHITE	FLAT	
ACT-1	2x2 ACOUSTIC CEILING TILE	ARMSTRONG	ULTIMA SQUARE TEGULAR(WHITE) WITH PRELUDE ML SUPRAFINE 9/16" EXPOSED TEE (WHITE)		CAC 35 MIN
ACT-2	2x6 ACOUSTIC CEILING TILE STAGGERED	ARMSTRONG	ULTIMA SQUARE TEGULAR(WHITE) WITH PRELUDE ML SUPRAFINE 9/16" EXPOSED TEE (WHITE)		CAC 35 MIN
RB-1	RUBBER BASE	JOHNSONITE	63 BURNT UMBER B	COVED BASE	6" RUBBER BASE
CPT-1	CARPET TILE	TARKETT	REVERSE 24"x24" 111478512-10-1		UNCP STANDARD - REFER TO FURNITURE PLAN FOR LOCATIONS
CPT-2	CARPET TILE	TARKETT	TBD 24"X24" - COLOR TBD FROM STANDARD		REFER TO FURNITURE PLAN FOR LOCATIONS; BASE BID CARPET FOR CONFERENCE ROOM EXIT PATH
LVT-1	LUXURY VINYL TILE	SHAW	COVE - PLASTER (27111) 9"X48"		REFER TO FURNITURE PLAN
LVT-2	LUXURY VINYL TILE	SHAW	COVE - SILT (27504) 9"X48"		REFER TO FURNITURE PLAN
LVT-3	LUXURY VINYL TILE	SHAW COREtec	COVER - SECURE (07068) 7"X48"		REFER TO FURNITURE PLAN FOR LOCATIONS
PT-1	PORCELAIN TILE	ESEDRA	PERGAMO 24"x24", 12"x24", 12"x12"		REFER TO FURNITURE PLAN FOR LOCATIONS
WD-1	WOOD VENEER	MADRID	BIRCH-WHITE-B-ROWP-L		
PLAM-1	PLASTIC LAMINATE	NEVAMAR	TBD		
PLAM-2	PLASTIC LAMINATE	NEVAMAR	TBD		
PLAM-3	PLASTIC LAMINATE	NEVAMAR	DARK GREY		
QTZ-1	SOLID SURFACE QUARTZ	CAESARSTONE	7141 QUARTZ REFLECTIONS		RECEPTION DESK COUNTERTOP - 2CM
T-3	TRANSITION STRIP	SCHLUTER	SCHLUTER RENO TK TRANSITION STRIP		(OR APPROVED EQUAL)

FINISH AND FURNITURE PLAN LEGEND

- MB — MARKER BOARD - REFER TO FURNITURE PLANS
- AV — AUDIO VISUAL - REFER TO FURNITURE PLANS
- LOCATION OF ACCENT PAINT COLOR
- NEW LVT FLOORING; INSTALL AS PER PATTERN SHOWN ON A5/A-631
- COVE PLASTER 27111
- COVE SILT 27504
- PORCELAIN TILE PATTERN
- T-3 — FLOOR TRANSITION TYPE; SEE A-611 FOR DETAILS
- LVT-3 — FINISH MATERIAL; SEE FINISH LEGEND FOR DETAILS

GENERAL FINISH PLAN NOTES

1. ALL FURNITURE: OWNER FURNISHED, OWNER INSTALLED.
2. COORDINATE POWER REQUIREMENTS WITH OWNER PROVIDED FURNITURE & EQUIPMENT.
3. ANY EXPOSED CEILING ELEMENTS TO BE PAINTED BLACK.



A3 LEVEL 2 FURNITURE PLAN
1/8" = 1'-0"

Jenkins • Peer *Architects*
112 South Tryon Street, Suite 1300
Charlotte, North Carolina 28284
(t) 704/372-6665

MUELLER ASSOCIATES, INC.
ENGINEER C-0979
1306 Concourse Dr #100,
Linthicum Heights, MD 21090
(t) 410/646-4500

1/10/2022

UNC PEMBROKE

UNC PEMBROKE AMERICAN INDIAN HERITAGE CENTER

SCO ID#: 21-23067-01A

TAG	DESCRIPTION	DATE

Project: 21PEM587
Drawn By: RS/ DJ
Checked By: RH/ JM
Date: 1/10/2022

FURNITURE AND FINISH PLAN, FINISH SCHEDULE & FINISH LEGEND

PROJECT NORTH
TRUE NORTH

BID DOCUMENTS

A-631

5 4 3 2 1

ABBREVIATIONS

ABBREV	ABBREVIATION
ABD	ABANDONED
ABV	ABOVE
A/C	AIR CONDITIONING
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
ALUM	ALUMINUM
APD	AIR PRESSURE DROP
APPROX	APPROXIMATE
ARCH	ARCHITECT, ARCHITECTURAL
ARRG	ARRANGEMENT
AST	ABOVEGROUND STORAGE TANK
ATC	AUTOMATIC TEMPERATURE
ATM	ATMOSPHERE
ATR	AIR TEMPERATURE
ATU	AIR TERMINAL UNIT
AVG	AVERAGE
AWT	AVERAGE WATER TEMPERATURE
BAS	BUILDING AUTOMATION SYSTEM
BWV	BACK WATER VALVE
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BOP	BOTTOM OF PIPE
BTM	BOTTOM
BTUH	BRITISH THERMAL UNITS PER HOUR
BFP	BACKFLOW PREVENTER
°C	DEGREES CELSIUS
CAV	CONSTANT AIR VOLUME
CC	COOLING COIL
CD	CEILING DIFFUSER
CFM	CUBIC FEET PER MINUTE
CLG	CEILING
CO	CLEANOUT / CARBON MONXIDE
CO2	CARBON DIOXIDE
COMP	COMPRESSED
CONC	CONCRETE
CONN	CONNECTION, CONNECT
CONT	CONTINUATION
CP	CONDENSATE PUMP
CRAC	COMPUTER ROOM AIR CONDITIONER
CRU	CONDENSATE RETURN UNIT
CU FT	CUBIC FEET
CUH	CABINET UNIT HEATER
CX	CONNECT TO EXISTING
CW	DOMESTIC COLD WATER PIPE
D	DRAIN OR DEPTH
DB	DRY BULB OR DECIBEL
DBA	DECIBEL (REFERENCE "A" SCALE)
DBL	DOUBLE
DCP	DIGITAL CONTROL PANEL
DDC	DIRECT DIGITAL CONTROL
DESIG	DESIGNATION
DF	DRINKING FOUNTAIN
DFU	DRAINAGE FIXTURE UNITS
DIA	DIAMETER
DIFF	DIFFUSER
DN	DOWN
DW	DOMESTIC WATER
DWG	DRAWING
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EDB	ENTERING DRY BULB
EFF	EFFICIENCY
EG	ETHYLENE GLYCOL
EJ	EXPANSION JOINT
ELEC	ELECTRICAL, ELECTRIC
ELEV	ELEVATION OR ELEVATOR
EMD	END OF MAIN DRIP
ENT	ENTERING
ESP	EXTERNAL STATIC PRESSURE
ETC	ET CETERA
EW	EYE WASH
EWB	ENTERING WET BULB
EWC	ELECTRIC WATER COOLER
EWT	ENTERING WATER TEMPERATURE
EX	EXISTING
EXP	EXPOSED
°F	DEGREES FEHRENHEIT
F&T	FLOAT & THERMOSTATIC TRAP
FCU	FAN COOL UNIT
FCVA	FLOOR CONTROL VALVE ASSEMBLY
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FF	FINISHED FLOOR
FHC	FIRE HOSE CABINET
FHV	FIRE HOSE VALVE
FL	FLOOR
FND	FOUNDATION DRAINAGE
FOB	FLAT ON BOTTOM
FOT	FLAT ON TOP
FPI	FINS PER INCH
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FS	FLOOR SINK
FT HD	FEET OF HEAD PRESSURE
FTR	FINNED TUBE RADIATION
GA	GAGE
GAL	GALLON
GALV	GALVANIZED
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
H	HEIGHT
HED	HOSE AND DRAIN
HORIZ	HORIZONTAL
HP	HORSEPOWER
H.P.	HIGH PRESSURE
HVAC	HEATING, VENTILATING & AIR CONDITIONING
HW	DOMESTIC HOT WATER PIPE
HWR	DOMESTIC HOT WATER RECIRCULATING
HZ	HERTZ

ABBREV	ABBREVIATION
IB	INVERTED BUCKET TRAP
I.L.	INTERMEDIATE LANDING
IN	INCH OR INCHES
INV	INVERT ELEVATION
KVA	KILOVOLT AMPERES
KW	KILOWATT
L	LENGTH
LAT	LEAVING AIR TEMPERATURE
LB(S)	POUND(S)
LDB	LEAVING DRY BULB
LF	LINEAR FEET
L.P.	LOW PRESSURE
LVG	LEAVING
LWB	LEAVING WET BULB
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MECH	MECHANICAL
MBH	THOUSAND BTU'S PER HOUR
MFR	MANUFACTURER
MIN	MINIMUM
MO	MOTOR OPERATOR
MS	MOP SINK
MTD	MOUNTED
N/A	NOT APPLICABLE
NAT	NATURAL
NC	NOISE CRITERIA
N.C.	NORMALLY CLOSED
NIC	NOT IN CONTRACT
N.O.	NORMALLY OPEN
NO.	NUMBER
OA	OUTDOOR AIR
OC	ON CENTER
OED	OPEN ENDED DUCT
OFD	OVERFLOW DRAIN
OS&Y	OUTSIDE SCREW AND YOKE
PD	PRESSURE DROP
PF	POWER FACTOR
PG	PROPYLENE GLYCOL
PH	PHASE
PHC	PREHEAT COIL
PLBG	PLUMBING
PPH	POUNDS PER HOUR (STEAM)
PPM	PARTS PER MILLION
PRESS.	PRESSURE
PRV	PRESSURE REDUCING VALVE
PSI(G)	POUNDS PER SQUARE INCH (GAGE)
PUH	PROPELLER UNIT HEATER
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
R	RADIUS
RA	RETURN AIR
RAD	RADIATED
RD	ROOF DRAIN
RED'D	REQUIRED
RH	RELATIVE HUMIDITY
RHC	REHEAT COIL
RHP	RADIANT HEATING PANEL
RL	RAINLEADER
RLF	RELIEF AIR
RPM	REVOLUTIONS PER MINUTE
RPZ	REDUCED PRESSURE ZONE
RX	REMOVE EXISTING
SA	SUPPLY AIR
SF	SQUARE FEET
SH	SENSIBLE HEAT OR SHOWER
SL	SOUND LINING
SP	STATIC PRESSURE
SPEC	SPECIFICATION/PROJECT MANUAL
SQ	SQUARE
SRD	SECONDARY (OVERFLOW) ROOF DRAIN
SRL	SECONDARY (OVERFLOW) RAIN LEADER
S/S	STAINLESS STEEL
STL	STEEL
STRUCT	STRUCTURAL
TEMP	TEMPERATURE
TH	TOTAL HEAT
TD	TRENCH DRAIN
THD	THERMODYNAMIC TRAP
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
UC	DOOR UNDER CUT
UH	UNIT HEATER
UON	UNLESS OTHERWISED NOTED
UST	UNDERGROUND STORAGE TANK
V	VOLTS
VA	VOLT AMPERES
VAV	VARIABLE AIR VOLUME
VEL	VELOCITY
VFC	VARIABLE FREQUENCY CONTROLLER
VTR	VENT THRU ROOF
W	WIDTH
WB	WET BULB
WC	WATER COLUMN
WG	WATER GAGE
W/	WITH
W/O	WITHOUT
WPD	WATER PRESSURE DROP

SYMBOLS

SUPPLY AIR DUCT (UP,DOWN)

RETURN/OUTDOOR/RELIEF AIR DUCT (UP,DOWN)

EXHAUST AIR DUCT (UP,DOWN)

FIRE DAMPER WITH ACCESS DOOR

SMOKE DAMPER WITH ACCESS DOOR

COMBINATION FIRE AND SMOKE DAMPER WITH ACCESS DOOR

MANUAL VOLUME DAMPER

FLEXIBLE CONNECTION (DUCT)

SOUND ATTENUATOR

SOUND LINED DUCTWORK

TRANSITION ROUND TO RECTANGULAR

DUCT (SIZE IN INCHES; FIRST FIGURE IS SIDE SHOWN)

DUCT OFFSET UP IN DIRECTION OF ARROW

DUCT OFFSET DOWN IN DIRECTION OF ARROW

ROUND FLEXIBLE DUCT

SUPPLY AIR TERMINAL UNIT

SUPPLY AIR TERMINAL UNIT WITH REHEAT COIL

FAN POWERED AIR TERMINAL UNIT WITH HEATING COIL

DUCT MOUNTED REHEAT COIL

SUPPLY AIR DEVICE

RETURN AIR DEVICE

EXHAUST AIR DEVICE

LINEAR SLOT DIFFUSER WITH PLENUM

SIDEWALL DIFFUSER W/ FIELD FABRICATED PLENUM

DUCT OR WALL MOUNTED AIR DEVICE

PROPELLER UNIT HEATER

FINNED TUBE RADIATION OR RADIANT HEATING PANEL

RETURN AIR FLOW DIRECTION

SUPPLY AIR FLOW DIRECTION

DIAMETER

CUBIC FEET PER MINUTE

CENTER LINE

FLAT OVAL

AREA DRAIN

FLOOR DRAIN

ROOF DRAIN/SECONDARY (OVERFLOW) ROOF DRAIN

FLOOR SINK

TRENCH DRAIN

INVERT ELEVATION

CLEANOUT IN HORIZONTAL

CLEANOUT IN VERTICAL

DOMESTIC WATER BACKFLOW PREVENTER

BACK WATER VALVE (ARROW INDICATES DIRECTION OF FLOW)

SHOCK ABSORBER

HOSE BIBB

NON-FREEZE CONCEALED OUTLET WALL HYDRANT

TRAP PRIMER PIPE

SPACE TEMPERATURE SENSOR OR THERMOSTAT

SPACE HUMIDITY SENSOR OR HUMIDISTAT

SPACE CARBON DIOXIDE SENSOR

DUCT OR PIPE MOUNTED TEMPERATURE SENSOR/TRANSMITTER

DUCT MOUNTED HUMIDITY SENSOR/TRANSMITTER

DUCT MOUNTED CARBON DIOXIDE SENSOR/TRANSMITTER

DUCT MOUNTED SMOKE DETECTOR

FREEZESTAT

CONTROL DAMPER

STATIC PRESSURE SENSOR/AIR FLOW STATION

FAN INLET AIR FLOW MEASURING STATION

TWO WAY CONTROL VALVE

THREE WAY CONTROL VALVE

FLOW SWITCH

DIFFERENTIAL PRESSURE SWITCH

DIFFERENTIAL PRESSURE TRANSMITTER

CURRENT SENSING RELAY

MANUAL OVERRIDE SWITCH

MAGNAHELIC PRESSURE GAGE

FLOW METER

1-HOUR FIRE RATED WALL

BOUNDARY LINE

SANITARY/WASTE PIPE

FOOD, OIL, AND GREASE WASTE PIPE

CHEMICAL RESISTANT WASTE PIPE

A/C CONDENSATE AND EQUIPMENT DRAIN PIPE

VENT PIPE

CHEMICAL RESISTANT VENT PIPE

STORM WATER PIPE

SECONDARY (OVERFLOW) STORM WATER PIPE

FOUNDATION DRAIN PIPE

SANITARY PUMPED DISCHARGE PIPE

STORM WATER PUMPED DISCHARGE PIPE

DOMESTIC COLD WATER PIPE

DOMESTIC HOT WATER PIPE (TEMP. IF INDICATED)

DOMESTIC HOT WATER RECIRCULATING PIPE

INDUSTRIAL COLD WATER PIPE

INDUSTRIAL HOT WATER PIPE (TEMP. IF INDICATED)

INDUSTRIAL HOT WATER RECIRCULATING PIPE

NON-POTABLE WATER PIPE

TREATED WATER PIPE

TEMPERED WATER PIPE

REVERSE OSMOSIS WATER SUPPLY PIPE

REVERSE OSMOSIS WATER RETURN PIPE

DEIONIZED WATER SUPPLY PIPE

DEIONIZED WATER RETURN PIPE

COMPRESSED AIR PIPE

NATURAL GAS PIPE

VACUUM PIPE

VACUUM EXHAUST PIPE

NITROGEN GAS PIPE

NITROUS OXIDE GAS PIPE

OXYGEN GAS PIPE

SPECIALTY GAS PIPE

FIRE SUPPRESSION AND WET-PIPE SPRINKLER PIPE

DRY-PIPE FIRE SUPPRESSION PIPE

PREACTION FIRE SUPPRESSION PIPE

CHILLED WATER SUPPLY PIPE

CHILLED WATER RETURN PIPE

CHILLED WATER (GLYCOL) SUPPLY PIPE

CHILLED WATER (GLYCOL) RETURN PIPE

CONDENSER WATER SUPPLY PIPE

CONDENSER WATER RETURN PIPE

HEATING WATER SUPPLY PIPE

HEATING WATER RETURN PIPE

PRIMARY HEATING WATER SUPPLY PIPE

PRIMARY HEATING WATER RETURN PIPE

HIGH PRESSURE STEAM PIPE (_PSIG)

HIGH PRESSURE CONDENSATE RETURN PIPE

MEDIUM PRESSURE STEAM PIPE (_PSIG)

MEDIUM PRESSURE CONDENSATE RETURN PIPE

LOW PRESSURE STEAM PIPE (_PSIG)

LOW PRESSURE CONDENSATE RETURN PIPE

HUMIDIFICATION STEAM PIPE

PUMPED CONDENSATE RETURN PIPE

STEAM VAPOR VENT PIPE

REFRIGERANT RELIEF PIPE

REFRIGERANT SUCTION PIPE

REFRIGERANT LIQUID PIPE

HOT GAS REFRIGERANT PIPE

FUEL OIL SUPPLY PIPE

FUEL OIL RETURN PIPE

HIGH TEMPERATURE HOT WATER SUPPLY PIPE

HIGH TEMPERATURE HOT WATER RETURN PIPE

DUAL TEMPERATURE SUPPLY

DUAL TEMPERATURE RETURN

FLOW DIRECTION ARROW

PIPE UP

PIPE DOWN

PIPE/DUCT CAP

UNION

FLANGED CONNECTION

PIPE ANCHOR

PIPE GUIDE

CONCENTRIC REDUCER

ECCENTRIC REDUCER

FLEXIBLE CONNECTION (PIPING)

SHUTOFF VALVE (IN HORIZONTAL / IN VERTICAL)

THROTTLING VALVE

MANUAL BALANCING VALVE

AUTOMATIC BALANCING VALVE

CHECK VALVE (ARROW INDICATES DIRECTION OF FLOW)

PRESSURE REDUCING VALVE

PRESSURE RELIEF VALVE

HOSE END DRAIN

TEMPERATURE GAGE/THERMOMETER

FLOW METER FITTING

COMBINATION BALANCING VALVE & FLOW METER FITTING

PRESSURE AND TEMPERATURE PLUG

AUTOMATIC AIR VENT

MANUAL AIR VENT

STRAINER WITH BLOW DOWN VALVE

STEAM TRAP

FIRE SUPPRESSION INDICATING VALVE W/TAMPER SWITCH

FIRE DEPARTMENT VALVE

ALARM CHECK VALVE

DRY PIPE VALVE

DRY PIPE VALVE W/ACCELERATOR

PREACTION VALVE

DELUGE VALVE

FIRE SUPPRESSION FLOW SWITCH

FIRE SUPPRESSION PRESSURE SWITCH

FIRE SUPPRESSION DOUBLE CHECK BACKFLOW PREVENTER

FIRE DEPARTMENT SIAMESE WALL CONNECTION

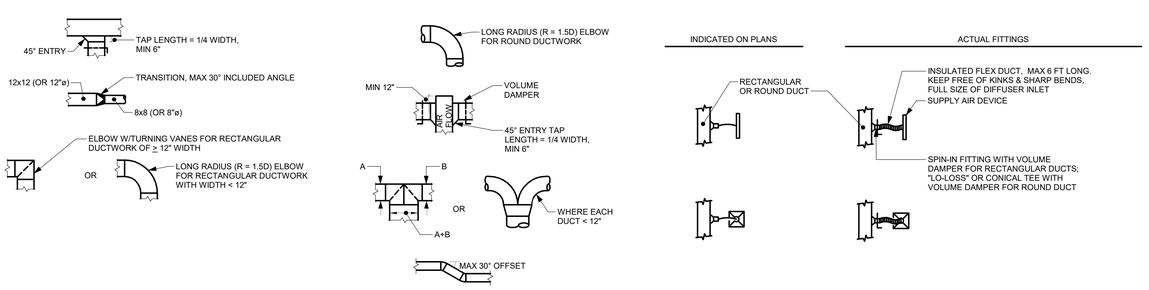
FIRE DEPARTMENT SIAMESE FREESTANDING CONNECTION

WATER MOTOR GONG

PUMP

EXPOSED SPRINKLER ZONE CONTROL VALVE ASSEMBLY

DUCTWORK CONVENTIONS



DRAWING CONVENTIONS

SYMBOL	DESCRIPTION
	POINT OF CONNECTION, NEW TO EXISTING
	DEMOLITION WORK TERMINATION POINT
X	INDICATES AIR DEVICE
	NUMBER INDICATES AIR DEVICE DESIGNATION. REFER TO SCHEDULE FOR SIZE AND TYPE
X	INDICATES SPECIAL NOTE
	NUMBER INDICATES SPECIAL NOTE DESIGNATION. REFER TO SPECIAL NOTE LIST ON DRAWING FOR DESCRIPTION OF ITEM
X-XX	SUPPLY AIR TERMINAL UNIT DESIGNATION
	SUPPLY AIR TERMINAL UNIT SEQUENTIAL DESIGNATION
	DESIGNATES AHU NUMBER
	HEAVY LINE WEIGHT DESIGNATES NEW WORK ON NEW WORK PLANS, AND REMOVAL WORK ON DEMOLITION PLANS
	LIGHT LINE WEIGHT DESIGNATES EXISTING WORK TO REMAIN

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

Thermal Zone

winter dry bulb: 26° F
summer dry bulb: 93° F

Interior design conditions

winter dry bulb: 70° F
summer dry bulb: 75° F
relative humidity: 50%

Building heating load: Existing; approximately 1150 MBH; includes reheat for ventilation

Building cooling load: Existing; approximately 1310 MBH; includes dehumidification loads

Mechanical Spacing Conditioning System

Unitary
description of unit: Existing AHU-1 w/ Chilled and Heating Water Coil, serving a VAV system on the second floor . Unit equipped with VFD controls
heating efficiency: N/A; Heating Water Coil
cooling efficiency: N/A; Chilled Water Coil
size category of unit: N/A

Boiler
Size category. If oversized, state reason.: One Existing Boiler (approx 1150 MBH capacity) serves the entire building heating requirements, including new VAV ATUs with reheat coils fitted with 2-way modulating valves for serving the partial Level 2 renovation area

Chiller
Size category. If oversized, state reason.: One Existing Chiller (approx 100-tons) serves entire building cooling requirements, including the existing VAV AHU that serves the partial Level 2 renovation area.

List equipment efficiencies: N/A No new equipment provided under this project.

Jenkins • Peer *Architects*
112 South Tryon Street, Suite 1300
Charlotte, North Carolina 28284
(t) 704/372-6665

MUELLER ASSOCIATES, INC.
ENGINEER C-0979
1306 Concourse Dr #100,
Linthicum Heights, MD 21090
(t) 410/646-4500

NORTH CAROLINA REGISTERED 030276 ENGINEER STEVEN A. GILLIS 1/10/22

1/10/2022

UNC PEMBROKE

UNC PEMBROKE AMERICAN INDIAN HERITAGE CENTER

SCO ID#: 21-23067-01A

TAG	DESCRIPTION	DATE

Project: 21PEM587
Drawn By: CJS
Checked By: SAG
Date: 1/10/2022

MECHANICAL LEGEND AND CODE SUMMARY (APPENDIX B)

PROJECT NORTH

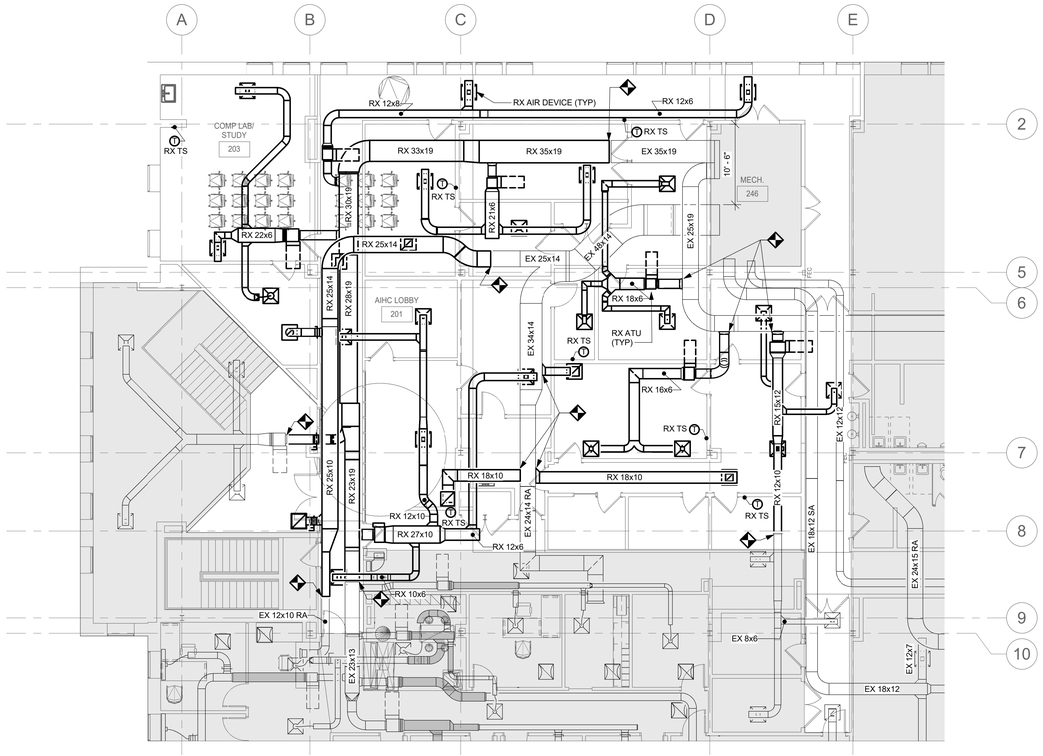
TRUE NORTH

BID DOCUMENTS

M001

5 4 3 2 1

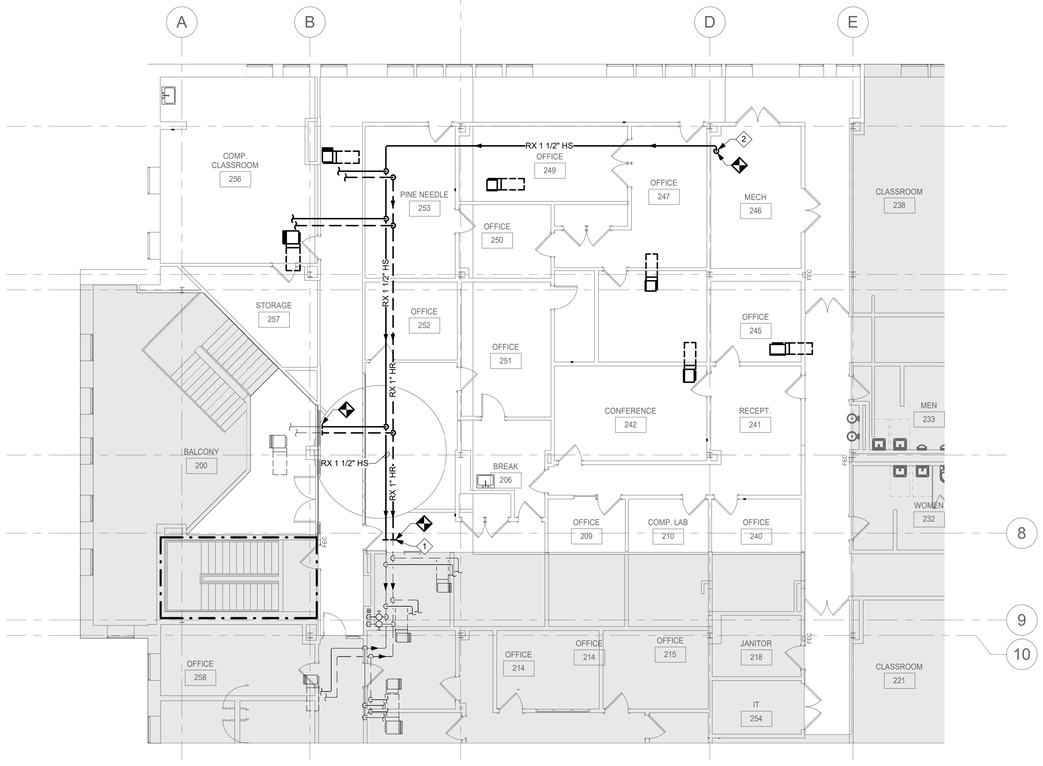
A B C D



1 MD101 LEVEL 2 - FLOOR PLAN - DUCTWORK - DEMOLITION

1/8" = 1'-0"

N



2 MD101 LEVEL 2 - FLOOR PLAN - PIPING - DEMOLITION

1/8" = 1'-0"

N

DRAWING NOTES:

A. REFER TO DRAWING M001 FOR LEGEND, ABBREVIATIONS AND DRAWING CONVENTIONS.

B. EXISTING CONDITIONS SHOWN ARE BASED ON LIMITED FIELD SURVEY AND EXISTING DOCUMENTATION. CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS, INDICATED OR OTHERWISE.

C. REMOVE ALL ABANDONED HANGERS, STRAPS AND EQUIPMENT SUPPORTS IN AREA OF WORK, INCLUDING ITEMS REMAINING FROM PREVIOUS RENOVATIONS.

D. COORDINATE ALL DEMOLITION WORK WITH NEW WORK CONSTRUCTION.

E. UNLESS OTHERWISE NOTED, DUCTWORK AND PIPING SHOWN IS CONCEALED ABOVE CEILING.

F. WHERE EXISTING DUCTWORK IS DISCONNECTED OR CUT FOR DEMOLITION, AND A NEW DUCT WILL NOT BE INSTALLED TO OCCUPY THE ENTIRE OPENING IN THE SURFACE OF THE EXISTING DUCT TO REMAIN, PATCH EXISTING DUCT WITH MATERIALS TO MATCH EXISTING DUCTWORK, AND SEAL AIR TIGHT AGAINST A STATIC PRESSURE OF 2 INCHES W.G. POSITIVE/NEGATIVE AS APPLICABLE FOR LOW PRESSURE DUCT, AND 6 INCHES W.G. POSITIVE/NEGATIVE AS APPLICABLE FOR MEDIUM PRESSURE DUCTWORK.

◇ SPECIAL NOTES:

1 REMOVE EXISTING BRANCH PIPING TO EXISTING AIR TERMINAL UNITS SHOWN TO BE REMOVED

2 REMOVE EXISTING PIPING AND PIPE FITTINGS TO VERTICAL RISER.

IF DRAWING IS REDUCED, USE GRAPHIC SCALE

5' 0" 5' 10'

1/8" = 1'-0"

Jenkins • Peer *Architects*
112 South Tryon Street, Suite 1300
Charlotte, North Carolina 28284
(t) 704/372-6665

MUELLER ASSOCIATES, INC.
ENGINEER C-0979
1306 Concourse Dr #100,
Linthicum Heights, MD 21090
(t) 410/646-4500

NORTH CAROLINA REGISTERED 030275 PROFESSIONAL ENGINEER STEVEN A. GILLIS

1/10/2022

UNC PEMBROKE

UNC PEMBROKE AMERICAN INDIAN HERITAGE CENTER

SCO ID#: 21-23067-01A

TAG	DESCRIPTION	DATE

Project: 21PEM587
Drawn By: CJS
Checked By: SAG
Date: 1/10/2022

FLOOR PLANS - MECHANICAL - DEMOLITION

PROJECT NORTH

TRUE NORTH

BID DOCUMENTS

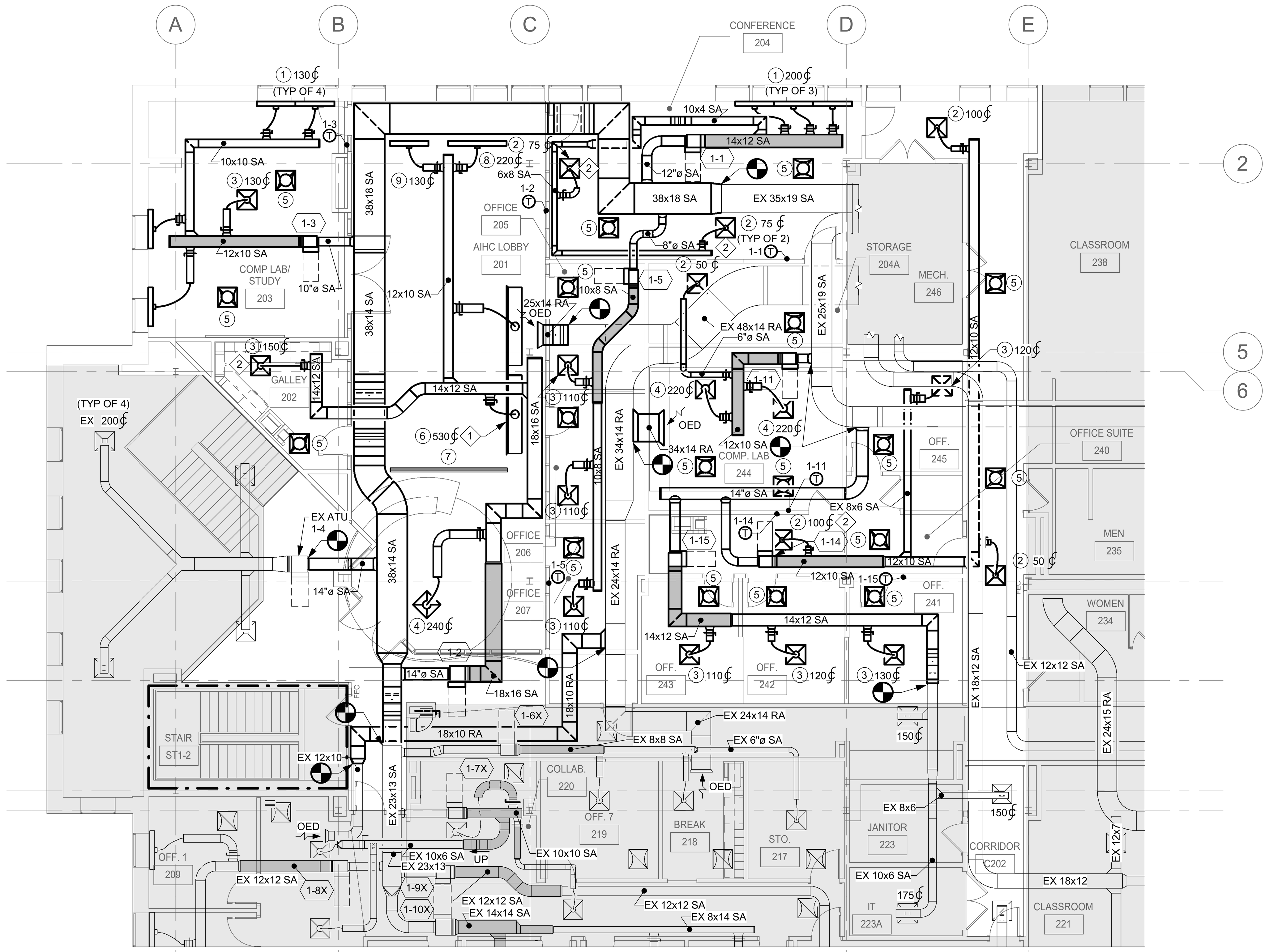
MD101

D

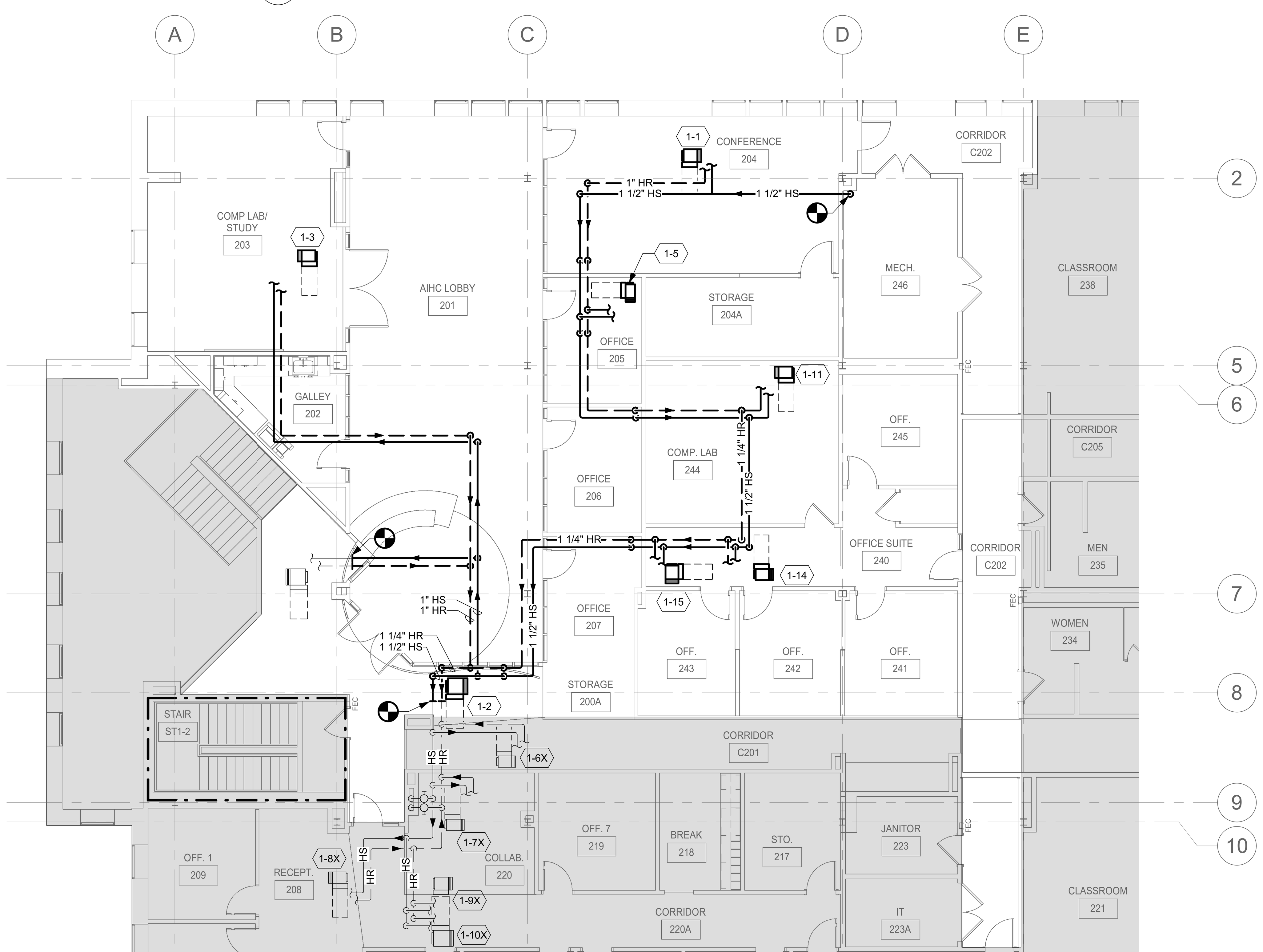
C

B

A



1 LEVEL 2 - FLOOR PLAN - DUCTWORK - NEW WORK
M101 1/8" = 1'-0"



2 LEVEL 2 - FLOOR PLAN - PIPING - NEW WORK
M101 1/8" = 1'-0"

5 4 3 2 1

DRAWING NOTES:

A. REFER TO DRAWING M001 FOR LEGEND, ABBREVIATIONS AND DRAWING CONVENTIONS.

B. EXISTING CONDITIONS SHOWN ARE BASED ON LIMITED FIELD SURVEY AND EXISTING DOCUMENTATION. CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS, INDICATED OR OTHERWISE.

C. COORDINATE ALL DEMOLITION WORK WITH NEW WORK CONSTRUCTION.

D. UNLESS OTHERWISE NOTED, DUCTWORK AND PIPING SHOWN IS CONCEALED ABOVE CEILING.

E. WHERE EXISTING DUCTWORK IS DISCONNECTED OR CUT FOR DEMOLITION, AND A NEW DUCT WILL NOT BE INSTALLED TO OCCUPY THE ENTIRE OPENING IN THE SURFACE OF THE EXISTING DUCT TO REMAIN, PATCH EXISTING DUCT WITH MATERIALS TO MATCH EXISTING DUCTWORK, AND SEAL AIR TIGHT AGAINST A STATIC PRESSURE OF 2 INCHES W.G. POSITIVE/NEGATIVE AS APPLICABLE FOR LOW PRESSURE DUCT, AND 6 INCHES W.G. POSITIVE/NEGATIVE AS APPLICABLE FOR MEDIUM PRESSURE DUCTWORK.

◇ SPECIAL NOTES:

1 CONTINUOUS SINGLE SLOT LINEAR AIR DIFFUSER. MOUNT TO VERTICAL GYP IN BULKHEAD. USE TWO 8' LENGTH SUPPLY PLENUMS. MAINTAIN SAME SLOPE AS ARCHITECTURAL BULKHEAD IN VERTICAL. MAINTAIN 4" VERTICAL CLEARANCE FROM TOP OF SLOT TO CEILING ABOVE.

2 TWO-WAY THROW

IF DRAWING IS REDUCED, USE GRAPHIC SCALE
5' 0' 5' 10'
1/8" = 1'-0"

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MUELLER ASSOCIATES, INC.
ENGINEER C-0979
1306 Concourse Dr #100,
Linthicum Heights, MD 21090
(t) 410/646-4500

NORTH CAROLINA PROFESSIONAL SEAL 030275 ENGINEER STEVEN A. GILLIS
[illegible]
1/10/2022

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UNC PEMBROKE

UNC PEMBROKE AMERICAN INDIAN HERITAGE CENTER

SCO ID#: 21-23067-01A

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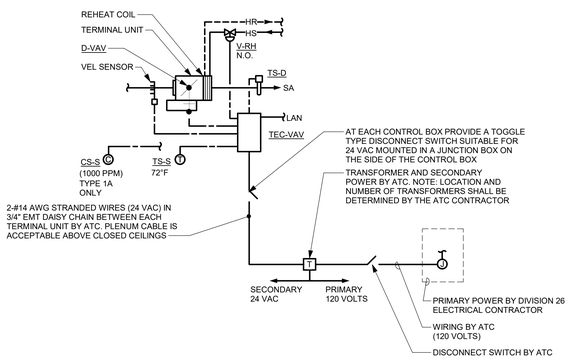
FLOOR PLANS - MECHANICAL - NEW WORK

PROJECT NORTH
TRUE NORTH

BID DOCUMENTS

M101



1 M601 SUPPLY AIR TERMINAL UNIT W/ HOT WATER REHEAT COIL (TYPE 1 & 1A)

NOT TO SCALE

A. GENERAL:
1. REFER TO FLOOR PLANS FOR THE NUMBER AND LOCATION OF TERMINAL UNITS AND REHEAT COILS.
2. TERMINAL EQUIPMENT CONTROLLERS (TEC'S), DAMPER ACTUATORS, AND FLOW TRANSDUCERS SHALL BE FURNISHED BY THE ATC CONTRACTOR.
3. THE ATC CONTRACTOR SHALL PROVIDE 24V AC TRANSFORMERS AND WIRING TO THE TEC'S AS REQUIRED FOR OPERATION OF THE TEC'S AND EXTEND 120 VOLT CIRCUITS FOR ATC USE TO LINE SIDE OF TRANSFORMERS.
4. EACH TEC SHALL BE SUITABLE FOR PRESSURE INDEPENDENT OPERATION AND SHALL ALLOW MONITORING, ALARMING, AND ADJUSTMENT OF SPACE TEMPERATURE, TERMINAL UNIT AIRFLOW, DAMPER POSITION, AND VALVE POSITION THROUGH THE BAS.
5. THE BAS SHALL MONITOR AND CONTROL SPACE CARBON DIOXIDE LEVELS AS SENSED BY SPACE CARBON DIOXIDE SENSORS CS-S LOCATED ADJACENT TO TEMPERATURE SENSORS IN SELECT SPACES. SEE FLOOR PLANS AND AIR TERMINAL EQUIPMENT SCHEDULE CONTROL TYPE FOR APPLICATION OF CARBON DIOXIDE SENSORS.
6. AN ALARM SHALL BE ANNUNCIATED THROUGH THE BAS WHEN ANY SPACE CARBON DIOXIDE SENSOR SENSES A CO2 CONCENTRATION ABOVE 1100 PPM (ADJUSTABLE) FOR A PERIOD OF 15 MINUTES (ADJUSTABLE). ALARM MUST BE MANUALLY RESET.
7. EACH TEC SHALL SEND A PRESSURE REQUEST TO ITS RESPECTIVE AHU CONTROLLER WHEN THE TEC'S VAV DAMPER IS GREATER THAN 95 PERCENT OPEN (ADJUSTABLE) UNTIL IT CLOSES TO 85 PERCENT OPEN (ADJUSTABLE).
8. THE BAS SHALL DETERMINE SPACE HEATING AND COOLING CONTROL SETPOINTS (ADJUSTABLE) THROUGH EACH TEC IN ACCORDANCE WITH OUTSIDE AIR TEMPERATURE OR TIME OF YEAR AS ESTABLISHED BY OWNER. SETPOINTS SHALL BE ADJUSTABLE THROUGH THE BAS AND TEC.
9. SPACE TEMPERATURE AS SENSED BY ITS SPACE SENSOR SHALL BE MONITORED BY THE BAS AND THE TEC. AN ALARM SHALL BE ANNUNCIATED THROUGH THE BAS WHEN ANY SPACE TEMPERATURE SENSOR SENSES A TEMPERATURE 5 DEG F (ADJUSTABLE) ABOVE SETPOINT OR 5 DEG F (ADJUSTABLE) BELOW SETPOINT.

B. TYPE 1 & 1A - VAV SUPPLY TERMINAL UNIT WITH REHEAT COIL:
1. GENERAL:
   a. CONTROL OF TYPE 1 ATU AND APPURTENANCES IS INDICATED BELOW; SEQUENCE IS TYPICAL FOR TYPE 1A, EXCEPT AS INDICATED OTHERWISE.
   b. TYPE 1A INCLUDES CO2 SENSOR AND CONTROL.
2. SUPPLY TERMINAL OCCUPIED MODE:
   a. SPACE TEMPERATURE SENSOR TS-S ON A FALL IN TEMPERATURE BELOW SETPOINT (75 DEG F (ADJ) COOLING, 70 DEG F (ADJ) HEATING) SHALL MODULATE TERMINAL UNIT DAMPER D-VAV TO REDUCE AIR FROM MAXIMUM TO MINIMUM COOLING FLOW THROUGH ITS PRESSURE INDEPENDENT TERMINAL EQUIPMENT CONTROLLER TEC-VAV.
   b. ON A FURTHER FALL, IT SHALL MODULATE D-VAV AND REHEAT COIL VALVE V-RH OPEN IN UNISON THROUGH THE TEC-VAV. AIRFLOW RATE SHALL NOT EXCEED SCHEDULED HEATING AIRFLOW.
   c. ON A RISE IN TEMPERATURE ABOVE SETPOINT, THE REVERSE SHALL OCCUR.
3. SUPPLY TERMINAL OCCUPIED MINIMUM VENTILATION OVER-RIDE CONTROL (FOR TYPE 1A ONLY):
   a. IF THE SPACE CARBON DIOXIDE LEVEL IS ABOVE 1,000 PPM (ADJUSTABLE) AS SENSED BY SPACE CARBON DIOXIDE SENSOR CS-S, THE TEC-VAV SHALL MODULATE DAMPER D-VAV OPEN TO MAINTAIN SPACE CARBON DIOXIDE LEVEL AT A MAXIMUM 1,000 PPM (ADJUSTABLE) AS SENSED BY CS-S. SUPPLY AIR QUANTITY SHALL NOT EXCEED SCHEDULED MAXIMUM COOLING AIRFLOW SETPOINT.
   b. IF THE INCREASED AIRFLOW TO SATISFY SPACE CARBON DIOXIDE LEVEL CAUSES A FALL IN SPACE TEMPERATURE, TEC-VAV SHALL MODULATE REHEAT COIL VALVE V-RH OPEN TO SATISFY SPACE TEMPERATURE SETPOINT.
   c. IF MAXIMUM SUPPLY AIRFLOW IS BEING DELIVERED TO THE SPACE AND SPACE CARBON DIOXIDE LEVEL EXCEEDS 1,000 PPM (ADJUSTABLE) FOR 10 MINUTES (ADJUSTABLE), THE TEC-VAV SHALL SEND A SIGNAL TO THE RESPECTIVE AHU CONTROLLER TO INCREASE OUTSIDE AIRFLOW.
   d. ON A FALL IN SPACE CARBON DIOXIDE LEVEL BELOW 1,000 PPM (ADJUSTABLE), THE REVERSE SHALL OCCUR.

SUPPLY AIR TERMINAL UNITS

NOTES:

1. DISCHARGE AND RADIATED NC VALUES ARE BASED ON MANUFACTURER'S PUBLISHED SOUND POWER LEVELS AT 1.0" W.G. DIFFERENTIAL STATIC PRESSURE WITH CREDITS TAKEN IN ACCORDANCE WITH ARI 885-90. SELECT DISCHARGE AND RADIATED VALUES TO ACHIEVE A MAXIMUM NC LEVEL OF 30, EXCEPT MAXIMUM NC LEVEL OF 25 FOR CONFERENCE ROOMS.
2. MAXIMUM APD 0.4" W.G. AT MAXIMUM AIRFLOW THROUGH TERMINAL UNIT, WITH HEATING COIL, WHERE APPLICABLE.
3. HEATING CAPACITY BASED ON 53°F EAT, MAX WPD = 2 FT HD.
4. SELECT COIL HEATING CAPACITY BASED ON HEATING AIRFLOW.

DESIG	CONTROL TYPE	AIRFLOW		MIN INLET DIAMETER (IN)	APPROX OUTLET SIZE (IN)	MAX APD	HEATING WATER REHEAT COIL			
		MAX (CFM)	MIN (CFM)				HEATING AIRFLOW (CFM)	MIN CAPACITY (BTU/H)	LAT (°F)	WATER FLOWRATE @ 180°F EWT (GPM)
1-1	1A	750	190	12	16 x 15	0.40	750	25,920	85	2.6
1-2	1A	1270	300	14	20 x 18	0.40	1270	43,900	85	4.4
1-3	1A	650	145	10	14 x 12	0.40	650	22,470	85	2.2
1-5	1	330	150	8	12 x 10	0.40	150	4,380	80	0.5
1-11	1A	490	145	10	14 x 12	0.40	490	14,290	80	1.4
1-14	1	370	210	10	14 x 12	0.40	210	6,130	80	0.6
1-15	1	835	350	12	16 x 15	0.40	350	10,210	80	1.0

Jenkins • Peer *Architects*

112 South Tryon Street, Suite 1300
Charlotte, North Carolina 28284
(t) 704/372-6665

MUELLER ASSOCIATES, INC.
ENGINEER C-0979
1306 Concourse Dr #100,
Linthicum Heights, MD 21090
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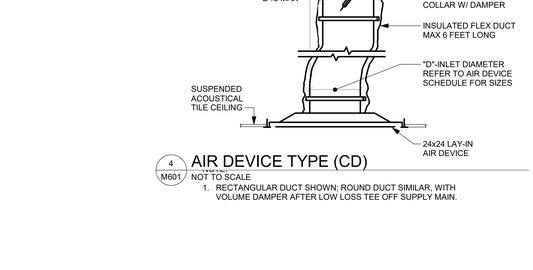


2 M601 SUPPLY AIR TERMINAL UNIT W/ HOT WATER REHEAT COIL

NOT TO SCALE

NOTE:

1. SUPPLY AIR TERMINAL UNIT WITH REHEAT COIL SHOWN, INSTALL SUPPLY AIR TERMINAL UNIT WITHOUT REHEAT COIL SIMILARLY - REFER TO SCHEDULE FOR CAPACITIES AND PLANS FOR LOCATIONS.

Simplified OA Calculation, based on 2018 NC State Mechanical Code, Paragraph 403.3

Room Name	Room Number	SF	Occupancy Classification	Supply Max CFM	CFM/SF	ATU #	Occupant Density #/1000 SF	People Outdoor Airflow Rate in Breathing Zone, Rp CFM/Person	Area Outdoor Airflow Rate In Breathing Zone, Ra CFM/SF	Occupant Quantity	Outside Airflow Rate per Person	Outside Airflow Rate per SF	Total Outside Airflow rate	Minimum Supply CFM to satisfy OA Requirement (Note 3)	Minumum Supply CFM indicated on Plan (Note 1)
COMP LAB/STUDY	212	489	Computer Lab	650	1.33	1-3	25	10	0.12	13	130	59	189	630.0	650 (Note 2)
GALLEY	211	133	Break Room	150	1.13	1-2	25	5	0.06	4	20	8	28	95.0	150 (Note 2)
AIHC LOBBY	210	1097	Lobby	1120	1.02	1-2	30	7.5	0.06	33	248	66	314	1050.0	1120 (Note 2)
CONFERENCE	213	497	Conference Room	750	1.51	1-1	50	5	0.06	25	125	30	155	520.0	750 (Note 2)
STORAGE	214	164	Storage	50	0.30	1-11	2	5	0.06	1	5	10	15	50.0	50
OFFICE	215	126	Office Spaces	110	0.87	1-5	5	5	0.06	1	5	8	13	45.0	50
OFFICE	216	126	Office Spaces	110	0.87	1-5	5	5	0.06	1	5	8	13	45.0	50
OFFICE	217	120	Office Spaces	110	0.92	1-5	5	5	0.06	1	5	8	13	45.0	50
OFFICE SUITE CORRIDOR	240	215	Corridor	100	0.47	1-14	--	--	0.06	--	--	13	13	45.0	45
OFFICE	241	149	Office Spaces	130	0.87	1-15	5	5	0.06	1	5	9	14	50.0	50
OFFICE	242	135	Office Spaces	120	0.89	1-15	5	5	0.06	1	5	9	14	50.0	50
OFFICE	243	126	Office Spaces	110	0.87	1-15	5	5	0.06	1	5	8	13	45.0	50
COMP LAB	244	136	Computer Lab	440	1.31	1-11	25	10	0.12	9	90	41	131	440.0	440 (Note 2)
OFFICE	245	136	Office Spaces	120	0.88	1-14	5	5	0.06	1	5	9	14	50.0	50
CORRIDOR	C202	162	Corridor	150	0.27	1-14	--	--	0.06	--	--	34	34	115.0	115

Notes:
1 Scheduled Airflow Rate indicated is based on the minimum air flow setting of the ATU and the airflow rate indicated on the floor plans, unless otherwise noted.
2 ATU serving space is provided with minimum ventilation override controls, which allows the supply airflow rate to increase based on carbon dioxide levels up to the maximum airflow rate scheduled.
3 Calculated OA % from AHU, based on existing documentation = 30%

3 M601 TERMINAL UNIT HOT WATER REHEAT COIL

NOT TO SCALE

NOTES:

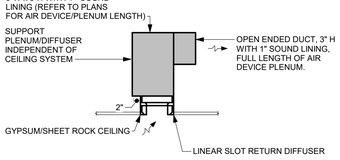
1. PIPING SPECIALITIES SHALL BE LOCATED ADJACENT TO COIL, CLEAR OF CONTROLLER AT AIR TERMINAL UNITS.
2. PROVIDE MINIMUM 10"x10" ACCESS DOOR IN DUCTWORK UPSTREAM AND DOWNSTREAM OF COILS.
3. PROVIDE MAXIMUM 30° INCLUDED ANGLE TRANSITION TO AND FROM COILS.

PIPE SCHEDULE	
GPM	PIPE SIZE (IN)
0 - 3.5	3/4"
3.6 - 7.0	1"
7.1 - 13.0	1 1/4"
13.1 - 21.0	1 1/2"

4 M601 AIR DEVICE TYPE (CD)

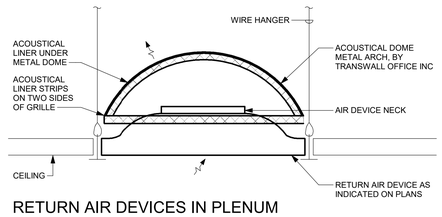
NOT TO SCALE

1. RECTANGULAR DUCT SHOWN; ROUND DUCT SIMILAR, WITH VOLUME DAMPER AFTER LOW LOSS TEE OFF SUPPLY MAIN.



5 M601 LINEAR RETURN AIR DEVICE IN PLENUM CEILINGS (TYPE HLR)

NOT TO SCALE



7 M601 RETURN AIR DEVICES IN PLENUM CEILINGS WITH ACOUSTIC DOME (TYPE CR)

NOT TO SCALE

NOTE:

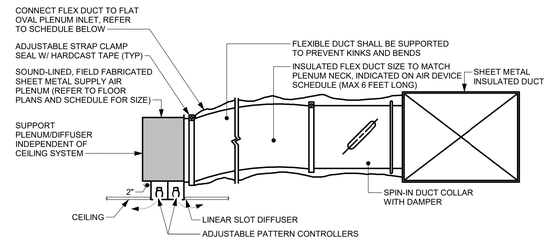
1. REFER TO FLOOR PLANS FOR LOCATIONS OF AIR DEVICES WITH ACOUSTIC DOMES.
2. SUPPORT AIR DEVICE AND DUCTWORK INDEPENDENT OF CEILING.
3. INSTALL ACOUSTIC DOMES SUCH THAT AIR OPENINGS ARE PERPENDICULAR TO ADJACENT DOMES OR TRANSFER DUCT OPENINGS.

AIR DEVICES

NOTES:

1. AIR DEVICES ARE SELECTED FOR A MAXIMUM ROOM NOISE LEVEL CRITERIA OF NC30.
2. TYPE "LS" AIR DEVICES SHALL BE 2-WAY BLOW UNLESS INDICATED OTHERWISE ON PLANS.
3. TYPE "CD" AIR DEVICES SHALL BE 4-WAY BLOW UNLESS INDICATED OTHERWISE ON PLANS.
4. REFER TO DETAILS FOR RETURN AIR DEVICE TYPES "CR"
5. AIR DEVICES WITH SERVICE DESIGNATION "RETURN" ALSO USED FOR AIR TRANSFER DUTY.
6. BLANKOFF PORTION OF LINEAR AIR DEVICE WITHOUT PLENUM.

DESIG	TYPE (SEE SPEC)	SERVICE	AIRFLOW RANGE		NOMINAL SIZE (IN)	INLET/NECK SIZE (IN)	REMARKS	APPLICATION
			MIN CFM	MAX CFM				
1	LS	SUPPLY	0	210	2 X 3/4" SLOT - 4' L	8"ø	BOD - TITUS TBDI-30	GYP CEILINGS AND SPACES W/EXTERIOR WINDOWS
2	CD	SUPPLY	0	100	24 x 24	6"ø	BOD - TITUS OMNI	ACT CEILINGS
3	CD	SUPPLY	105	205	24 x 24	8"ø	BOD - TITUS OMNI	ACT CEILINGS
4	CD	SUPPLY	210	360	24 x 24	10"ø	BOD - TITUS OMNI	ACT CEILINGS
5	CR	RETURN	0	800	24 x 24	15" ø	BOD - TITUS OMNI	ACT CEILINGS
6	HLS	SUPPLY	0	530	1 x 1" SLOT - 16' L	---	TITUS FL-10	VERTICAL GYP IN LOBBY BULKHEAD
7	HLR	RETURN	0	880	2 x 1" SLOT - 12' L	---	TITUS FL-10	GYP CEILING
8	LS	SUPPLY	0	220	1 x 1" SLOT - 6' L	---	TITUS FL-10	ACT CEILING
9	LS	SUPPLY	0	130	1 x 1" SLOT - 4' L	---	TITUS FL-10	ACT CEILING



6 M601 AIR DEVICE TYPE (LS) - LINEAR SLOT

NOT TO SCALE

NOTES:

1. RECTANGULAR DUCT SHOWN; ROUND DUCT SIMILAR, WITH VOLUME DAMPER AFTER LOW LOSS TEE OFF SUPPLY MAIN.
2. TWO SLOT AIR DEVICE SHOWN, REFER TO SCHEDULE FOR NUMBER OF SLOTS
3. DETAIL SIMILAR TO TYPE HLS, BUT WITH SLOT DEVICE IN VERTICAL ORIENTATION

FLAT OVAL INLET SCHEDULE		
FLEX DUCT	A	B
6"ø	6 1/4"	5 1/4"
8"ø	9 3/8"	5 1/4"
10"ø	12 1/2"	5 1/4"
12"ø	14 1/8"	7 1/8"

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UNC PEMBROKE

AMERICAN INDIAN HERITAGE CENTER

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MECHANICAL ATC, DETAILS, AND SCHEDULES

PROJECT NORTH
TRUE NORTH

BID DOCUMENTS

M601

5 4 3 2 1

A B C D

MECHANICAL

1. GENERAL:
A. REFER TO DIVISION 1 SPECIFICATIONS ON DRAWING G102 FOR GENERAL CONDITIONS.
B. THOROUGHLY EXAMINE THE ARCHITECTURAL AND MECHANICAL DRAWINGS PRIOR TO COMMENCEMENT OF ANY WORK. EXAMINE DRAWINGS IN THE COMPLETE CONSTRUCTION SET OF DRAWINGS (REGARDLESS OF TRADE), AND COORDINATE MECHANICAL WITH ALL OTHER TRADES.
C. CONTRACTOR SHALL THOROUGHLY EXAMINE PREMISES AND OBSERVE ALL CONDITIONS UNDER WHICH THE WORK WILL BE PERFORMED. NO ALLOWANCES WILL BE MADE FOR ERRORS OR NEGLIGENCE IN THIS RESPECT.
D. COORDINATE ALL WORK WITH OWNER'S OPERATION SCHEDULE IN ORDER NOT TO DISRUPT OR DELAY SUCH OPERATIONS. WORK SHALL BE COORDINATED AND SCHEDULED IN ADVANCE AND APPROVED BY THE OWNER. PERFORM ALL WORK ONLY AFTER SECURING APPROVAL FROM THE OWNER TO COMMENCE.
E. AREAS ADJACENT TO THE CONSTRUCTION SITE WILL REMAIN OCCUPIED. CONTRACTOR SHALL MAINTAIN ALL SERVICES (AIR SYSTEMS, SERVICE PIPING, ELECTRICAL, ETC.) TO THESE AREAS AS INDICATED, AS REQUIRED AND AS DIRECTED BY THE OWNER IN THE FIELD.
F. VERIFY ALL EXISTING UTILITIES AND SERVICES AND THEIR POINTS OF CONNECTION BEFORE STARTING NEW WORK.
G. ALL MATERIAL SHALL BE NEW (UNLESS NOTED OTHERWISE ON THE DRAWINGS) AND SHALL BE OF FIRST QUALITY. THE QUALITY OF WORKMANSHIP SHALL BE THE FINEST AND HIGHEST OBTAINABLE IN EACH PARTICULAR TRADE. WORKMANSHIP SHALL BE ACCEPTABLE TO THE OWNER AND HIS DECISION AS TO ACCEPTABLE QUALITY IS FINAL; UNACCEPTABLE WORK SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
H. ONLY MATERIALS AND EQUIPMENT NAMED ON THE DRAWINGS AND IN THIS SPECIFICATION SHALL BE USED. SUBSTITUTIONS WILL NOT BE ACCEPTABLE UNLESS DETERMINED TO BE IN THE BEST INTEREST OF THE OWNER AND ARE SUBJECT TO THE OWNER'S REVIEW AND ACCEPTANCE.
I. THE CONTRACT DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. DO NOT SCALE THE DRAWINGS.
J. DUE TO THE SMALL SCALE OF THE DRAWINGS, IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, RISERS AND DROPS, FITTINGS, AND ACCESSORIES AS MAY BE REQUIRED. CAREFULLY INVESTIGATE CONDITIONS AFFECTING THE WORK, AND ARRANGE SUCH WORK ACCORDINGLY, PROVIDING SUCH FITTINGS AND ACCESSORIES AS MAY BE REQUIRED TO MEET SUCH CONDITIONS.
K. STORE AND PROTECT ALL MATERIALS ON SITE AT LOCATIONS DESIGNATED BY THE OWNER.
L. PROVIDE ALL LABOR AND MATERIALS AS REQUIRED OR AS DIRECTED BY THE OWNER TO PROTECT EXISTING WORK AND FINISHES FROM DAMAGE WHICH COULD OCCUR AS A RESULT OF CONTRACTOR'S OPERATIONS.
M. CONTAINERS HOLDING ANY TYPE OF MATERIAL USED ON CONSTRUCTION SITES SHALL BE PERMANENTLY MARKED WITH THE CONTRACTOR'S NAME. CONTAINERS INCLUDE, BUT ARE NOT LIMITED TO: BOXES, BUCKETS, CYLINDERS, PAILS, SPRAY CANS, JUGS, ROLLS, BAGS, DRUMS, TUBES, ETC. ALL CONTAINERS MUST BE REMOVED FROM THE SITE AT THE CONCLUSION OF THE RENOVATION OR CONSTRUCTION PROJECT.

2. COORDINATION DRAWINGS:
A. PROVIDE COORDINATION DRAWINGS DETAILING THE WORK IN THE ENTIRE AREA OF WORK.
B. BUILDING INFORMATION MODELING (BIM): SCREEN CAPTURES FROM BIM SOFTWARE IN ADDITION TO THE ELECTRONIC FILE OF REVIT OR NAVISWORKS MODEL ARE ACCEPTABLE.
C. DETAIL MAJOR ELEMENTS, COMPONENTS, AND SYSTEMS OF MECHANICAL EQUIPMENT AND MATERIALS IN RELATIONSHIP WITH OTHER SYSTEMS, INSTALLATIONS, AND BUILDING COMPONENTS (I.E. ELECTRICAL, PLUMBING, SPRINKLER, STRUCTURAL AND ARCHITECTURAL WORK). SHOW SPACE REQUIREMENTS FOR INSTALLATION AND ACCESS. INDICATE IF SEQUENCE AND COORDINATION OF INSTALLATIONS ARE IMPORTANT TO EFFICIENT FLOW OF THE WORK. INCLUDE THE FOLLOWING:
(1) PLANNED DUCTWORK AND PIPING LAYOUT, INCLUDING DAMPER, VALVE AND SPECIALTY LOCATIONS AND VALVE-STEM MOVEMENT.
(2) CLEARANCES FOR INSTALLING AND MAINTAINING INSULATION.
(3) CLEARANCES FOR SERVICING AND MAINTAINING EQUIPMENT, ACCESSORIES, AND SPECIALTIES, INCLUDING SPACE FOR DISASSEMBLY REQUIRED FOR PERIODIC MAINTENANCE.
(4) EQUIPMENT AND ACCESSORY SERVICE CONNECTIONS AND SUPPORT DETAILS.
(5) REFLECTED CEILING PLANS:
(a) CEILING SUSPENSION ASSEMBLY MEMBERS.
(b) OTHER SYSTEMS INSTALLED IN SAME SPACE AS DUCTS.
(c) CEILING- AND WALL-MOUNTING ACCESS DOORS AND PANELS REQUIRED TO PROVIDE ACCESS TO DAMPERS AND OTHER OPERATING DEVICES.
(d) CEILING-MOUNTING ITEMS, INCLUDING LIGHTING FIXTURES, DIFFUSERS, GRILLES, SPEAKERS, SPRINKLERS, ACCESS PANELS, AND SPECIAL MOLDINGS.
(e) REFER TO ARCHITECTURAL CEILING PLANS FOR ADDITIONAL REQUIREMENTS

3. ALTERATIONS AND REMOVAL:
A. SCHEDULE AND PERFORM DEMOLITION WORK AS REQUIRED TO KEEP EXISTING BUILDING SERVICES AND SYSTEMS IN OPERATION AND TO MINIMIZE DISRUPTION TO OCCUPANTS. WHEN SHUTDOWN OF SYSTEM OR SERVICE IS REQUIRED PERFORM AS HEREIN SPECIFIED UNDER "INTERRUPTION OF UTILITIES."
B. CARE SHOULD BE TAKEN NOT TO DISTURB OR DAMAGE BAS OR FIRE SYSTEM WIRING UNPROTECTED BY CONDUITS. ANY INCIDENCES OF THIS SORT MUST BE IMMEDIATELY REPORTED TO THE OWNER. REPAIR AND/OR REPLACEMENT WILL BE AT CONTRACTOR'S EXPENSE.
C. REMOVE WORK BY HAND AS FAR AS POSSIBLE. POWER DRIVEN EQUIPMENT, WHEN REQUIRED, SHALL BE USED SUBJECT TO THE APPROVAL OF THE OWNER.
D. CAP, SEAL, OR PLUG ALL ABANDONED WORK. REMOVE TO THE EXTENT REQUIRED TO ALLOW CONCEALMENT BEHIND NEW FINISH MATERIALS.
E. WHERE EQUIPMENT OR FIXTURES ARE INDICATED TO BE REMOVED, REMOVE ALL RELATED SUPPORTS, HANGERS, PIPING, WIRING, DUCTS, CONTROLS, INSULATION, ETC., UNLESS NOTED OTHERWISE.
F. EXISTING MECHANICAL EQUIPMENT, PIPING AND DUCTWORK, ETC., AFFECTED BY REMOVAL OR NEW WORK INSTALLATION AND REQUIRED TO REMAIN IN SERVICE SHALL BE REINSTALLED OR SUPPORTED AS REQUIRED IN ACCORDANCE WITH NEW WORK SPECIFICATION. ALL WORK SHALL BE COMPLETED TO THE OWNER'S SATISFACTION.
G. EXISTING CONDITIONS INDICATED (I.E., DUCTWORK, PIPING, EQUIPMENT, ETC.), WERE OBTAINED FROM AVAILABLE RECORD DRAWINGS AND LIMITED FIELD SURVEY AND ARE NOT WARRANTED TO BE COMPLETE OR CORRECT. CONTRACTOR SHALL VERIFY EXACT LOCATION OF ALL DUCTWORK, PIPING, ETC., IN THE FIELD PRIOR TO STARTING OR FABRICATING NEW WORK.
H. SHOULD THE CONTRACTOR ENCOUNTER ANY EXISTING DUCTWORK, PIPING, CONDUITS OR OTHER OBSTRUCTIONS WHICH INTERFERES WITH THE NEW WORK, HE SHALL REMOVE, REARRANGE OR RELOCATE SAME AS REQUIRED TO THE SATISFACTION OF THE OWNER, OR HE SHALL REARRANGE OR RELOCATE THE WORK IN ACCORDANCE WITH INSTRUCTIONS PROVIDED BY THE OWNER. ALL WORK SHALL BE DONE AT NO COST TO THE OWNER.
I. REFER TO DRAWINGS FOR REMOVAL REQUIREMENTS AND NOTES.
J. DELIVER TO OWNER ALL MATERIALS AND EQUIPMENT DESIGNATED OR DIRECTED BY OWNER TO BE SALVAGED. ALL OTHER MATERIALS OR EQUIPMENT REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROMPTLY REMOVED FROM THE SITE.

4. CUTTING AND PATCHING:
A. CUTTING AND PATCHING ASSOCIATED WITH BOTH NEW AND EXISTING WORK SHALL BE PERFORMED IN A NEAT AND WORKMANLIKE MANNER. EXISTING SURFACES WHICH ARE DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED OR PROVIDED WITH NEW MATERIALS. STRUCTURAL MEMBERS SHALL NOT BE CUT OR PENETRATED.
B. ALL PATCHING SHALL BE DONE WITH MATERIALS AND METHODS SIMILAR TO EXISTING ADJACENT WORK, SUBJECT TO APPROVAL OF THE OWNER.

5. SLEEVES AND PLATES:
A. PIPE SLEEVES THROUGH DRYWALL AND SIMILAR CONSTRUCTION SHALL BE SCHEDULE 40 STEEL PIPE. PROVIDE 20 GAUGE GALVANIZED SLEEVE OR TRIM ANGLES FOR ALL DUCTWORK PASSING THROUGH MASONRY, DRYWALL, PLYWOOD, MASONITE, AND SIMILAR TYPE CONSTRUCTION.
B. ESCUTCHEON PLATES OF SPLIT CHROME PLATED BRASS SHALL BE PROVIDED FOR ALL NEW AND EXISTING PIPES PASSING THROUGH WALL, FLOOR OR CEILING CONSTRUCTION IN FINISHED SPACES.

6. ACCESSIBILITY:
A. LOCATE ALL EQUIPMENT AND MATERIALS WHICH MUST BE SERVICED, OPERATED OR MAINTAINED IN FULLY ACCESSIBLE POSITIONS TO ALLOW ACCESS AND SERVICE CLEARANCES NOT LESS THAN RECOMMENDED BY MANUFACTURER AND AS REQUIRED BY CODE. EQUIPMENT SHALL INCLUDE, BUT NOT BE LIMITED TO HVAC EQUIPMENT, VAV TERMINAL UNITS, VALVES, PIPING SPECIALTIES, ETC. WHERE INDICATED OR REQUIRED. PROVIDE ACCESS DOORS AS REQUIRED AND WHERE INDICATED OR DIRECTED BY OWNER.
B. REWORK ANY EQUIPMENT DEEMED INACCESSIBLE BY OWNER AT NO ADDITIONAL COST.

7. OPERATING AND MAINTENANCE INSTRUCTIONS:
A. ALL SYSTEMS AND EQUIPMENT SHALL BE SATISFACTORILY DEMONSTRATED BY THE CONTRACTOR TO THE OWNER.

1

B. CONTRACTOR SHALL FURNISH TO THE OWNER THREE (3) COMPLETE BOUND SETS OF SHOP DRAWINGS AND TYPEWRITTEN OR BLUE-PRINTED INSTRUCTIONS FOR OPERATING AND MAINTAINING ALL SYSTEMS AND EQUIPMENT INSTALLED UNDER THIS CONTRACT.

8. IDENTIFICATION:
A. PIPING SHALL BE IDENTIFIED WITH PRESSURE SENSITIVE COLOR VINYL LABELS AS MANUFACTURED BY SETON OR APPROVED EQUAL. LABELS SHALL BE HELD IN PLACE BY ADHESIVE BACKING AND PRESSURE SENSITIVE TAPE OF THE SAME COLOR, PROVIDED AT EACH END. LABELS SHALL BE PLACED AROUND THE PIPING OR INSULATION EVERY TWENTY (20) FEET MINIMUM. LABELS SHALL HAVE MINIMUM 1-1/4 INCH HIGH BLACK LETTERS WITH DIRECTION OF FLOW ARROWS. COLOR CODING AND STENCIL DESIGNATIONS SHALL BE AS FOLLOWS:

SERVICE:	COLOR:	STENCIL DESIGNATION:
FIRE PROTECTION (MAINS ONLY)	RED	FIRE PROTECTION WATER
DOMESTIC WATER	GREEN	DOMESTIC WATER (HOT, COLD, OR RECIRC)
VENT	BROWN	VENT
SANITARY	BROWN	SANITARY
HOT WATER HEATING	YELLOW	HOT WATER HEATING (SUPPLY OR RETURN)

B. ALL CONTROL DEVICES AND EQUIPMENT, I.E., PANELS, SWITCHES, TEMPERATURE CONTROLLERS, VAV TERMINAL UNITS, ETC., SHALL BE MARKED TO CLEARLY IDENTIFY EQUIPMENT, FUNCTION AND SPACE OR DUTY THEY SERVE. MECHANICAL EQUIPMENT SHALL BE IDENTIFIED USING ENGRAVED LAMINATED BLACK AND WHITE PHENOLIC PLATES, LETTERS SHALL BE MINIMUM 3/4-INCH HIGH WHITE ON SURROUNDING BLACK. PLATES SHALL BE MOUNTED BY MEANS OF SHEET METAL SCREWS. SUBMIT NAMEPLATE LIST TO THE OWNER CONFORMING TO UNIVERSITY STANDARDS FOR APPROVAL.
C. ALL MECHANICAL AND ELECTRICAL DEVICES AND EQUIPMENT, I.E., VALVES, VAV TERMINAL UNITS, ETC., CONCEALED ABOVE CEILINGS SHALL BE IDENTIFIED AS TO LOCATION USING CLEAR PLASTIC SELF-ADHESIVE TAPE WITH BLACK LETTERING, APPLIED TO CEILING TILE "T" BARS. SUBMIT NAMETAPE LIST CONFORMING TO UNIVERSITY STANDARDS FOR APPROVAL.

9. PIPING AND EQUIPMENT INSTALLATION REQUIREMENTS – GENERAL:
A. INSTALL PIPING CONCEALED ABOVE SUSPENDED CEILINGS UNLESS OTHERWISE INDICATED. PIPING INSTALLED IN EQUIPMENT ROOMS AND ROOMS WITHOUT CEILINGS, AND RUNOUTS TO EQUIPMENT INSTALLED WITHIN FINISHED SPACES SHALL BE RUN EXPOSED.
B. INSTALL ALL PIPING, REGARDLESS OF EXPOSURE OR CONCEALMENT, AT RIGHT ANGLES OR PARALLEL TO BUILDING WALLS. DIAGONAL RUNS ARE PROHIBITED UNLESS SPECIFICALLY INDICATED OTHERWISE.
C. INSTALL PIPING ABOVE ACCESSIBLE CEILINGS TO ALLOW SUFFICIENT SPACE FOR CEILING PANEL REMOVAL AND TO PERMIT SERVICING OF VALVES, TRAPS, ETC.
D. INSTALL PIPING AT REQUIRED SLOPES, AND FREE OF SAGS AND BENDS.
E. INSTALL PIPING TO ALLOW APPLICATION OF INSULATION.
F. SELECT SYSTEM COMPONENTS WITH PRESSURE RATING EQUAL TO OR GREATER THAN 1.25 TIMES SYSTEM OPERATING PRESSURE.
G. REAM ENDS OF PIPES AND TUBES AND REMOVE BURRS. BEVEL PLAIN ENDS OF STEEL PIPE. REMOVE SCALE, SLAG, DIRT, AND DEBRIS FROM INSIDE AND OUTSIDE OF PIPE AND FITTINGS BEFORE ASSEMBLY.
H. SOLDERED JOINTS: APPLY ASTM B 813, WATER-FLUSHABLE FLUX, UNLESS OTHERWISE INDICATED, TO TUBE END. CONSTRUCT JOINTS ACCORDING TO ASTM B 828 OR CDA'S "COPPER TUBE HANDBOOK," USING LEAD-FREE SOLDER ALLOY COMPLYING WITH ASTM B 32.
I. THREADED JOINTS: THREAD PIPE WITH TAPERED PIPE THREADS ACCORDING TO ASME B1.20.1. CUT THREADS FULL AND CLEAN USING SHARP DIES. REAM THREADED PIPE ENDS TO REMOVE BURRS AND RESTORE FULL ID. JOIN PIPE FITTINGS AND VALVES AS FOLLOWS:
(1) APPLY APPROPRIATE TAPE OR THREAD COMPOUND TO EXTERNAL PIPE THREADS UNLESS DRY SEAL THREADING IS SPECIFIED.
(2) DAMAGED THREADS: DO NOT USE PIPE OR PIPE FITTINGS WITH THREADS THAT ARE CORRODED OR DAMAGED. DO NOT USE PIPE SECTIONS HAVING CRACKED OR OPEN WELDS.
J. INSTALL UNIONS, IN PIPING NPS 2 AND SMALLER, ADJACENT TO EACH CONTROL VALVE AND AT FINAL CONNECTION TO EACH PIECE OF EQUIPMENT. INSTALL FLANGES, IN PIPING NPS 2-1/2 AND LARGER, ADJACENT TO FLANGED VALVES AND AT FINAL CONNECTION TO EACH PIECE OF EQUIPMENT.
K. INSTALL DIELECTRIC UNIONS AND FLANGES OR DIELECTRIC COUPLINGS AND FITTINGS TO CONNECT PIPING MATERIALS OF DISSIMILAR METALS. PROVIDE MATERIALS SUITABLE FOR THE SERVICE APPLICATION.
L. INSTALL EQUIPMENT TO ALLOW MAXIMUM POSSIBLE HEADROOM UNLESS SPECIFIC MOUNTING HEIGHTS ARE INDICATED.
M. INSTALL EQUIPMENT LEVEL AND PLUMB, PARALLEL AND PERPENDICULAR TO OTHER BUILDING SYSTEMS AND COMPONENTS.
N. INSTALL EQUIPMENT TO FACILITATE SERVICE, MAINTENANCE, AND REPAIR OR REPLACEMENT OF COMPONENTS. CONNECT EQUIPMENT FOR EASE OF DISCONNECTING, WITH MINIMUM INTERFERENCE TO OTHER INSTALLATIONS. IN NO CASE SHALL EQUIPMENT BE INSTALLED WITH SERVICE CLEARANCE LESS THAN MANUFACTURER'S RECOMMENDATIONS.

10. PIPE, FITTINGS AND JOINTS:

A. SANITARY AND VENT PIPE AND FITTINGS (DP LESS THAN 4.3 PSI):
(1) GENERAL REQUIREMENTS
(a) IN SOIL OR WASTE PIPE, PROVIDE Y-TYPE FITTINGS IN BRANCH CONNECTIONS SUCH THAT BRANCH ENTERS MAIN IN DIRECTION OF FLOW.
(b) INSTALL TRUE TO GRADES AND ALIGN AS INDICATED ON DRAWINGS, WITH UNBROKEN CONTINUITY OF INVERT. PLACE HUB ENDS OF PIPE UPSTREAM.
(c) INSTALL REQUIRED GASKETS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS FOR USE OF LUBRICANTS, CEMENTS, AND OTHER INSTALLATION REQUIREMENTS.
(d) MAINTAIN SWAB IN PIPING, AND PULL PAST EACH JOINT AS COMPLETED TO PREVENT DEBRIS AND FOREIGN MATERIAL ENTERING COMPLETED PIPE.
(e) INSTALL VARIOUS PIPING TYPES AS FOLLOWS:
(f) CAST-IRON SOIL PIPING PER CISPI'S "CAST IRON SOIL PIPE AND FITTINGS HANDBOOK," CHAPTER IV, "INSTALLATION OF CAST IRON SOIL PIPE AND FITTINGS." INSTALL ENCASEMENT ON UNDERGROUND PIPING ACCORDING TO ASTM A 674 OR AWWA C105/A 21.5
(g) STEEL PIPING PER APPLICABLE PLUMBING CODE
(h) ABOVEGROUND COPPER TUBING PER CDA "COPPER TUBE HANDBOOK."
(i) UNLESS OTHERWISE DIRECTED, INSTALL SOILD, WASTE AND VENT PIPING AT THE FOLLOWING MINIMUM SLOPES:

TYPE	ORIENTATION	SLOPE (%)
BUILDING SANITARY WASTE	DOWNWARD IN DIRECTION OF FLOW	2
HORIZ. SANITARY WASTE	DOWNWARD IN DIRECTION OF FLOW	2
VENT	DOWN TOWARD VERTICAL FIXTURE-VENT OR VENT STACK	1

(2) ABOVEGROUND PIPE AND FITTINGS (UNPRESSURIZED)
(a) 2½-INCH AND SMALLER – SHALL BE COPPER DRAINAGE TUBING, DWV, ASTM B306 WITH WROUGHT COPPER AND BRONZE DRAINAGE FITTINGS, ANSI B16.29; WITH ASME B16.18 CAST COPPER ALLOY OR ASME B16.22 WROUGHT COPPER SOLDER-JOINT FITTINGS. FURNISH WROUGHT COPPER FITTINGS WHERE SPECIFICALLY INDICATED ON CONSTRUCTION DOCUMENTS. JOINTS SHALL BE SOLDERED TO ASTM B32, LEAD FREE. NOTE: DRAIN PIPE 2½" AND SMALLER LOCATED WITHIN SINGLE ROOMS AND NOT INSTALLED IN AIR PLENUMS OR VENTILATED CHASES – MAY ALTERNATELY BE SCHEDULE-40 PVC.
B. HOT WATER HEATING PIPING:
(1) 2½-INCH AND SMALLER - SEAMLESS COPPER WATER TUBE, ASTM B88, TYPE L, HARD TEMPERED WITH WROUGHT COPPER SOLDER JOINT FITTINGS, 150 LB. WATER, ANSI B16.22. JOINTS SHALL BE SOLDERED, ASTM B32 TIN-ANTIMONY 95-5.
C. SPRINKLER SYSTEM PIPING SHALL BE AS HEREINAFTER SPECIFIED.DOMESTIC WATER PIPING (HOT, COLD, AND RECIRCULATING, AND NON-POTABLE WATER): HARD COPPER TUBE, ASTM B 88, TYPE L, WATER TUBE, LEAD-FREE SOLDER JOINT FITTINGS FOR PIPE SIZES 2 INCHES AND SMALLER, ROLL-GROOVED END FITTINGS FOR PIPE SIZES 2-1/2 INCHES AND LARGER. ALL FITTINGS AND COUPLINGS SHALL BE MADE BY ONE MANUFACTURER.
D. COPPER PRESSURE FITTINGS: ASME B 16.18, CAST COPPER ALLOY, OR ASME B 16.22, WROUGHT COPPER, LEAD FREE SOLDER JOINT FITTINGS. FURNISH WROUGHT COPPER FITTINGS IF INDICATED.
E. COPPER UNIONS: MSS SP-123, CAST COPPER ALLOY, HEXAGONAL STOCK BODY, WITH BALL AND SOCKET, METAL TO METAL SEATING SURFACES AND SOLDER JOINT OR THREADED ENDS.
F. COPPER ROLLED GROOVED END FITTINGS: ASTM B 75 COPPER TUBE OR ASTM B 584 BRONZE CASTINGS, VICTAULIC STYLE CTS.

2

G. COPPER TUBING, KEYED COUPLINGS: COPPER TUBE DIMENSIONS AND DESIGN SIMILAR TO AWWA C606, VICTAULIC STYLE 606. INCLUDE FERROUS HOUSING SECTIONS WITH NUTS & BOLTS, EPDM GRADE E GASKET SUITABLE FOR DOMESTIC COLD AND HOT WATER.

11. PIPING SPECIALTIES:
A. MANUAL AIR VENTS SHALL BE ½" LOCKING BALL VALVE INSTALLED AS SHOWN ON DRAWINGS OR AS SPECIFIED FOR PROPER VENTING OF EQUIPMENT.
B. UNIONS SHALL BE PROVIDED WHERE INDICATED, AT EACH CONTROL VALVE AND AS REQUIRED FOR EQUIPMENT, CONTROL VALVE OR PIPING REPLACEMENT. UNIONS FOR STEEL PIPE SHALL BE 250 LB. MALLEABLE IRON BRASS SEAT TYPE. UNIONS FOR COPPER PIPE SHALL BE WROUGHT COPPER WITH RED BRONZE RING NUT.
C. DIELECTRIC UNIONS SHALL BE PROVIDED WHERE REQUIRED AND WHERE NON-FERROUS METAL IS JOINED TO FERROUS METAL.
D. PIPELINE "Y" STRAINERS SHALL BE Y-PATTERN AS MANUFACTURED BY MUELLER STEAM SPECIALTY COMPANY, INC. OR APPROVED EQUAL. SCREENS SHALL BE STAINLESS STEEL WITH 1/32-INCH PERFORATIONS FOR WATER SERVICE. PROVIDE VALVED BLOWDOWN CONNECTIONS ON EACH STRAINER CONSISTING OF A BALL VALVE SET BETWEEN TWO SHORT NIPPLES. BUSH STRAINER OUTLET AS REQUIRED FOR 3/4-INCH MINIMUM CONNECTION. PROVIDE CAP AND CHAINED OUTLET. PROVIDE MODEL NO. 351M (BRONZE BODY FOR 2-1/2 INCHES AND SMALLER) WITH THREADED ENDS.
E. PRESSURE/TEMPERATURE TEST PLUGS SHALL BE 1/4-INCH NPT FITTINGS SUITABLE TO RECEIVE EITHER A 1/8-INCH OD TEMPERATURE OR PRESSURE PROBE. PLUGS SHALL BE MANUFACTURED BY PETERSON EQUIPMENT CO., OR APPROVED EQUAL.

12. POTABLE WATER SYSTEM REQUIREMENTS:
A. ALL PIPING, FITTINGS, VALVES AND OTHER COMPONENTS INSTALLED WITHIN A POTABLE WATER DISTRIBUTION SYSTEM SHALL COMPLY WITH NSF 61 "*DRINKING WATER SYSTEM COMPONENTS-HEALTH EFFECTS*."

13. PLUMBING FIXTURES, DRAINS AND EQUIPMENT:
A. FIXTURES:
(1) BREAK ROOM SINK: SINGLE COMPARTMENT, SEAMLESS DIE-DRAWN 18 GAUGE TYPE 304, 18-8 STAINLESS STEEL, COUNTER MOUNTED, SELF RIMMING NOMINAL 21-IN X 31-IN X 6.5-IN DEEP, 3 PUNCHED FAUCET HOLES 4-INCH ON CENTER, SOUND DEADENED, FITTED WITH DECK MOUNTED CHROME PLATED BRASS FAUCET, CUP STRAINER DRAIN, TRAP WITH NIPPLE, AND SUPPLIES WITH STOPS AND ESCHUTCHEONS.
(a) FIXTURE: JUST MODEL NO. SL-ADA-2131-A-GR
(b) FAUCET: CHICAGO MODEL NO. 786-GN8AE35ABCP 8" RIGID/SWING GOOSENECK W/ 1.5 GPM SOFTFLO AERATOR
(c) DRAIN: JUST MODEL NO. J-35
(d) TRAP: ENGINEERED BRASS CO. MODEL NO. TA-150
(e) SUPPLIES: CHICAGO MODEL NO. 1005

14. VALVES:
A. VALVES SHALL BE PROVIDED WHERE INDICATED ON DRAWINGS AND AS HEREIN SPECIFIED. VALVES SHALL BE PLACED IN SUCH A MANNER AS TO BE EASILY ACCESSIBLE FOR OPERATION AND MAINTENANCE. VALVE PIPE CONNECTIONS SHALL BE SCREWED OR FLANGED WITH CONNECTIONS TO PIPING SYSTEM CONSISTENT WITH OTHER PARTS OF THE PIPING SYSTEM.
B. ALL VALVES INSTALLED IN INSULATED PIPING SYSTEMS SHALL BE PROVIDED WITH MINIMUM 2-INCH EXTENSION NECKS.
C. BALL VALVES SHALL BE USED SYSTEMS SIZE 2-1/2 INCHES AND SMALLER FOR SHUT-OFF SERVICE. STEM SHALL BE BLOWOUT PROOF. STEM PACKING SHALL BE EXTERNALLY ADJUSTABLE TO COMPENSATE FOR WEAR. VALVE SHALL BE EQUIPPED WITH VINYL COVERED LEVER HANDLE WHICH SHALL INDICATE POSITION OF BALL ORIFICE AND SHALL HAVE STOPS FOR FULLY OPEN AND CLOSED POSITION. LEVER SHALL BE PROVIDED WITH LOCKABLE DEVICE WHICH CAN LOCK VALVE IN EITHER THE OPEN OR CLOSED POSITION. VALVE SHALL BE SUITABLE FOR FLOW IN EITHER DIRECTION AND SHALL BE LEAK PROOF AT DESIGN OPERATING CONDITIONS IN THE OPEN OR SHUT POSITION.
(1) BALL VALVES FOR ALL SERVICES, INCLUDING ASSOCIATED DRAINS, 2½" AND SMALLER, SHALL BE OF THE 2-PIECE DESIGN SUITABLE FOR 250 PSIG WATER. VALVES SHALL COMPRISE OF ASTM B254 BRONZE BODY WITH THREADED OR SOLDERED END CONNECTIONS, 316 STAINLESS STEEL STANDARD PORT BALL, STAINLESS STEEL STEM, REINFORCED TEFLON SEAT AND THRUST WASHER, TEFLON BODY SEAL, MULTIPLE PIECE V-RING OR GRAPHITE STEM PACKING, AND THREADED HEXAGONAL GLAND FOLLOWER. BALL VALVES SHALL BE AS MANUFACTURED BY MILWAUKEE, APOLLO, JAMESBURY OR WORCESTER.
D. PROVIDE BALANCING VALVES FOR WATER SYSTEMS WHERE INDICATED.
(a) VALVES 2-1/2 INCH AND SMALLER SHALL BE ARMSTRONG MODEL CBV OR APPROVED EQUAL BY PRESO OR TOUR ANDERSON WITH TWO 1/4-INCH BRASS METERING PORTS WITH CHECK VALVES AND CAPS.
1) VALVE SHALL HAVE MULTI-TURN 360 DEGREE ADJUSTMENT HANDWHEEL WITH MEMORY STOP FOR LOCKING VALVE IN THE BALANCED POSITION.
2) PROVIDE VALVES WITH END CONNECTIONS SUITABLE FOR PIPING IN WHICH THEY ARE INSTALLED.
3) PROVIDE ONE (1) ARMSTRONG COMPUTERIZED FLOW METER TO MEASURE BALANCED FLOW THROUGH VALVES.
E. DRAIN/BLOWDOWN VALVES SHALL BE HOSE END TYPE AND SHALL BE PROVIDED AT LOW POINTS OF ALL PIPING SYSTEMS AND WHERE INDICATED. VALVES SHALL BE 3/4-INCH MINIMUM BALL TYPE VALVES AS SPECIFIED ABOVE. PROVIDE EACH DRAIN VALVE WITH THREADED CAP AND CHAIN.

15. PIPING TESTS:
A. GENERAL:
(1) THE CONTRACTOR SHALL PROVIDE ALL EQUIPMENT, LABOR, AND MATERIAL REQUIRED TO MAKE THE REQUIRED TESTS. IF WATER IS UNAVAILABLE, THEN THE CONTRACTOR SHALL PROVIDE A SOURCE OF WATER (E.G., TANK, CYLINDER).
(2) ALL TESTS SHALL BE CARRIED OUT IN ACCORDANCE WITH APPLICABLE ASME REQUREMENTS AND APPLICABLE OSHA REGULATIONS.
(3) ISOLATE ALL PIPE UNDER TEST FROM EQUIPMENT, INSTRUMENTS SUBJECT TO DAMAGE, AND OTHER PIPE NOT PART OF THE NEW CONSTRUCTION DURING TESTING.
(4) REPLACE ALL JOINTS FOUND TO BE LEAKING WITH NEW MATERIALS, AND RETEST UNTIL NO FURTHER LEAKS EXIST.
(5) NOTIFY THE OWNER PRIOR TO TESTS. PERFORM ALL TESTS PRIOR TO MAKING NEW CONNECTIONS TO EXISTING SYSTEMS.
(6) PIPING MAY BE TESTED A SECTION AT A TIME IN ORDER TO FACILITATE THE CONSTRUCTION. THE CONTRACTOR SHALL FILL THE SECTION OF THE PIPE TO BE TESTED WITH WATER, TAKING CARE TO BLEED ALL OF THE AIR OUT OF THE PIPING SYSTEM. THE TESTS SHALL BE CONDUCTED BY THE CONTRACTOR IN THE PRESENCE OF THE OWNER OR HIS DESIGNATED REPRESENTATIVE. SHOULD ANY LEAKS DEVELOP, LEAKS SHALL BE REPAIRED AND THE SYSTEM RETESTED.
(7) ALL TESTS SHALL BE CONDUCTED BEFORE ANY INSULATION IS INSTALLED, AND ANY INSULATION INSTALLED PRIOR TO THESE TESTS SHALL BE REMOVED AND THEN REPLACED AFTER SUCCESSFUL COMPLETION OF THE TEST AT NO ADDITIONAL COST TO THE OWNER. GAUGES USED IN THE TESTS SHALL BE PROVEN TO HAVE BEEN RECENTLY CALIBRATED.
B. HYDRONIC PIPE:
(1) DOMESTIC-WATER, HOT-WATER HEATING, OTHER THAN DRAINS AND UNLESS SPECIFICALLY INDICATED OTHERWISE, SHALL BE HYDROSTATICALLY TESTED AS FOLLOWS:
(a) SANITARY WATER SHALL BE HYDROSTATICALLY TESTED AS REQUIRED BY CODE AND, AT A MINIMUM, SHALL INCLUDE FILLING THE SYSTEM WITH WATER TO THE HIGHEST LEVEL OF PIPING TO BE TESTED BUT NOT LESS THAN 10-FOOT HEAD OF WATER. ALLOW TO STAND AT LEAST 30 MINUTES BEFORE INSPECTION.
(b) PRESSURE PIPING SYSTEMS, UNLESS OTHERWISE SPECIFIED HEREIN, SHALL BE FILLED WITH WATER AND THOROUGHLY FLUSHED CLEAN OF FOREIGN MATTER AFTER ERECTION AND BEFORE CONNECTION TO THE EXISTING SYSTEMS AND NEW OR EXISTING EQUIPMENT. TEST ALL PIPING PRIOR TO INSTALLATION OF INSULATION. REPAIR ALL LEAKS AND RETEST AT NO COST TO OWNER.
1) PIPING SHALL BE TESTED TO 1.5 TIMES MAWP (MAXIMUM ALLOWABLE WORKING PRESSURE), BUT NOT LESS THAN 100PSIG.
2) ALLOWABLE PRESSURE LOSS DURING THIS PERIOD SHALL NOT EXCEED 5 PERCENT.
3) MAINTAIN TEST PRESSURE FOR A SUFFICIENT TIME BUT NOT LESS THAN FOUR (4) HOURS TO LOCATE AND ELIMINATE ALL LEAKS.
C. DISINFECT DOMESTIC WATER PIPING IN ACCORDANCE WITH THE METHODS PRESCRIBED BY STATE DEPARTMENT OF HEALTH AND GOVERNING COUNTY PLUMBING CODE. CONDUCT DISINFECTION IN THE PRESENCE OF OWNERS REPRESENTATIVE.
D. FIRE PROTECTION PIPING SHALL BE TESTED AS HEREINAFTER SPECIFIED.

16. HANGERS AND SUPPORTS:
A. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE AN ADEQUATE PIPE SUSPENSION SYSTEM IN ACCORDANCE WITH RECOGNIZED ENGINEERING PRACTICES, USING STANDARD, COMMERCIALLY ACCEPTED PIPE HANGERS AND SUSPENSION EQUIPMENT. THE DESIGN OF ALL HANGERS AND SUPPORTS SHALL BE IN ACCORDANCE WITH THE PROVISION OF CURRENT ISSUE OF

3

MSS-SP-58 AND SP-69 DOCUMENT DEVELOPED AS A STANDARD BY THE MANUFACTURERS' STANDARDIZATION SOCIETY.
B. PIPE HANGERS FOR STEEL PIPE 2-INCH AND SMALLER AND COPPER PIPE 1-1/2-INCH AND LARGER SHALL BE SPACED AT LEAST EVERY 8 FEET. HANGERS FOR COPPER PIPE 1-1/4-INCH AND SMALLER SHALL BE SPACED AT LEAST EVERY 6 FEET. ADDITIONALLY, HANGERS SHALL BE PLACED WITHIN ONE FOOT OF EACH HORIZONTAL ELBOW AND WHERE CONCENTRATED LOADS AT VALVES, FITTINGS AND SIMILAR ITEMS OCCUR, CLOSER HANGER SPACING SHALL BE REQUIRED.
C. PIPE HANGERS IN CONTACT WITH COPPER PIPE SHALL BE COPPER PLATED. PIPE HANGERS AND HANGER SUPPORTS SHALL CONFORM WITH THE FOLLOWING GRINNELL FIGURES:
(1) HANGERS GENERALLY SHALL BE FIG. 65 AND 260.
(2) CLAMPS SHALL BE FIG. 261.
D. IN LIEU OF INDIVIDUAL HANGERS, MULTIPLE (TRAPEZE) HANGERS MAY BE USED. HORIZONTAL MEMBERS SHALL CONSIST OF 1-1/2 INCH BY 1-1/2 INCH, 12 GAUGE COLD FORMED CHANNELS AS MANUFACTURED BY KINDORF SERIES B-995 OR APPROVED EQUAL. PROVIDE METAL FRAMING SYSTEM WITH APPLICABLE FASTENERS, SPRINGHELD HARDENED STEEL NUTS, BRACKETS, FITTINGS, CLAMPS, ETC., TO SUIT THE INSTALLATION.
E. HANGER ATTACHMENTS SHALL BE SUITABLE FOR EACH TYPE OF HANGER AND SHALL BE COMPATIBLE WITH THE BUILDING MATERIAL TO WHICH IT IS SECURED.
(1) STEEL BEAMS - FIG. 228, 218 OR 229 ATTACHMENTS FOR PIPES 2-1/2 INCHES AND LARGER.
(2) STEEL BEAMS - FIG. 87 OR 85 ATTACHMENTS FOR PIPES 2 INCHES AND SMALLER.
F. IN NO CASE SHALL WIRE OR PERFORATED STRAP BE USED FOR PIPE OR CONDUIT SUPPORT.
G. SECURE ALL HANGERS FOR PIPING, DUCTWORK, EQUIPMENT, ETC., TO STRUCTURAL BEAMS, TRUSS MEMBERS, OR NEW FRAMING MEMBERS AS REQUIRED. IN NO CASE SHALL SUPPORTS BE SECURED TO THE UNDERSIDE OF ROOF DECK UNLESS DIRECTED IN THE FIELD BY THE OWNER. CONTRACTOR SHALL SUBMIT DETAILS OF METHODS OF ATTACHMENT TO THE OWNER FOR APPROVAL.
H. CONTRACTOR SHALL PROVIDE ADDITIONAL STRUCTURAL FRAMING MEMBERS (BEAMS, ANGLES, CHANNELS, ETC.) AS REQUIRED TO INSTALL PIPING, DUCTWORK, EQUIPMENT, ETC. AT THE RECOMMENDED HANGER SPACING INTERVALS WHERE ATTACHMENT TO STEEL OR UNDERSIDE OF BUILDING CONSTRUCTION IS IMPRACTICAL. THE TYPE AND SIZE OF THE SUPPORTING CHANNELS AND SUPPLEMENTARY STEEL SHALL BE DETERMINED BY THE CONTRACTOR AND SHALL BE OF SUFFICIENT STRENGTH AND SIZE TO ALLOW ONLY A MINIMUM DEFLECTION IN CONFORMANCE WITH MANUFACTURER'S REQUIREMENTS FOR LOADING. CONTRACTOR SHALL SUBMIT DETAILS FOR APPROVAL TO THE OWNER.

17. INSULATION:
A. ALL INSULATION AND FINISHES SHALL BE INSTALLED BY SKILLED WORKMEN REGULARLY ENGAGED IN THIS TYPE OF WORK AND SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' PUBLISHED INSTRUCTIONS.
B. INSULATION SHALL BE CONTINUOUS AT ALL HANGERS, SLEEVES, AND OPENINGS. VAPOR SEALS SHALL BE PROVIDED FOR ALL COLD SURFACES AND SHALL BE CONTINUOUS.
C. INSULATION MATERIALS SHALL NOT BE APPLIED UNTIL ALL SURFACES TO BE COVERED ARE CLEAN AND DRY, AND PIPING AND DUCT SYSTEMS ARE TESTED.
D. MATERIALS SHALL CONFORM TO THE FOLLOWING PRODUCTS INDICATED AS MANUFACTURED BY ARMSTRONG, MANVILLE, OWENS/CORNING, CERTAIN-TEED, KNAUF OR APPROVED EQUAL.

TYPE I: HEAVY DUTY FIBERGLASS PIPE INSULATION WITH VAPOR BARRIER JACKET EQUAL TO MANVILLE MICRO-LOK 650 WITH APT ALL SERVICE JACKET AND PRESSURE SENSITIVE SELF-SEALING LAPS. K-FACTOR SHALL NOT EXCEED 0.23 AT 75 DEGREES F MEAN TEMPERATURE. ALL LONGITUDINAL LAPS SHALL BE STAPLED EVERY SIX (6) INCHES. ALL BUTT JOINTS SHALL BE WRAPPED WITH A 3-INCH MINIMUM WIDE STRIP OF JACKETING MATERIAL SECURELY SEALED IN PLACE.

TYPE II: LIGHTWEIGHT BLANKET TYPE FIBERGLASS DUCT INSULATION WITH VAPOR BARRIER FACING EQUAL TO MANVILLE MICROLITE TYPE FSK. K-FACTOR SHALL NOT EXCEED 0.24 AT 75 DEGREES F MEAN TEMPERATURE WITH DENSITY NOT LESS THAN 1.0 PCF. INSULATION SHALL BE APPLIED WITH ADHESIVE AND BOTTOM WELDED PINS TO PREVENT DISTORTION AND SAGGING. LAP ALL JOINTS AND STAPLE. TAPE ALL JOINT AND PIN PENETRATIONS.

E. INSULATION TYPE AND THICKNESS SHALL CONFORM TO THE FOLLOWING SCHEDULE:

SERVICE:	TYPE:	THICKNESS:
HEATING HOT WATER		
• 1 1/2" AND SMALLER	I	1-1/2"
DOMESTIC HOT & COLD WATER, AND POTABLE WATER		
• 3" AND SMALLER	I	1
• 3-1/2" AND LARGER	I	1-1/2"
SUPPLY DUCTWORK - CONCEALED	II	2"

F. INSULATION SHALL NOT BE REQUIRED ON SPRINKLER PIPING AND EXHAUST DUCTWORK.
G. PIPE FITTINGS AND VALVES SHALL BE INSULATED WITH ZESTON PREMOLDED ONE-PIECE 20 MIL PVC INSULATED FITTING COVER AND FACTORY PRECUT INSULATION.
H. REPLACE AND REPAIR INSULATION DISTURBED BY TESTING AND BALANCING PROCEDURES HEREINAFTER SPECIFIED.
I. REPLACE AND REPAIR EXISTING INSULATION DISTURBED OR DAMAGED BY WORK UNDER THIS CONTRACT.
J. PROVIDE HIGH DENSITY PIPE INSERTS WITH GALVANIZED METAL PIPE SHIELDS AT ALL POINTS OF SUPPORT OF PIPING SYSTEMS. DIAMETER OF INSERT SHALL MATCH INSULATION THICKNESS AND ENCOMPASS 50% OF THE SURFACE. WOOD BLOCKING AND METAL INSERTS ARE UNACCEPTABLE.

18. LOW PRESSURE (LP) DUCTWORK:
A. LOW PRESSURE DUCTWORK SHALL BE LIMITED TO VELOCITIES UNDER 2500 FPM AND 2IN-WG POSITIVE OR NEGATIVE; AND SHALL COMPLY WITH THE LATEST EDITION OF SMACNA "HVAC DUCT CONSTRUCTION STANDARDS" FOR FABRICATION AND INSTALLATION OF LOW-PRESSURE DUCTWORK.
B. ALL SUPPLY DUCTWORK DOWNSTREAM OF AIR TERMINAL UNITS, RETURN AIR DUCTWORK, AND EXHAUST DUCTWORK, UNLESS OTHERWISE SPECIFIED, SHALL BE "LOW PRESSURE" DUCT CONSTRUCTION AS HEREIN SPECIFIED.
C. ALL LOW PRESSURE DUCTWORK SHALL BE RATED 2-INCH W.G., AND SEALED IN ACCORDANCE WITH "SEAL CLASS C." DUCTWORK SHALL BE CONSTRUCTED OF PRIME QUALITY G90 GALVANIZED STEEL, EXCEPT DUCTWORK AT HUMIDIFIER DISTRIBUTION MANIFOLDS, SHALL BE CONSTRUCTED OF TYPE 316 STAINLESS STEEL, ALL WELDED CONSTRUCTION AS INDICATED ON DRAWINGS. REINFORCE ALL DUCTS TO PREVENT BUCKLING, BREATHING, VIBRATIONS, OR UNNECESSARY NOISE. SUCH REINFORCING SHALL BE AS RECOMMENDED IN DUCT MANUAL, PLUS ANY ADDITIONAL REINFORCING AS REQUIRED TO MEET JOB CONDITIONS. ELBOWS SHALL BE DOUBLE RADIUS VANES ONLY WITH BLADE ALIGNMENT ASSEMBLY, EXCEPT ELBOWS ON RETURN AIR CEILING DEVICES SHALL BE UNVANED.
D. DUCT SIZES INDICATED ON THE DRAWINGS ARE AIR SIDE SIZES. INCREASE SHEET METAL SIZES ACCORDINGLY TO COMPENSATE FOR THICKNESS OF SOUND LINING.
E. ALL DUCT JOINTS AND FITTINGS SHALL BE SEALED WITH UNITED MCGILL AIRFLOW, OR 3M EC-750 DUCT SEALER.
F. DUCT ACCESS DOORS SHALL BE INSULATED, HAVE CONTINUOUS PIANO HINGE AND VENTLOCK #140 LATCH. SIZE OF DOOR SHALL BE MINIMUM 10-INCH BY 12-INCH UNLESS NOTED OTHERWISE. PROVIDE ACCESS DOORS WHERE INDICATED AND WHERE REQUIRED FOR MAINTENANCE OR INSPECTION.
G. PROVIDE VOLUME DAMPERS CONSTRUCTED PER SMACNA FIG. 7-4 AND 7-5. PROVIDE VENTLOK #639 QUADRANT WITH STAND-OFFS ON ALL VOLUME DAMPERS INSTALLED IN INSULATED DUCTWORK. DEPTH OF STAND-OFFS SHALL EXCEED THICKNESS OF SPECIFIED INSULATION TO PROVIDE SUFFICIENT OPERATING CLEARANCES.
H. CIRCULAR LOW PRESSURE SUPPLY DUCTWORK SHALL BE AS MANUFACTURED BY UNITED MCGILL, EASTERN, LEWIS AND LAMBERT, MONROE, PEABODY-WIND, OR SEMCO, EQUAL TO MCGILL UNISEAL LOW PRESSURE SPIRAL DUCTWORK AND FITTINGS.
I. FLEXIBLE DUCTWORK SHALL BE HART & COOLEY TYPE F114 OR APPROVED EQUAL. FLEXIBLE DUCT SHALL COMPLY WITH NFPA BULLETIN 90A AND SHALL BE U.L. LISTED AS CLASS 1 AIR DUCT AND CONNECTOR, STANDARD 181. FLEXIBLE DUCT SHALL BE SUITABLE FOR INSTALLATION IN CEILING RETURN AIR PLENUMS.
J. SUPPORT ALL DUCTS IN ACCORDANCE WITH DUCT MANUAL TABLES 5-1 AND 5-2, AND FIGURES #5-1 THROUGH #5-9 AS REQUIRED.
K. TEST SUPPLY DUCTWORK FOR LEAKS BY SEALING OPENINGS AND PRESSURIZING SYSTEM TO 2-INCH W.G. STATIC PRESSURE. AS A MINIMUM, TEST TWO (2) COMPLETE DUCT SECTION AS SELECTED BY THE OWNER. USE TEST METHODS APPROVED BY THE OWNER. SEAL ALL JOINTS AS HEREIN SPECIFIED. LEAKAGE SHALL NOT EXCEED 3 PERCENT OF THE AIR FLOW SPECIFIED AT 2-INCH W.G. STATIC PRESSURE. SHOULD LEAKAGE EXCEED ALLOWED RATE, TEST ADDITIONAL SECTIONS AS DIRECTED BY OWNER.
L. PROVIDE FLEXMASTER OR APPROVED EQUAL SPIN-IN-FITTING WITH INTEGRAL VOLUME DAMPER, TYPE CBD WHERE DUCT DIMENSIONS PERMIT OR TYPE FLD OTHERWISE AT BRANCHES FROM SUPPLY AIR MAINS TO AIR DEVICES.

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Jenkins • Peer *Architects*
112 South Tryon Street, Suite 1300
Charlotte, North Carolina 28284
(t) 704/372-6665

MUELLER ASSOCIATES, INC.
ENGINEER C-0979
1306 Concourse Dr #100,
Linthicum Heights, MD 21090
(t) 410/646-4500

1/10/2022

UNC PEMBROKE AMERICAN INDIAN HERITAGE CENTER

SCO ID#: 21-23067-01A

TAG	DESCRIPTION	DATE

Project: 21PEM587
Drawn By: CJS
Checked By: SAG
Date: 1/10/2022

MECHANICAL SPECIFICATIONS

PROJECT NORTH TRUE NORTH

BID DOCUMENTS

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19. MEDIUM PRESSURE (MP) DUCTWORK:
A. ALL SUPPLY DUCTWORK FROM AIR HANDLING UNITS AND SUPPLY DUCTWORK UPSTREAM OF VAV SUPPLY TERMINAL UNITS SHALL BE "MEDIUM PRESSURE" DUCT CONSTRUCTION AS HEREINAFTER SPECIFIED.
B. MEDIUM PRESSURE DUCTWORK SHALL BE LIMITED TO VELOCITIES UNDER 3500 FPM AND 4-INCH WG POSITIVE OR NEGATIVE; AND SHALL COMPLY WITH THE LATEST EDITION OF SMACNA "HVAC DUCT CONSTRUCTION STANDARDS" FOR FABRICATION AND INSTALLATION OF MEDIUM-PRESSURE DUCT.
C. TRANSVERSE JOINTS IN RECTANGULAR DUCTS SHALL BE CONSTRUCTED PER SECTION 2-4. AT CONTRACTOR'S OPTION DUCTMATE OR TDC/TDF DUCT CONNECTION SYSTEMS MAY BE USED; HOWEVER, MINIMUM SHEETMETAL GAUGES SHALL CONFORM TO BOTH SMACNA RECTANGULAR DUCT REINFORCEMENT AND TRANSVERSE JOINT REINFORCEMENT TABLES. CLEATS OR CLIPS ONLY SHALL BE UTILIZED IN CONJUNCTION WITH THE TDC/TDF SYSTEM.
D. ALL NEW MP DUCTWORK SHALL BE SEALED IN ACCORDANCE WITH "SEAL CLASS A."
E. UNLESS SPECIFIED OTHERWISE, CIRCULAR MEDIUM PRESSURE DUCTWORK SHALL BE AS MANUFACTURED BY UNITED MCGILL LEWIS AND LAMBERT, EASTERN, MONROE, PEABODY-WIND, OR SEMCO, AND SHALL CONSIST OF SINGLE WALL SPIRAL PIPE AND WELDED FITTINGS. CIRCULAR DUCT SHALL HAVE LOCKED SEAMS SO MADE AS TO ELIMINATE ANY LEAKAGE UNDER THE PRESSURES FOR WHICH THE SYSTEM HAS BEEN DESIGNED. LONGITUDINAL SEAM DUCT SHALL HAVE A FUSION WELDED BUTT SEAM. CIRCULAR AND FLAT OVAL DUCT SHALL BE MANUFACTURED OF GALVANIZED STEEL MEETING ASTM A-527-80 BY THE SPIRAL LOCKSEAM METHOD AND SHALL BE MINIMUM 26 GAUGE FOR SIZES 8-INCH AND SMALLER, 24 GAUGE FOR SIZES 8-INCH THROUGH 24-INCH, AND 20 GAUGE ABOVE 24-INCH. DUCTWORK SHALL BE INSTALLED USING SLIP JOINTS, OR ON LARGE DUCTS SPIRALMATIC CONNECTORS BY DUCTMATE. DRAW BAND JOINTS SHALL NOT BE USED.
F. ALL FITTINGS ARE TO HAVE CONTINUOUS WELDS ALONG ALL SEAMS. ALL DIVIDED FLOW FITTINGS ARE TO BE MANUFACTURED AS SEPARATE FITTINGS. FITTINGS AND COUPLINGS SHALL BE OF MINIMUM 22 GAUGE THROUGH 24-INCH DIAMETER, AND 20 GAUGE ABOVE 24-INCH.
G. ELBOWS IN DIAMETERS 3-INCH THROUGH 8-INCH SHALL BE TWO SECTION DIE-STAMPED ELBOWS. ALL OTHER ELBOWS SHALL BE GORED CONSTRUCTION WITH ALL SEAMS CONTINUOUS-WELDED. ELBOWS SHALL BE FABRICATED TO A CENTERLINE RADIUS OF 1.5 TIMES THE CROSS SECTION DIAMETER.
H. SUPPORTS, SEALANT AND TESTING SHALL CONFORM TO APPLICABLE PORTIONS OF THE DUCT MANUAL. ALL NEW DUCT JOINTS AND FITTINGS SHALL BE SEALED WITH UNITED MCGILL OR 3M EC-750 DUCT SEALER.
I. GALVANIZED AREAS THAT HAVE BEEN DAMAGED BY WELDING SHALL BE COATED WITH CORROSION RESISTANT ALUMINUM PAINT, MINIMUM 2 COATS.
J. DUCTWORK SHALL BE SUPPORTED IN ACCORDANCE WITH DUCT MANUAL TABLES #5-1, #5-2 AND FIGURE #5-5, TRAPEZE TYPE ONLY. FABRICATE SUPPORTS ON ROOF MOUNTED DUCTWORK USING NON-CORROSIVE, HOT DIPPED GALVANIZED OR STAINLESS STEEL MATERIALS.
K. CONTRACTOR SHALL REVIEW AND COORDINATE THE INSTALLATION OF THE DUCTWORK AND EQUIPMENT, I.E. VAV TERMINAL UNITS, ETC. NO DUCTWORK SHALL BE FABRICATED PRIOR TO THE CONTRACTOR OBTAINING EXACT FIELD DIMENSIONS OF THE BUILDING STRUCTURE, EQUIPMENT CONNECTIONS, EXISTING PIPING AND DUCTWORK TO REMAIN, CEILING SPACE CONDITIONS, MECHANICAL, ELECTRICAL, STRUCTURAL AND ARCHITECTURAL OBSTRUCTIONS, ETC., WHICH MAY AFFECT THE INSTALLATION OF THE AIR DISTRIBUTION SYSTEMS. NOTIFY THE OWNER IMMEDIATELY UPON ANY DISCREPANCIES.
L. SECURE ALL HANGERS FOR DUCTWORK AND EQUIPMENT TO BEAMS OR JOISTS. CONTRACTOR SHALL PROVIDE ADDITIONAL STRUCTURAL FRAMING MEMBERS AS REQUIRED TOINSTALL DUCTWORK AT THE REQUIRED HANGER SPACING INTERVALS WHERE ATTACHMENT TO STRUCTURAL STEEL IS IMPRACTICAL. IN NO CASE SHALL SUPPORTS BE SECURED TO THE UNDERSIDE OF ROOF DECKING UNLESS OTHERWISE DIRECTED IN THE FIELD BY THE OWNER.
M. TEST NEW DUCTWORK FOR LEAKS BY SEALING OPENINGS AND PRESSURIZING SYSTEM TO 4-INCH W.G. STATIC PRESSURE. TEST ALL MEDIUM PRESSURE DUCTS UNLESS OTHERWISE DIRECTED BY THE OWNER. USE TEST METHODS APPROVED BY THE OWNER. SEAL ALL JOINTS AS HEREIN SPECIFIED. LEAKAGE SHALL NOT EXCEED 1 PERCENT OF THE AIR FLOW SPECIFIED AT 4-INCH W.G. STATIC PRESSURE.
N. DAMPERS IN CIRCULAR DUCT SHALL BE UNITED MCGILL TYPE 1 OR 2 WITH LOCKING TYPE QUADRANT OR APPROVED EQUAL. ACCESS DOORS WHERE INDICATED SHALL BE MCGILL TYPE ASHXFSDC OR APPROVED EQUAL.

20. DUCT LINING:
A. PROVIDE DUCT LINING MINIMUM 10 FT. DOWNSTREAM OF TERMINAL UNITS, , AND AS INDICATED ON THE DRAWINGS.
B. DUCT LINING SHALL BE BONDED MAT OF GLASS FIBER THERMAL AND ACOUSTICAL INSULATION COATED WITH AN ACRYLIC SURFACE COATING WHICH IS TREATED SO THAT IT WILL NOT SUPPORT MICROBIAL GROWTH, EQUAL TO MANVILLE PERMACOTE LINACOUSTIC FLEXIBLE DUCT LINER, ONE (1) INCH THICKNESS EXCEPT EXTERIOR DUCTWORK SHALL UTILIZE TYPE II, RIGID BOARD LINER. "K" FACTOR SHALL NOT EXCEED 0.25 AT 75 DEGREES F WITH DENSITY NOT LESS THAN 3.0 PCF.
C. ADHERE LINER, WITH COATED SIDE TOWARD AIR STREAM, TO ALL INTERIOR SIDES OR DUCT WITH 100% COVERAGE OF APPROVED FIRE-RESISTANT INSULATION BINDING ADHESIVE. ADHESIVE SHALL COMPLETELY COVER THE SHEET METAL AT EACH END OF EACH SECTION OF DUCTWORK. FURTHER SECURE THE LINER TO THESE SURFACES WITH WELDED PIN TYPE MECHANICAL FASTENERS AS SHOWN IN THE SMACNA DUCT MANUAL. ADDITIONALLY, POINT ALL JOINTS IN LINER AND BUTTER THE EDGES OF THE LINER WHERE SECTIONS OF DUCTWORK WILL BE JOINED WITH APPROVED FIRE-RESISTANT INDOOR BREATHER MASTIC.
D. PROVIDE LEADING EDGE PROTECTION AS INDICATED IN DUCT MANUAL (FIGURE 2-19) AT BEGINNING OF EACH SECTION OF LINED DUCT.
E. DUCT SIZES INDICATED ON THE DRAWINGS ARE AIR SIDE SIZES. INCREASE SHEET METAL SIZES ACCORDINGLY TO COMPENSATE FOR THICKNESS OF LINING.

21. VARIABLE AIR VOLUME SUPPLY TERMINAL UNITS:
A. PROVIDE PRESSURE INDEPENDENT VARIABLE AIR VOLUME TERMINAL UNITS AS INDICATED ON THE PLANS AND AS SCHEDULED. UNITS SHALL BE TITUS MODEL DESV-3000 WITH DDC CONTROLLER SUITABLE FOR SINGLE DUCT, VARIABLE AIR VOLUME INSTALLATION OR EQUAL BY PRICE INDUSTRIES, NAILOR, OR JOHNSON CONTROLS. PROVIDE FLOW SENSORS AND CONTROLLERS AS REQUIRED TO ACHIEVE CONTROL OPERATION DESCRIBED ON DRAWINGS. MINIMUM VAV SIZE = 6
B. CASING: 0.031-INCH-THICK GALVANIZED STEEL, SINGLE WALL, WITH LONGITUDINAL LOCK SEAMS.
(1) AIR INLET: ROUND STUB CONNECTION OR S-SLIP AND DRIVE CONNECTIONS FOR DUCT ATTACHMENT.
(2) AIR OUTLET: S-SLIP AND DRIVE RECTANGULAR CONNECTIONS.
C. UNITS SHALL BE SIZED AND SELECTED IN CONFORMANCE WITH ASHRAE STANDARD 62.1 (LATEST EDITION) FOR IAQ, INCLUDING MATCHING REHEAT COILS. VAV UNITS AND REHEATS SHALL BE SET AS SCHEDULED.
D. UNITS SHALL BE PROVIDED WITH FIBER-FREE (POLYMER, CLOSED-CELL) LINER, BOTTOM ACCESS PANEL, AND CONTROL ENCLOSURE.
E. HOT-WATER REHEAT: PROVIDE HOT WATER REHEAT COIL ON DISCHARGE OF BOX WHERE INDICATED OF SCHEDULED CAPACITY. COIL SHALL BE ARI STANDARD 410 CERTIFIED DESIGNED FOR MINIMUM WORKING PRESSURE OF 150 PSIG.
(1) COILS: COPPER TUBE, WITH MECHANICALLY BONDED ALUMINUM FINS SPACED NO CLOSER THAN 0.083 INCH, AND RATED FOR A MINIMUM WORKING PRESSURE OF 200 PSIG AND A MAXIMUM ENTERING-WATER TEMPERATURE OF 220 DEG F. INCLUDE MANUAL AIR VENT AND DRAIN VALVE.
F. MAXIMUM LEAKAGE:
(1) 1.0 PERCENT AT MAXIMUM RATED AIRFLOW AND 1.0 INCHES W.G. PRESSURE.
(2) 2.0 PERCENT AT MAXIMUM RATED AIRFLOW AND 3.0 INCHES W.G. PRESSURE.
G. AIR FLOW SENSOR: MULTI-POINT CROSS-SHAPED TYPE WITH AMPLIFYING PRESSURE PICKUP POINTS CONNECTED TO CENTRAL AVERAGING CHAMBER.
(1) MINIMUM DIFFERENTIAL PRESSURE SIGNAL: 0.03 INCH WG AT INLET VELOCITY OF 500 FPM.
(2) SENSOR OUTPUT: AMPLIFIED DIFFERENTIAL PRESSURE SIGNAL AT LEAST 2.5 TIMES THE EQUIVALENT VELOCITY PRESSURE SIGNAL FROM A CONVENTIONAL PITOT TUBE.
(3) COMPATIBLE WITH CONTROLLER.
(4) ACCURACY: MAXIMUM PLUS OR MINUS 5-PERCENT THROUGH TERMINAL OPERATING RANGE.
H. VOLUME DAMPER: GALVANIZED 18 GAUGE STEEL WITH PERIPHERAL GASKET, POSITION INDICATOR, AND SELF-LUBRICATING BEARINGS.
(1) LEAKAGE RATES IN "MAXIMUM DAMPER LEAKAGE" SUBPARAGRAPH BELOW VARY AMONG MANUFACTURERS AND WITH PRESSURE RATING.
(2) MAXIMUM DAMPER LEAKAGE: AHRI 880 RATED, 2 PERCENT OF NOMINAL AIRFLOW AT 750-PA3-INCH WG INLET STATIC PRESSURE.
(3) DAMPER POSITION: NORMALLY CLOSED.
I. EACH UNIT SHALL BE FIELD FITTED WITH AN EXTERNAL DDC CONTROLLER AND DAMPER OPERATOR PROVIDED BY THE ATC SUBCONTRACTOR.

22. AIR DEVICES:
A. PROVIDE AIR DEVICES, AS MANUFACTUERED BY TITUS, OR EQUAL BY PRICE INDUSTRIES, KRUGER OR NAILOR, AS INDICATED ON PLANS AND SCHEDULED EQUAL TO THE FOLLOWING TITUS MODEL NUMBERS WITH #26 WHITE FINISH.
B. PROVIDE REGISTERS WITH DAMPERS.
C. SUPPORT ALL AIR DEVICES INDEPENDENTLY FROM CEILING GRID SYSTEM.
D. ADJUST ALL PATTERN CONTROLLERS OR INSTALL BLOW CLIPS TO PROVIDE DISCHARGE PATTERN INDICATED.

E. TYPE HLS/HLR DIFFUSERS IN GYP BOARD CONSTRUCTIONS SHALL BE PROVIDED WITH BORDER TYPE TO ALLOW DIFFUSER FLANGES TO BE MUDDED INTO GYP.
F. PROVIDE AIR DEVICES AS FOLLOWS:

DESIG	DEVICE	TITUS MODEL	FRAME TYPE
LS	PLENUM SLOT DIFFUSER	TBDI-30	LAY-IN OR GYP
HLS/HLR	HIGH-THROW SLOT DIFFUSER	FL-10	LAY-IN OR GYP
CD/CR	CEILING DIFFUSER, 24" X 24" MODULE	OMNI	LAY-IN

23. AUTOMATIC SPRINKLER SYSTEM:
A. REFER TO SHEET F101 FOR AUTOMATIC SPRINKLER SYSTEMS SPECIFICATIONS AND ADDITIONAL INFORMATION.

24. AIR AND WATER BALANCING:
A. AIR AND WATER SYSTEMS SHALL BE TESTED AND BALANCED IN ACCORDANCE WITH AABC OR NEBB STANDARDS.
B. DUCT PRESSURE TESTS SPECIFIED HEREIN SHALL BE WITNESSED BY THE TESTING AND BALANCING CONTRACTOR, AND A WRITTEN REPORT OF EACH TEST SHALL BE SUBMITTED TO THE OWNER WITHIN ONE WEEK UPON ITS COMPLETION.
C. BALANCING CONTRACTOR SHALL TEST AND RESET CONTROLLERS AS REQUIRED ON EXISTING TERMINAL UNITS INDICATED TO BE REUSED. NOTIFY OWNER IMMEDIATELY OF ANY EQUIPMENT FOUND TO BE DEFECTIVE.
D. CONTRACTOR SHALL COORDINATE AND SCHEDULE THE WORK OF THE TEST & BALANCE SUBCONTRACTOR.
E. SUBMIT TEST REPORT WITHIN 10 WORKING DAYS AFTER COMPLETION OF ALL FINAL ADJUSTMENTS.

25. AUTOMATIC TEMPERATURE CONTROLS:
A. THE CONTROL SYSTEM SHALL CONNECT TO, SHARE POINTS WITH, AND COMMUNICATE WITH THE EXISTING BAS SYSTEM AND SHALL INCLUDE ALL REQUIRED CONTROLLERS, SENSORS, ACTUATORS, NETWORK AND CONTROL WIRING, HARDWARE, SOFTWARE, PROGRAMMING, ETC., AS REQUIRED FOR A COMPLETE SYSTEM AND TO ACHIEVE THE SEQUENCES OF CONTROL DESCRIBED. ALL HARDWARE AND SOFTWARE SHALL BE STANDARD PRODUCTS OF THE MANUFACTURER. TEST AND DEMONSTRATE DDC CONTROL SYSTEM AS REQUIRED FOR OWNER'S ACCEPTANCE.
B. THE ATC CONTRACTOR IS REQUIRED TO PERFORM THE FOLLOWING:
(1) FURNISH, INSTALL, CONFIGURE AND COMMISSION NEW BACNET, FULLY PROGRAMMABLE AND APPLICATION SPECIFIC DDC CONTROLLERS FOR EQUIPMENT IDENTIFIED IN THE DRAWINGS, INCLUDING ALL COMPONENTS, SOFTWARE AND APPLICATIONS REQUIRED TO MEET THE SEQUENCE OF OPERATION AND THE DESIGN/PERFORMANCE INTENT OF THE SYSTEMS; INCLUDING:
(a) AIR TERMINAL UNIT CONTROLLERS
(2) COORDINATION OF WORK
(a) WHEREVER WORK INTERCONNECTS WITH WORK BY OTHER TRADES, COORDINATE WITH THE OTHER TRADES AND WITH THE OWNER'S REPRESENTATIVE TO ENSURE ALL TRADES HAVE THE INFORMATION NECESSARY THAT THEY MAY PROPERLY INSTALL THEIR EQUIPMENT AND CONNECTIONS.
(b) PROVIDE SLEEVES AND CONDUIT FOR PASSAGE OF PIPES, AND WIRING THROUGH STRUCTURAL MASONRY, CONCRETE WALLS AND FLOORS, AND ELSEWHERE FOR THE PROPER PROTECTION OF BAS WORK.
C. DIRECT DIGITAL CONTROL (DDC) SYSTEM SHALL BE AS MANUFACTURED BY DELTA TO MATCH EXISTING BAS.
D. MECHANICAL CONTRACTOR SHALL COORDINATE AND SCHEDULE WORK OF THE ATC SUBCONTRACTOR.
E. THE SYSTEM SHALL BE COMPLETE IN ALL RESPECTS INCLUDING ALL LABOR, MATERIALS, EQUIPMENT, AND SERVICE NECESSARY. DIAGRAMS ON THE DRAWINGS SHOW THE GENERAL INTENT OF THE CONTROL SYSTEMS. PROVIDE ALL DEVICES, WIRING, CONDUITS, RELAYS, ETC. TO PERFORM THE SEQUENCES DESCRIBED.
F. SUBMITTALS: SUBMIT THE FOLLOWING ITEMS FOR REVIEW:
(1) MANUFACTURER'S CATALOG DATA:
(a) DIRECT DIGITAL CONTROLLERS
(b) TEMPERATURE SENSORS
(c) ELECTRICAL AND ELECTRONIC POWER SUPPLY
(d) ACTUATORS
(2) SUBMIT A GENERIC, FUNCTIONAL DESCRIPTION OF EACH SPECIFIED CONTROL COMPONENT. SUBMIT COMPLETE WIRING AND CONNECTION DIAGRAMS FOR I/O MODULES INTERFACE TERMINAL AND CONTROLLERS; TEMPERATURE SENSORS; TEMPERATURE AND PRESSURE INDICATORS; PRESSURE SENSORS; SWITCHES, RELAYS, TRANSMITTERS, AND TRANSFORMERS.
(3) DRAWINGS:
(a) DIRECT DIGITAL CONTROL SYSTEM: SHOW EACH CONTROL COMPONENT. INDICATE SEQUENCE OF OPERATION FOR EACH SYSTEM AND FUNCTION. INDICATE EQUIPMENT INTERLOCKS AS REQUIRED BY SEQUENCE OF OPERATION.
(b) TEMPERATURE CONTROL SYSTEM SCHEMATIC: SUBMIT SCHEMATIC INCLUDING REQUIRED VARIABLES, FLOW DIAGRAMS, LADDER DIAGRAMS, INPUT/OUTPUT (I/O) LIST, AND POINT TO POINT WIRING DIAGRAMS, INDICATING SET POINTS, RESET RANGES, THROTTLING RANGES, CONTROLLER GAINS, DIFFERENTIALS, OPERATING RANGES, NORMAL POSITIONS, CONTROLLER ACTION, DIAL RANGES, VOLTAGES, CURRENTS, MOUNTING LOCATIONS, INDICATORS, AND TERMINAL STRIP POINTS.
(4) FIELD TEST REPORTS:
(a) DEVICES AND SYSTEMS TESTS
(b) FIELD ACCEPTANCE TESTS
(5) OPERATION AND MAINTENANCE MANUALS
G. CONTROL WIRING: MINIMUM WIRE SIZE SHALL CONFORM TO NEC REQUIREMENTS.
(1) MINIMUM CONDUIT SIZE, 3/4". LOW VOLTAGE (50 VOLT OR LESS) REMOTE CONTROL AND SIGNAL WIRING MAY BE RUN IN MULTI-CONDUCTORS CABLE WITH PVC INSULATION, MYLAR BINDER AND PVC JACKET. ENTIRE INSTALLATION SHALL BE IN ACCORDANCE WITH ARTICLE 725 NEC, AND SHALL MEET ADDITIONAL REQUIREMENTS NOTED. CABLES CARRYING AC CIRCUITS SENSITIVE TO EXTERNAL FIELD SHALL BE SHIELDED. EXCEPT IN AREAS WITH SUSPENDED CEILINGS, ALL CONTROL WIRING SHALL BE RUN IN CONDUIT PROVIDED IN ACCORDANCE WITH THE REQUIREMENTS SPECIFIED UNDER THE DIVISION 16 SPECIFICATION SECTION – RACEWAYS, PULL AND JUNCTION, AND OUTLET BOXES. UTILIZE PLENUM RATED CABLE IN AREAS WITH SUSPENDED CEILINGS. ALL CONDUITS, FITTINGS, AND BOXES INSTALLED OUTDOORS SHALL BE WATERTIGHT CONSTRUCTION SUITABLE FOR OUTDOOR INSTALLATION.
(2) CONTROLLERS AND OPERATORS: ALL CONTROLS SHALL BE DESIGNED TO FUNCTION PROPERLY WITH A POWER SOURCE VOLTAGE VARIATION OF +10%. OPERATORS SHALL BE HYDRAULIC, THERMAL OR GEAR TYPE, TOTALLY ENCLOSED WITH OIL IMMERSED GEAR TRANS. SELECT SPEED OF OPERATION TO PREVENT HUNTING.
H. TRANSFORMERS: TRANSFORMERS OTHER THAN THOSE USED IN BRIDGE CIRCUITS SHALL HAVE PRIMARIES WOUND FOR THE AVAILABLE CURRENT AND SECONDARIES WOUND FOR THE CORRECT CONTROL CIRCUIT VOLTAGE. SIZE TO HAVE CAPACITY TO OPERATE SIMULTANEOUSLY ALL APPARATUS SERVED AND IN ADDITION BE CAPABLE OF CARRYING A 25 PERCENT OVERLOAD FOR ONE HOUR. ENCLOSE TRANSFORMER IN A STEEL CABINET WITH CONDUIT CONNECTIONS, AND PROVIDE A DISCONNECT SWITCH ON THE PRIMARY SIDE, AND A FUSE CUT-OUT ON THE SECONDARY SIDE.
I. SURGE AND TRANSIENT PROTECTION: ISOLATION SHALL BE PROVIDED AT ALL FIELD POINT TERMINATIONS TO SUPPRESS INDUCED VOLTAGE TRANSIENTS CONSISTENT WITH IEEE STANDARD 587-1980. SURGE SUPPRESSORS SHALL BE INSTALLED EXTERNAL TO ALL DIGITAL CONTROLLERS ON INCOMING POWER. SURGE SUPPRESSORS SHALL BE RATED BY UL 1449, AND HAVE CLAMPING VOLTAGE RATINGS BELOW THE FOLLOWING LEVELS:
(1) NORMAL MODE (LINE TO NEUTRAL) - 350 VOLTS
(2) COMMON MODE (LINE TO GROUND) - 350 VOLTS
(3) COMMUNICATION LINES SHALL ALSO BE PROTECTED FROM SURGES. PROVIDE METAL OXIDE VARISTOR (MOV) PROTECTION, RATED FOR THE APPLICATION. CONTROLLERS SHALL HAVE SENSOR AND CONTROL WIRING SURGE PROTECTION WITH OPTICAL ISOLATION, METAL OXIDE VARISTORS, OR SILICON AVALANCHE DEVICES. FUSES ARE NOT PERMITTED FOR SURGE PROTECTION.
J. DIGITAL CONTROLLERS: PROVIDE MICROPROCESSOR BASED DIRECT DIGITAL CONTROLLER WITH INTEGRAL POWER SUPPLY CONNECTED TO A 120V AC POWER CIRCUIT. THE NEW DDC CONTROLLER SHALL COMMUNICATE WITH THE EXISTING DDC SYSTEM. DDC CONTROLLER SHALL INCLUDE ALL REQUIRED RESIDENT SOFTWARE PROGRAMS TO PROVIDE THE SPECIFIED SEQUENCE OF OPERATION. PROVIDE PROGRAMS IN NON-VOLATILE MEMORY OR IF PROVIDED IN VOLATILE MEMORY SHALL HAVE AN AUTOMATICALLY RECHARGEABLE NICKEL CADMIUM OR LITHIUM BATTERY OF AT LEAST 72 HOURS TO PROTECT THE PROGRAMS AND DATA. SENSORS MAY HAVE THEIR OWN ANALOG TO DIGITAL (A/D) CONVERTER OR THE A/D CONVERTER MAY BE PART OF THE CONTROLLER. PERFORM CONTROL IN A DIGITAL MANNER BY THE MICROPROCESSOR AND CONVERT SIGNALS ELECTRONICALLY TO PROPORTIONAL ELECTRIC SIGNALS FOR OPERATING FIELD ACTUATORS. SYSTEM SHALL BE (UL) LISTED AGAINST FIRE AND SHOCK HAZARD. AIR TERMINAL UNIT CONTROLLERS SHALL BE WEBCTRL TYPE.

K. ELECTRONIC SENSORS:
(1) SPACE TEMPERATURE SENSORS SHALL UTILIZE A 10K OHM THERMISTOR WITH AN ACCURACY WITHIN 0.35 DEGREES F AND LESS THAN 0.18 DEGREES F DRIFT OVER A TEN YEAR PERIOD. SENSORS SHALL BE AS MANUFACTURED BY AUTOMATED LOGIC, MODEL LOGISTAT PLUS, WITH LOCAL SETPOINT ADJUSTMENT.
(2) SINGLE POINT DUCT TEMPERATURE SENSOR SHALL CONSIST OF SENSING ELEMENT, TRANSMITTING, JUNCTION BOX FOR WIRING CONNECTIONS AND GASKET TO PREVENT AIR LEAKAGE OR VIBRATION NOISE. TEMPERATURE RANGE 20 TO 120 DEGREES F. ACCURACY AT CALIBRATION POINT PLUS-OR-MINUS 0.5 DEGREES F (ELEMENT); PLUS-OR-MINUS 0.8 DEGREES F (SENSOR). SENSING ELEMENT - PLATINUM RTD OR THERMISTOR.
L. AIR TERMINAL UNIT CONTROL VALVES: BRONZE BODY, GLOBE STYLE, BRONZE TRIM, TWO- OR THREE-PORT AS INDICATED, REPLACEABLE PLUGS AND SEATS, UNION AND THREADED ENDS. BALL VALVES WITH STAINLESS STEEL BALL AND STEM MAY BE USED AT INSTALLER'S OPTION.
(1) RATING: CLASS 125 FOR SERVICE AT 125 PSIG AND 250 DEG. F OPERATING CONDITIONS.
(2) SIZING: 3-PSIG MAXIMUM PRESSURE DROP AT DESIGN FLOW RATE, TO CLOSE AGAINST PUMP SHUTOFF HEAD.
(3) FLOW CHARACTERISTICS: TWO-WAY VALVES SHALL HAVE EQUAL PERCENTAGE CHARACTERISTICS
M. ACTUATORS FOR VALVES:
(1) SIZING:
(a) VALVES: SIZE FOR TORQUE REQUIRED FOR VALVE CLOSE-OFF AT MAXIMUM PUMP DIFFERENTIAL PRESSURE (CLOSE-OFF HEAD), MINIMUM 50 PSIG.
(2) ELECTRIC MOTORS: SIZE TO OPERATE WITH SUFFICIENT RESERVE POWER TO PROVIDE SMOOTH MODULATING ACTION OR TWO-POSITION ACTION.
(a) PERMANENT SPLIT-CAPACITOR OR SHADED-POLE TYPE: GEAR TRAINS COMPLETELY OIL IMMERSED AND SEALED. EQUIP SPRING-RETURN MOTORS WITH INTEGRAL SPIRAL-SPRING MECHANISM IN HOUSINGS DESIGNED FOR EASY REMOVAL FOR SERVICE OR ADJUSTMENT OF LIMIT SWITCHES, AUXILIARY SWITCHES, OR FEEDBACK POTENTIOMETER.
(b) PROVIDE CONDUIT FITTING WITH MINIMUM 3' OF PRE-WIRED ELECTRICAL CABLE.
N. PROGRAMMING: CONFIGURE ALL CONTROLLERS TO ENABLE AND DISABLE APPROPRIATE OPTIONS FOR IMPLEMENTING THE SEQUENCES OF CONTROL.
O. START-UP: START-UP, TEST, AND ADJUST EACH INDIVIDUAL CONTROL COMPONENT. DEMONSTRATE COMPLIANCE WITH REQUIREMENTS. REPLACE DAMAGED OR MALFUNCTIONING CONTROLS AND EQUIPMENT.
P. THE ATC CONTRACTOR SHALL COOPERATE WITH THE AIR BALANCING SUBCONTRACTOR.

Jenkins • Peer *Architects*
112 South Tryon Street, Suite 1300
Charlotte, North Carolina 28284
(t) 704/372-6665

MUELLER ASSOCIATES, INC.
ENGINEER C-0979
1306 Concourse Dr #100,
Linthicum Heights, MD 21090
(t) 410/646-4500

NORTH CAROLINA PROFESSIONAL 030275 ENGINEER STEVEN A. GILLIS 1/10/2022

1/10/2022

UNC PEMBROKE

UNC PEMBROKE AMERICAN INDIAN HERITAGE CENTER

SCO ID#: 21-23067-01A

TAG	DESCRIPTION	DATE

Project: 21PEM587
Drawn By: CJS
Checked By: SAG
Date: 1/10/2022

MECHANICAL SPECIFICATIONS

PROJECT NORTH
TRUE NORTH

BID DOCUMENTS

M702

ABBREVIATIONS

A	AMPERE(S)
AC	ALTERNATING CURRENT
ACU	AIR CONDITIONING UNIT
ADA	AMERICANS WITH DISABILITIES ACT
AF	AMPERES FRAME
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHJ	AUTHORITY HAVING JURISDICTION
AHU	AIR HANDLING UNIT
AIC	AMPERES INTERRUPTING CAPACITY
ARCH	ARCHITECTURAL
AT	AMPERES TRIP
ATC	AUTOMATIC TEMPERATURE CONTROL
ATS	AUTOMATIC TRANSFER SWITCH
AV	AUDIOVISUAL
AWG	AMERICAN WIRE GAUGE
BAS	BUILDING AUTOMATION SYSTEM
BLDG	BUILDING
C	CONDUIT
CB	CIRCUIT BREAKER
CCT	CORRELATED COLOR TEMPERATURE
CKT	CIRCUIT
CLG	CEILING
CPT	CONTROL POWER TRANSFORMER
CRI	COLOR RENDERING INDEX
CT	CURRENT TRANSFORMER
CX	CONNECT TO EXISTING
DC	DIRECT CURRENT
DESIG	DESIGNATION
DIST	DISTRIBUTION
DN	DOWN
DWG	DRAWING
DX	DISCONNECT EXISTING
EA	EACH
EC	EMPTY CONDUIT
ECB	ENCLOSED CIRCUIT BREAKER
EF	EXHAUST FAN
EH	ELECTRIC HEATER
ELEC	ELECTRIC
ELV	ELECTRONIC LOW VOLTAGE
EMH	ELECTRIC MANHOLE
EMT	ELECTRICAL METALLIC TUBING
EQUIP	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EX	EXISTING
F	FUSE
FA	FIRE ALARM
FDAS	FIRE DETECTION ALARM SYSTEM
FDR	FEEDER
FLA	FULL LOAD AMPERES
FMC	FLEXIBLE METAL CONDUIT
FS	FUSED SWITCH
FT	FOOT OR FEET
FVNR	FULL VOLTAGE NON-REVERSING
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTOMATIC
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HTR	HEATER
HV	HIGH VOLTAGE
HZ	HERTZ
IMC	INTERMEDIATE METAL CONDUIT
JB	JUNCTION BOX
KCMIL	THOUSAND CIRCULAR MILS
KV	KILOVOLT(S)
KVA	KILOVOLT-AMPERE(S)
KW	KILOWATT(S)
LED	LIGHT EMITTING DIODE
LFMC	LIQUIDTIGHT FLEXIBLE METAL CONDUIT
LTG	LIGHTING
MAFC	MAKE ALL FINAL CONNECTIONS
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MFR	MANUFACTURER
MH	MOUNTING HEIGHT (TO CENTERLINE OF DEVICE UNLESS OTHERWISE NOTED)
MLO	MAIN LUGS ONLY
MOA	MULTI-OUTLET ASSEMBLY
MS	MANUAL STARTER
MTD	MOUNTED
MV	MEDIUM VOLTAGE
N	NEUTRAL
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NFS	NON-FUSED SWITCH
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
OL	OVERLOAD
P	POLE
PH	PHASE
PIR	PASSIVE INFRARED
PNL	PANEL
PVC	POLYVINYL CHLORIDE
RECEPT	RECEPTACLE(S)
REQD	REQUIRED
REL	RELOCATE OR RELOCATED
RF	RETURN FAN
RMC	RIGID METAL CONDUIT
RM(S)	ROOM(S)
RVAT	REDUCED VOLTAGE AUTOTRANSFORMER
RX	REMOVE EXISTING
SF	SUPPLY FAN
SMR	SURFACE METAL RACEWAY
SPD	SURGE PROTECTIVE DEVICE
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TA	TRIP AMPERES
TTB	TELEPHONE TERMINAL BOARD
TTC	TELEPHONE TERMINAL CABINET
TYP	TYPICAL
UG	UNDERGROUND
UH	UNIT HEATER
UON	UNLESS OTHERWISE NOTED
V	VOLT(S)
VA	VOLT-AMPERE(S)
VFC	VARIABLE FREQUENCY CONTROLLER
VT	VOLTAGE TRANSFORMER
W	WIRE
W/	WITH
WP	WEATHERPROOF
XFMR	TRANSFORMER

SYMBOLS

LIGHTING

- SINGLE POLE SWITCH MOUNTED 48" ABOVE FINISHED FLOOR, UNLESS OTHERWISE NOTED
  SUBSCRIPTS AS FOLLOWS:
  3 - THREE WAY SWITCH
  4 - FOUR WAY SWITCH
  L1 - 2-BUTTON DIMMER SWITCH W/ RAISE LOWER
  P - SWITCH WITH PILOT LIGHT
  K - KEY-OPERATED SWITCH
  T - TIME SWITCH
  WP - SWITCH WITH WEATHERPROOF COVER
  OS - OCCUPANCY SENSOR
  a - LOWER CASE LETTER INDICATES SWITCH LEG
- LIGHTING FIXTURE
- LIGHTING FIXTURE, PENDANT MOUNTED
- LIGHTING FIXTURE, WALL MOUNTED
- INDUSTRIAL LIGHTING FIXTURE
- LIGHTING TRACK
- LIGHTING FIXTURE, TRACK MOUNTED
- LIGHTING FIXTURE, CEILING MOUNTED
- LIGHTING FIXTURE, WALL MOUNTED
- LIGHTING FIXTURE, WALL WASHER
- DECORATIVE LIGHTING FIXTURE, PENDANT MOUNTED
- DECORATIVE LIGHTING FIXTURE, SURFACE MOUNTED
- EXIT SIGN - BACK MOUNTED WITH DIRECTIONAL INDICATORS AS SHOWN
- EXIT SIGN - TOP OR PENDANT MOUNTED, SINGLE FACE WITH DIRECTIONAL INDICATORS AS SHOWN
- EXIT SIGN - TOP OR PENDANT MOUNTED, DOUBLE FACE WITH DIRECTIONAL INDICATORS AS SHOWN
- EMERGENCY LIGHTING UNIT MOUNTED 90" AFF
- OS — OCCUPANCY SENSOR, CEILING MOUNTED - ARROWS INDICATE DIRECTION OF SENSOR BEAM AIMING

POWER - FLOOR PLANS

- SINGLE RECEPTACLE MOUNTED 18" AFF, UNLESS OTHERWISE NOTED
- xx — DUPLEX RECEPTACLE MOUNTED 18" AFF, UNLESS OTHERWISE NOTED
  SUBSCRIPTS AS FOLLOWS (APPLIES TO ALL RECEPTACLES)
  E - CONNECTED TO EMERGENCY CIRCUIT
  G - GROUND FAULT CIRCUIT INTERRUPTER TYPE
  TV - RECEPTACLE FOR TV. COORDINATE MOUNTING HEIGHT WITH TV INSTALLER IN THE FIELD.
  WC - WATER COOLER
  WP - WEATHERPROOF GROUND FAULT CIRCUIT INTERRUPTER TYPE
  84" - MOUNTING HEIGHT AS INDICATED
- DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER, 6" ABOVE BACKSPLASH
- QUAD RECEPTACLE MOUNTED 18" AFF, UNLESS OTHERWISE NOTED
  SUBSCRIPTS AS FOLLOWS (APPLIES TO ALL RECEPTACLES)
  U - COMBINATION QUAD RECEPTACLE W/ (2) USB PORTS
- 5 7 — DUPLEX RECEPTACLES MOUNTED IN MULTI-OUTLET ASSEMBLY
- L6-30R — SPECIAL RECEPTACLE MOUNTED 18" AFF, UNLESS OTHERWISE NOTED (NEMA CONFIGURATION AS INDICATED)
- FPT — FIRE RATED POKE-THRU TYPE FLOOR BOX. PROVIDE WITH DUPLEX OUTLET AND PROVISONS FOR DATA DEVICE. LEGRAND EVOLUTION 6" SERIES OR APPROVED EQUAL.
- 208Y/120V PANELBOARD (SURFACE MOUNTED)
- 208Y/120V PANELBOARD (FLUSH MOUNTED)
- 480Y/277V PANELBOARD (SURFACE MOUNTED)
- 480Y/277V PANELBOARD (FLUSH MOUNTED)

TELECOMMUNICATIONS

- J — JUNCTION BOX (CEILING MOUNTED)
- DATA OUTLET BOX MOUNTED 18" AFF, WITH 1" C TO ABOVE ACCESSIBLE CEILING
- VOICE OUTLET BOX MOUNTED 18" AFF, WITH 1" C TO ABOVE ACCESSIBLE CEILING

FIRE DETECTION AND ALARM SYSTEMS

- F — AUDIBLE DEVICE MOUNTED 6" BELOW CEILING OR 90" AFF, WHICHEVER IS LOWER
- 15 — STROBE LIGHT MOUNTED 6" BELOW CEILING OR 80" AFF, WHICHEVER IS LOWER (SUBSCRIPTED NUMBER INDICATES LUMINOUS INTENSITY OF OF STROBE LIGHT IN CANDELAS)
- F 15 — COMBINATIONAL AUDIBLE DEVICE AND STROBE LIGHT MOUNTED 6" BELOW CEILING OR 80" AFF, WHICHEVER IS LOWER (SUBSCRIPTED NUMBER INDICATES LUMINOUS INTENSITY OF STROBE LIGHT IN CANDELAS)
- F 15 — COMBINATIONAL AUDIBLE DEVICE AND STROBE LIGHT CEILING MOUNTED (SUBSCRIPTED NUMBER INDICATES LUMINOUS INTENSITY OF STROBE LIGHT IN CANDELAS)

GENERAL NOTES

1. GENERAL NOTES APPLY TO ALL DRAWINGS. GENERAL DEMOLITION NOTES APPLY TO DEMOLITION DRAWINGS. DRAWING NOTES APPLY TO THE DRAWING THEY ARE ON. SPECIAL NOTES APPLY SPECIFICALLY TO THE ITEMS EACH NOTE POINTS TO.
2. INFORMATION PERTAINING TO EXISTING CONDITIONS HAS BEEN OBTAINED FROM AVAILABLE BUILDING DRAWINGS AND GENERAL FIELD OBSERVATIONS AND MAY NOT INDICATE ACTUAL EXISTING CONDITIONS IN DETAIL OR DIMENSION. VERIFY ACTUAL EXISTING CONDITIONS PRIOR TO FABRICATION OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, IMMEDIATELY NOTIFY THE ENGINEER IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.
3. CONTRACT DRAWINGS ARE DIAGRAMMATIC IN NATURE AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN CONTRACT.
4. RACEWAY ROUTING SHOWN IS DIAGRAMMATIC. NOT ALL RACEWAY OFFSETS, RISES AND DROPS HAVE BEEN INDICATED. CAREFULLY INVESTIGATE THE CONDITIONS AFFECTING THE WORK, AND ARRANGE RACEWAYS ACCORDINGLY, PROVIDING NECESSARY FITTINGS AND ACCESSORIES THAT MAY BE NEEDED TO MEET SUCH CONDITIONS.
5. ELECTRICAL EQUIPMENT AND DEVICE LOCATIONS SHOWN ON PLANS ARE APPROXIMATE AND REQUIRE ADJUSTMENT BASED ON FIELD CONDITIONS AND COORDINATION WITH OTHER TRADES.
6. COORDINATE LOCATIONS OF ELECTRICAL DEVICES WITH ARCHITECTURAL DRAWINGS PRIOR TO INSTALLATION.
7. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION OF MECHANICAL EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS.
8. CORE DRILL CONCRETE WALLS AND FLOORS TO PROVIDE OPENINGS FOR CONDUIT INSTALLATION. MAXIMUM CORE DRILL SIZE FOR CONDUIT PENETRATIONS SHALL BE 5-INCH DIAMETER. SPACE CORE DRILL LOCATIONS A MINIMUM OF 6" FROM EACH OTHER, MEASURED FROM CORE DRILL OPENINGS. PROPERLY SEAL OPENINGS ACCORDING TO LOCATION AND APPLICATION.
9. GIVE NOTICES, FILE PLANS, OBTAIN PERMITS AND LICENSES, PAY FEES AND BACK CHARGES, AND OBTAIN NECESSARY APPROVALS FROM AUTHORITIES THAT HAVE JURISDICTION.
10. CONTRACTOR SHALL THOROUGHLY EXAMINE PREMISES AND OBSERVE CONDITIONS UNDER WHICH THE WORK WILL BE PERFORMED, AND SHALL COMPLETELY FAMILIARIZE THEMSELF WITH RELATED REQUIREMENTS OF THE JOB THAT WILL AFFECT WORK UNDER THIS CONTRACT. NO ALLOWANCES WILL BE MADE FOR ERRORS OR NEGLIGENCE IN THIS RESPECT.
11. WHERE ELECTRICAL WORK PENETRATES WALLS, PARTITIONS, FLOORS OR CEILINGS, PROVIDE SLEEVES AS SPECIFIED. PATCH, SEAL AND FINISH TO MATCH SURFACE PENETRATED. DO NOT CUT/PENETRATE STRUCTURAL MEMBERS. REFER TO STRUCTURAL DRAWINGS FOR NEW OPENINGS.
12. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR LOCATIONS OF LIGHTING FIXTURES AND CEILING MOUNTED DEVICES.
13. EXISTING ABANDONED CONDUIT THAT REMAINS CONCEALED, BURIED, OR OTHERWISE CONTAINED IN OR BELOW THE REMAINING SLABS AND WALLS SHALL BE CAPPED, PLUGGED, OR OTHERWISE SEALED. ABANDONED CONDUITS SHALL BE CUT SO THAT CAPPED OR PLUGGED ENDS WILL BE FAR ENOUGH BEHIND FINISHED SURFACES TO ALLOW FOR THE INSTALLATION OF THE NORMAL THICKNESS OF FINISHED MATERIAL.
14. EXISTING ELECTRICAL CIRCUITS AFFECTED BY REMOVAL WORK AND REQUIRED TO REMAIN IN SERVICE ON A TEMPORARY OR PERMANENT BASIS SHALL BE RECONNECTED AS REQUIRED IN ACCORDANCE WITH GENERALLY ACCEPTED PRACTICE.

GENERAL DEMOLITION NOTES

1. PRIOR TO DEMOLITION, FIELD VERIFY CONDUITS, ELECTRICAL CONDUCTORS AND CABLES, FIBER OPTIC CABLES, DATA AND TELEPHONE CABLES, SECURITY CABLES, ETC., THAT PASS THROUGH DEMOLITION AREAS AND SERVE AREAS OUTSIDE THE SCOPE OF WORK. MAINTAIN CONTINUITY OF SYSTEMS. PROTECT OR RELOCATE SYSTEMS TO PREVENT DAMAGE. RESTORE SYSTEMS TO NORMAL OPERATION. COORDINATE SYSTEM OUTAGES WITH OWNER.
2. REMOVE ALL EXISTING ELECTRICAL EQUIPMENT AND DEVICES IN AREA OF DEMOLITION, INCLUDING ALL ASSOCIATED WIRE, CABLE AND CONDUIT BACK TO SOURCE UNLESS OTHERWISE NOTED.
3. COORDINATE WITH MECHANICAL WORK SHOWN ON MECHANICAL DRAWINGS AND PROVIDE DISCONNECTION OF MECHANICAL EQUIPMENT AS INDICATED AND REQUIRED.
4. DEMOLITION SHALL INCLUDE REMOVAL AND OFF-SITE DISPOSAL OF MATERIALS. DO NOT ABANDON IN PLACE DEMOLISHED ELECTRICAL COMPONENTS UNLESS OTHERWISE NOTED ON DRAWINGS. COORDINATE WITH OWNER ITEMS TO BE DISPOSED OF AND ITEMS TO BE TURNED OVER TO OWNER.
5. FIRE SEAL ALL PENETRATIONS MADE ON FIRE RATED WALLS. RESTORE RATING OF ALL RATED WALLS AFFECTED BY DEMOLITION.
6. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS OF FEEDER SERVING BUILDING. MINIMIZE POWER OUTAGES. COORDINATE POWER OUTAGE(S) WITH OWNER AND OTHER BUILDINGS AFFECTED. PROVIDE TEMPORARY POWER TO MAINTAIN NORMAL OPERATIONS.
7. IN AREAS REQUIRING THE PERFORMANCE OF WORK OF OTHER TRADES, CAREFULLY DISCONNECT, MAKE SAFE, REMOVE AND STORE ELECTRICAL ITEMS IN PATH OF WORK. REINSTALL AND RECONNECT SAME AFTER COMPLETION OF OTHER TRADE'S WORK. COORDINATE REMOVAL OF EQUIPMENT WITH OTHER TRADES PRIOR TO DEMOLITION.

DRAWING CONVENTIONS

SYMBOL	DESCRIPTION
1	INDICATES SPECIAL NOTE
	NUMBER INDICATES SPECIAL NOTE DESIGNATION REFER TO SPECIAL NOTE LIST ON DRAWING FOR DESCRIPTION OF ITEM
XX / X	LIGHTING FIXTURE
	SWITCH DESIGNATION
	LIGHTING FIXTURE TYPE, REFER TO LIGHTING FIXTURE SCHEDULE
X / EXX	INDICATES DETAIL DESIGNATION
	DRAWING WHERE DETAIL IS DRAWN
	INDICATES PANELBOARD AND CIRCUIT NUMBER
XXX/X,X	BRANCH CIRCUIT HOME RUN; ARROWHEADS INDICATE NUMBER OF CIRCUITS. INCLUDE ONE EQUIPMENT GROUND CONDUCTOR.
#E	INDICATES WIRE SIZE (AWG OR CIRCULAR MILS) IF OTHER THAN BRANCH CIRCUIT WIRE SIZING STANDARD
	EACH BRANCH CIRCUIT SHALL HAVE A DEDICATED NEUTRAL CONDUCTOR
E	"E" INDICATES EMERGENCY CIRCUIT WITH 3#10 MINIMUM IN 3/4"C

BRANCH CIRCUIT WIRE SIZING STANDARD

WIRE	DISTANCE
#12	UP TO 75 FEET FOR 120V
#10	UP TO 120 FEET FOR 120V
#8	UP TO 190 FEET FOR 120V
#12	UP TO 150 FEET FOR 277V
#10	UP TO 260 FEET FOR 277V
#8	UP TO 400 FEET FOR 277V

- CONDUIT RUN CONCEALED IN WALL OR CEILING IN FINISHED AREAS, EXPOSED IN UNFINISHED AREAS
- CONDUIT UNDERGROUND OR UNDER SLAB
- HEAVY LINE WEIGHT DESIGNATES NEW WORK ON NEW WORK PLANS, REMOVAL WORK ON DEMOLITION PLANS
- LIGHT LINE WEIGHT DESIGNATES EXISTING WORK TO REMAIN

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

Method of Compliance: Energy Code: [X] Prescriptive [ ] Performance
ASHRAE 90.1: [ ] Prescriptive [ ] Performance

Lighting schedule (each fixture type) See Fixture Schedule on Drawing E201

lamp type required in fixture
number of lamps in fixture
ballast type used in the fixture
number of ballasts in fixture
total wattage per fixture
total interior wattage specified vs. allowed (whole building or space by space) Specified: 1516W vs. Allowed: 2702W
total exterior wattage specified vs. allowed N/A

Additional Efficiency Package Options
(When using the 2018 NCECC; not required for ASHRAE 90.1)

- [ ] C406.2 More Efficient Mechanical Equipment
- [X] C406.3 Reduced Lighting Power Density
- [ ] C406.4 Enhanced Digital Lighting Controls
- [ ] C406.5 On-Site Renewable Energy
- [ ] C406.6 Dedicated Outdoor Air System
- [ ] C406.7 Reduced Energy Use in Service Water Heating

Jenkins • Peer *Architects*
112 South Tryon Street, Suite 1300
Charlotte, North Carolina 28284
(t) 704/372-6665

MUELLER ASSOCIATES, INC.
ENGINEER C-0979
1306 Concourse Dr #100,
Linthicum Heights, MD 21090
(t) 410/646-4500

NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER SEAL 51207 ENGINEER ADAM FRY

1/10/2022

UNC PEMBROKE

UNC PEMBROKE AMERICAN INDIAN HERITAGE CENTER

SCO ID#: 21-23067-01A

TAG	DESCRIPTION	DATE

Project: 21PEM587
Drawn By: SAS
Checked By: ARF
Date: 1/10/2022

ELECTRICAL LEGEND AND CODE SUMMARY (APPENDIX B)

PROJECT NORTH
TRUE NORTH

BID DOCUMENTS

E001

1 2 3 4 5
A B C D

DRAWING NOTES:

A. REFER TO DRAWING E001 FOR SYMBOLS, ABBREVIATIONS, AND DRAWING CONVENTIONS.

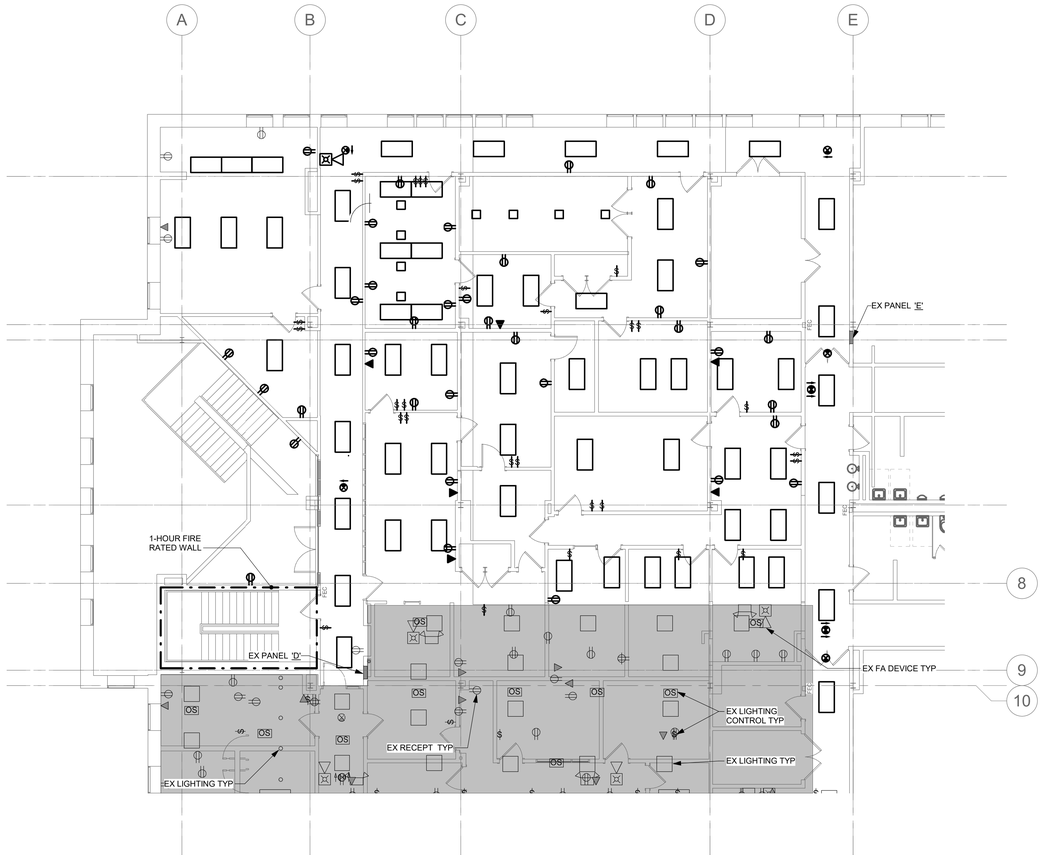
B. HEAVY LINE WEIGHT INDICATES DEMOLITION WORK. LIGHT LINE WEIGHT INDICATES EXISTING TO REMAIN.

C. DEMOLITION PLAN IS INTENDED TO SHOW SCOPE OF WORK AND DOES NOT INDICATE EVERY DEVICE, CONDUIT AND BOX THAT MUST BE REMOVED.

D. FOR AREAS THAT ARE NOT WITHIN THE SCOPE OF WORK MAINTAIN CONTINUITY OF BRANCH CIRCUITS.

E. EXISTING CONDITIONS SHOWN ARE BASED ON LIMITED FIELD SURVERY AND EXISTING DOCUMENTATION. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS INDICATED OR NOT INDICATED.

F. FOR ALL LIGHTING FIXTURES, RECEPTACLES, LIGHT SWITCHES, ETC. INDICATED AS BEING REMOVED, REMOVE ALL ASSOCIATED WIRING AND CONDUIT BACK TO SOURCE.



1 ED101 LEVEL 2 - FLOOR PLAN - ELECTRICAL - DEMOLITION
1/8" = 1'-0"

Jenkins • Peer *Architects*
112 South Tryon Street, Suite 1300
Charlotte, North Carolina 28284
(t) 704/372-6665

MUELLER ASSOCIATES, INC.
ENGINEER C-0979
1306 Concourse Dr #100,
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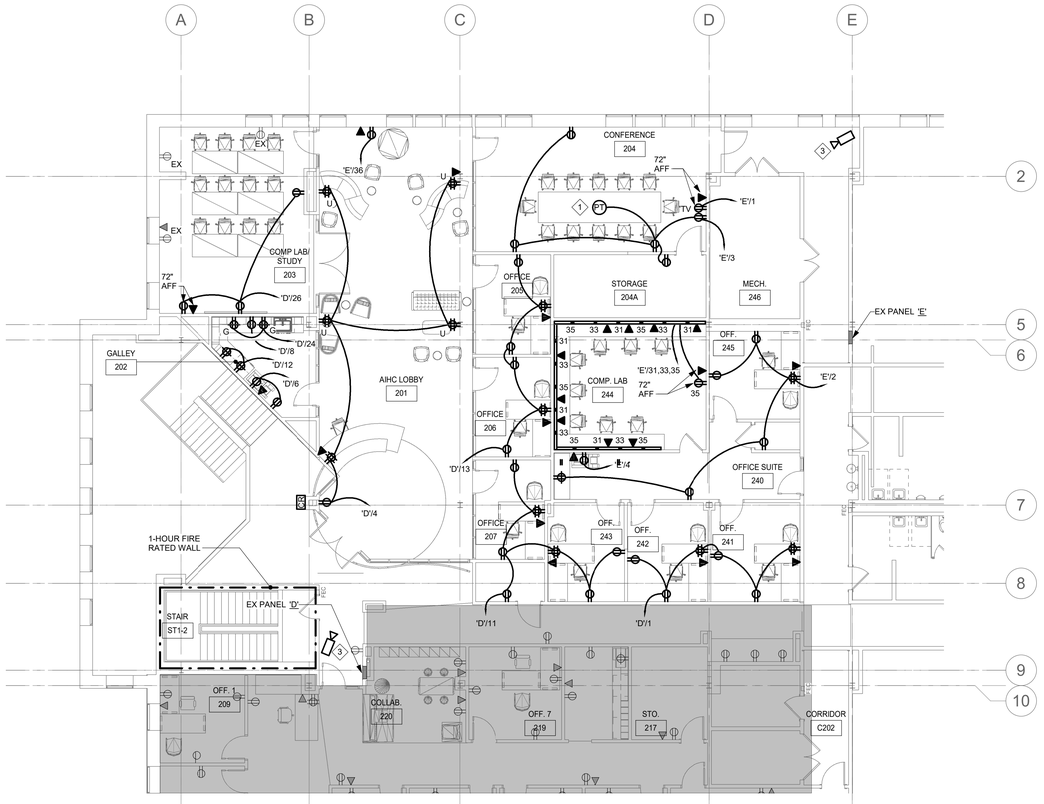
FLOOR PLANS - ELECTRICAL - DEMOLITION

PROJECT NORTH
TRUE NORTH

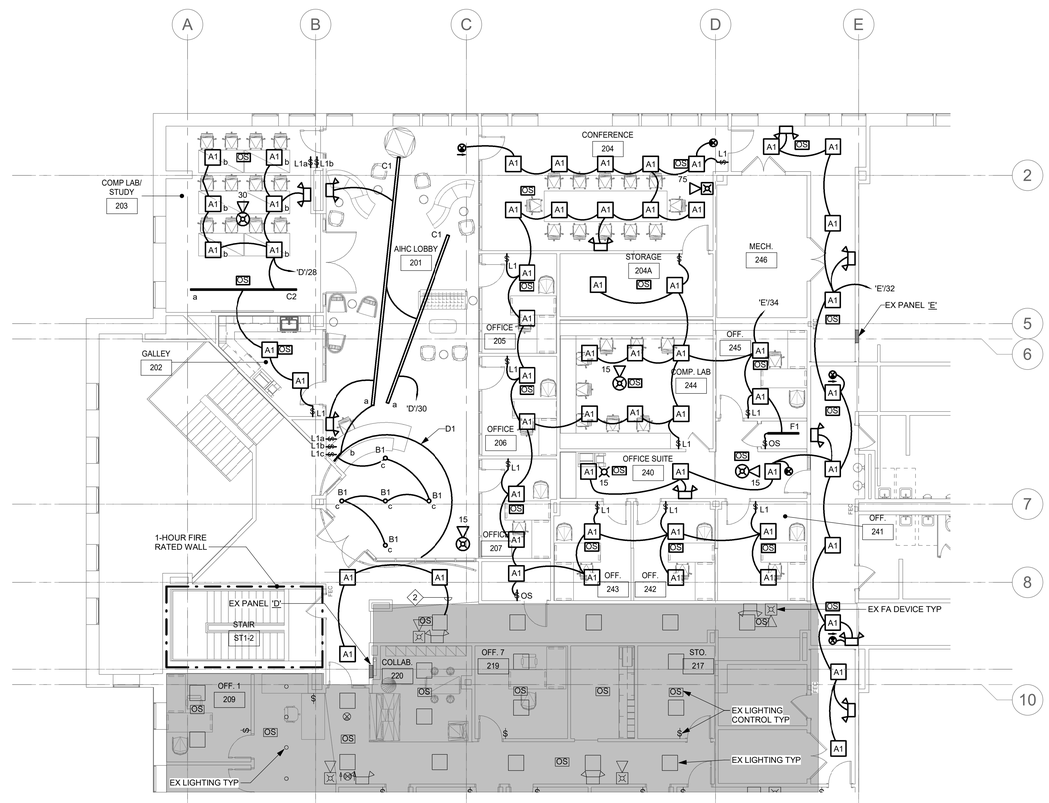
IF DRAWING IS REDUCED, USE GRAPHIC SCALE
5' 0' 5' 10'
1/8" = 1'-0"

BID DOCUMENTS

ED101



2 E201 LEVEL 2 - FLOOR PLAN - ELECTRICAL - POWER
1/8" = 1'-0"



1 E201 LEVEL 2 - FLOOR PLAN - ELECTRICAL - LIGHTING
1/8" = 1'-0"

PANELBOARD:	'D'	BUS RATING:	225 A	MAIN:	MLO		
MIN AIC:	10,000	VOLTS:	208Y/120V	PHASES:	3	WIRES:	4
ENCLOSURE:	NEMA 1	MOUNTING:	SURFACE	FED FROM:			
LOCATION:	Corridor 77	NOTES:	EXISTING PANELBOARD				

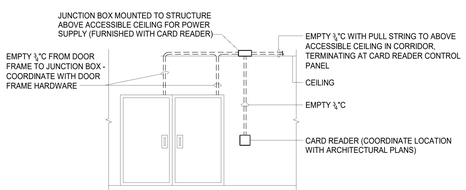
CKT #	ITEM SERVED	CB P	CB TA	AØ (KVA)		BØ (KVA)		CØ (KVA)		CB TA	CB P	ITEM SERVED	CKT #
1	RECEPT - OFFICE 241 & 243	1	20	1.1	0.0					20	1	OFFICE LIGHTS (EX LOAD)	2
3	CORR LIGHTING (EX LOAD)	1	20			0.0	1.3			20	1	RECEPT - AIHC LOBBY 5	4
5	PUBLICATION LIGHTS (EX LOAD)	1	20					0.0	0.4	20	1	RECEPT - GALLERY 202	6
7	RECEPT - ROOM 271, 272	1	20	1.1	0.2					20	1	RECEPT - GALLERY 202	8
9	UNKNOWN EXISTING LOAD	1	20			0.0	0.2			20	1	LIGHTING - OFFICES AND CORRIDORS	10
11	RECEPT - OFFICE 207 & 243	1	20					1.3	0.4	20	1	RECEPT - GALLERY 202	12
13	RECEPT - OFFICE 205 & 206	1	20	1.1	0.0					20	1	OFFICE LIGHTS (EX LOAD)	14
15	LOBBY LIGHTS (EX LOAD)	1	20			0.0	0.0			20	1	OFFICE LIGHTS (EX LOAD)	16
17	LOBBY LIGHTS (EX LOAD)	1	20					0.0	0.0	20	1	OFFICE LIGHTS (EX LOAD)	18
19	LIGHTS (EX LOAD)	1	20	0.0	0.0					20	1	RECEPT COMPUTER ROOM (EX LOAD)	20
21	OUTSIDE LIGHTS & RECEPTS (EX LOAD)	1	20			0.0	0.0			20	1	RECEPT COMPUTER ROOM (EX LOAD)	22
23	RECEPT - CORRIDOR & BREAK ROOM	1	20					1.1	0.4	20	1	RECEPT - GALLERY 202	24
25	UNKNOW EXISTING LOAD	1	20	0.0	0.5					20	1	RECEPT - COMP LAB / STUDY 203	26
27	RECEPT - ROOM 268, 269	1	20			1.1	0.0			20	1	LIGHTING - GALLERY 202 & COMP LAB/STUDY 203	28
29	RECEPT - ROOM 260, 261	1	20					0.9	0.2	20	1	LIGHTING - AIHC LOBBY 201	30
31	EWC & FAN (EX LOAD)	1	20	0.0	0.2					20	1	RECEPT - VENDING	32
33	RECEPT (EX LOAD)	1	20			0.0	0.2			20	1	RECEPT - VENDING	34
35	RECEPT - VENDING	1	20					0.2	0.2	20	1	RECEPT - BREAK ROOM	36
37	COPY (EX LOAD)	1	20	0.0	0.0					20	1	CAMERA (EX LOAD)	38
39	COPY (EX LOAD)	1	20			0.0	1.1			20	1	RECEPT - ROOM 262, 263	40
41	RECEPT - ROOM 264, 265	1	20					1.1	1.1	20	1	RECEPT - ROOM 266, 267	42
	TOTAL PER PHASE:			4.1		3.8		7.0					
	TOTAL CONNECTED:			14.9 kVA				41 A					

PANELBOARD:	'E'	BUS RATING:	225 A	MAIN:	MLO		
MIN AIC:	10,000	VOLTS:	208Y/120V	PHASES:	3	WIRES:	4
ENCLOSURE:	NEMA 1	MOUNTING:	SURFACE	FED FROM:			
LOCATION:	Corridor 77	NOTES:	EXISTING PANELBOARD				

CKT #	ITEM SERVED	CB P	CB TA	AØ (KVA)		BØ (KVA)		CØ (KVA)		CB TA	CB P	ITEM SERVED	CKT #
1	RECEPT - TV - CONFERENCE 204	1	20	0.2	1.1					20	1	RECEPT - SUITE 240 & OFFICE 245	2
3	RECEPT - CONFERENCE 204	1	20			1.3	0.2			20	1	RECEPT - PRINTER - SUITE 240	4
5	CORRIDOR LTG (EX LOAD)	1	20					0.0	0.0	20	1	JANITOR & SNACK ROOM LTG (EX LOAD)	6
7	CLASSROOM LTG (EX LOAD)	1	20	0.0	0.0					20	1	SEMINAR LTG (EX LOAD)	8
9	CLASSROOM LTG (EX LOAD)	1	20			0.0	0.0			20	1	SEMINAR LTG (EX LOAD)	10
11	CLASSROOM LTG (EX LOAD)	1	20					0.0	0.0	20	1	SEMINAR LTG (EX LOAD)	12
13	CLASSROOM LTG (EX LOAD)	1	20	0.0	0.0					20	1	SEMINAR LTG (EX LOAD)	14
15	CLASSROOM LTG (EX LOAD)	1	20			0.0	0.0			20	1	LIGHTING (EX LOAD)	16
17	CLASSROOM LTG (EX LOAD)	1	20					0.0	0.0	20	1	LIGHTING (EX LOAD)	18
19	OFFICE & STAIR LTG (EX LOAD)	1	20	0.0	0.0					20	1	EWC (EX LOAD)	20
21	OFFICE & STAIR LTG (EX LOAD)	1	20			0.0	0.0			20	1	RECEPT (EX LOAD)	22
23	RECEPT (EX LOAD)	1	20					0.0	0.0	20	1	RECEPT (EX LOAD)	24
25	RECEPT (EX LOAD)	1	20	0.0	0.0					20	1	RECEPT (EX LOAD)	26
27	RECEPT (EX LOAD)	1	20			0.0	0.0			20	1	RECEPT (EX LOAD)	28
29	RECEPT (EX LOAD)	1	20					0.0	0.0	20	1	RECEPT (EX LOAD)	30
31	WIREMOLD - COMP LAB 244	1	20	0.5	0.0					20	1	LIGHTING - CORRIDOR	32
33	WIREMOLD - COMP LAB 244	1	20			0.4	0.0			20	1	LIGHTING - OFFICES, COMP LAB & CONFERENC..	34
35	WIREMOLD - COMP LAB 244	1	20					0.4	0.2	20	1	RECEPT - TV CART - AIHC LOBBY 5	36
37	UNKNOWN LOAD	1	20	0.0	0.0					20	1	UNKNOWN LOAD	38
39	UNKNOWN LOAD	1	20			0.0	0.0			20	1	UNKNOWN LOAD	40
41	UNKNOWN LOAD	1	20					0.0	0.0	20	1	UNKNOWN LOAD	42
	TOTAL PER PHASE:			1.8		1.8		0.5					
	TOTAL CONNECTED:			4.2 kVA				12 A					

LIGHTING FIXTURE SCHEDULE

FIXTURE TYPE	MOUNTING	MANUFACTURERS	CATALOG OR MODEL NUMBER	LAMPS (NOTE 1)	VOLTAGE (V)	DESCRIPTION
	CEILING RECESSED				120	
A1	CEILING RECESSED	DAY-BRITE	2-DL-G-34L-835-2-D-UNV-DIM	LED	120	2' X 2' LED RECESSED LIGHTING FIXTURE. 27 WATTS PER FIXTURE.
B1	CEILING RECESSED	FOCAL POINT OR APPROVED EQUAL	FLC4D-RO-1500L-120-L11-T-LC4-RD-35K-DN-CD-WP	LED	120	4.5" RECESSED LED DOWNLIGHT. 19 WATTS PER FIXTURE.
C1	CEILING PENDANT	FOCAL POINT OR APPROVED EQUAL	FSM4LS-FL-625LF-35K-1C-UNV-LD1-C96-WH-LENGTH	LED	120	4" NARROW LINEAR LED LIGHTING FIXTURE. LENGTH AS INDICATED FLOOR PLANS.
C2	CEILING RECESSED	FOCAL POINT OR APPROVED EQUAL	FSM2L-AS-625LF-35K-1C-UNV-LD1-WH-LENGTH	LED	120	2" NARROW LINEAR LED LIGHTING FIXTURE W/ ASYMMETRIC LENS
D1	CEILING RECESSED	NOVA FLEX OR APPROVED EQUAL	NF/SP-CH-3916-2M-WT (LENS - NF-CH-3916-C/CLEAR-2M)	LED	120	BENDABLE LED CHANNEL. PROVIDE MOUNTING CLIPS NF-CH-UNV-CLIP/ADJ.
EMERG LIGHTING UNIT	SURFACE	LITHONIA OR APPROVED EQUAL	ELM2L-SDRT	LED	120	EMERGENCY LIGHTING UNIT FOR EMERGENCY EGRESS LIGHTING.
EXIT	SURFACE	LITHONIA OR APPROVED EQUAL	LRP-RC-120/277-EL N	LED	120	EDGE LIT EXIT SIGN WITH BATTERY
F1	CEILING SURFACE	COLUMBIA OR APPROVED EQUAL	CSL4-LSCS-4050	LED	120	48" STRIP LED, FROSTED ACRYLIC LENS, 0-10V DIMMING



NOTES:

1. PROVIDE EMPTY BOXES AND CONDUIT TO ACCOMMODATE CARD READER, POWER SUPPLY AND ASSOCIATED WIRING AT DOORS AS INDICATED IN ARCHITECTURAL DOOR SCHEDULE & SPECIFICATION.
2. REFER TO POWER PLANS & ARCHITECTURAL DOOR SCHEDULE FOR CARD READER LOCATION.

3 E201 DETAIL - CARD READER
NOT TO SCALE

DRAWING NOTES:

A. REFER TO DRAWING E001 FOR SYMBOLS, ABBREVIATIONS, AND DRAWING CONVENTIONS.
B. CONTRACTOR SHALL PERFORM REACCEPTANCE TESTING OF THE FIRE ALARM SYSTEM IN ACCORDANCE WITH 2013 NFPA 72 14.4.2.

◇ SPECIAL NOTES:

1 PROVIDE 1" CONDUIT FROM FIRE RATED POKE-THRU TO TV LOCATION ON WALL.
2 CONNECT TO EXISTING LIGHTING BRANCH CIRCUIT.
3 PROVIDE LOW VOLTAGE CABLES TO CAMERA. COORDINATE WITH UNCP FOR RACK/SERVER ROOM LOCATION.

IF DRAWING IS REDUCED, USE GRAPHIC SCALE
5' 0' 5' 10'
1/8" = 1'-0"

Jenkins • Peer *Architects*
112 South Tryon Street, Suite 1300
Charlotte, North Carolina 28284
(t) 704/372-6665

MUELLER ASSOCIATES, INC.
ENGINEER C-0979
1306 Concourse Dr #100,
Linthicum Heights, MD 21090
(t) 410/646-4500

NORTH CAROLINA PROFESSIONAL SEAL 51207 ENGINEER ADAM FRY
1/10/2022

UNC PEMBROKE

UNC PEMBROKE AMERICAN INDIAN HERITAGE CENTER

SCO ID#: 21-23067-01A

TAG	DESCRIPTION	DATE

Project: 21PEM587
Drawn By: SAS
Checked By: ARF
Date: 1/10/2022

FLOOR PLANS & SCHEDULES - ELECTRICAL

PROJECT NORTH
TRUE NORTH

BID DOCUMENTS

E201

ELECTRICAL

1. GENERAL:
   A. REFER TO DIVISION 1 SPECIFICATIONS ON DRAWING G102 FOR GENERAL CONDITIONS.
   B. THOROUGHLY EXAMINE THE ARCHITECTURAL AND MECHANICAL DRAWINGS PRIOR TO COMMENCEMENT OF ANY WORK. COORDINATE WORK WITH ALL OTHER TRADES.
   C. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO BID DATE TO EXAMINE THE CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED. NO EXTRAS SHALL BE ALLOWED FOR FAILURE TO NOTE EXISTING CONDITIONS.
   D. UNLESS OTHERWISE NOTED ALL ELECTRICAL EQUIPMENT SHALL BE NEW, OF FIRST QUALITY, AND SHALL BE FURNISHED, DELIVERED, ERECTED, CONNECTED, AND FINISHED IN EVERY DETAIL. ALL ELECTRICAL EQUIPMENT SHALL BE UL LISTED AND LABELED.
   E. ONLY THOSE MATERIALS AND EQUIPMENT NAMED ON THE DRAWINGS AND IN THIS SPECIFICATION SHALL BE USED. SUBSTITUTIONS WILL NOT BE ACCEPTABLE UNLESS DETERMINED TO BE IN THE BEST INTEREST OF THE OWNER.
   F. CONTRACTOR SHALL PROVIDE TEMPORARY LIGHTING AND POWER AS REQUIRED DURING CONSTRUCTION.
   G. THE CONTRACT DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN THE CONTRACT. DO NOT SCALE THE DRAWINGS. CONSULT THE ARCHITECTURAL DRAWINGS AND DETAILS FOR EXACT LOCATION OF EQUIPMENT. WHERE SAME ARE NOT DEFINITELY LOCATED, OBTAIN THIS INFORMATION FROM THE ARCHITECT.
   H. DUE TO THE SMALL SCALE OF THE DRAWINGS, IT IS NOT POSSIBLE TO INDICATE ALL RACEWAY OFFSETS, RISERS AND DROPS, FITTINGS, AND ACCESSORIES AS MAY BE REQUIRED TO MEET SUCH CONDITIONS.
   I. AREAS ADJACENT TO THE CONSTRUCTION SITE WILL REMAIN OCCUPIED. CONTRACTOR SHALL MAINTAIN ALL ELECTRICAL SERVICE TO THESE AREAS.
   J. THE CONTRACTOR SHALL REMOVE ALL UNUSED OR ABANDONED HANGER RODS, SUPPORTS, RACEWAYS, JUNCTION BOXES, HANGERS, ETC.
   K. VERIFY THERE IS ADEQUATE ACCESS TO MAINTAIN AND SERVICE EACH PIECE OF INSTALLED EQUIPMENT. RELOCATE NEWLY INSTALLED EQUIPMENT IN ORDER TO MEET THIS REQUIREMENT.

2. TESTS:
   A. THE CONTRACTOR SHALL FURNISH ALL EQUIPMENT AND APPLIANCES NECESSARY FOR TESTING THE COMPLETE WIRING SYSTEM DURING THE PROGRESS OF THE WORK, AS MAY BE DIRECTED BY THE ENGINEER. THE TESTS SHALL DEMONSTRATE TO THE SATISFACTION OF THE OWNER THAT ALL CIRCUITS ARE FREE FROM SHORT CIRCUITS AND UNSPECIFIED GROUNDS, AND THAT THE INSULATION RESISTANCE-TO-GROUND OF ALL NEUTRALS (WITH THE SINGLE POINT CONNECTION TO GROUND REMOVED FOR THIS TEST) AND ALL NON-GROUNDED CIRCUITS IS NOT LESS THAN ONE MEGOHM AT 1000 VOLTS DC.

3. PROTECTION OF EXISTING WORK:
   A. WHEN WORKING IN AND AROUND THE EXISTING BUILDING, EXTREME CARE SHALL BE EXERCISED WITH REGARD TO PROTECTION OF EXISTING SURFACES. CORRECT ALL DAMAGE TO EXISTING WORK TO THE SATISFACTION OF THE OWNER AT NO COST TO THE OWNER.

4. INTERRUPTION OF EXISTING UTILITIES:
   A. NOTIFY THE OWNER AT LEAST 48 HOURS IN ADVANCE OF ANY REQUIRED SHUTDOWN OF ELECTRICAL SERVICE OR OTHER SERVICE UTILITIES. UPON RECEIPT OF APPROVAL FROM THE OWNER, SHUTDOWNS SHALL BE PERFORMED ON PREMIUM TIME UNLESS OTHERWISE DIRECTED AND SHALL BE ACCOMPLISHED AT NO ADDITIONAL COST TO THE OWNER.

5. CUTTING AND PATCHING:
   A. CUTTING AND PATCHING ASSOCIATED WITH BOTH NEW AND EXISTING WORK SHALL BE PERFORMED IN A NEAT AND WORKMANLIKE MANNER. EXISTING SURFACES WHICH ARE DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED OR PROVIDED WITH NEW MATERIALS. STRUCTURAL MEMBERS SHALL NOT BE CUT OR PENETRATED UNLESS APPROVED BY THE OWNER.
   B. ALL PATCHING SHALL BE DONE WITH MATERIALS AND METHODS SIMILAR TO EXISTING ADJACENT WORK, SUBJECT TO APPROVAL OF THE OWNER AND HIS DECISION SHALL BE FINAL.

6. CLEANING AND PAINTING:
   A. ALL PAINTING IN FINISHED AREAS SHALL BE COMPLETED UNDER ANOTHER DIVISION. THE CONTRACTOR SHALL, UNDER THIS DIVISION, CLEAN AND REMOVE ALL RUST, SCALE, OIL, GREASE AND DIRT AND LEAVE IN A CONDITION FOR PAINTING ALL SURFACES OF MATERIALS OR EQUIPMENT PROVIDED UNDER THIS DIVISION WHICH ARE TO BE PAINTED.
   B. ALL FERROUS MATERIALS THAT ARE CONCEALED, OR EXPOSED IN UNFINISHED AREAS, SUCH AS STRAPS, HANGERS, JUNCTION BOXES, PULL BOXES, AND SIMILAR ITEMS, THAT ARE NOT GALVANIZED OR FINISHED WITH A FACTORY FINISH, SHALL BE PAINTED UNDER THIS DIVISION WITH ONE COAT OF ZINC-CHROMATE PRIMER AND ONE FINISH COAT OF ALUMINUM, PRATT AND LAMBERT NOXIDE, OR RUST-OLEUM PAINT. NON-FERROUS MATERIALS SHALL BE CLEANED ONLY AND LEFT UNPAINTED.
   C. EQUIPMENT WHICH IS FURNISHED WITH A FINAL FACTORY FINISH SHALL HAVE FINISH CAREFULLY TOUCHED-UP WHERE IT IS SCRATCHED OR OTHERWISE DAMAGED. TOUCH-UP WORK SHALL BE DONE IN SAME COLOR AND TYPE AS ORIGINAL FINISH.

7. NAMEPLATES AND MARKINGS:
   A. EACH WIRING DEVICE (RECEPTACLE AND LIGHT SWITCH) SHALL BE LABELED TO INDICATE THE PANELBOARD AND SPACE OR POLE NUMBER FROM WHICH IT IS SERVED. THE LABELS SHALL BE DYMO-TAPE, WHITE LETTERING ON SURROUNDING BLACK FOR 208/120V SYSTEMS. THE TAPE DESIGNATION SHALL BE PLACED ON THE BACK OF EACH DEVICE COVER PLATE.
   B. PROVIDE UPDATED TYPED PANELBOARD DIRECTORIES FOR EACH EXISTING PANELBOARD WHERE BRANCH CIRCUITS ARE MODIFIED AS A RESULT OF THIS WORK, AND FOR EACH NEW PANELBOARD.
   C. ALL RACEWAYS CONTAINING BRANCH CIRCUITS ORIGINATING IN EMERGENCY PANELBOARDS SHALL BE STRIPED WITH YELLOW TAPE. ALL JUNCTION BOXES CONTAINING EMERGENCY BRANCH CIRCUITS SHALL BE PAINTED YELLOW.
   D. ALL RACEWAYS CONTAINING FIRE DETECTION AND ALARM SYSTEM WIRING SHALL BE STRIPED WITH RED TAPE. ALL JUNCTION BOXES CONTAINING FIRE DETECTION AND ALARM SYSTEM WIRING SHALL BE PAINTED RED.

8. EQUIPMENT UTILITY ROUGH-INS AND CONNECTIONS:
   A. ELECTRICAL ROUGH-IN LOCATIONS AND CONNECTIONS INDICATED ON THE DRAWINGS ARE BASED UPON OWNER DATA SHEETS AND OTHER PLANNING INFORMATION AVAILABLE DURING THE COURSE OF DESIGN. CONTRACTOR SHALL NOTE THAT SUCH INFORMATION MAY NOT BE FINAL OR COMPLETE AT THE TIME OF BID. COORDINATION SHALL INCLUDE THE CONTRACTOR'S DETERMINATION OF THE FOLLOWING INFORMATION:
      (1) EXACT ROUGH-IN LOCATION FOR EACH OUTLET OR HARDWIRED CONNECTION INDICATED.
      (2) THE METHOD OR TYPE OF TERMINATION FOR EACH CIRCUIT.
      (3) THE VOLTAGE, AMPACITY, AND NUMBER OF WIRES REQUIRED FOR EACH CIRCUIT.
   B. WHERE REQUIREMENTS ARE DIFFERENT FROM THOSE INDICATED ON THE CONTRACT DRAWINGS, PROCEED IN ACCORDANCE WITH THE OWNER'S DIRECTION. NO ADDITIONAL COMPENSATION WILL BE PAID TO THE CONTRACTOR FOR REVISING INSTALLED WORK TO SUIT OWNER'S EQUIPMENT WHEN SUCH INSTALLATION WAS NOT FULLY COORDINATED BY THE CONTRACTOR AS HEREIN DESCRIBED.

9. RACEWAYS:
   A. UNLESS OTHERWISE NOTED, ALL CONDUIT RACEWAYS SHALL BE ELECTRICAL METALLIC TUBING (EMT). MINIMUM SIZE SHALL BE 3/4 INCH. ALL CONDUIT RACEWAYS SHALL BE CONCEALED (WHERE POSSIBLE) UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
   B. FLEXIBLE METAL CONDUIT (FMC), OR LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC) SHALL BE USED WHERE SPECIFIED HEREIN OR AS INDICATED ON THE DRAWINGS.
   C. FMC SHALL BE USED FOR ALL FINAL CONNECTIONS TO LIGHTING FIXTURES, ROTATING AND/OR VIBRATING EQUIPMENT, SUCH AS MOTORS AND TRANSFORMERS, IN SHORT LENGTHS (LESS THAN SIX FEET). LFMC SHALL BE USED FOR ALL FINAL CONNECTIONS TO ROTATING AND/OR VIBRATING EQUIPMENT IN WET LOCATIONS.
   D. MAINTAIN MINIMUM OF SIX INCH CLEARANCE BETWEEN ALL WIRING AND PARALLEL RUNS OF HOT WATER PIPES.
   E. PROVIDE ALL EMPTY RACEWAY SEGMENTS WITH 200 POUND TEST MINIMUM PLASTIC CORD OR WIRE, FISHED CONTINUOUSLY FROM OUTLET TO OUTLET. PROVIDE MINIMUM 12" EXTRA PULL WIRE AT EACH END.

   F. INSTALL RACEWAY SO AS TO INSURE AGAINST THE COLLECTION OF TRAPPED CONDENSATION, ARRANGED TO BE FREE FROM TRAPS WHEREVER POSSIBLE. USE SCREW OR PUSH-ON CAPS TO PREVENT THE LODGEMENT OF FOREIGN PARTICLES IN THE RACEWAYS, FITTINGS AND BOXES DURING CONSTRUCTION.
   G. ALL RACEWAYS IN WHICH MOISTURE HAS COLLECTED MUST BE SWABBED OUT BEFORE PULLING WIRE.
   H. RUN ALL GROUNDING CONDUCTORS IN CONDUITS.
   I. PROVIDE COMPRESSION TYPE FITTINGS FOR ALL EMT. SET SCREW FITTINGS ARE NOT ACCEPTABLE. TOOLS USED TO COMPRESS FITTINGS SHALL BE THE TYPE THAT WILL NOT RELEASE UNTIL FULL COMPRESSION HAS BEEN ACHIEVED.
   J. ALL PENETRATIONS OF FIRE RATED PARTITIONS SHALL BE CONSTRUCTED WITH UL LISTED FIRE RESISTANT MATERIALS AND METHODS.

10. FASTENINGS AND SUPPORTS:
   A. PIPE STRAPS AND HANGER RODS SHALL BE FASTENED TO CONCRETE BY MEANS OF INSERTS OR EXPANSION BOLTS AND TO HOLLOW MASONRY BY MEANS OF TOGGLE BOLTS. WOODEN PLUGS AND SHIELDS OR OTHER SHRINKABLE MATERIALS SHALL NOT BE USED FOR FASTENING PIPE STRAPS AND HANGERS. IN LIEU OF INSERTS OR EXPANSION BOLTS, POWDER-DRIVEN FASTENERS MAY BE USED TO ATTACH STRAPS AND HANGER RODS TO CONCRETE. ALL U-BOLTS, CLAMPS, ATTACHMENTS, AND OTHER HARDWARE NECESSARY FOR HANGER ASSEMBLY, AND FOR SECURING HANGER RODS AND CONDUIT SHALL BE PROVIDED.
   B. ALL CONDUITS SHALL BE SECURELY AND INDEPENDENTLY SUPPORTED SO THAT NO STRAIN WILL BE TRANSMITTED TO OUTLET BOX. SUPPORT SHALL BE RIGID ENOUGH TO PREVENT DISTORTION OF CONDUITS DURING WIRE PULLING.
   C. INDIVIDUAL HORIZONTAL CONDUITS SHALL BE SUPPORTED BY CORROSION RESISTANT PVC-COATED OR STAINLESS STEEL ONE-HOLE PIPE STRAPS OR SEPARATE PIPE HANGERS FOR SIZES 1-1/2 INCH AND SMALLER, AND BY SEPARATE PIPE HANGERS FOR LARGER SIZES. SPRING STAINLESS STEEL FASTENERS SHALL BE SPECIFICALLY DESIGNED FOR SUPPORTING SINGLE CONDUITS. WIRE SHALL NOT BE USED AS A MEANS OF SUPPORT.
   D. WHERE TWO OR MORE HORIZONTAL CONDUITS RUN PARALLEL AND AT THE SAME ELEVATION, THEY SHALL BE SUPPORTED ON MULTIPLE (TRAPEZE) PIPE HANGERS. EACH CONDUIT SHALL BE SECURED TO THE HORIZONTAL HANGER MEMBER BY A U-BOLT, ONE-HOLE STRAP OR OTHER SPECIALLY DESIGNED AND APPROVED FASTENER.
   E. SUPPORTS FOR HORIZONTAL CONDUITS SHALL BE SPACED NOT MORE THAN 8 FEET APART, WITH NOT LESS THAN TWO SUPPORTS FOR EACH 10-FOOT STRAIGHT LENGTH AND ONE SUPPORT NEAR EACH ELBOW OR BEND.

11. PULL AND JUNCTION BOXES:
   A. PROVIDE PULL OR JUNCTION BOXES WHERE INDICATED ON THE DRAWINGS OR WHERE REQUIRED TO FACILITATE WIRE PULLING OR CONNECTION. FABRICATE BOXES WITH MINIMUM 14-GAUGE GALVANIZED STEEL AND PROVIDE WITH REMOVABLE SCREW-SECURED COVER. SIZE BOXES PER NEC. ON THE EXTERIOR OF EACH BOX COVER PROVIDE A MACHINE PRINTED LABEL OR STENCILED (NOT HAND DRAWN) LETTERS DEFINING THE CIRCUITS ENCLOSED BY THE BOX.
   B. SHEET METAL BOXES SHALL BE ADEQUATELY SUPPORTED TO MAINTAIN SHAPE.

12. OUTLET BOXES:
   A. AT ALL OUTLETS, PROVIDE A SUITABLE BOX SPECIALLY DESIGNED TO RECEIVE THE TYPE OF FIXTURE OR DEVICE TO BE MOUNTED THEREON. PROVIDE FIXTURE OUTLETS WITH SUITABLE FIXTURE SUPPORTS OF SIZE AND KIND REQUIRED FOR THE FIXTURE TO BE HUNG.
   B. FOR WALL OUTLET BOXES, GENERALLY, USE NO. 1900 BOXES, FOUR INCHES SQUARE. PROVIDE SINGLE DEVICE PLASTER RINGS FOR BOXES RECESSED IN WALLS TO ALLOW SINGLE DEVICE MOUNTING. PROVIDE FOUR INCH SQUARE EXTENSION RINGS AS NECESSARY TO MAKE EXISTING BOXES FLUSH WITH NEW ARCHITECTURAL FINISHES.
   C. PROVIDE BOX COVERS TO FIT OUTLET BOX.
   D. OUTLET BOXES SHALL BE MADE OF ZINC COATED GALVANIZED PRESSED STEEL NOT LESS THAN 14 USS GAUGE, OR CAST METAL NOT LESS THAN 1/8 INCH THICK. OUTLET BOXES SHALL BE STEEL CITY, NATIONAL, APPLETON, OR APPROVED EQUIVALENT, AND SHALL BE THE BEST TYPE SUITED FOR THE PARTICULAR PURPOSE FOR WHICH IT IS INTENDED.

13. WIRE AND CABLE:
   A. ALL FEEDER AND BRANCH CIRCUIT CONDUCTORS SHALL BE COPPER, RATED 600 VOLTS WITH TYPE THHN/THWN INSULATION. MINIMUM SIZE BRANCH CIRCUIT CONDUCTOR SHALL BE #12 AWG. CONDUCTORS SIZE #12 AND #10 SHALL BE SOLID. CONDUCTORS SIZE #8 OR LARGER SHALL BE STRANDED.
   B. THE COLOR OF ALL UNGROUNDED CONDUCTORS SHALL BE AS FOLLOWS:
      208Y/120 VOLT, 3-PHASE: PHASE A - BLACK
      PHASE B - RED
      PHASE C - BLUE
      NEUTRAL - WHITE
   C. A GREEN COLORED INSULATED EQUIPMENT GROUND CONDUCTOR SHALL BE PROVIDED FOR ALL FEEDERS AND ALL SINGLE AND THREE PHASE BRANCH CIRCUITS. THE REQUIRED EQUIPMENT GROUNDING CONDUCTORS AND STRAPS SHALL BE SIZED IN COMPLIANCE WITH NEC TABLE 250-122.
   D. ELECTRICAL INSULATION SHALL BE PROTECTED FROM DAMAGE BY SCREWS, NAILS OR ANY OTHER FASTENING DEVICES. NO CONDUCTOR OR CABLE WHOSE INSULATION HAS BEEN ABRADED OR OTHERWISE DAMAGED SHALL BE INSTALLED. AN APPROVED CABLE PULLING COMPOUND SHALL BE USED AS A LUBRICANT FOR THE PURPOSE OF PULLING WIRE AND/OR CABLE IN ANY CONDUIT OR DUCT. SOAP, GREASE OR SIMILAR SUBSTANCES SHALL NOT BE USED FOR THIS PURPOSE.

14. WIRING DEVICES:
   A. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING: HUBBELL, ARROW HART, LEVITON AND PASS & SEYMOUR.
   B. ALL WIRING DEVICES SHALL BE SPECIFICATION GRADE.
   C. THE CONTRACTOR SHALL VERIFY COLOR, LOCATION AND MOUNTING HEIGHT OF ALL DEVICES PRIOR TO INSTALLATION.
   D. RECEPTACLES SHALL BE FLUSH, DUPLEX, GROUNDING TYPE, 20A, 2P, 3W, 125VAC, NEMA 5-20R STRAIGHT BLADE, IVORY NYLON OR HIGH-STRENGTH THERMOPLASTIC MATERIAL UNLESS INDICATED AS SPECIAL PURPOSE OUTLET. RECEPTACLES SHALL BE DESIGNED TO ACCEPT STANDARD TWO-WIRE PARALLEL CONNECTOR CAPS AND SHALL GRIP BOTH SIDES OF THE CONNECTOR WIRE.
   E. SINGLE THROW LIGHTING SWITCHES SHALL BE QUIET TYPE, 20A, 1P, 120/277VAC, IVORY HANDLE ABLE TO ACCOMMODATE UP TO #10 AWG CONDUCTORS AND DESIGNED FOR INDUCTIVE LIGHTING LOADS. FOR RENOVATION PROJECTS, MATCH EXISTING SWITCHES.
   F. THREE (3) WAY AND FOUR (4) WAY TOGGLE SWITCHES SHALL BE QUIET TYPE, 20A, 120/277VAC, IVORY HANDLE. SWITCHES SHALL BE POSITIVE ACTION TYPE AND SHALL NOT PERMIT A MAINTAINED NEUTRAL POSITION. FOR RENOVATION PROJECTS, MATCH EXISTING SWITCHES.
   G. ALL WALL BOX DIMMERS SHALL BE UL LISTED SPECIFICALLY FOR THE REQUIRED LOADS (I.E. INCANDESCENT, FLUORESCENT, LOW VOLTAGE, ELECTRONIC LOW VOLTAGE). UNIVERSAL DIMMERS SHALL NOT BE ACCEPTABLE. DIMMERS SHALL INCORPORATE AN AIR GAP, WHICH SHALL BE ACCESSIBLE WITHOUT REMOVING THE FACEPLATE. DIMMERS SHALL PROVIDE POWER FAILURE MEMORY. DIMMERS SHALL MEET ANSI/IEEE STANDARD C62.41-1991, TESTED TO WITHSTAND VOLTAGE SURGES OF UP TO 6000V AND CURRENT SURGES OF UP TO 200A WITHOUT DAMAGE. DIMMER CONTROL SHALL BE LINEAR SLIDE AND SHALL PROVIDE A SMOOTH AND CONTINUOUS SQUARE LAW DIMMING CURVE. DIMMERS AND FACEPLATES SHALL BE LUTRON NOVA T STYLE, OR APPROVED EQUIVALENT.
   H. SWITCHES SHALL BE VERTICALLY ALIGNED WITH THERMOSTATS, OTHER WALL SWITCHES, FIRE ALARM DEVICES WITH THE TOP OF THE SWITCH 48 INCHES ABOVE THE FINISHED FLOOR UNLESS OTHERWISE INDICATED. NOTIFY ENGINEER OF ANY DISCREPANCIES BEFORE ROUGHING IN OUTLET AND OBTAIN A NEW LOCATION. GANG MULTIPLE SWITCHES AT ONE LOCATION UNDER A SINGLE MULTI-GANG PLATE. LOCATE SWITCHES ON STRIKE SIDE OF DOOR BETWEEN 6 INCHES AND 12 INCHES FROM EDGE OF DOOR FRAME.
   I. DEVICE PLATES SHALL BE FITTED TIGHT TO THE WALL.
      (1) CEILING MOUNTED OCCUPANCY SENSORS SHALL BE DUAL-TECHNOLOGY TYPE, TO DETECT OCCUPANCY BY USING COMBINATION PIR AND ULTRASONIC METHODS IN AREA OF COVERAGE. COVERAGE SHALL BE COORDINATED WITH AREAS SHOWN ON DRAWINGS.
      (2) SENSORS SHALL BE BY LUTRON, HUBBELL, BRYANT, WATT STOPPER, OR SENSOR SWITCH.

15. DEVICE PLATES:
   A. PROVIDE STAINLESS STEEL DEVICE PLATES FOR ALL OUTLETS WHERE DEVICES ARE INSTALLED.
   B. PROVIDE SINGLE DEVICE PLATE FOR MULTI-GANG BOXES.
   C. GROUP ADJACENT WIRING DEVICES UNDER SINGLE, MULTIGANG DEVICE PLATES.

16. ENCLOSURES:
   A. USE NEMA TYPE 1 ENCLOSURES FOR INDOOR LOCATIONS, UNLESS OTHERWISE INDICATED.

17. LIGHTING FIXTURES:
   A. LIGHTING FIXTURES SHALL BE AS INDICATED ON THE LIGHTING FIXTURE SCHEDULE.
   B. ALL MATERIALS, ACCESSORIES, AND OTHER RELATED FIXTURE PARTS HEREIN MENTIONED SHALL CONFORM TO THE REQUIREMENTS OF THE DRAWINGS, SPECIFICATIONS, AND THE AGENCIES HERETOFORE MENTIONED. THEY SHALL BE NEW AND FREE FROM DEFECTS WHICH IN ANY MANNER MIGHT IMPAIR THEIR CHARACTER, APPEARANCE, STRENGTH, DURABILITY, AND FUNCTION, AND SHALL BE OF PRIME QUALITY INTENDED FOR THEIR RESPECTIVE PURPOSE, AND EFFECTIVELY PROTECTED FROM ANY DAMAGE OR INJURY FROM THE TIME OF FABRICATION UNTIL FINAL ACCEPTANCE OF THE WORK. THE ABOVE ITEMS SHALL MEET WITH THE APPROVAL OF THE OWNER WHO RESERVES THE RIGHT OF REJECTION PRIOR TO OR AFTER INSTALLATION IF FOUND NOT TO BE IN STRICT ACCORDANCE WITH THE TRUE INTENT OF THE CONTRACT.
   C. ALL FIXTURES SHALL BE COMPLETELY WIRED AT THE FACTORY.
   D. THE CONTRACTOR SHALL FURNISH AND INSTALL ANY NECESSARY EXTRA CHANNELS, SUPPORT WIRE OR RODS, ETC., TO PROVIDE A STRUCTURALLY SOUND SYSTEM. FIXTURES SHALL BE SUPPORTED INDEPENDENTLY OF THE CEILING GRID. FIXTURES SHALL NOT BE SUSPENDED FROM DUCTWORK, PIPING, OR APPURTENANCES THERETO.
   E. THE FIXTURES SHALL BE MANUFACTURED IN STRICT ACCORDANCE WITH THE APPROPRIATE AND CURRENT REQUIREMENTS OF THE UNDERWRITER'S LABORATORIES, INC. "STANDARD FOR SAFETY" AND OTHERS AS THEY MAY BE APPLICABLE. A UL LISTING SHALL BE PROVIDED FOR EACH FIXTURE TYPE, AND THE APPROPRIATE LABEL OR LABELS SHALL BE AFFIXED TO EACH FIXTURE IN A LOCATION CONCEALING IT FROM NORMAL VIEW.
   F. LIGHT LEAKS BETWEEN FIXTURE DOORS AND FRAMES SHALL NOT BE ACCEPTABLE.

18. FIRE DETECTION AND ALARM SYSTEM (FDAS):
   A. NOTIFICATION APPLIANCE DEVICES SHALL MATCH EXISTING DEVICES, WITH MINIMUM LUMINOUS INTENSITY IN CANDELAS AS REQUIRED FOR THE SPACE INDICATED ON THE DRAWINGS.
   B. FOR SIGNALING LINE CIRCUITS (SLC), PROVIDE #16/2 AWG TWISTED NON-SHIELDED PAIR IN FPLP, FPLR OR FIRE ALARM MC. IF CONDUIT IS USED, THE APPROPRIATELY SIZED CONDUIT MUST BE USED FOR THE NUMBER AND TYPES OF CABLE BEING USED.
   C. FOR NOTIFICATION APPLIANCE CIRCUITS (NAC), PROVIDE #14/2 AWG TWISTED NON-SHIELDED PAIR IN FPLP, FPLR OR FIRE ALARM MC. IF CONDUIT IS USED, THE APPROPRIATELY SIZED CONDUIT MUST BE USED FOR THE NUMBER AND TYPES OF CABLE BEING USED.
   D. FOR HORN CIRCUITS, PROVIDE #16/2 AWG TWISTED SHIELDED PAIR IN FPLP, FPLR OR FIRE ALARM MC. IF CONDUIT IS USED, THE APPROPRIATELY SIZED CONDUIT MUST BE USED FOR THE NUMBER AND TYPES OF CABLE BEING USED.

END OF SPECIFICATIONS

Jenkins • Peer *Architects*
112 South Tryon Street, Suite 1300
Charlotte, North Carolina 28284
(t) 704/372-6665

MUELLER ASSOCIATES, INC.
ENGINEER C-0979
1306 Concourse Dr #100,
Linthicum Heights, MD 21090
(t) 410/646-4500

NORTH CAROLINA REGISTERED SEAL 51207 ENGINEER ADAM FRY

1/10/2022

UNC PEMBROKE

UNC PEMBROKE AMERICAN INDIAN HERITAGE CENTER

SCO ID#: 21-23067-01A

TAG	DESCRIPTION	DATE

Project: 21PEM587
Drawn By: SAS
Checked By: ARF
Date: 1/10/2022

ELECTRICAL SPECIFICATIONS

PROJECT NORTH
TRUE NORTH

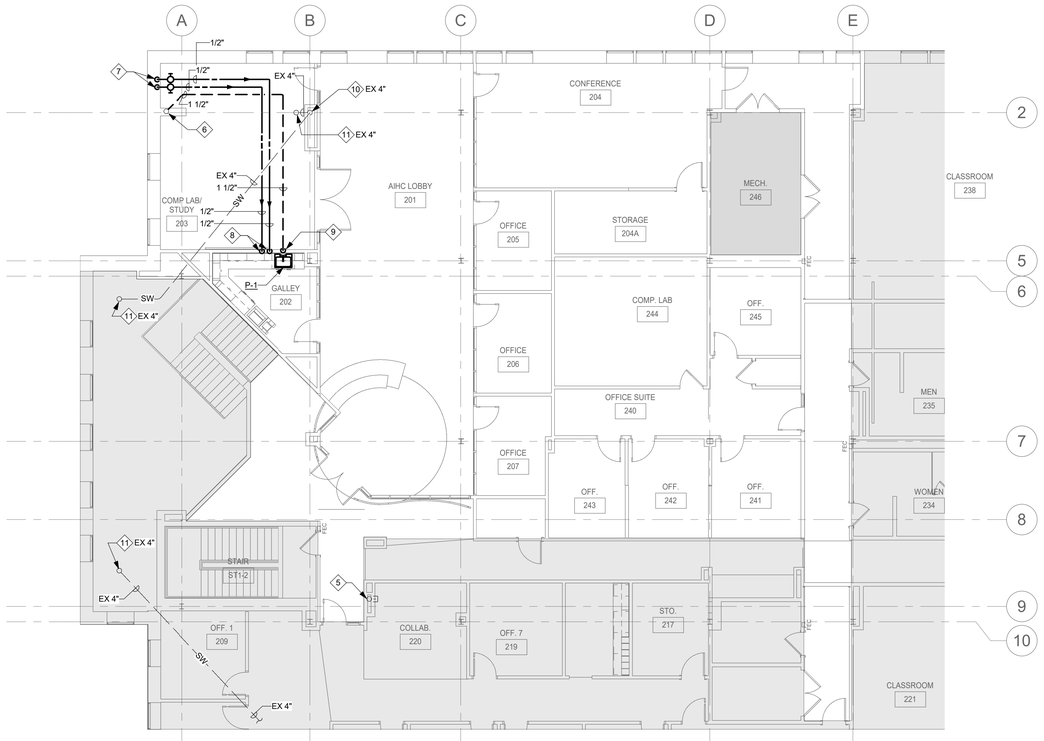
BID DOCUMENTS

E701

D
C
B
A

5 4 3 2 1

1 P101 LEVEL 2 - FLOOR PLAN - PLUMBING - DEMOLITION
1/8" = 1'-0"



2 P101 LEVEL 2 - FLOOR PLAN - PLUMBING - NEW WORK
1/8" = 1'-0"

DRAWING NOTES:

A. REFER TO DRAWING M001 FOR LEGEND, ABBREVIATIONS AND DRAWING CONVENTIONS.

B. EXISTING CONDITIONS SHOWN ARE BASED ON LIMITED FIELD SURVEY AND EXISTING DOCUMENTATION. CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS, INDICATED OR OTHERWISE.

C. COORDINATE ALL DEMOLITION WORK WITH NEW WORK CONSTRUCTION.

D. UNLESS OTHERWISE NOTED, PIPING SHOWN IS CONCEALED ABOVE CEILING.

E. REFER TO SHEET G102, M701, AND M702 FOR SPECIFICATIONS ON GENERAL CONDITIONS, INSTALLATION REQUIREMENTS, CUTTING AND PATCHING, SLEEVES, AND ADDITIONAL INFORMATION.

◇ SPECIAL NOTES:

1 EX 2" SAN FROM FIXTURE DOWN THROUGH FLOOR SLAB. 2" VP DOWN TO EXISTING SAN AND UP TO EX 2" VTR.

2 REMOVE EXISTING 1/2" HW AND 1/2" CW FROM FIXTURE AND DOWN TO APROXIMATELY 18" AFF.

3 REMOVE EXISTING COUNTER MOUNTED SINK, FAUCET, AND ALL APPURTENANCES.

4 RX 1 1/2" SAN FROM FIXTURE TO EX 2" SAN RISER. CAP SANITARY AT CONNECTION TO RISER.

5 EX 3" VP DOWN THROUGH FLOOR SLAB AND UP TO EX 3" VTR.

6 EX 2" SAN FROM FIXTURE DOWN THROUGH FLOOR SLAB. 2" VP DOWN TO EXISTING SAN AND UP TO EX 2" VTR.

7 EXISTING 1/2" HW AND 1/2" CW DOWN THROUGH FLOOR SLAB. CONNECT NEW 1/2" HW AND CW TO EXISTING PIPING AND EXTEND ABOVE CEILING.

8 1/2" HW AND CW DOWN IN WALL TO FIXTURE(S).

9 1 1/2" SAN FROM FIXTURE DOWN THROUGH FLOOR SLAB. CONNECT 1 1/2" SAN TO EX 2" SAN FROM EXISTING SINK LOCATION IN FIRST FLOOR CEILING.

10 EX SW DOWN THROUGH FLOOR SLAB.

11 EX SW UP TO EX ROOF DRAIN

12 RX 2" SAN FROM FIXTURE DOWN THROUGH FLOOR SLAB. CAP EX 2" SAN IN CEILING SPACE BELOW, AT 2" SAN MAIN. RX 2" VP UP TO EX 2" VTR. CAP EX VTR 18" BELOW ROOF.

13 REMOVE EXISTING 1/2" HW AND 1/2" CW FROM FIXTURE AND DOWN THROUGH FLOOR SLAB, BACK TO MAIN. CAP EX 1/2" HW AND EX 1/2" CW IN CEILING SPACE BELOW, AT MAIN.

PLUMBING FIXTURE SCHEDULE

NOTES:
1. BASIS OF DESIGN: FIXTURE, JUST MODEL NO. SL-ADA-2131-A-GR; FAUCET, CHICAGO MODEL NO. 786-GN8AE35ABCP

DESIG	DESCRIPTION	FIXTURE UNITS		ROUGH-IN CONNECTION (IN)				REMARKS
		WASTE	WATER	SAN	VENT	CW	HW	
P-1	BREAKROOM SINK	2	2	1 1/2"	1 1/2"	1/2"	1/2"	COUNTER MOUNTED, BARRIER FREE, STAINLESS STEEL, MANUAL FAUCET, 1.5 GPM; NOTE 1

Jenkins • Peer *Architects*
112 South Tryon Street, Suite 1300
Charlotte, North Carolina 28284
(t) 704/372-6665

MUELLER ASSOCIATES, INC.
ENGINEER C-0979
1306 Concourse Dr #100,
Linthicum Heights, MD 21090
(t) 410/646-4500

NORTH CAROLINA REGISTERED 030276 ENGINEER STEVEN A. GILLIS

1/10/2022

UNC PEMBROKE

UNC PEMBROKE AMERICAN INDIAN HERITAGE CENTER

SCO ID#: 21-23067-01A

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FLOOR PLANS - PLUMBING DEMOLITION AND NEW WORK

PROJECT NORTH
TRUE NORTH

BID DOCUMENTS

P101

1 F101 LEVEL 2 - FLOOR PLAN - FIRE PROTECTION - DEMOLITION
1/8" = 1'-0"

2 F101 LEVEL 2 - FLOOR PLAN - FIRE PROTECTION - NEW WORK
1/8" = 1'-0"

D
C
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A

5 4 3 2 1

DRAWING NOTES:

A. REFER TO DRAWING M001 FOR LEGEND, ABBREVIATIONS AND DRAWING CONVENTIONS.

B. EXISTING CONDITIONS SHOWN ARE BASED ON LIMITED FIELD SURVEY AND EXISTING DOCUMENTATION. FIRE PROTECTION PIPING SHOWN FOR COORDINATION PURPOSES ONLY. CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS, INDICATED OR OTHERWISE.

C. COORDINATE ALL DEMOLITION WORK WITH NEW WORK CONSTRUCTION.

D. UNLESS OTHERWISE NOTED, PIPING SHOWN IS CONCEALED ABOVE CEILING.

E. REFER TO SHEET G102 M701 AND M702 FOR SPECIFICATIONS ON GENERAL CONDITIONS, INSTALLATION REQUIREMENTS, CUTTING AND PATCHING, SLEEVES, AND ADDITIONAL INFORMATION.

◇ SPECIAL NOTES:

1 REMOVE ALL EXISTING WET PIPE SPRINKLER HEADS AND EXISTING BRANCH PIPING (NOT SHOWN) IN THIS AREA, AS REQUIRED. REMOVE ALL CPVC BRANCH PIPING (NOT SHOWN) BACK TO STEEL MAINS, AS SHOWN. COORDINATE ALL DEMOLITION WORK WITH NEW WORK PLANS. SHUTDOWN OF EXISTING WET PIPE FIRE PROTECTION SYSTEM MUST BE COORDINATED WITH OWNER.

2 MODIFY EXISTING HYDRAULICALLY DESIGNED WET PIPE SPRINKLER SYSTEM PER NFPA 13 AND/OR NORTH CAROLINA OFFICE OF STATE FIRE MARSHAL. THIS AREA SHALL BE DESIGNED FOR AN ORDINARY HAZARD GROUP I OCCUPANCY REQUIREMENTS AS REQUIRED IN NFPA 13. HYDRAULIC CALCULATIONS SHALL BE PERFORMED TO INSURE THAT A DENSITY OF 0.15 GPM/SQ.FT. OVER THE MOST REMOTE 1500 SQ.FT. SHALL BE AVAILABLE, WITH A 250 GPM HOSE STREAM ALLOWANCE. COVERAGE SHALL NOT EXCEED 130 SQUARE FEET PER HEAD. CALCULATIONS SHALL BE BASED ON A FIRE HYDRANT FLOW TEST WITHIN THE PAST 12 MONTHS. PROVIDE A PIPING PLAN INDICATING PIPE FROM MOST REMOTE AREA TO TEST HYDRANT. MAXIMUM SPRINKER HEAD SPACING SHALL NOT EXCEED 15 FT. FIRE PROTECTION PIPING IS SHOWN FOR COORDINATION PURPOSES ONLY. PROVIDE SPRINKLER HEADS AND PIPING TO ACCOMMODATE WALLS, CEILINGS, LIGHTS, DUCTS, ETC. SO THAT ADEQUATE COVERAGE IS PROVIDED FOR THE RENOVATED AREA. PROVIDE ONLY NEW SPRINKLER HEADS, RELOCATING EXISTING SPRINKLER HEADS IS NOT PERMITTED.

3 REMOVE EXISTING 3" SPRINKLER MAIN TO COORDINATE WITH NEW HIGHER CEILINGS.

4 PROVIDE NEW 3" SPRINKLER MAIN LOCATED ABOVE NEW CEILINGS. CONNECT TO EXISTING LOWER SECTIONS OF SPRINKLER MAIN AT APPROXIMATE LOCATIONS INDICATED.

UNCP – OLD MAIN – AIHC RENOVATION **FIRE PROTECTION SPECIFICATIONS**

1. AUTOMATIC SPRINKLER SYSTEM:
   A. THE CONTRACTOR SHALL PROVIDE OR MODIFY THE EXISTING WET PIPE SPRINKLER SYSTEM WHERE REQUIRED IN ALL AREAS TO BE CONSTRUCTED/RENOVATED UNDER THIS PROJECT.
      (1) THE CONTRACTOR SHALL PROVIDE A NEW WET PIPE SPRINKLER/STANDPIPE SYSTEM AS REQUIRED IN AREAS INDICATED.
      (2) CONTRACTOR SHALL PROVIDE CONNECTION(S) TO EXISTING FIRE PROTECTION PIPING. CONNECTIONS TO EXISTING PIPING SHALL BE VERIFIED AND APPROVED BY THE UNIVERSITY AND NORTH CAROLINA STATE FIRE MARSHAL.
      (3) DESIGNATED AREAS SHALL BE FULLY SPRINKLED AS DEFINED HEREIN, INDICATED ON THE FLOOR PLANS AND AS REQUIRED BY CODE. THE PIPING LOCATIONS, IF SHOWN, ON THE FLOOR PLANS ARE DIAGRAMMATIC. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE COMPLETE SPRINKLED SYSTEMS AND ALL RELATED WORK, INCLUDING DRAIN AND TEST PIPING, ETC., IN COMPLETE COMPLIANCE WITH ALL APPLICABLE SECTIONS OF NFPA. SUBMIT SHOP DRAWINGS AND CALCULATIONS TO THE OWNER FOR REVIEW AND FINAL APPROVAL.
      (4) SYSTEM SHALL BE APPROVED AND COMPLY WITH ALL ORGANIZATIONS HAVING JURISDICTION. SYSTEM DESIGN DOCUMENTS SHALL BE AND APPROVED BY THE OWNER'S REPRESENTATIVE AND FIRE MARSHAL PRIOR TO INSTALLATION.
      (5) SUBMITTALS:
         (a) THE INSTALLING CONTRACTOR SHALL SUBMIT THE FOLLOWING DESIGN INFORMATION AND DRAWINGS FOR APPROVAL PRIOR TO COMMENCING WORK ON THIS PROJECT.
         (b) INSTALLATION LAYOUT DRAWINGS DETAILING THE QUANTITY, LOCATION, AND MARKING OF ALL SYSTEM COMPONENTS, INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:PIPING MATERIALS, INCLUDING DIELECTRIC FITTINGS AND SPRINKLER SPECIALTY FITTINGS.
            1) PIPE HANGERS AND SUPPORTS.
            2) VALVES, INCLUDING LISTED FIRE-PROTECTION VALVES AND SPECIALTY VALVES AND TRIM.
            3) SPRINKLERS, ESCUTCHEONS, AND GUARDS. INCLUDE SPRINKLER FLOW CHARACTERISTICS, MOUNTING, FINISH, AND OTHER PERTINENT DATA.
      (6) THE INSTALLER SHALL HAVE BEEN ENGAGED IN THE SPRINKLER INDUSTRY FOR A MINIMUM OF FIVE (5) YEARS OR SHALL DEMONSTRATE TO THE SATISFACTION OF THE OWNER, DURING THE BIDDING PERIOD, THEIR CAPABILITY IN SUCCESSFULLY COMPLETING THE FIRE PROTECTION SYSTEM.
      (7) THE SPRINKLER SYSTEMS SHALL BE HYDRAULICALLY DESIGNED IN ACCORDANCE WITH NFPA 13. THE AREAS SHALL BE DESIGNED FOR AN ORDINARY HAZARD GROUP I OCCUPANCY REQUIREMENTS AS REQUIRED IN NFPA 13. HYDRAULIC CALCULATIONS SHALL BE PERFORMED TO ENSURE THAT A DENSITY OF 0.15 GPM/SQ.FT. OVER THE MOST REMOTE 1500 SQ.FT. SHALL BE AVAILABLE, WITH A 250 GPM HOSE STREAM ALLOWANCE. COVERAGE SHALL NOT EXCEED 130 SQUARE FEET PER HEAD. MAXIMUM SPRINKER HEAD SPACING SHALL NOT EXCEED 15FT. VERIFY DENSITY AND DESIGN REQUIREMENTS WITH UNIVERSITY FIRE MARSHAL'S OFFICE DURING THE BID PERIOD AND CONFORM WITH UNIVERSITY FIRE MARSHAL'S GUIDELINES AND RECOMMENDATIONS PRIOR TO ANY LAYOUT OR DESIGN WORK.
      (8) INSTALLER'S RESPONSIBILITIES INCLUDE DESIGNING, FABRICATING, AND INSTALLING FIRE-SUPPRESSION SYSTEMS AND PROVIDING PROFESSIONAL ENGINEERING SERVICES NEEDED TO ASSUME ENGINEERING RESPONSIBILITY. BASE CALCULATIONS ON RESULTS OF FIRE-HYDRANT FLOW TEST. FLOW TESTS SHALL NOT BE OLDER THAN 12 MONTHS.
         (a) ENGINEERING RESPONSIBILITY: PREPARATION OF WORKING PLANS, CALCULATIONS, AND FIELD TEST REPORTS BY A QUALIFIED PROFESSIONAL FIRE PROTECTION ENGINEER OR NICET LEVEL IV TECHNICIAN. THE DESIGNER'S NICET OR P.E. STAMP SHALL BE PRESENT ON EACH SHEET OF THE WORKING DRAWINGS.
      (9) PROVIDE NEW SPRINKLER HEADS AND BRANCH PIPING BELOW THE NEW DUCTWORK, OBSTRUCTIONS, ETC., AS REQUIRED BY CODE FOR PROPER COVERAGE.

B. PRODUCTS:
   (1) SPRINKLERS SHALL BE LISTED BY UNDERWRITER'S LABORATORIES AND/OR F.M. GLOBAL APPROVED. ONLY NEW SPRINKLERS SHALL BE USED. SPRINKLERS SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE WITH NFPA CODES, AND PROPERLY COORDINATED WITH OTHER WORK. THE CORRECT TYPE AND TEMPERATURE RATING OF SPRINKLER HEADS SHALL BE USED IN EVERY LOCATION.
   (2) SPRINKLER HEADS SHALL BE PROVIDED AS HEREIN SPECIFIED: IN FINISHED CEILING SPACES, PROVIDE VIKING MICROFAST, OR EQUAL, FULLY RECESSED, LOW PROFILE PENDENT TYPE HEADS WITH MODEL E-1, FLUSH SCREWED ONE-PIECE ADJUSTABLE ESCUTCHEON CEILING PLATE, ORDINARY TEMPERATURE RATING, ENTIRE ASSEMBLY SHALL BE BAKED WHITE ENAMEL. IN AREAS WITH EXPOSED STRUCTURE (NO CEILINGS), PROVIDE VIKING MICROFAST BRASS SPRINKLER HEADS.
   (3) SPRINKLER HEADS THAT MAY BE SUBJECT TO MECHANICAL DAMAGE DUE TO THEIR LOCATION (LOW HANGING SPRINKLER HEADS IN CORRIDORS, STORAGE ROOMS, OR UNDER DUCTS) SHALL BE PROVIDED WITH APPROVED GUARDS, VIKING MODEL A-1 OR APPROVED EQUAL.
   (4) PIPE HANGERS AND SUPPORTS SHALL BE DETAILED ON THE SHOP DRAWINGS AND SHALL BE "LISTED" TYPE IN ACCORDANCE WITH NFPA 13 STANDARDS AND AS HEREIN SPECIFIED. HANGER ATTACHMENTS TO ROOF SHALL BE GRINNELL FIGURE 228, 218 OR 229 FOR PIPES 3 INCHES AND LARGER, AND FIGURE 87 OR 85 FOR PIPES 2-1/2 INCHES AND SMALLER.
   (5) SPRINKLER SYSTEM PIPING SHALL BE AS FOLLOWS:
      (a) FIRE PROTECTION (ABOVE GROUND - GENERALLY): STEEL PIPE, ASTM A53, A795, A135, ANSI SCHEDULE 40 WITH BLACK MALLEABLE IRON SCREWED FITTINGS, 175 LB. (WATER), ANSI B16.3, AND THREADED JOINTS, AMERICAN STANDARD FOR PIPE THREADS, ANSI B2.1. THREAD SEALANT SHALL BE LOCK-TITE NO. 592 WITH TEFLON, SNOW WHITE AND HOMOGENEOUS, OR RECTORSEAL NO. 5. AT CONTRACTOR'S OPTION, INTERIOR WET-PIPE SYSTEM PIPING SHALL BE ASSEMBLED WITH DUCTILE IRON ROLLED GROOVED SHORT PATTERN FITTINGS, ASTM A-536, VICTAULIC FIRELOCK, DESIGNED SPECIFICALLY FOR FIRE PROTECTION SYSTEMS, AND MECHANICALLY GROOVED COUPLINGS, VICTAULIC RIGID ANGLE PAD DESIGN STYLE 005/009/009H WITH CHLORINATED BUTYL GRADE "E" EPDM – TYPE A GASKETS AND HEAT TREATED CARBON STEEL BOLTS AND NUTS, ASTM A-183 AND A-449. ALL GROOVED COUPLINGS, GASKETS AND FITTINGS SHALL BE MANUFACTURED BY THE SAME MANUFACTURER.
      (b) AT CONTRACTOR'S OPTION, FLEXIBLE SPRINKLER DROPS SHALL BE STAINLESS STEEL TYPE 304, BRAIDED OR UN-BRAIDED FLEXIBLE TUBE WITH UNION JOINTS AND ZINC PLATED STEEL MALE THREADED NIPPLE OR GROOVED END COUPLING FOR CONNECTION TO BRANCH-LINE PIPING. FLEXIBLE DROP SHALL ATTACH TO THE CEILING GRID USING A ONE-PIECE OPEN GATE BRACKET. THE BRACKET SHALL ALLOW INSTALLATION BEFORE THE CEILING TILE IS ON PLACE. DROP SIZE SHALL BE 1-INCH I.D. WITH A MINIMUM 2-INCH BEND RADIUS. FLEXIBLE DROPS SHALL BE AS MANUFACTURED BY VICTAULIC, VICFLEX SERIES OR EQUALS BY FLEXHEAD INDUSTRIES, INC. OR GATEWAY TUBING, INC.

C. EXECUTION
   (1) CONTRACTOR SHALL COORDINATE INSTALLATION OF SPRINKLER SYSTEM WITH LIGHTING FIXTURES, DUCTS, PIPING, MECHANICAL/ELECTRICAL EQUIPMENT STRUCTURAL ELEMENTS, ACOUSTICAL TILE GRID SYSTEM, AND OTHER ITEMS WHERE CONFLICTS RESULT, THEY SHALL BE RESOLVED BY THE CONTRACTOR TO THE OWNER'S SATISFACTION AND AT NO ADDITIONAL EXPENSE TO THE OWNER. NO WORK SHALL BE STARTED UNTIL SHOP DRAWINGS ARE APPROVED BY ALL REVIEWING AGENCIES.
   (2) DURING THE COURSE OF THE NEW WORK INSTALLATION, THE CONTRACTOR, AS DIRECTED BY THE GENERAL SUPERINTENDENT OR OWNER, MAY BE REQUIRED TO REMOVE, REARRANGE, OR RELOCATE EXISTING SPRINKLER PIPING OR HEADS AS NECESSARY TO SUIT THE FIELD CONDITIONS AND WORK OF OTHER TRADES. ALL WORK SHALL BE PERFORMED AT NO ADDITIONAL COST TO THE OWNER.
   (3) PIPE SIZES SHALL BE AS REQUIRED BY NFPA.
   (4) ALL SPRINKLER PIPING SHALL BE SUBSTANTIALLY SUPPORTED FROM THE BUILDING STRUCTURE WHICH MUST SUPPORT THE ADDED LOAD OF THE WATER FILLED PIPE PLUS MINIMUM OF 250 POUNDS APPLIED AT THE POINT OF HANGING IN ACCORDANCE WITH NFPA 13. NO PIPING SHALL BE SUPPORTED FROM THE ROOF DECK.
   (5) PIPING SHALL BE INSTALLED AND ARRANGED TO PROTECT IT FROM FREEZING AND CORROSION AND SHALL BE PITCHED FOR DRAINAGE. ALL PIPING AND SPRINKLER HEADS SHALL BE INSTALLED EXPOSED, EXCEPT IN AREAS WITH SUSPENDED CEILINGS WHERE PIPING SHALL BE INSTALLED CONCEALED.
   (6) DRAINS AND TEST PIPING SHALL BE FURNISHED AND INSTALLED SO THAT ALL PARTS OF THE SYSTEM MAY BE DRAINED AND TESTED PROPERLY.
   (7) SPRINKLER PIPING SHALL BE FILLED WITH WATER AND THOROUGHLY FLUSHED CLEAN OF FOREIGN MATTER AFTER ERECTION IN THE PRESENCE OF THE OWNER.
   (8) PIPING TESTS SHALL BE CONDUCTED BY THE CONTRACTOR IN THE PRESENCE OF THE OWNER. ALL PIPING SHALL BE PROVEN TIGHT. SHOULD ANY LEAKS DEVELOP, LEAKS SHALL BE REPAIRED AND THE SYSTEM RETESTED. PIPING SHALL BE HYDROSTATICALLY TESTED AT 200 PSIG FOR TWO HOURS. PERFORM ADDITIONAL TEST AS REQUIRED BY NFPA OR OTHER ORGANIZATIONS HAVING JURISDICTION.
   (9) INSTALLATION SHALL BE IN ACCORDANCE WITH ALL NFPA STANDARDS, NORTH CAROLINA STATE FIRE CODE, UNIVERSITY FIRE AND SAFETY REGULATIONS, AND OTHER ORGANIZATIONS HAVING JURISDICTION.
   (10) VERIFICATION OF DIMENSIONS: THE CONTRACTOR SHALL BECOME FAMILIAR WITH ALL DETAILS OF THE WORK AND VERIFY ALL DIMENSIONS IN THE FIELD BEFORE PERFORMING THE WORK REQUIRED.
   (11) SERVICE: THE CONTRACTOR SHALL BE CAPABLE OF RESPONDING WITHIN 24 HOURS OF NOTIFICATION FOR THE EQUIPMENT INSTALLED AND SHALL RENDER SATISFACTORY SERVICE TO THE EQUIPMENT ON A REGULAR AND EMERGENCY BASIS FOR A PERIOD OF ONE (1) YEAR AFTER DATE OF CERTIFICATE OF COMPLETION AND ACCEPTANCE OF WORK.
   (12) THE CONTRACTOR SHALL FURNISH A WRITTEN STATEMENT TO THE EFFECT THAT ALL WORK COVERED IN THE CONTRACT HAS BEEN COMPLETED AND TESTED IN ACCORDANCE WITH THE APPROVED SPECIFICATIONS AND PLANS. COPIES OF THE WRITTEN STATEMENT SHALL BE PROVIDED TO THE OWNER AND ANY OTHER AUTHORITY HAVING JURISDICTION.
   (13) THIS SPECIFICATION IS NOT MEANT TO COVER ALL THE FIRE PROTECTION RESTRICTIONS IMPOSED BY FEDERAL, STATE OR LOCAL CODES OR DEPARTMENTS, AND IT SHALL BE THE RESPONSIBILITY OF THE SPRINKLER CONTRACTOR TO PROVIDE A SYSTEM THAT IS ACCEPTABLE TO ALL GOVERNING AUTHORITIES INVOLVED.

Jenkins • Peer *Architects*
112 South Tryon Street, Suite 1300
Charlotte, North Carolina 28284
(t) 704/372-6665

MUELLER ASSOCIATES, INC.
ENGINEER C-0979
1306 Concourse Dr #100,
Linthicum Heights, MD 21090
(t) 410/646-4500

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030275 STEVEN A. OLLIS

1/10/2022

UNC PEMBROKE

UNC PEMBROKE AMERICAN INDIAN HERITAGE CENTER

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FLOOR PLANS - FIRE PROTECTION DEMOLITION AND NEW WORK

PROJECT NORTH
TRUE NORTH

BID DOCUMENTS

F101

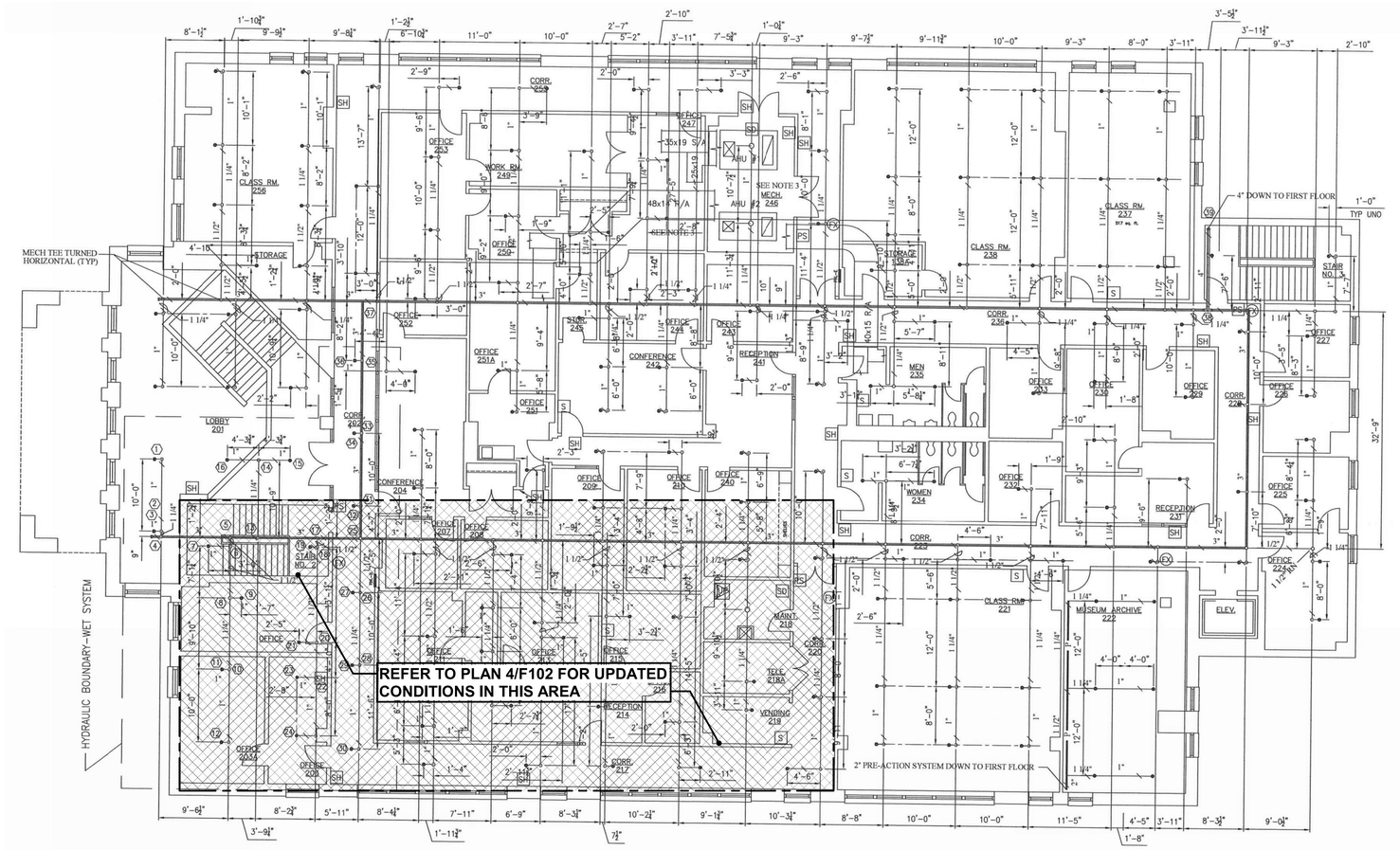
PARTIAL SITE PLAN - FIRE PROTECTION
EXISTING DOCUMENTATION
1 / F102 NOT TO SCALE

WATER SUPPLY INFORMATION - FLOW TEST					
DATE AND TIME	TESTED BY	HYDRANT ELEVATION	STATIC PRESSURE (PSI)	RESIDUAL PRESSURE (PSI)	WATER FLOW RATE (GPM)
07/21/21 @ 8:30 AM	CFP, INC.	N/A	69	61	732

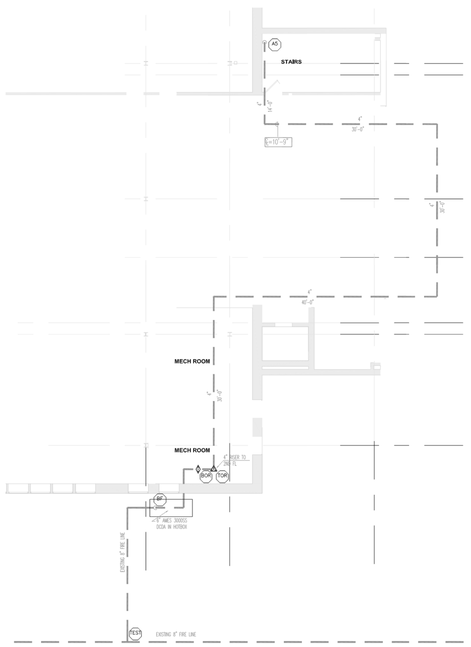
DRAWING NOTES:

A. INFORMATION ON THIS SHEET IS OBTAINED FROM EXISTING DOCUMENTATION PROVIDED BY THE OWNER FOR THIS PROJECT ONLY. FIRE PROTECTION PIPING SHOWN FOR COORDINATION PURPOSES ONLY. CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS, INDICATED OR OTHERWISE.

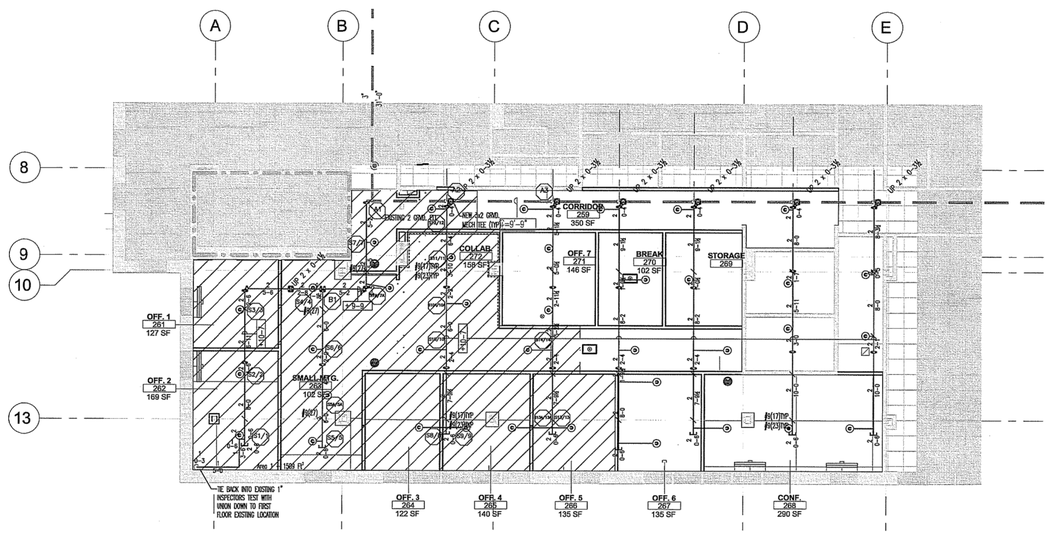
B. REFER TO SHEET G102 M701 AND M702 FOR SPECIFICATIONS ON GENERAL CONDITIONS, INSTALLATION REQUIREMENTS, CUTTING AND PATCHING, SLEEVES, AND ADDITIONAL INFORMATION.



2 / F102 SECOND FLOOR PLAN - FIRE PROTECTION - EXISTING DOCUMENTATION
1/8" = 1'-0"



3 / F102 PARTIAL FIRST FLOOR PLAN - FIRE PROTECTION EXISTING DOCUMENTATION
NOT TO SCALE



4 / F102 PARTIAL SECOND FLOOR PLAN - FIRE PROTECTION - EXISTING DOCUMENTATION
1/8" = 1'-0"

Jenkins • Peer *Architects*
112 South Tryon Street, Suite 1300
Charlotte, North Carolina 28284
(t) 704/372-6665

MUELLER ASSOCIATES, INC.
ENGINEER C-0979
1306 Concourse Dr #100,
Linthicum Heights, MD 21090
(t) 410/646-4500

NORTH CAROLINA REGISTERED 030276 ENGINEER STEVEN A. GILLIS
1/10/22

1/10/2022

UNC PEMBROKE

UNC PEMBROKE AMERICAN INDIAN HERITAGE CENTER

SCO ID#: 21-23067-01A

TAG	DESCRIPTION	DATE

Project: 21PEM587
Drawn By: CJS
Checked By: SAG
Date: 1/10/2022

FLOOR PLANS - FIRE PROTECTION - EXISTING DOCUMENTATION

PROJECT NORTH
TRUE NORTH

BID DOCUMENTS

F102