Coop De Ville Savanah 301 Passage Way Savanah, GA 31401 5/11/23 Permit Set

Architect/Landscape Architect

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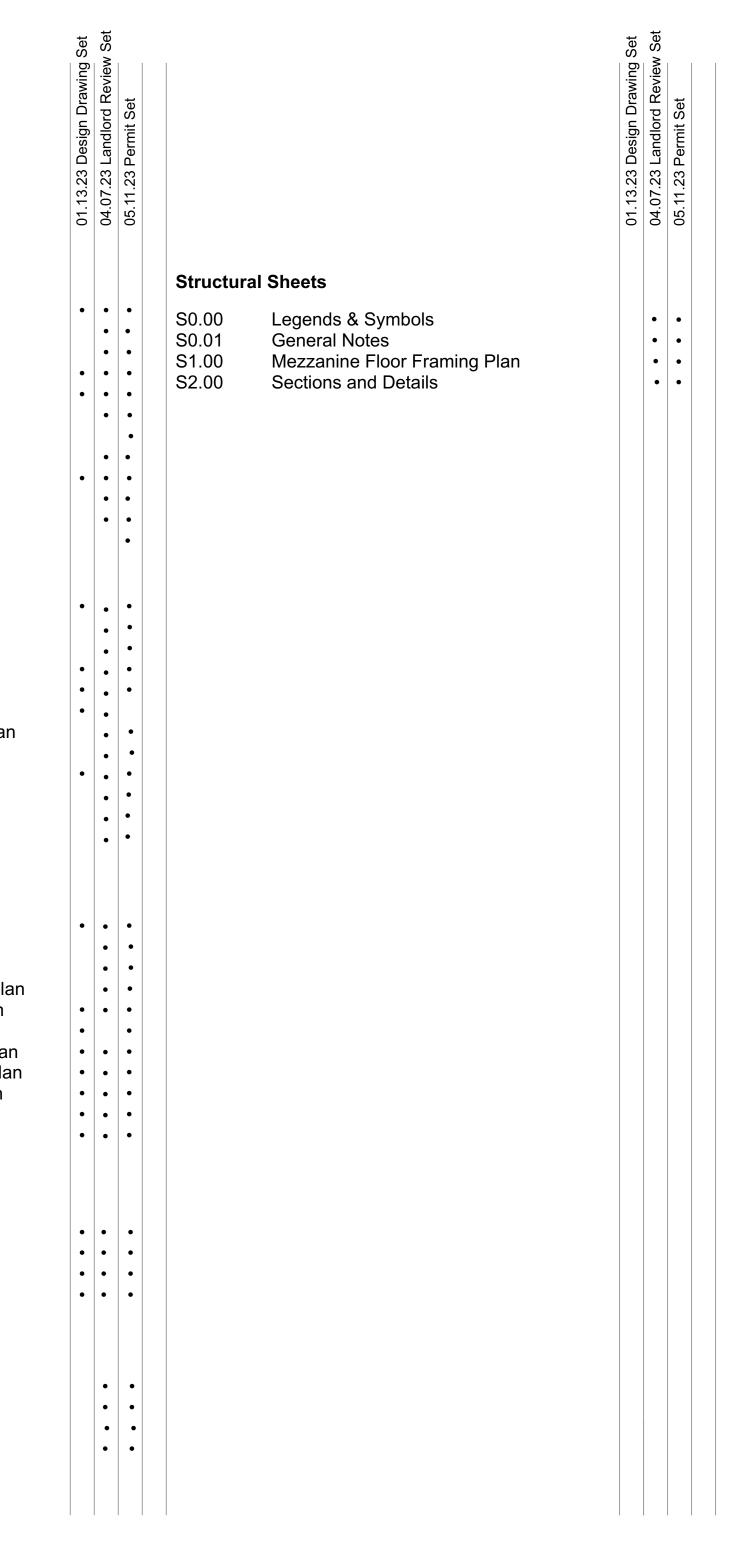
Strada 611 William Penn Place 7th Floor Pittsburgh, PA 15219 412.263.3800 www.stradallc.com Pittsburgh Philadelphia ©2022 Strada Architecture LLC Strada Architecture THOMAS HENNINGER Tom Price License: RA014683 **Project Information** Coop De Ville Savannah 301 Passage Way Savanah, GA 31401 Owner: COOP DEVILLE SAVANNAH, LLC Project Number: 22059 **Revision History** ID Date Issue Name 01.13.23 Design Drawing Set 05.11.23 Permit Set Current Issuance Date Project Phase 05.11.23 Permit Set Drawing Title Cover Sheet Sheet Number **CS1.01**

Drav	<u>wing Index</u>	01.13.23 Design Drawing Set	04.07.23 Landlord Review Set	05.11.23 Permit Set	
Genera	I Sheets				Electrical Sheets
G1.01 G1.02 G2.01 G2.02 G3.01	Drawing Index 3D Overview Life Safety Plans & Code Information Accessibility Drawings Wall Types ctural Sheets Site Plan Ground Floor Plan Mezzanine Floor Plan Roof Plan Enlarged Restroom Plans Enlarged Plans Exterior Elevations Exterior Elevations Building Sections Building Sections Building Sections Building Sections Ground Floor RCP Mezzanine Floor RCP Ceiling Details Mezzanine Stair Dumbwaiter Interior Elevations Interior Elevations Casework Details Wall Sections Details Door & Window Schedule Ground Floor Finish Plans Mezzanine Finish Plan Finish Legend & Schedule Ground Floor Furniture Plan Mezzanine Furniture Plan				Electrical Data SheetE0.01Electrical Data SheetE2.01Ground Floor Lighting planE3.02Mezzanine Lighting planE3.03Roof Power PlanE3.04Mezzanine Power PlanE3.05Mezzanine Power PlanE4.01Lighting ElevationsE5.01Electrical DetailsE6.01Electrical ScheduleE7.02Electrical SchedulesE8.01Lighting ComcheckMechanical SheetsM0.01Mechanical SpecificationsM0.02Mechanical SpecificationsM0.03Mechanical SpecificationsM2.04Ground Floor Mechanical PlanM2.05Mezzanine Mechanical PlanM3.01Ground Floor Mechanical Piping PlanM4.01Mechanical SchedulesM4.02Mezzanine Mechanical Piping PlanM4.03Mechanical SchedulesM5.02Mechanical SchedulesM5.03Plumbing Data SheetP0.04Plumbing SpecificationsP0.05Plumbing SpecificationsP0.06Plumbing SpecificationsP1.00Mezz. Plumbing Drainage Demo. PlatP2.01Ground Floor Plumbing Supply PlanP3.00Crawl Space Plumbing Drainage PlanP3.01Ground Floor Flumbing Drainage PlanP3.02Mezzanine Plumbing Drainage PlanP3.03Ground Floor Flumbing Drainage PlanP3.04Ground Floor Flumbing Drainage PlanP3.05Plumbing DetailsP7.01Plumbing DetailsP7.01Plumbing Drainage Plan<
					FA4.01 FIRE Alarm Riser Diagram

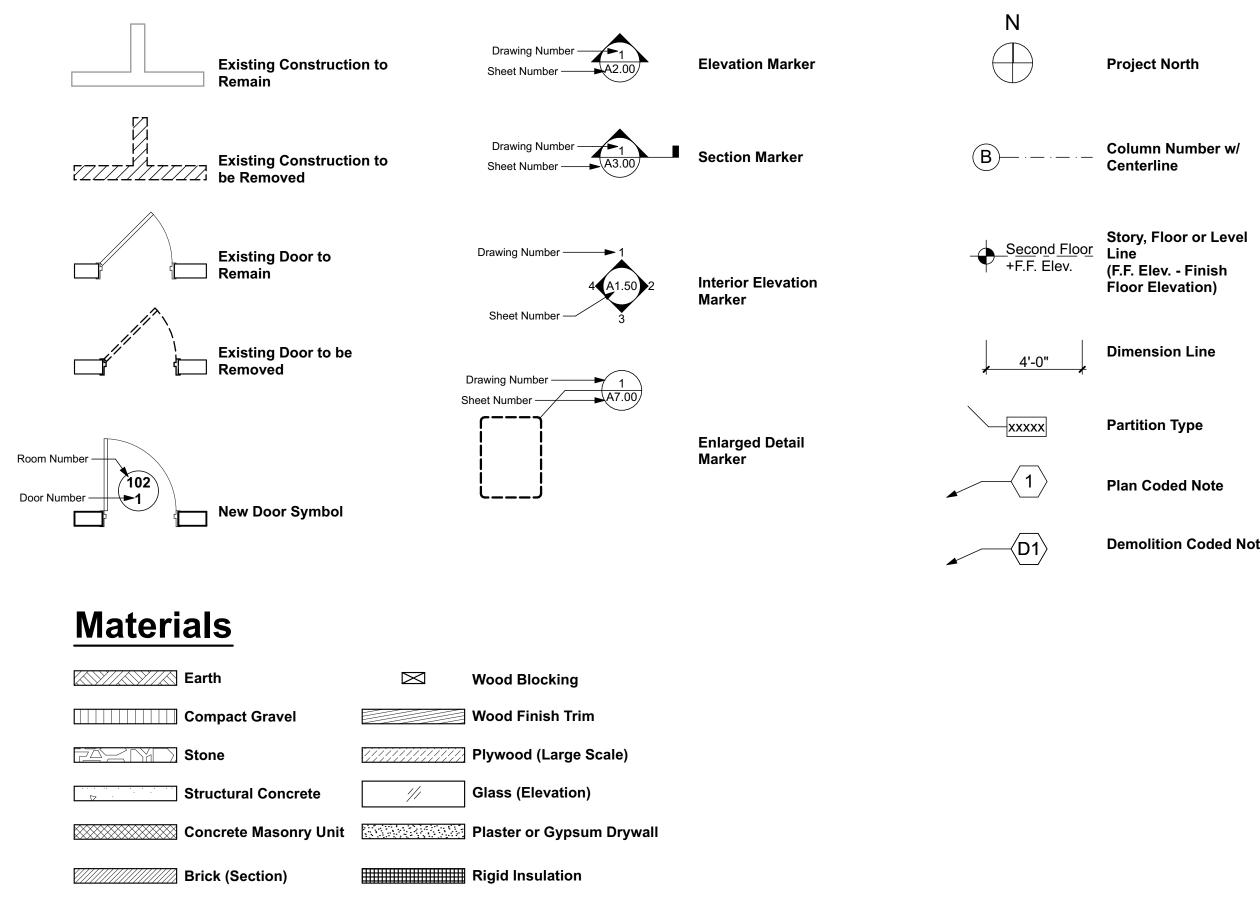
Abbreviations

@	At	i.d.	Ins
&	And	insul.	Ins
ACT	Acoustic Ceiling Tile	int.	Inte
ADA	Americans with Disabilities Act	jan.	Jai
adj	Adjacent / Adjustable	jt	Joi
AFF	Above Finish Floor	L	Lei
afg	Above Finish Grade	lam.	La
alt	Alternate	lav.	La
alum	Aluminum	max.	Ma
ар	Access Panel	m.c.	Me
ASTM	American Society for	mech.	Me
/ (0 / 10)	Testing & Materials		
		min.	Mir
C.J	Control Joint	manuf.	Ma
CL	Center Line	m.o.	Ma
clg.	Ceiling	mtl.	Me
clr.	Clear	N.I.C.	No
CMU			
	Concrete Masonry Unit	n.t.s.	No
C.O.	Clean Out	0.C.	On
col.	Column	o.d.	Ou
conc.	Concrete		
	Continuous	o.s.b.	Ori
cont.		p.c.	Ρlι
ct	Ceramic Tile	p.lam	Pla
су	Cubic Yard(s)	psi	Po
demo	Demolition		
		psf	Po
dia.	Diameter	p.t.	Pre
DN	Down	ptd	Pa
dr	Door	q.t.	Qu
dtl.	Detail	•	
		r	Ris
dwgs.	Drawings	RD.	Ro
ea.	Each	rm	Ro
e.c.	Electrical Contractor	req'd	Re
EIFS	Ext. Insul. Finish System	•	
E.J	-	r.o.	Ro
	Expansion Joint	SAFB	Soι
elev.	Elevation	s.f.	Sq
elec.	Electric or Electrical	sim.	Sir
EPDM	Ethylene Propylene Diene		
	Monomer	spec(s)	Sp
		sq.	Sq
eq.	Equal	sq. in.	Sq
equiv.	Equivalent	s.s.	Sta
equip.	Equipment	stl	Ste
etr	Existing to Remain		
	-	struct.	Str
exist	Existing	s.y.	Sq
exp	Expansion	t/	To
ext	Exterior		Tei
f.d.	Floor Drain	temp.	
F.E.	Fire Extinguisher	tlt	Toi
		typ	Ту
F.E.C.	Fire Extinguisher Cabinet	Ú.L.	Un
fin	Finish or Finished		Un
fl or flr	Floor	u.n.o.	
	Fiber Reinforced Plastic	vct	Vir
f.r.p.		vert	Ve
ga.	Gauge	V.I.F.	Ve
galv.	Galvanized	W	Wi
g.c.	General Contractor		
		w/	Wi
gl.	Glass or Glazing	WC	Wa
gwb	Gypsum Wall Board	wd	Wo
дур	Gypsum	wwf	We
ht	Height		
	-	wwm	We
h.d.p.	High Density Particle Board	У	Ya
HM	Hollow Metal		
horiz.	Horizontal		
HVAC	Heating Ventilating and Air		
	Conditioning		
	Conditioning		

Inside Diameter
Insulation
Interior
Janitor
Joint
Length
Laminate(d)
Lavatory
Maximum
Mechanical Contractor
Mechanical
Minimum
Manufacturer
Masonry Opening
Metal
Not Included In Contract
Not To Scale
On Center
Outside Diameter
Oriented Strand Board
Plumbing Contractor
Plastic Laminate
Pounds per Square Inch
Pounds per Square Foot
Pressure Treated
Painted
Quarry Tile
Riser or Radius
Roof Drain
Room
Required
Rough Opening
Sound Attenuation Fiberglass Blankets
0
Square Feet
Similar
Specification(s)
Square
Square Inches
Stainless Steel
Steel
Steel Structural
Steel Structural Square Yards
Steel Structural Square Yards Top of
Steel Structural Square Yards Top of Temperature (or Temporary)
Steel Structural Square Yards Top of
Steel Structural Square Yards Top of Temperature (or Temporary) Toilet
Steel Structural Square Yards Top of Temperature (or Temporary) Toilet Typical
Steel Structural Square Yards Top of Temperature (or Temporary) Toilet Typical Underwriters Laboratory
Steel Structural Square Yards Top of Temperature (or Temporary) Toilet Typical Underwriters Laboratory Unless Noted Otherwise
Steel Structural Square Yards Top of Temperature (or Temporary) Toilet Typical Underwriters Laboratory Unless Noted Otherwise Vinyl Composition Tile
Steel Structural Square Yards Top of Temperature (or Temporary) Toilet Typical Underwriters Laboratory Unless Noted Otherwise Vinyl Composition Tile Vertical
Steel Structural Square Yards Top of Temperature (or Temporary) Toilet Typical Underwriters Laboratory Unless Noted Otherwise Vinyl Composition Tile Vertical Vertical
Steel Structural Square Yards Top of Temperature (or Temporary) Toilet Typical Underwriters Laboratory Unless Noted Otherwise Vinyl Composition Tile Vertical
Steel Structural Square Yards Top of Temperature (or Temporary) Toilet Typical Underwriters Laboratory Unless Noted Otherwise Vinyl Composition Tile Vertical Vertical
Steel Structural Square Yards Top of Temperature (or Temporary) Toilet Typical Underwriters Laboratory Unless Noted Otherwise Vinyl Composition Tile Vertical Vertical Verify in Field Wide or Width
Steel Structural Square Yards Top of Temperature (or Temporary) Toilet Typical Underwriters Laboratory Unless Noted Otherwise Vinyl Composition Tile Vertical Vertical Vertify in Field Wide or Width With Water Closet
Steel Structural Square Yards Top of Temperature (or Temporary) Toilet Typical Underwriters Laboratory Unless Noted Otherwise Vinyl Composition Tile Vertical Vertical Verify in Field Wide or Width With Water Closet Wood
Steel Structural Square Yards Top of Temperature (or Temporary) Toilet Typical Underwriters Laboratory Unless Noted Otherwise Vinyl Composition Tile Vertical Vertical Verify in Field Wide or Width With Water Closet Wood Welded Wire Fabric
Steel Structural Square Yards Top of Temperature (or Temporary) Toilet Typical Underwriters Laboratory Unless Noted Otherwise Vinyl Composition Tile Vertical Verify in Field Wide or Width With Water Closet Wood Welded Wire Fabric Welded Wire Mesh
Steel Structural Square Yards Top of Temperature (or Temporary) Toilet Typical Underwriters Laboratory Unless Noted Otherwise Vinyl Composition Tile Vertical Vertical Verify in Field Wide or Width With Water Closet Wood Welded Wire Fabric



Architectural Symbols



Mtl. Structural Members

Mtl. Structural Members [Large Scale]

Column Number w/ Centerline

Dimension Line

Partition Type

Plan Coded Note

Demolition Coded Note

Room Name 100

<u>/1</u>

10

 $\langle W1 \rangle$

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Ē

Room Name & Number

Revision Number

Equipment Number

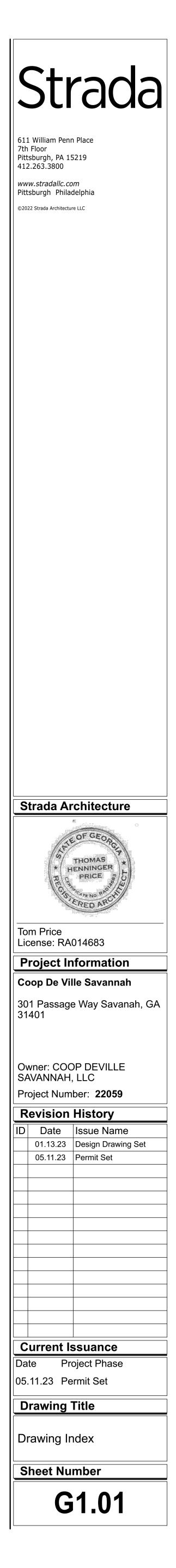
Window Number Window

Swinging Door

Pocket Door

Bifold Door

Sliding Door





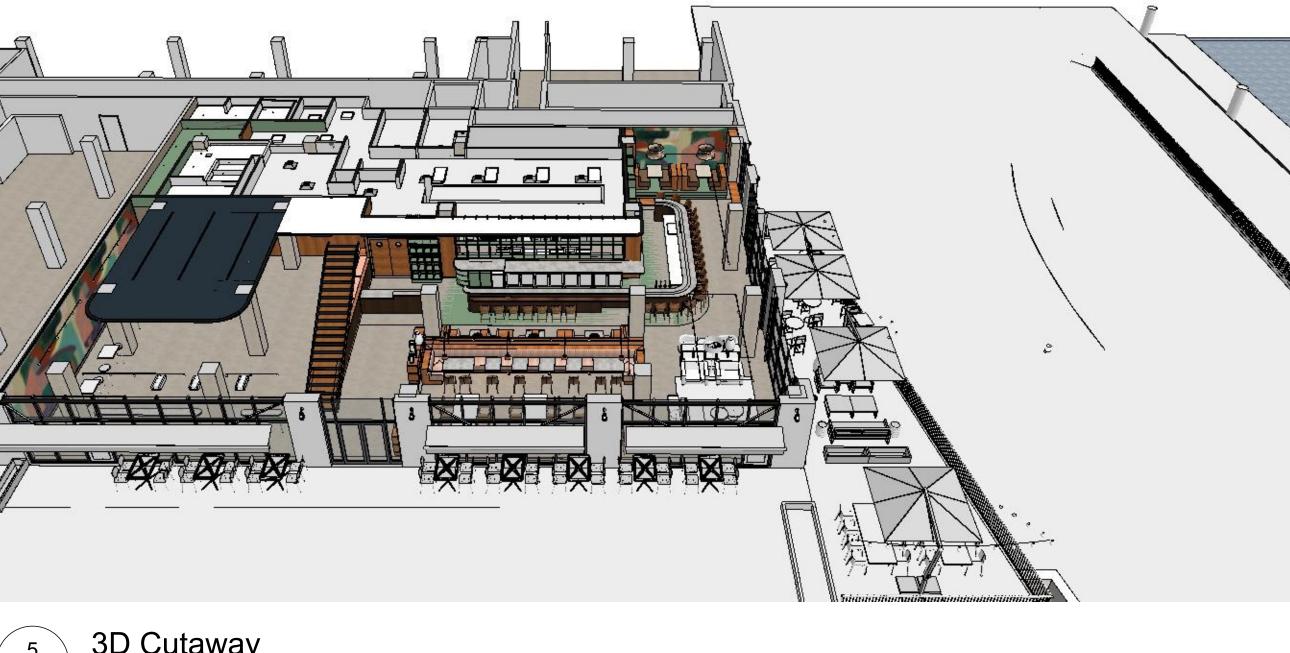


1 Perspective G1.02 SCALE: 1:66.67

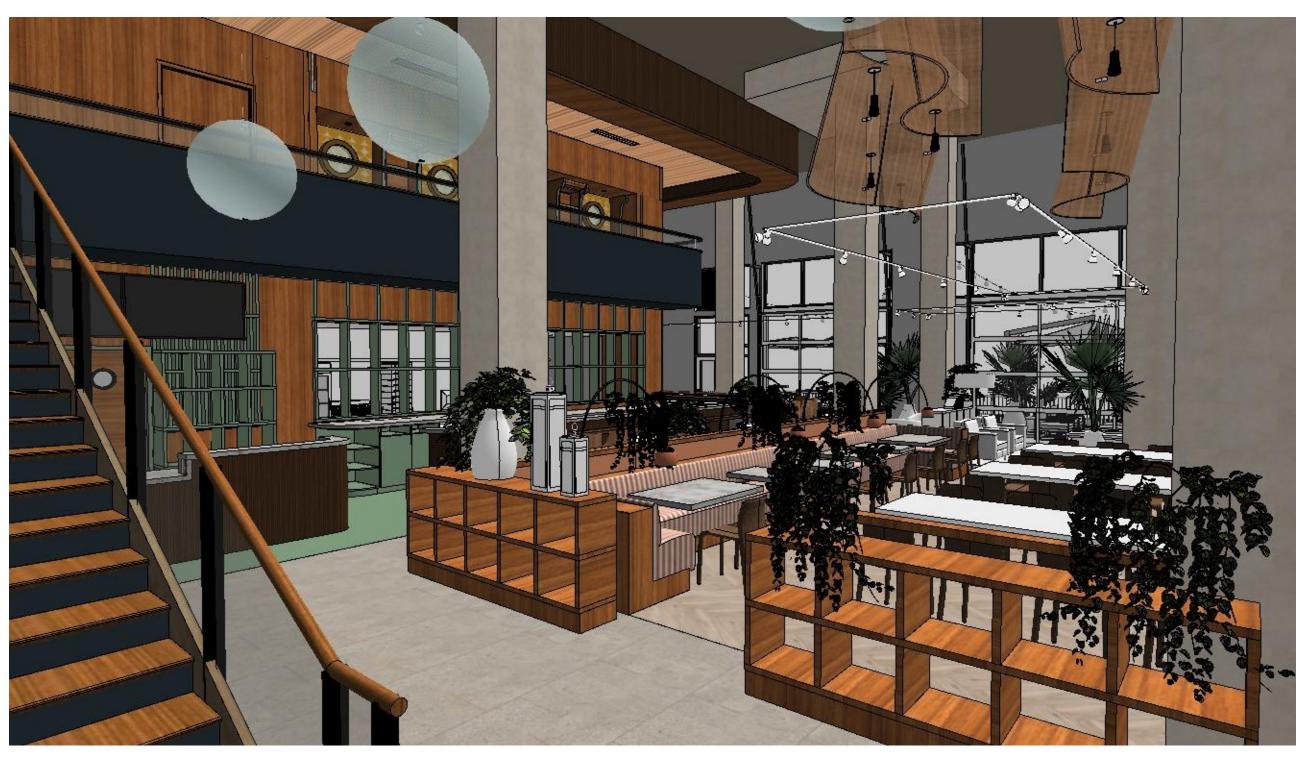




3 Perspective G1.02 SCALE: 1:66.67







2 Perspective G1.02 SCALE: 1:66.67

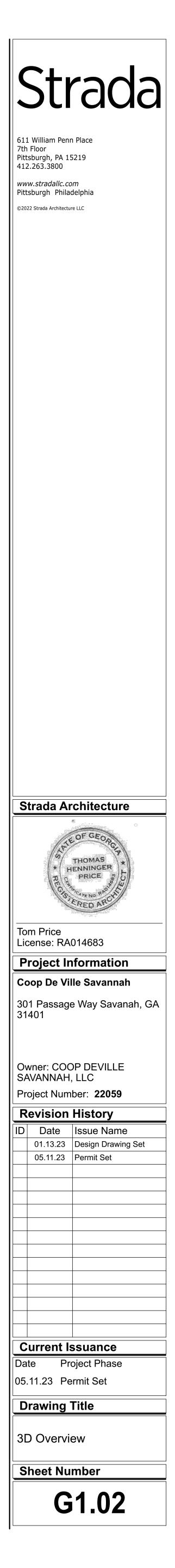


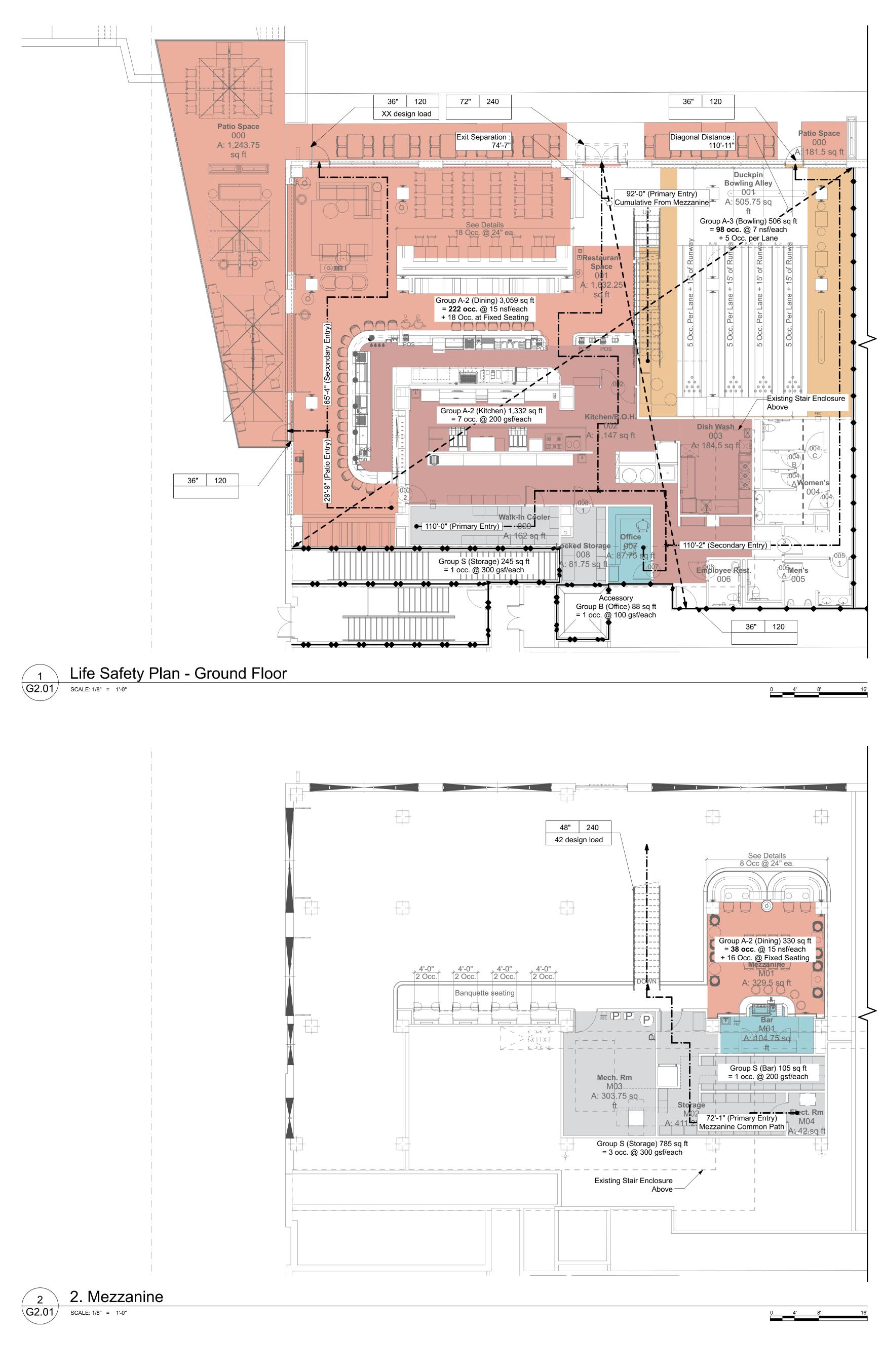


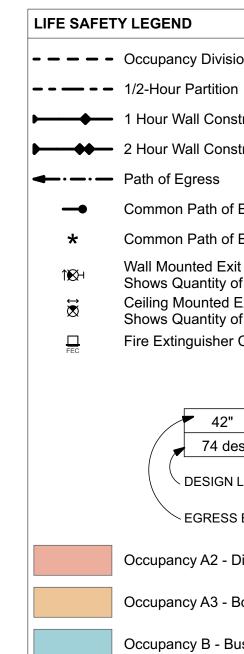
Perspective 4 Perspe G1.02 SCALE: 1:66.67







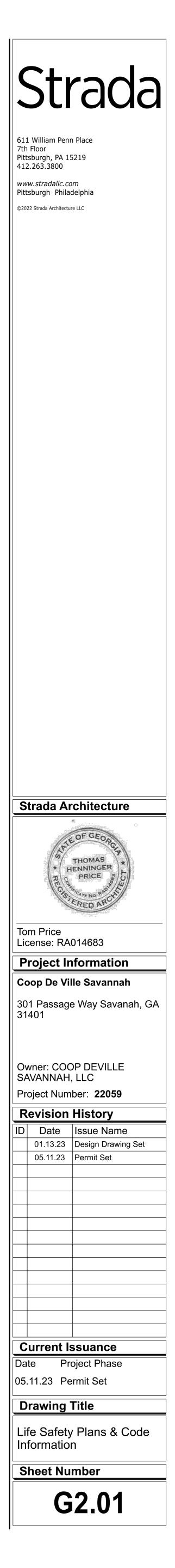




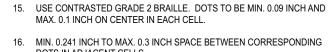
ion Line
n
struction
struction
Egress Begins
Egress Ends (2 Possible Routes)
tit Sign - of Face(s) and Direction of Arrow(s) Exit Sign - of Face(s) and Direction of Arrow(s) Cabinet
EGRESS CAPACITY
∲ 2 140
esign load
LOAD
S ELEMENT WIDTH
Dining Occupancy S - Storage
Bowling Not In Scope
usiness

			BUIL		ODE REV	IEW					
CODES IN EFFECT	International Buildin Georgia State Ame	ndments to	the Internat	onal Building	Code 2018 Edit	ion (GSA), Title 30	, Chapter	3 of the C	Official C	ode of G	
	Annotated YPE, OCCUPANCY & G				s of the Georgia	Safety Fire Comm	lissioner,	2010 AD/	ASIAND	ARDS.	
Item	Requirement		Section	Comment	3						
Occupancy	A-2	LSC C	Section 303 hapter 12 8 Table 601	Restauran		of Type IA floor of po					
Construction Type Allowable Height	Type IA Unlimited Unlimited	GBC 2018	8 Table 504.3 8 Table 504.3	Actual heig		floor of podium style		with (5) 5P	A HOOIS AL	Jove.	
Allowable Area	Unlimited		3 Table 504.3		a - 6,329 Sqft. per	° °					
FIRE RATINGS	Requirement	Code	Section	Comment	6						
Non-Bearing Exterior Walls	0 HR	Table	Table 601 LS A8.2.1.2	-							
Columns Beams, Girders,	3 HR	Table	Table 601 LS A8.2.1.2 Table 601 LS	At Ground							
and Trusses Floor-Ceiling Assemblies	2 HR	GBC 2018	A8.2.1.2 Table 601 LS A8.2.1.2	r l		rs, i.e. mezzanine s	tructure.				
Shaft & Elevator Enclosures	2 HR	GBC 2018 ⁻ Table	Table 601 LS A8.2.1.2	-							
Exit Enclosures	2 HR	Table	Table 601 LS A8.2.1.2 Table 601 LS								
Corridors	1 HR	Table	A8.2.1.2								
MEANS OF EGRES	S Requirement		Section Section 7.3	Comments							
Occupant Load Egress Width - Stairwells	- 0.3" per occupant		3 Section 7.3		e safety plans. e safety plans.						
Egress Width - Level Components and Ramps	0.2" per occupant	LSCG 2018	3 Section 7.2	.5 Refer to life	e safety plans.						
Egress Ilumination	Aisle accessways min 32"		8 Section 7.8 18 Section	3							
Doors - width	min 80"	GBC 20	10.1.1 18 Section 10.1.1								
Exit Signs		GBC 2018	Section 1013	Main exter have exit s	or exit doors or g	n rooms or areas that ates that are obviou ved by the building	isly and cl				ed not
Handrails Exit Access Doorways	34" - 38"		Section 101	4 .2 Refer to life	e safety plans.						
Exit Access Remoteness		GBC 2018	Section 1007	.1 Refer to life	e safety plans.						
Exit Access Travel Distance - Assembly	250'		018 Section 2.6.2	With sprink	ler system.						
Corridors - width Corridors - dead end length	44" 20'		Table 1020.								
Exits - minimumn number	2		018 Section .2.4.4	For entire	restaurant space.	. Max. occupant loa	d less thai	n 500.			
ACCESSIBILITY											
Item Accessible Route	Requirement -	2010 AD/	A Standards	Accesible	oute provided fro	m main entrance to	all dining	areas with	nin scope	of work.	
Accessible Entrances	-		A Standards ion 404	Main entra	nce on accessible	e route is accessible	9.				
Toilet Rooms Drinking Fountains	-	Section	A Standards 603 & 604 A Standards		t rooms are acces						
Accessible Dining Surfaces	-	2010 ADA Sect	A Standards tion 902	At least 5 9 on a level a	6 of dining surfact	e for seating and sta ccessible route. See			be acces	sible and	located
	-	2010 AD	A Standards	To meet AI	DAAG standards,	see G2.02.					
FIRE PROTECTION Item Sprinklers	Mark Yes		Section 8 Chapter 7	Comments	-	rom existing building	a.				
Standpipes Portable fire	Yes See life safety plans.	GBC 201	8 Chapter 7 8 Section 906	Class 1 fro	m existing buildin		-	Section 9	006 1		
extinguishers Fire Alarm & Smoke Detection	Yes		8 Chapter 7		from existing build						
MEZZANINE											
Item	Mark	Code	Section		gate area of mezz	anines in buildings of the floor area of					
Area Limitation	Mezzanine		18 505.2.1 eption 2	throughout an approve 907.5.2.2.	with an approved d emergency voi Mezzanine + Mee	d automatic sprinkle ce/alarm communic ch. equipment plat sqft. (1,607/6,329 =	r system i ation syste form = 1,	n accorda em in acco	nce with s ordance v	section 90 vith Section	03.1.1 and on
Aggregate Areas of Mezzanines and Equipment Platforms			018 505.3 5.2.1.1	two raised in which th accordance mezzanine ladders pro	floor levels shall r ey are located. Th e with Section 505 and such platforr oviding access to	a mezzanine and a not be greater than he area of the mezz 5.2.1 505.3 states "E ms and the walkway an equipment platfo ezzanine + Mech. e	two-thirds anine sha Equipmen vs, stairwa orm shall n	of the floc Il not exce t platforms ys, alterna ot serve a	or area of ed the ar s shall no ating trea as a part o	that room ea deterr t be a par d devices of the me	n or space nined in t of any and ans of
Maximum						tios) = 6,329 sqft. (Sqit. Fic	or area or
Occupany Load of Mezzanine	49	GBC 2018	Table 1006.2			Access Doorway. A					
Mezzanine Openness Common Path of			018 505.2.3	Actual oc	cupant load of er	below. Aggregate of hclosed area = 3 O	cc.				ccupants.
Travel - Assembly	75'-0"		2.5.1.2			travel is not to exce					
Accessible Route	Not required	-	10 Section Exception 1	accessible less than 2 decor and	route shall not be 5 percent of the to services are provi	e required to a mezz otal combined area ided in the accessib 330 sqft. (330/3,895	anine dini for seating le area. S	ng area w g and dinir	here the	mezzanir here the s	ne contains same
			BUILI	DING (DCCUP	ANTS					
CODES IN EFFECT	Safety Code	e 2018 of (Georgia (L	SC), Geor	gia State Ame	e Minimum Sta endments to th	e Interr	ational	Buildi	ng Cod	
Floor	Use			SF	GSF or	otated (OCGA)	-	Multi	olier	Occ	upant
	Assem	bly		389	NSF	Multiplie		Ur	nit		ount
	(Unconcer	,		000	007			NSF Fixed	Seats	225.	9333333 34
First Floor & Mezzanine	Busine	SS		332 193	GSF GSF			GSF GSF			6.66 1.93
	Storage/Stoc g Area		1	030	GSF		300	GSF			3333333
			E	XTURE	COUNT	S		Floo	r Total	271.	9566667
	Georgia	State Mini				le 403.1 (Same a	IBC &	IPC)			
Occupancy		То	tal pants	Water (Male	-	1	tories	nale	Drin Foun		Service Sink
A-2	estaurants, banquet h and food courts		68	1.8	1.8	0.7		.7		.5	1
B Storage	Business S-1/S-2		4	0.0	0.0	0.0	0	.0		004	1
Tot	tals (added together	and round	led up)	2	2	1		1		1	1

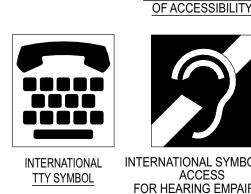
EXCEPTION: GPC & IPC 424.2 "In each bathroom or toilet room, urinals shall not be subsituted for more than 67 perfect of the required water closet in assembly and educational occupancies. NOTE : Additional Water Closet and Lavatory provided in accessible Employee Restroom rm. 006, see plans.







DOTS IN ADJACENT CELLS. 7. DOTS RAISED MINIMUM 0.025 INCH ABOVE BACKGROUND. MAXIMUM .037 INCHES.





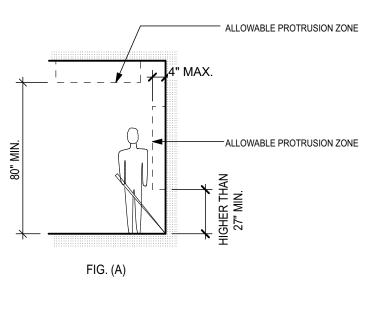
INTERNATIONAL INTERNATIONAL SYMBOL OF TTY SYMBOL ACCESS FOR HEARING EMPAIRED

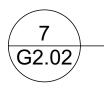
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PROPORTIONS

INTERNATIONAL SIGN

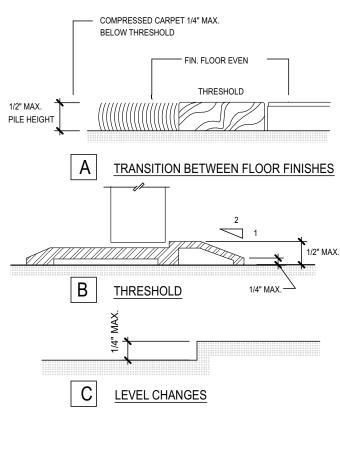
Signs / Pictograms G2.02 NOT TO SCALE



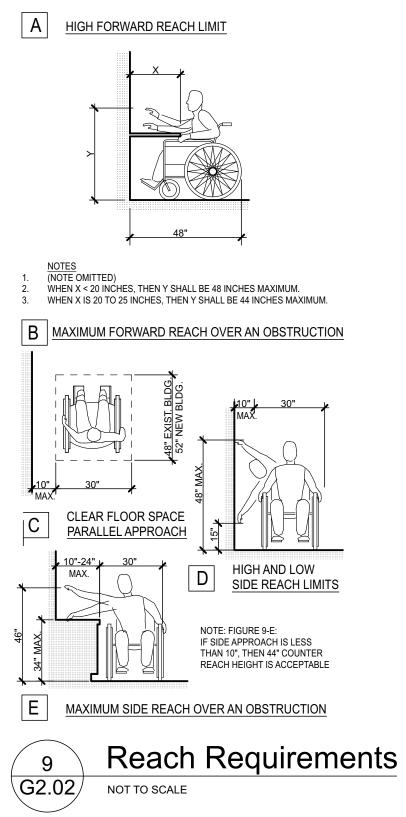


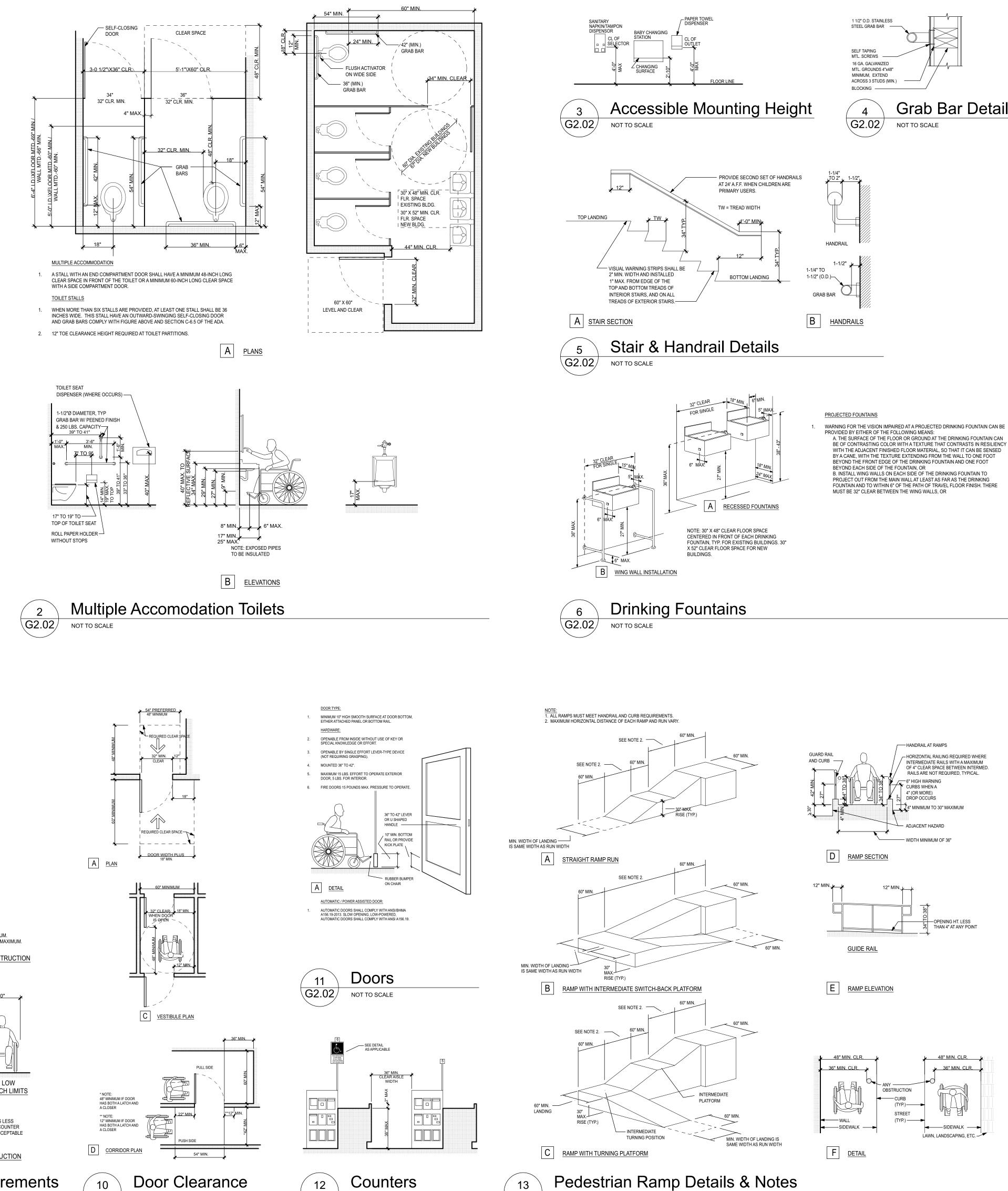
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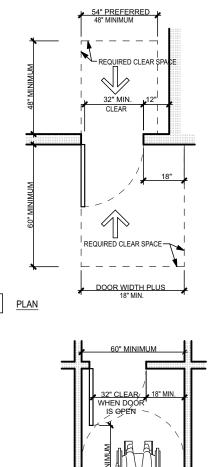
Protruding Objects NOT TO SCALE

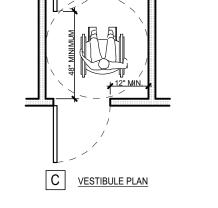


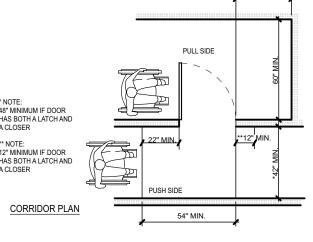




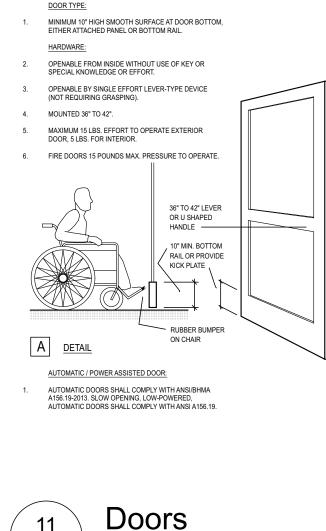


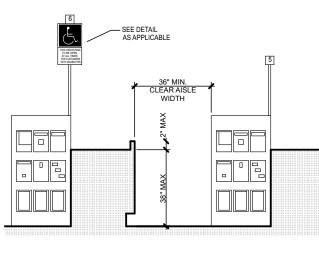




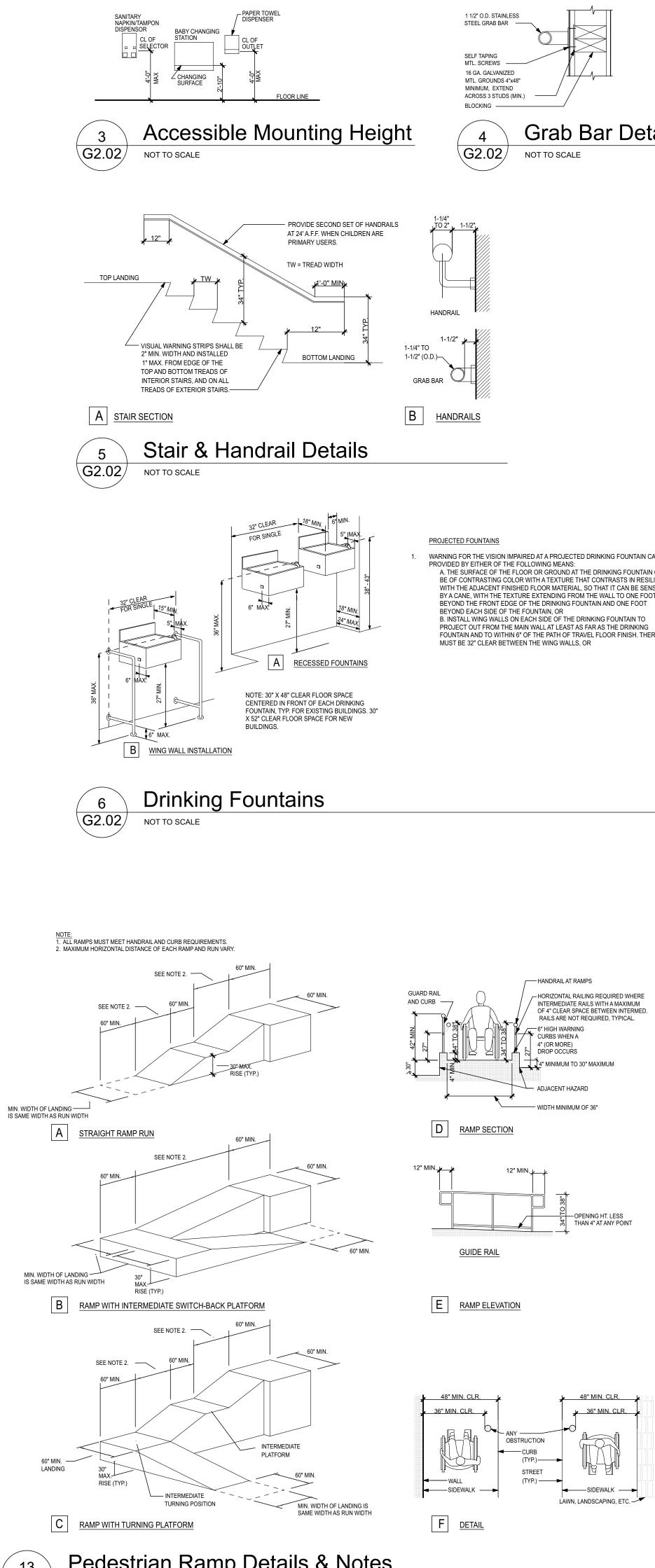


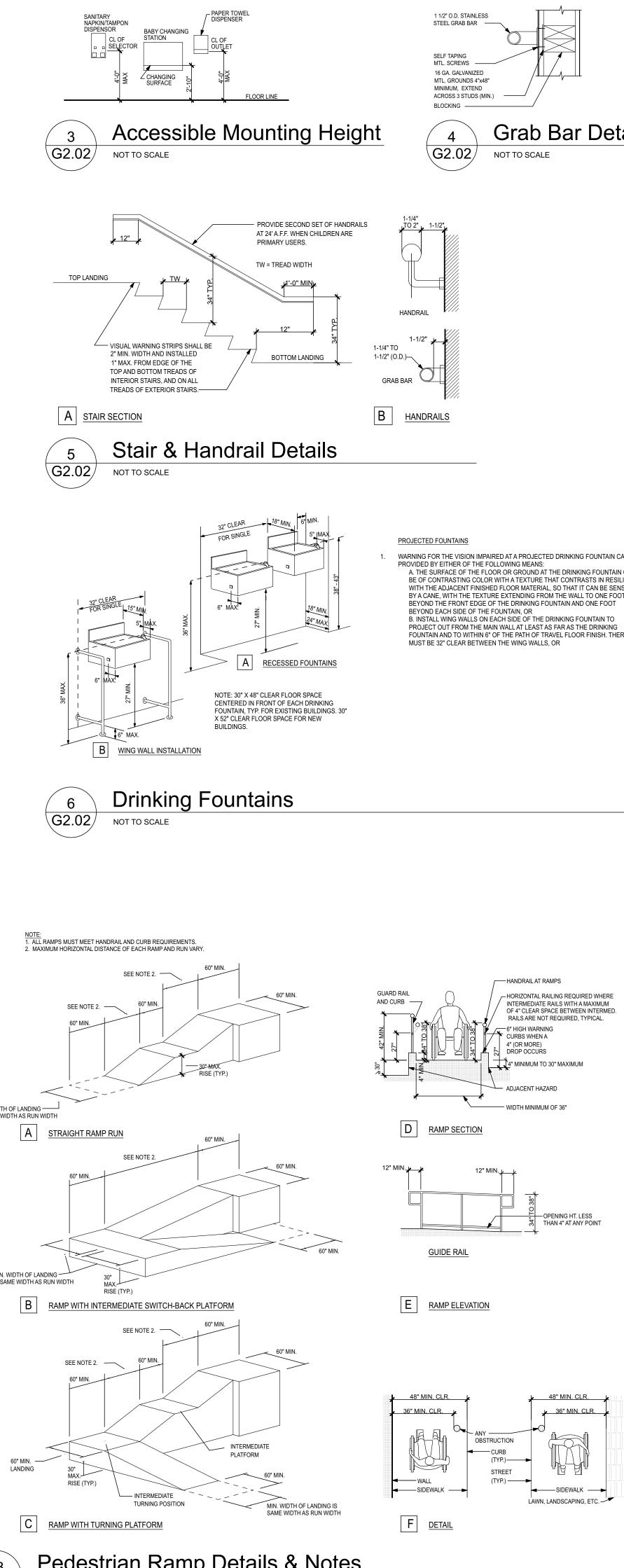
Door Clearance 10 G2.02 NOT TO SCALE

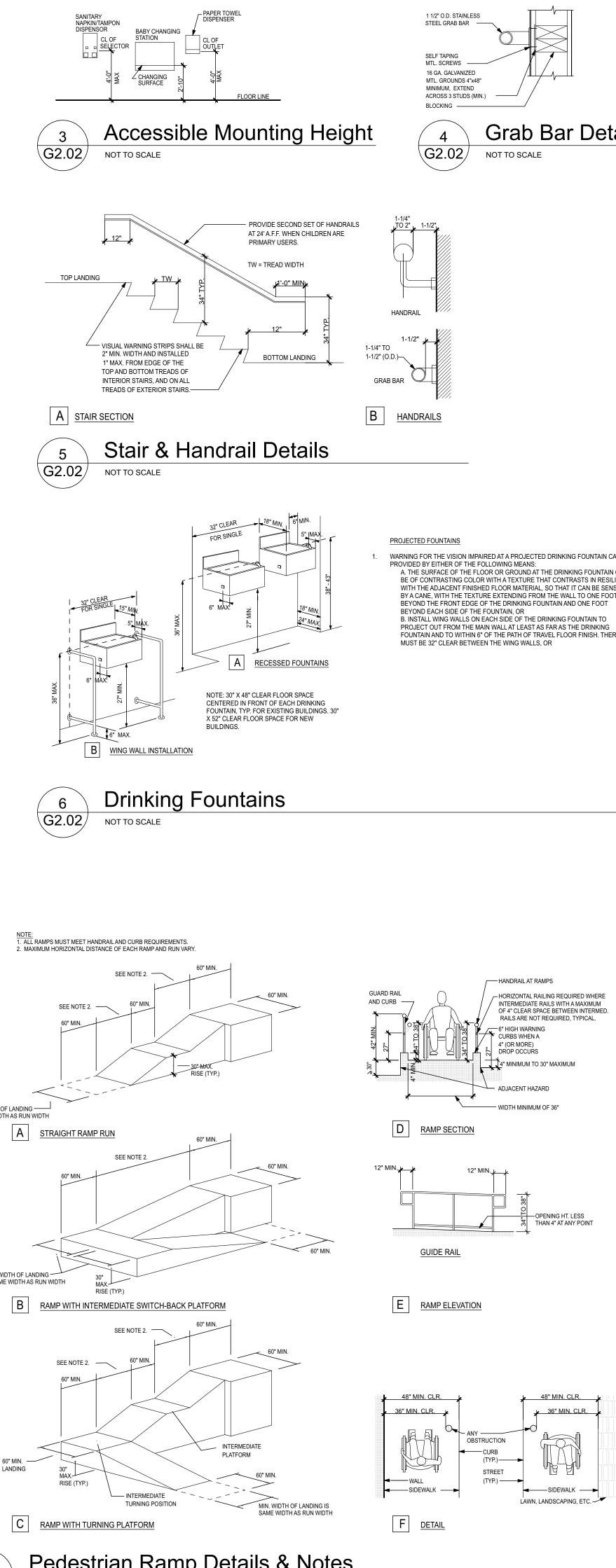




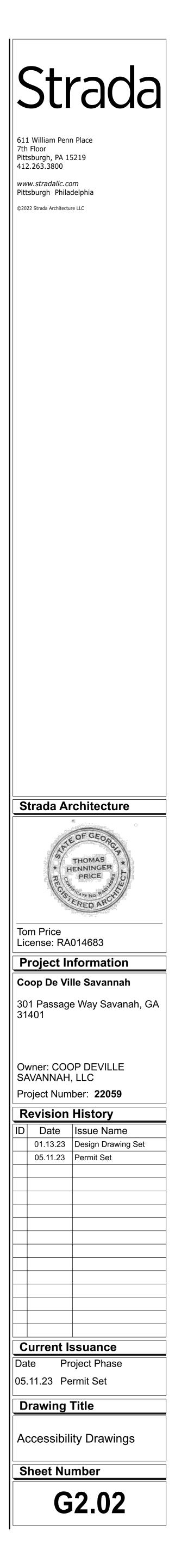


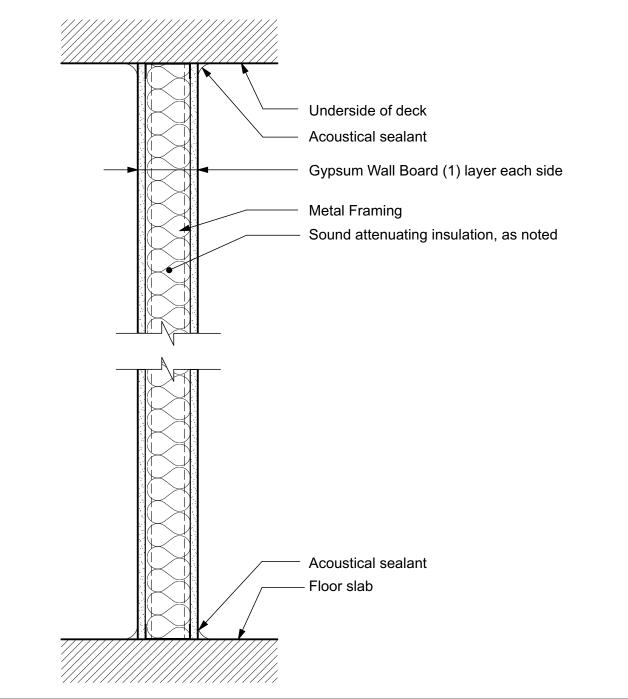




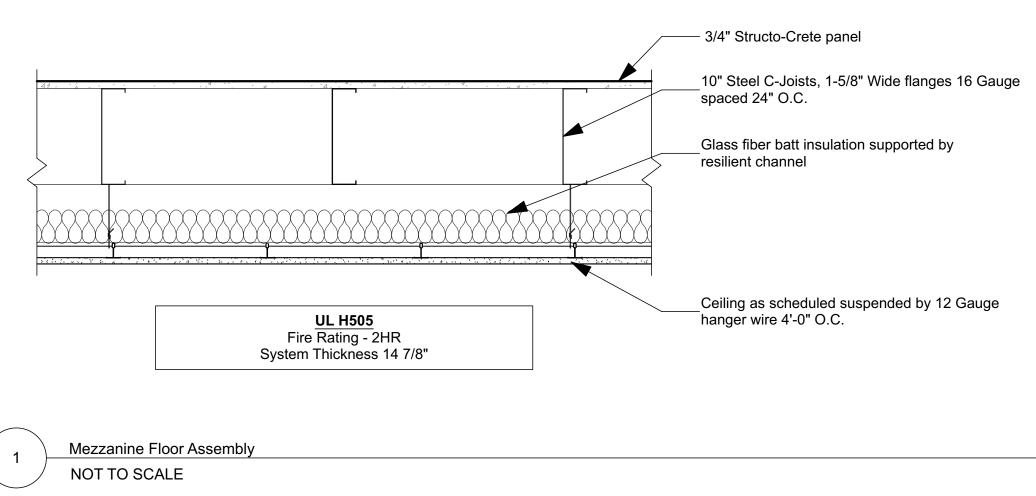


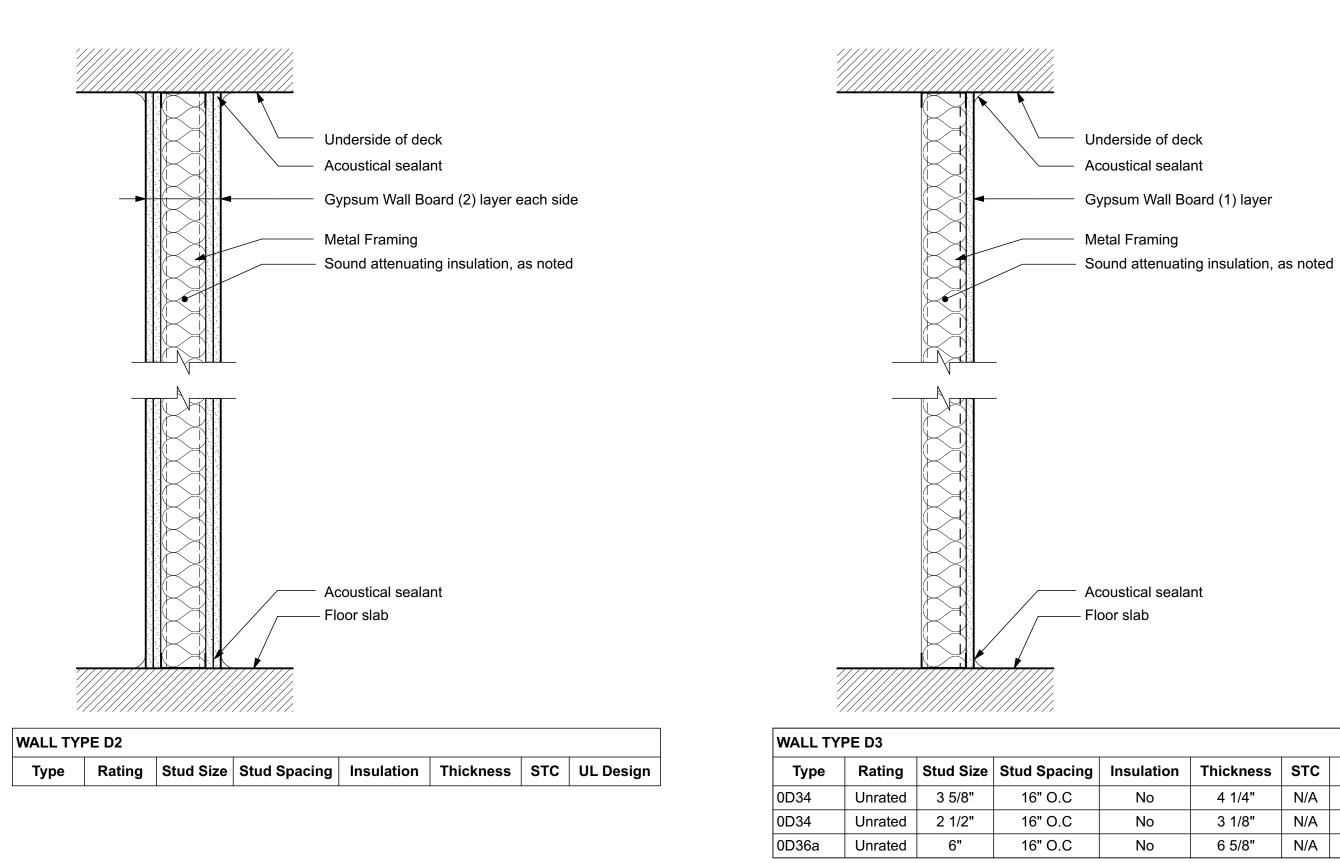
13 Pedes G2.02 NOT TO SCALE

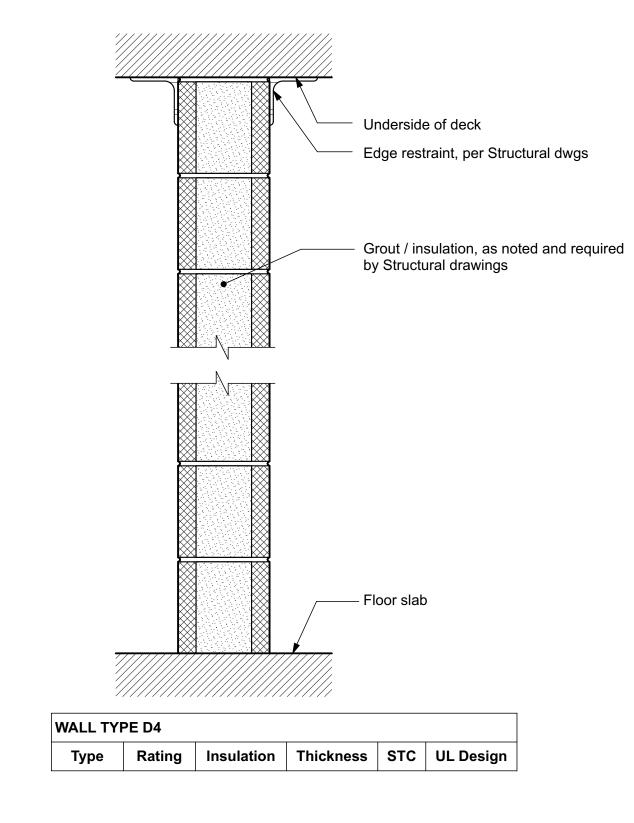




WALL TY	PE D1						
Туре	Rating	Stud Size	Stud Spacing	Insulation	Thickness	STC	UL Design
0D14	Unrated	3 5/8"	16" O.C	No	4 7/8"	N/A	-
0D14a	Unrated	3 5/8"	16" O.C	No	4 7/8"	N/A	-
0D16	Unrated	6"	16" O.C	No	7 1/4"	N/A	-
0D16a	Unrated	6"	16" O.C	No	7 1/4"	N/A	-



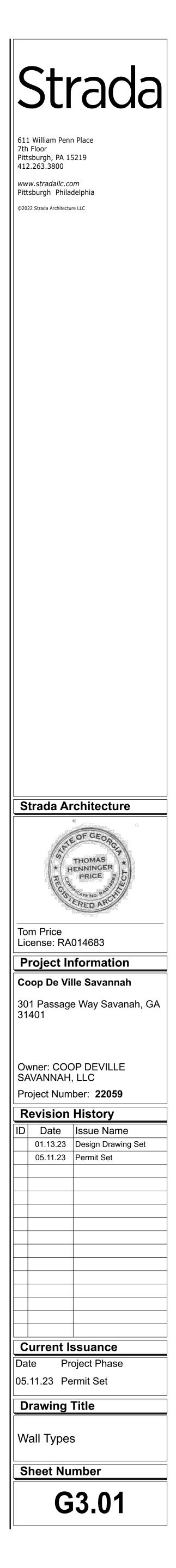


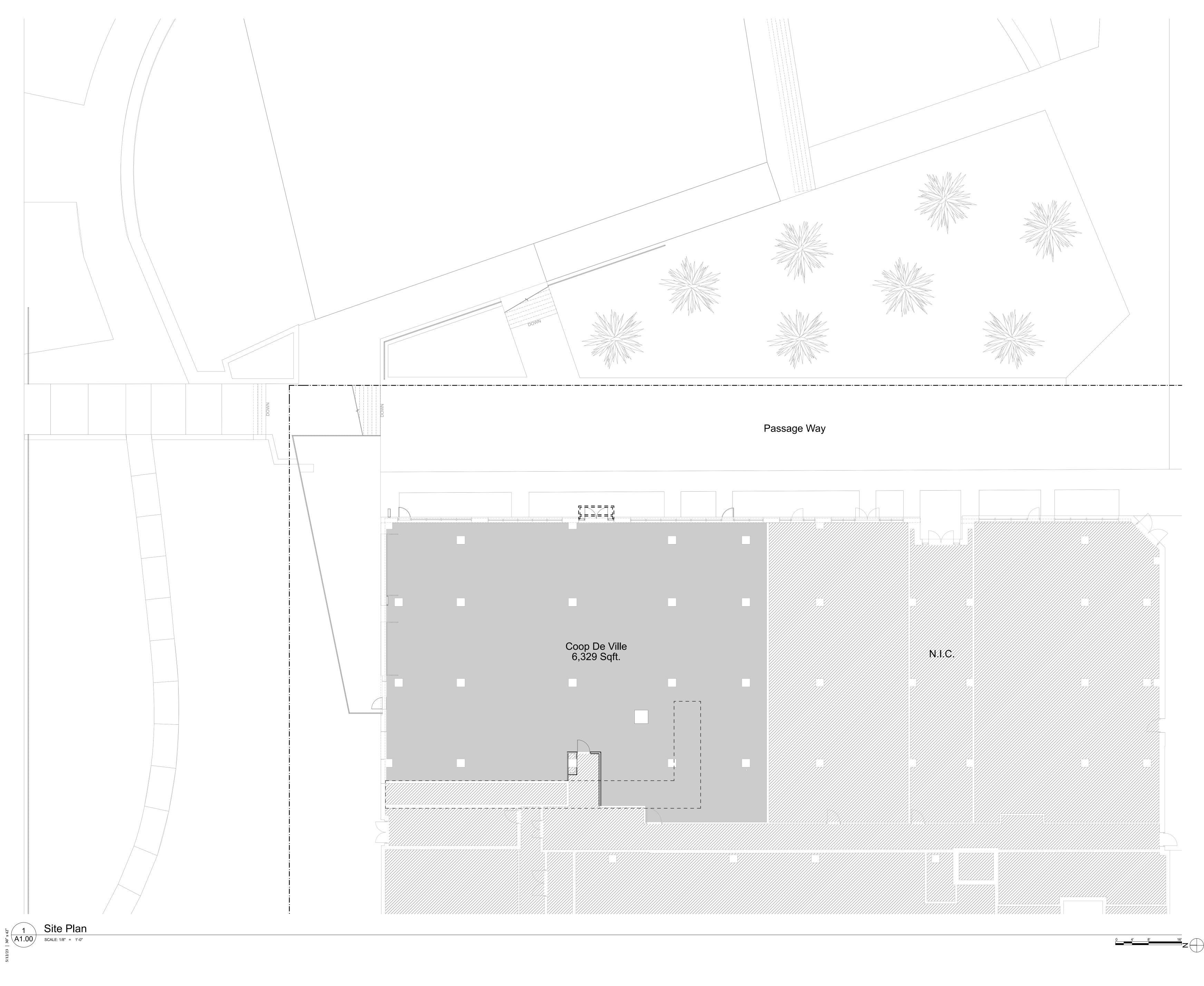


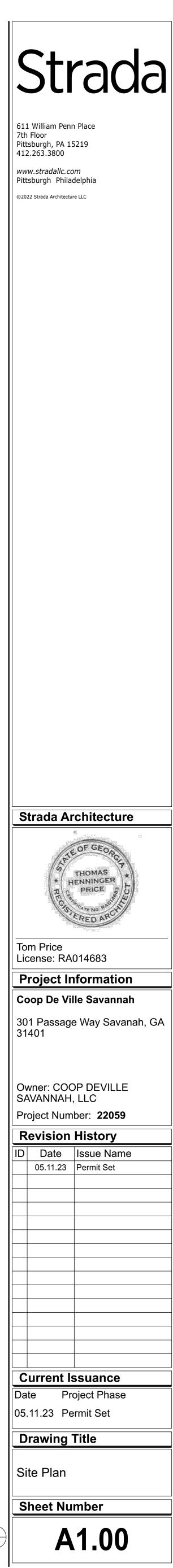
Thickness	STC	UL Design
4 1/4"	N/A	-
3 1/8"	N/A	-
6 5/8"	N/A	-

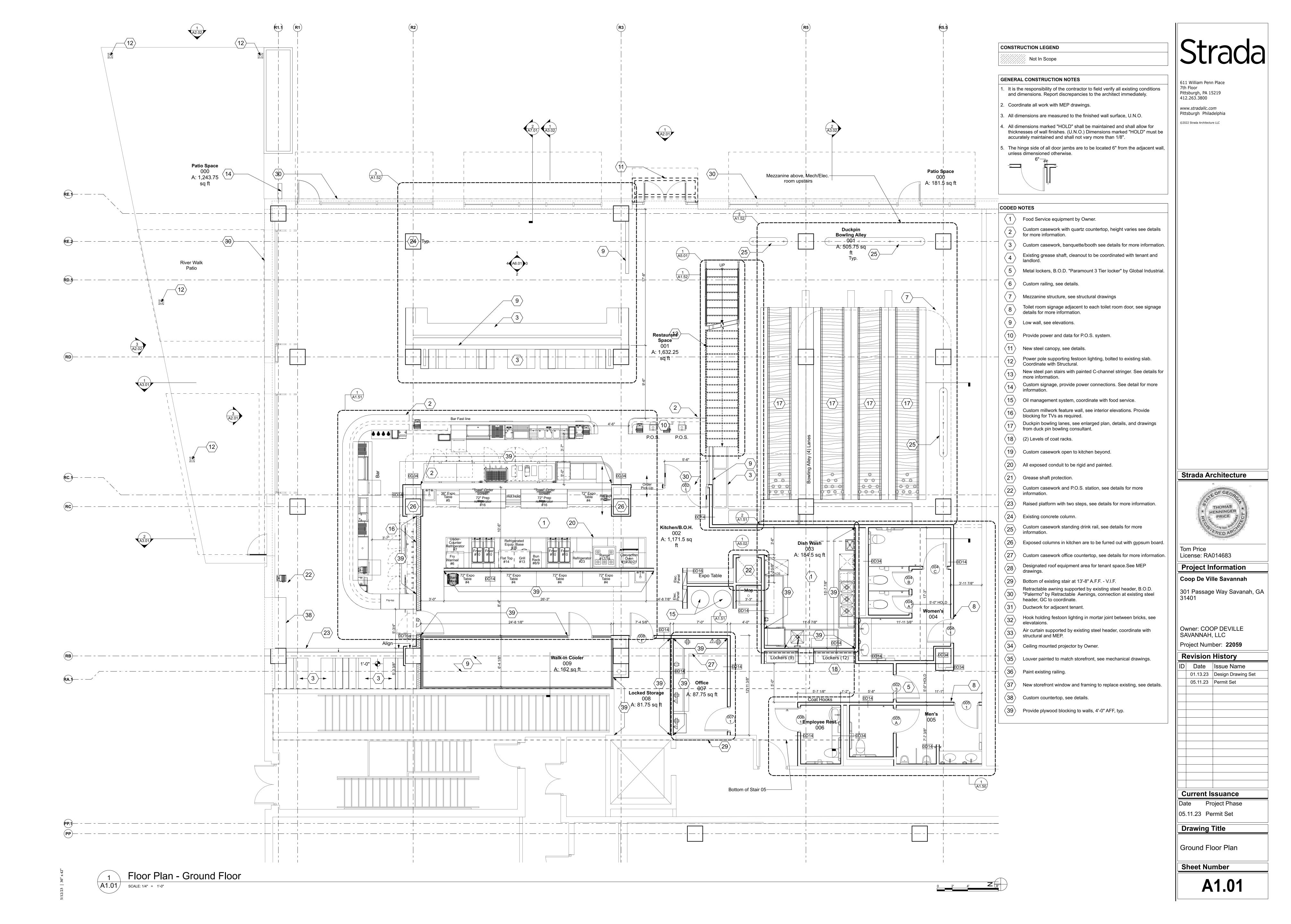
Metal Framing

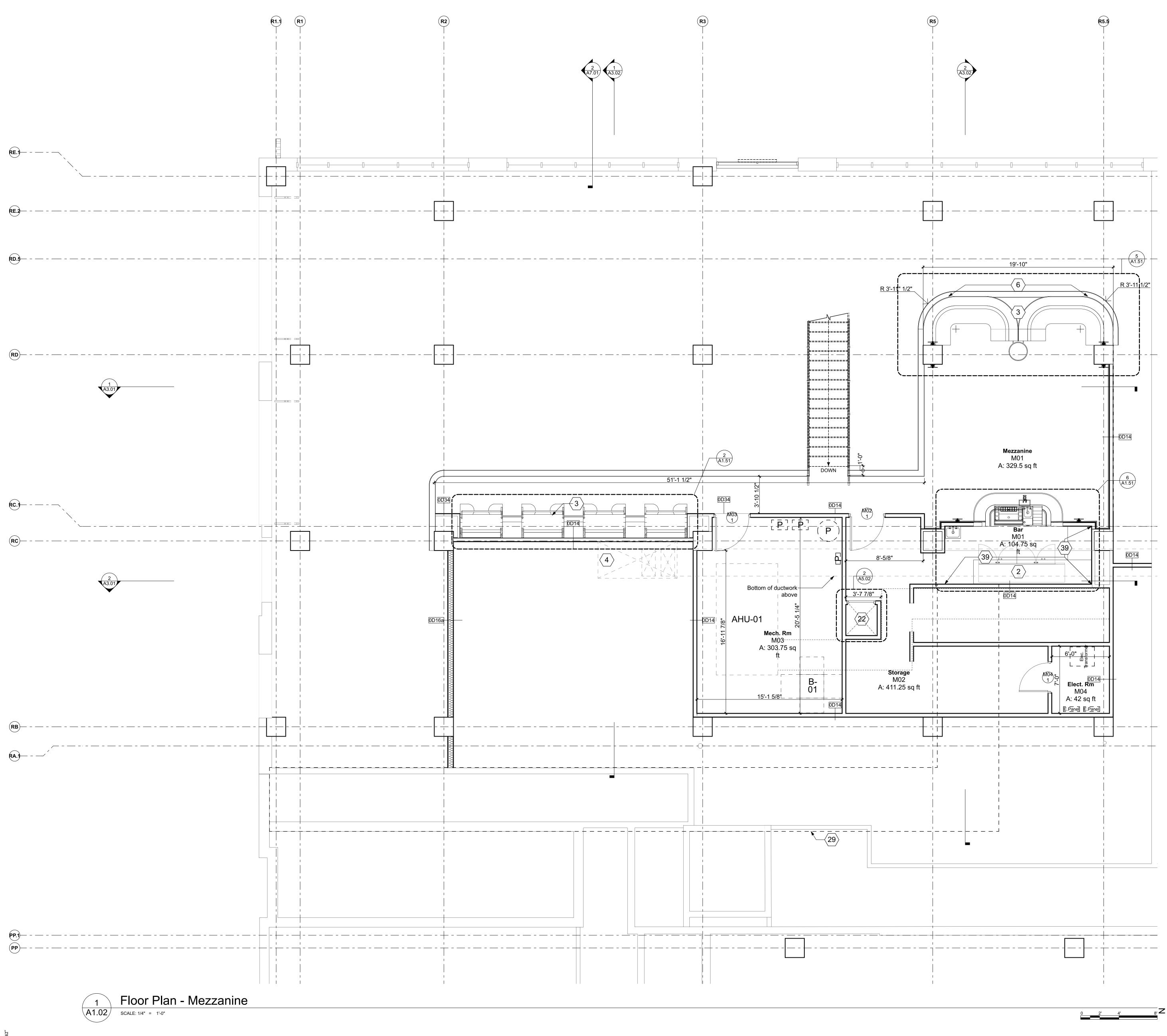
	↓ 4a
Fire I	Rating of Wall 0 = Non-rated walls T = 30 min 1 = One Hour 2 = Two Hour S = Smoke Rated Wall
Тор с	of wall condition D = Demising wall, extend wall to underside of deck above C = Extend wall 6" above ceiling P = Partial height wall
Wall	<u>Type</u> Number indicates wall variations
Num	ber indicates nominal size of framing 1 = 7/8" furring 2 = 1 1/2" furring 4 = 4" stud/ masonry 6 = 6" stud / masonry 8 = 8" stud / masonry 9 = 12" stud / masonry
Spec	ial wall detailing a = Acoustical batt insulation and detailing b = Reserved c = Reserved x = Special wall construction, reference notes





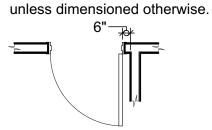






20	DNSTRUCTION LEGEND
	Not In Scope
GE	ENERAL CONSTRUCTION NOTES
•	It is the responsibility of the contractor to field verify all existing condition and dimensions. Report discrepancies to the architect immediately.
,	Coordinate all work with MEP drawings

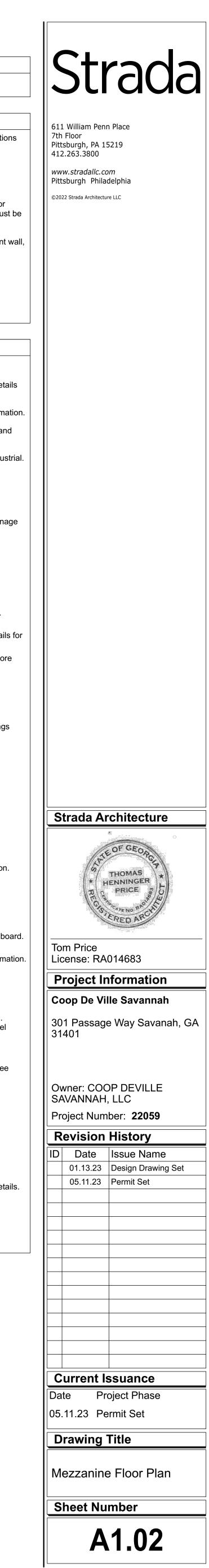
- 2. Coordinate all work with MEP drawings.
- 3. All dimensions are measured to the finished wall surface, U.N.O.
- 4. All dimensions marked "HOLD" shall be maintained and shall allow for thicknesses of wall finishes. (U.N.O.) Dimensions marked "HOLD" must be accurately maintained and shall not vary more than 1/8".
- 5. The hinge side of all door jambs are to be located 6" from the adjacent wall,

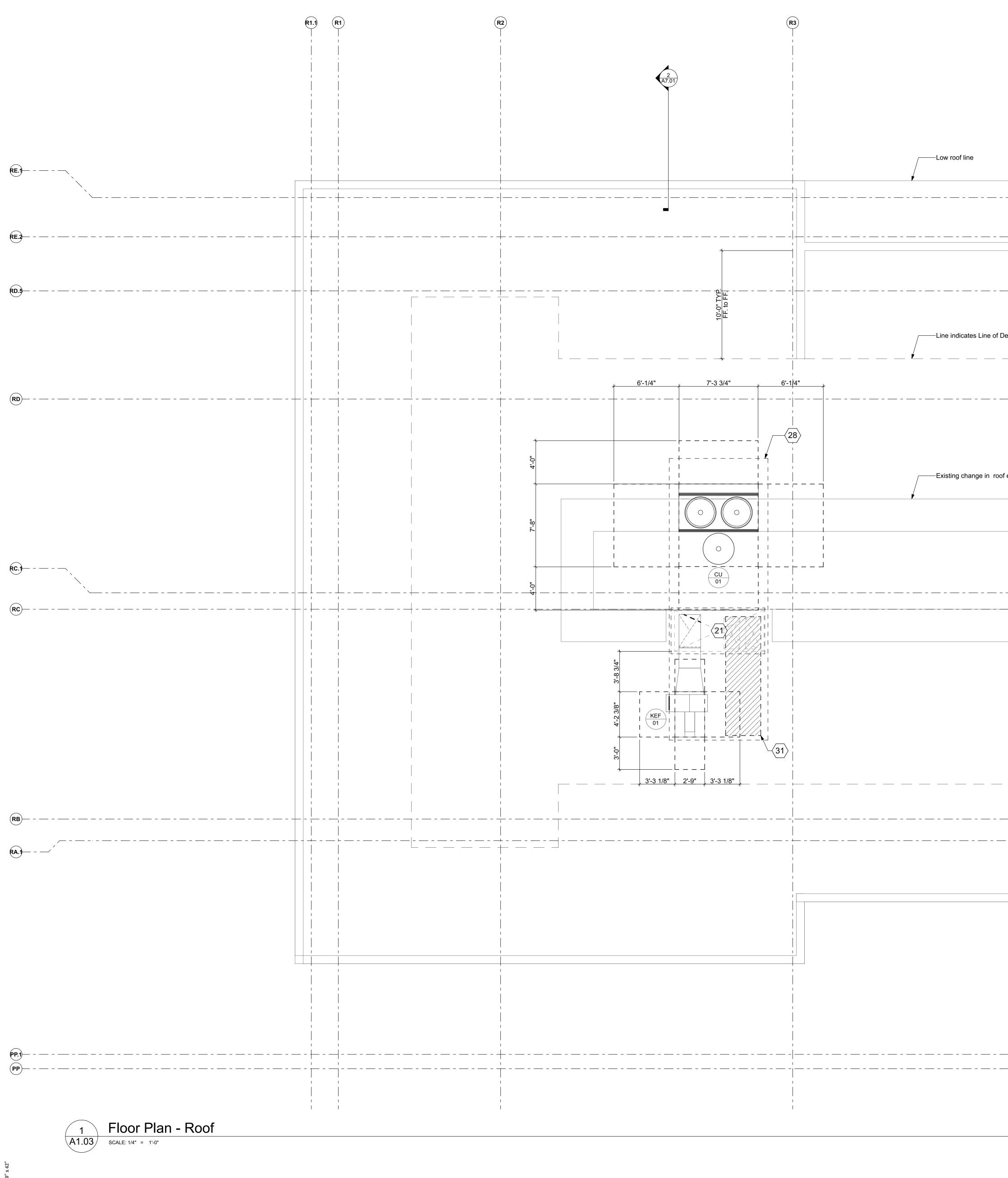


CODED NOTES

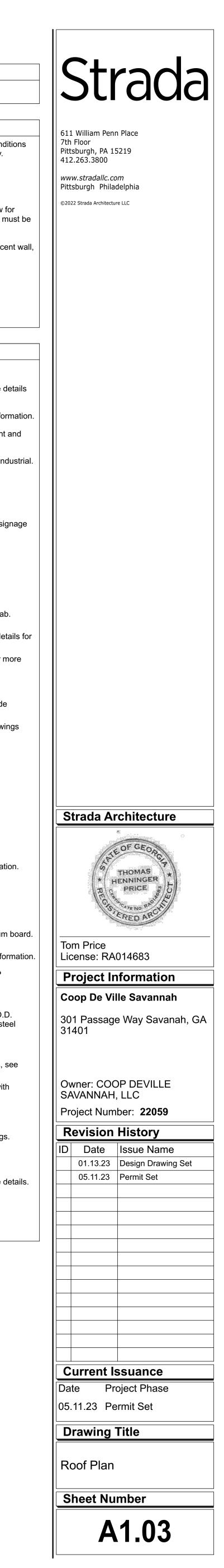
	IOTES
$\langle 1 \rangle$	Food Service equipment by Owner.
$\langle 2 \rangle$	Custom casework with quartz countertop, height varies see det for more information.
3	Custom casework, banquette/booth see details for more inform
$\langle 4 \rangle$	Existing grease shaft, cleanout to be coordinated with tenant ar landlord.
5	Metal lockers, B.O.D. "Paramount 3 Tier locker" by Global Indu
6	Custom railing, see details.
$\langle 7 \rangle$	Mezzanine structure, see structural drawings
8	Toilet room signage adjacent to each toilet room door, see signade details for more information.
9	Low wall, see elevations.
(10)	Provide power and data for P.O.S. system.
$\langle 11 \rangle$	New steel canopy, see details.
(12)	Power pole supporting festoon lighting, bolted to existing slab. Coordinate with Structural.
(13)	New steel pan stairs with painted C-channel stringer. See detai more information.
(14)	Custom signage, provide power connections. See detail for mo information.
(15)	Oil management system, coordinate with food service.
(16)	Custom millwork feature wall, see interior elevations. Provide blocking for TVs as required.
(17)	Duckpin bowling lanes, see enlarged plan, details, and drawing from duck pin bowling consultant.
(18)	(2) Levels of coat racks.
(19)	Custom casework open to kitchen beyond.
20	All exposed conduit to be rigid and painted.
$\langle 21 \rangle$	Grease shaft protection.
$\langle 22 \rangle$	Custom casework and P.O.S. station, see details for more information.
23	Raised platform with two steps, see details for more information
24	Existing concrete column.
25	Custom casework standing drink rail, see details for more information.
(26)	Exposed columns in kitchen are to be furred out with gypsum b
(27)	Custom casework office countertop, see details for more inform
28	Designated roof equipment area for tenant space.See MEP drawings.
29	Bottom of existing stair at 13'-8" A.F.F V.I.F.
$\langle 30 \rangle$	Retractable awning supported by existing steel header, B.O.D. "Palermo" by Retractable Awnings, connection at existing steel header, GC to coordinate.
31	Ductwork for adjacent tenant.
$\langle 32 \rangle$	Hook holding festoon lighting in mortar joint between bricks, see elevataions.
$\langle 33 \rangle$	Air curtain supported by existing steel header, coordinate with structural and MEP.
34	Ceiling mounted projector by Owner.
35	Louver painted to match storefront, see mechanical drawings.
$\langle 36 \rangle$	Paint existing railing.
$\langle 37 \rangle$	New storefront window and framing to replace existing, see det

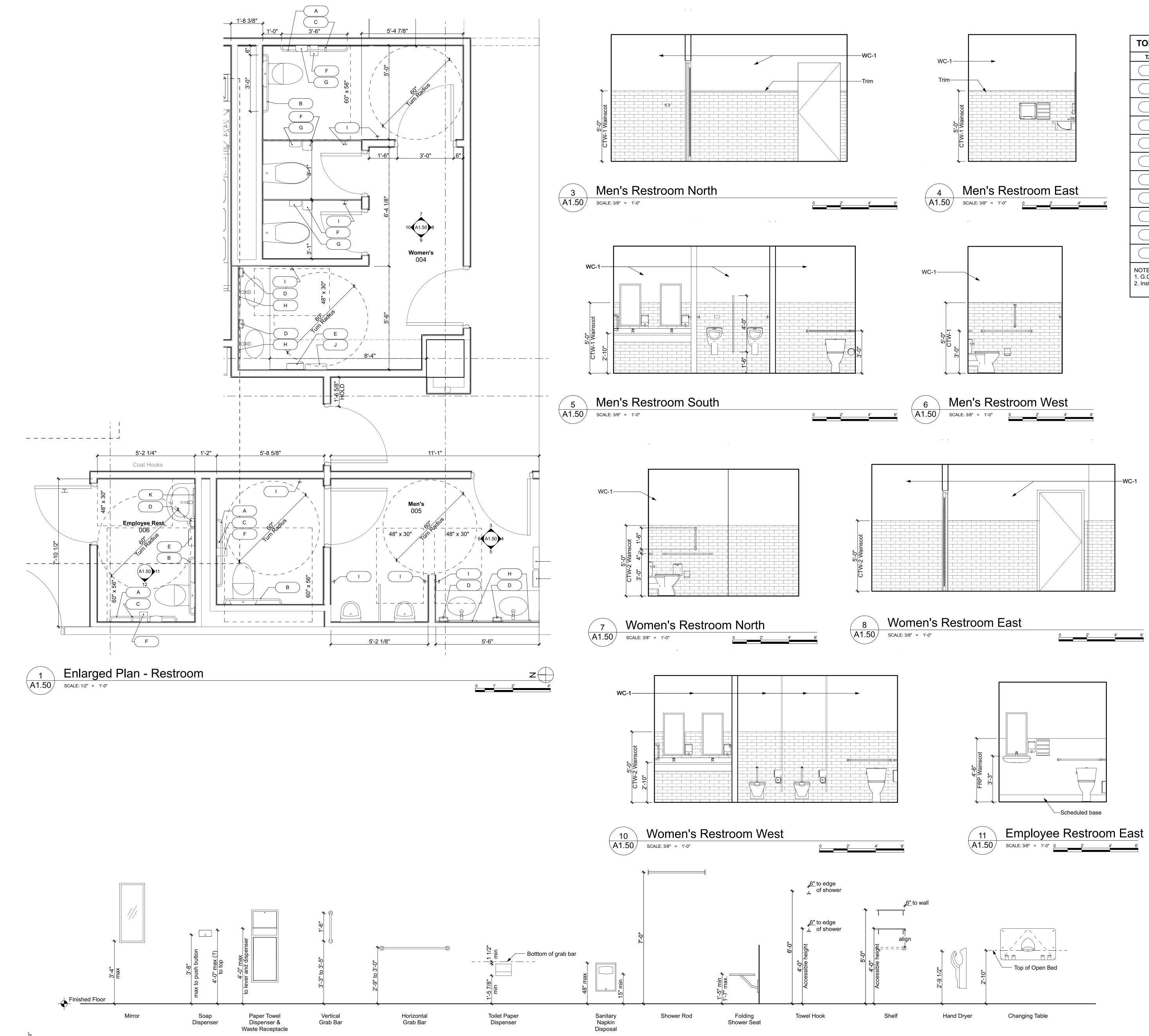
- $\langle 37 \rangle$ New storefront window and framing to replace existing, see details.
- $\langle 38 \rangle$ Custom countertop, see details.
- $\langle 39 \rangle$ Provide plywood blocking to walls, 4'-0" AFF, typ.

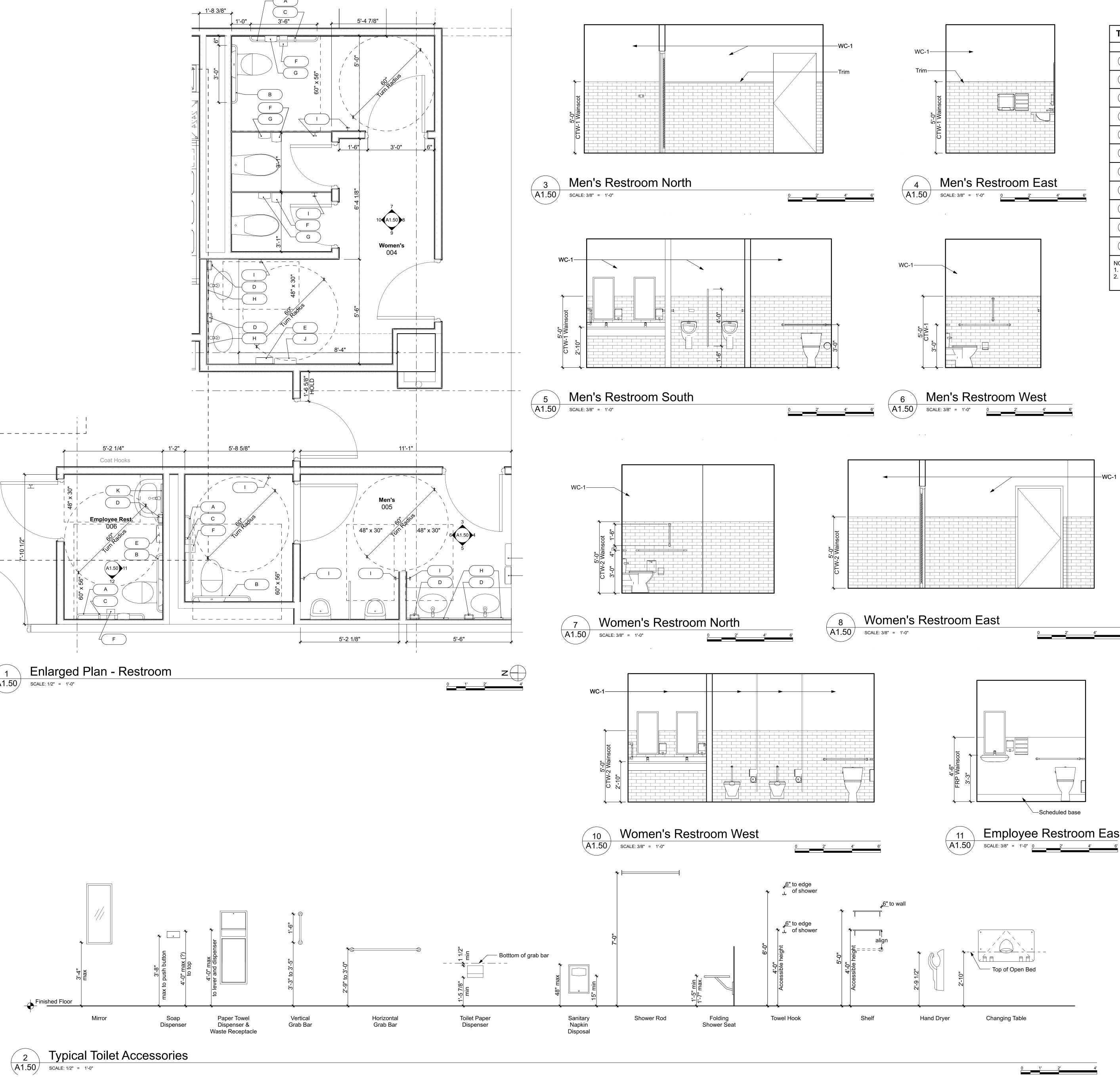




R5	R5.5	CONSTRUCTION LEGEND
		GENERAL CONSTRUCTION NOTES
		 It is the responsibility of the contractor to field verify all existing cond and dimensions. Report discrepancies to the architect immediately.
		2. Coordinate all work with MEP drawings.
		3. All dimensions are measured to the finished wall surface, U.N.O.
		4. All dimensions marked "HOLD" shall be maintained and shall allow f
		thicknesses of wall finishes. (U.N.O.) Dimensions marked "HOLD" m
		accurately maintained and shall not vary more than 1/8".
		 The hinge side of all door jambs are to be located 6" from the adjace unless dimensioned otherwise.
		6"
		ε _γ α
	<u> </u>	CODED NOTES
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		$\langle 3 \rangle$ Custom casework, banquette/booth see details for more infor
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		$\begin{pmatrix} 4 \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ $
		$\left< 5 \right>$ Metal lockers, B.O.D. "Paramount 3 Tier locker" by Global Inc
emarcation		6 Custom railing, see details.
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'	<u> </u>	— (7) Mezzanine structure, see structural drawings
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		$\left< \begin{array}{c} 9 \end{array} \right>$ Low wall, see elevations.
		$\langle 10 \rangle$ Provide power and data for P.O.S. system.
		11 Now steel expense details
		(11) New steel canopy, see details. Devery note automating factors lighting, holted to evicting clob
		Power pole supporting festoon lighting, bolted to existing slab Coordinate with Structural.
		$\langle 13 \rangle$ New steel pan stairs with painted C-channel stringer. See det
felevation		
		$\begin{pmatrix} 14 \end{pmatrix}$ custom signage, provide power connections. See detail for m
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		16 Custom millwork feature wall, see interior elevations. Provide
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		10 Output and the little hand have a d
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		Custom secondarily and DO S, station, and datails for more
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		$\langle 23 \rangle$ Raised platform with two steps, see details for more informati
		$\langle 24 \rangle$ Existing concrete column.
		(25) Custom casework standing drink rail, see details for more information.
		$\langle 26 \rangle$ Exposed columns in kitchen are to be furred out with gypsum
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		$\langle 29 \rangle$ Bottom of existing stair at 13'-8" A.F.F V.I.F.
		Retractable awning supported by existing steel header, B.O.E "Palermo" by Retractable Awnings, connection at existing steel
		- – header, GC to coordinate.
		$\langle 31 \rangle$ Ductwork for adjacent tenant.
		Hook holding festoon lighting in mortar joint between bricks, s elevataions.
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		$\langle 34 \rangle$ Ceiling mounted projector by Owner.
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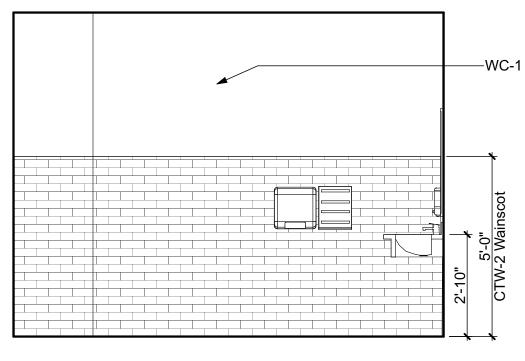




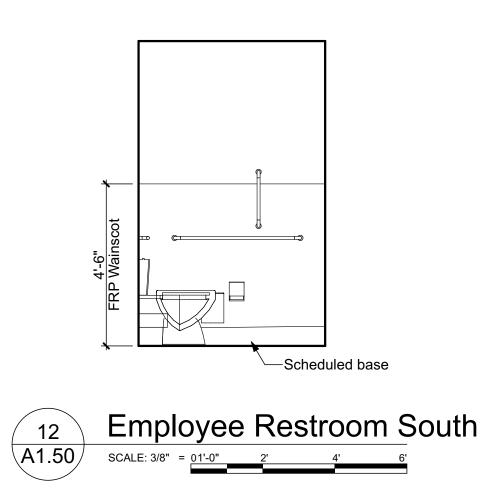


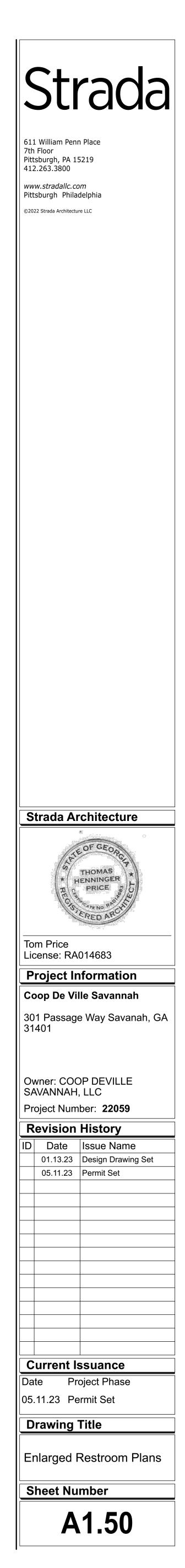
TAG	DESCRIPTION	SPECIFICATION
Α	42" horizontal grab bar	TBD
В	36" horizontal grab bar	TBD
С	18" vertical grab bar	TBD
D	Soap Dispenser	TBD
E	Paper Towel Dispenser / Waste Receptacle	TBD
F	Toilet Paper Dispenser	TBD
G	Sanitary Napkin Disposal	TBD
Н	Mirror	TBD
I	Hook	TBD
J	Hand Dryer	TBD
К	Mirror	TBD

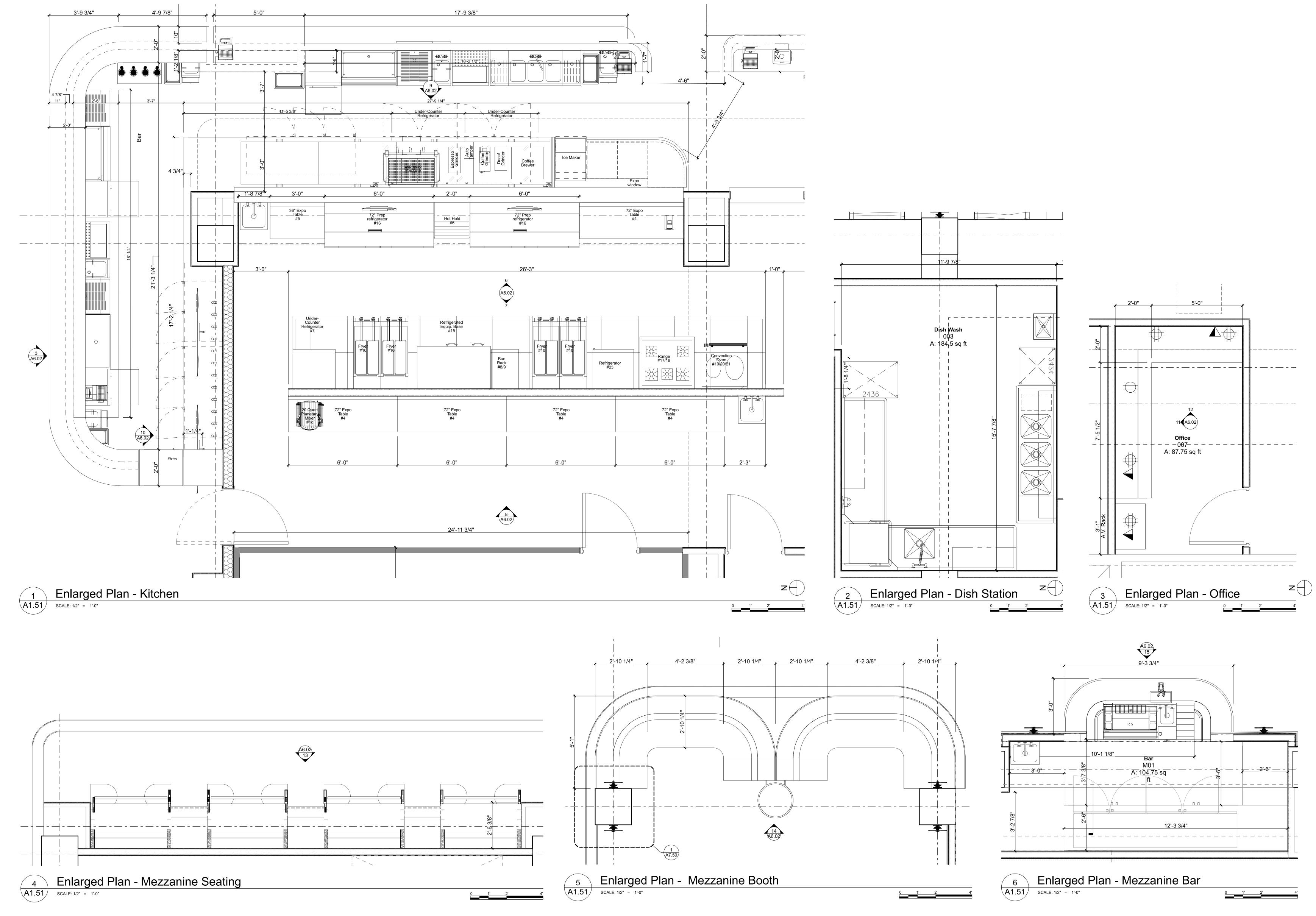
NOTE: 1. G.C. to provide and install wood blocking for all restroom accessories. 2. Install all toilet accessories in accordance with 2017 ICC ANSI 117.1.

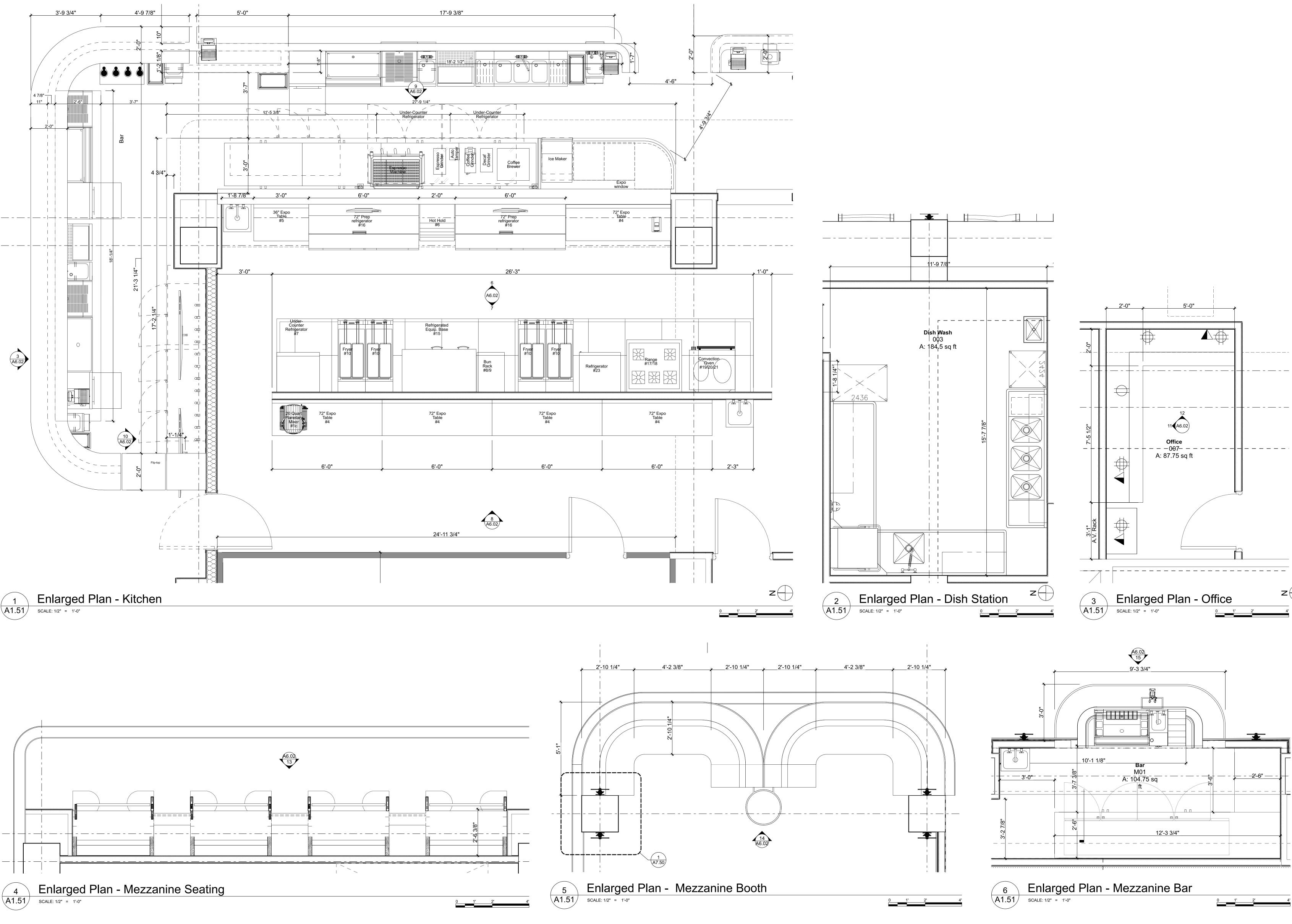




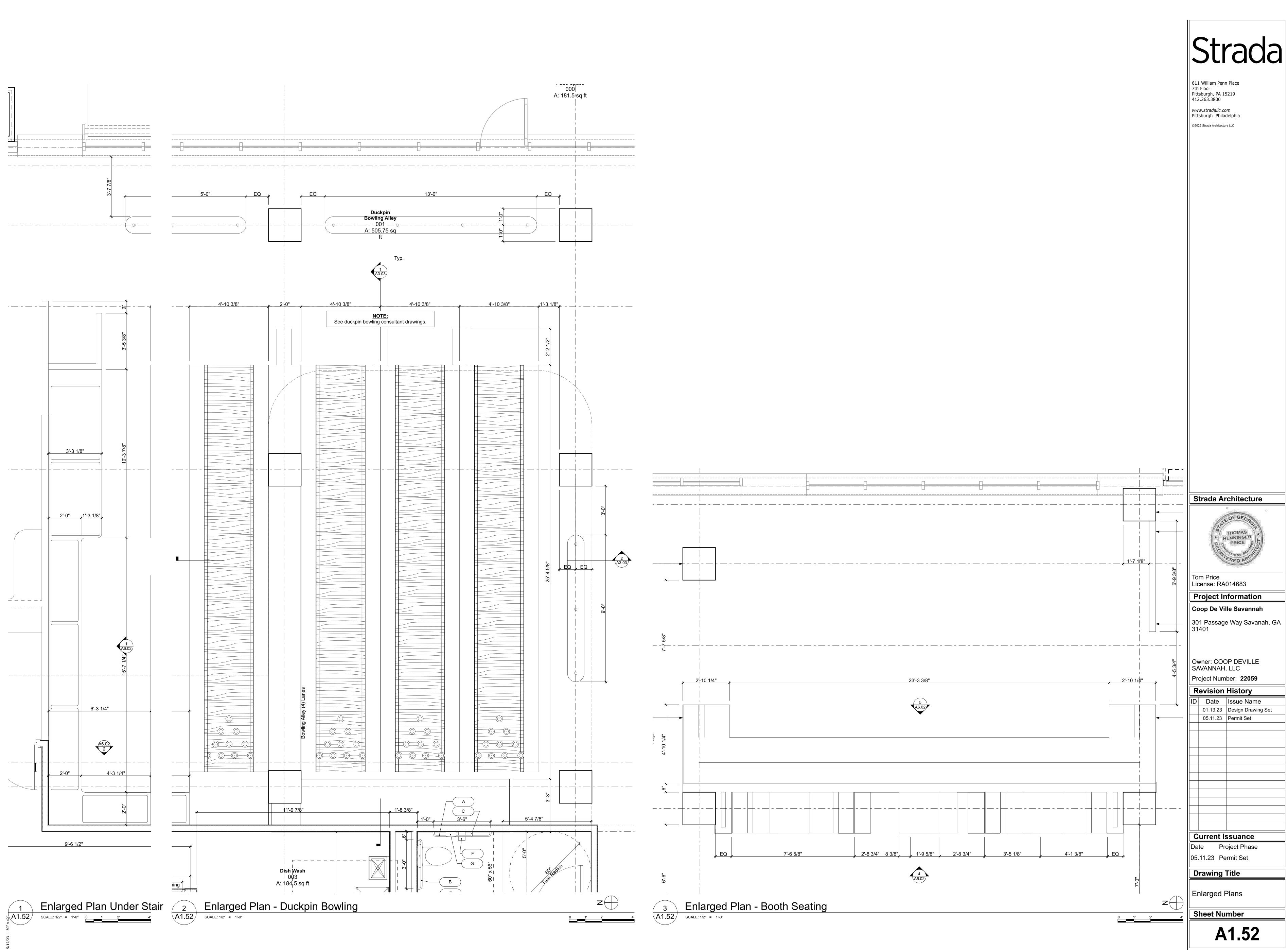


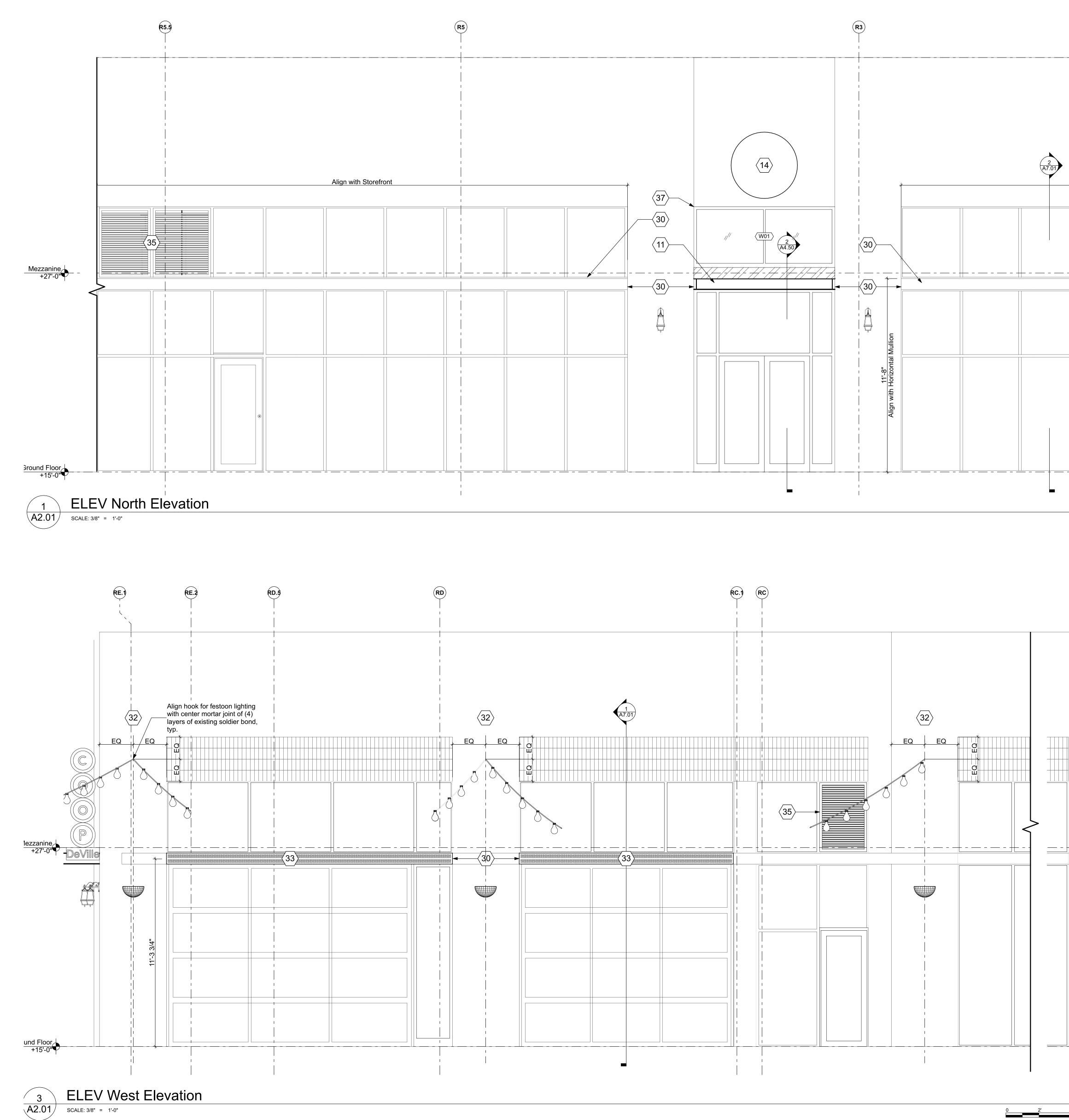






Strac 611 William Penn Place 7th Floor Pittsburgh, PA 15219 412.263.3800 www.stradallc.com Pittsburgh Philadelphia ©2022 Strada Architecture LLC Strada Architecture THOMAS HENNINGER PRICE Tom Price License: RA014683 **Project Information** Coop De Ville Savannah 301 Passage Way Savanah, GA 31401 Owner: COOP DEVILLE SAVANNAH, LLC Project Number: 22059 Revision History ID Date Issue Name 05.11.23 Permit Set **Current Issuance** Date Project Phase 05.11.23 Permit Set Drawing Title Enlarged Plans Sheet Number A1.51

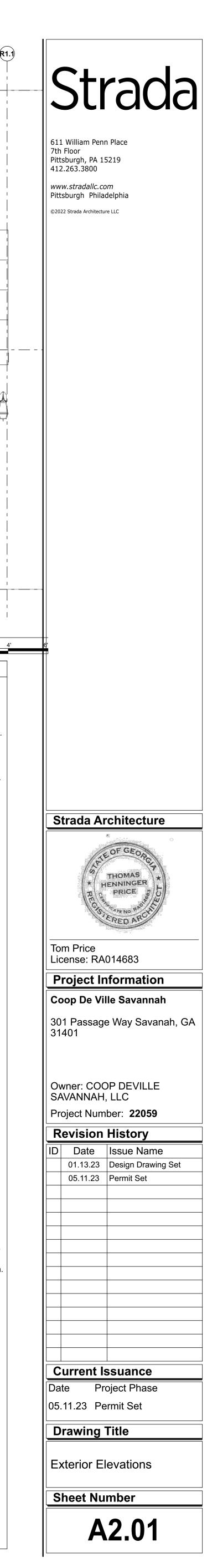


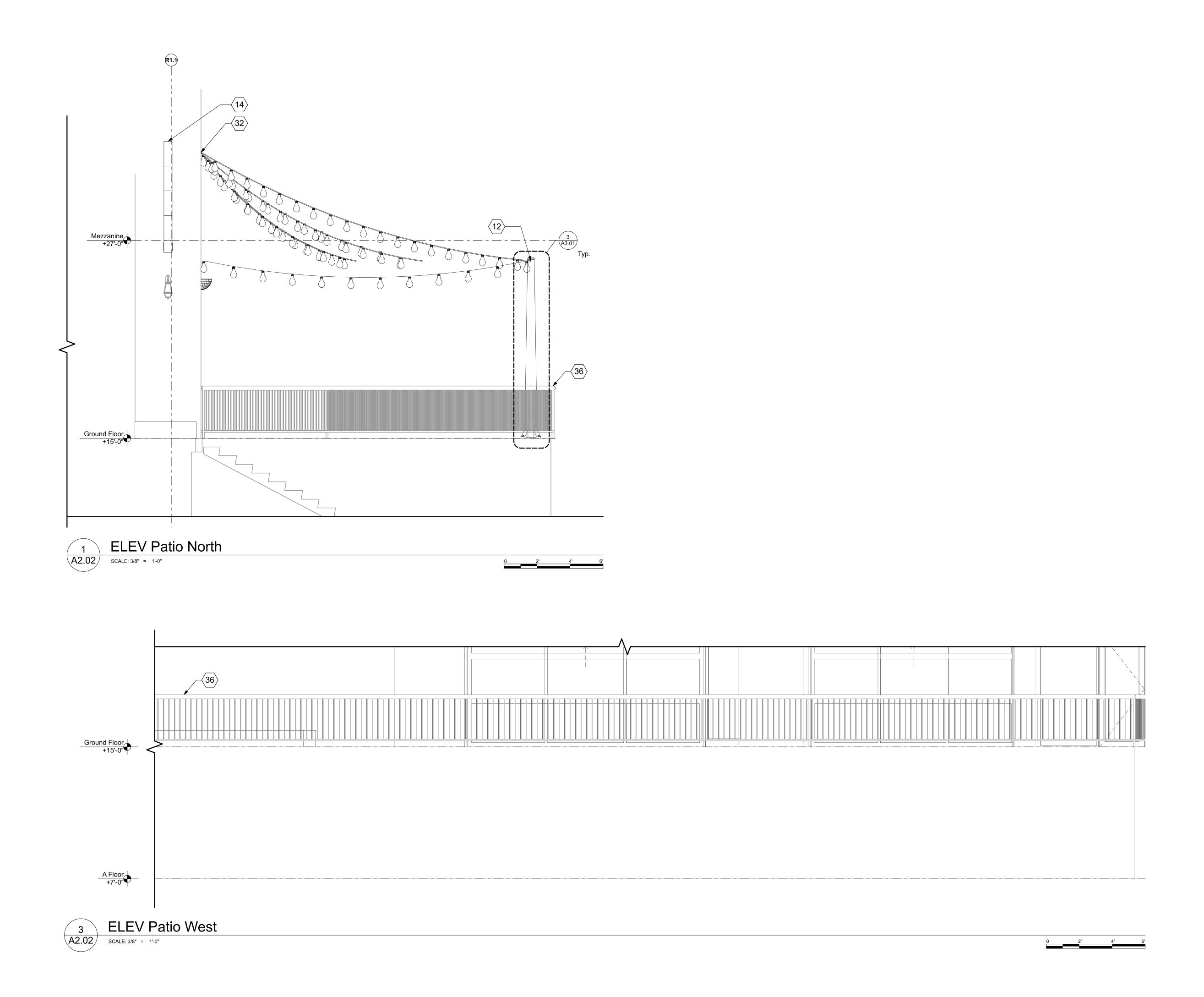


		F	22		R1	R1 .
2 A7.01						
	Align with Storefront			 		
	30					

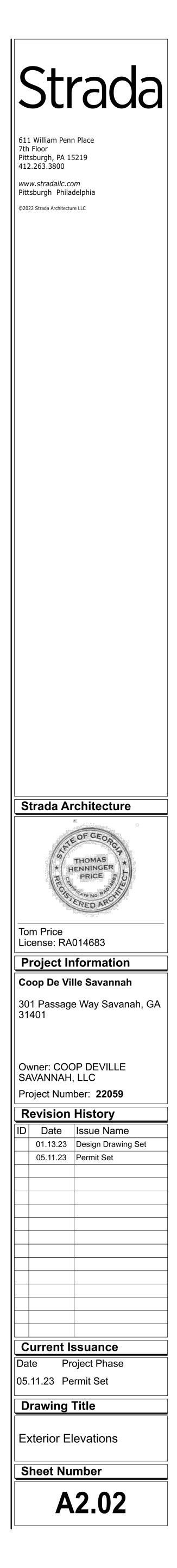
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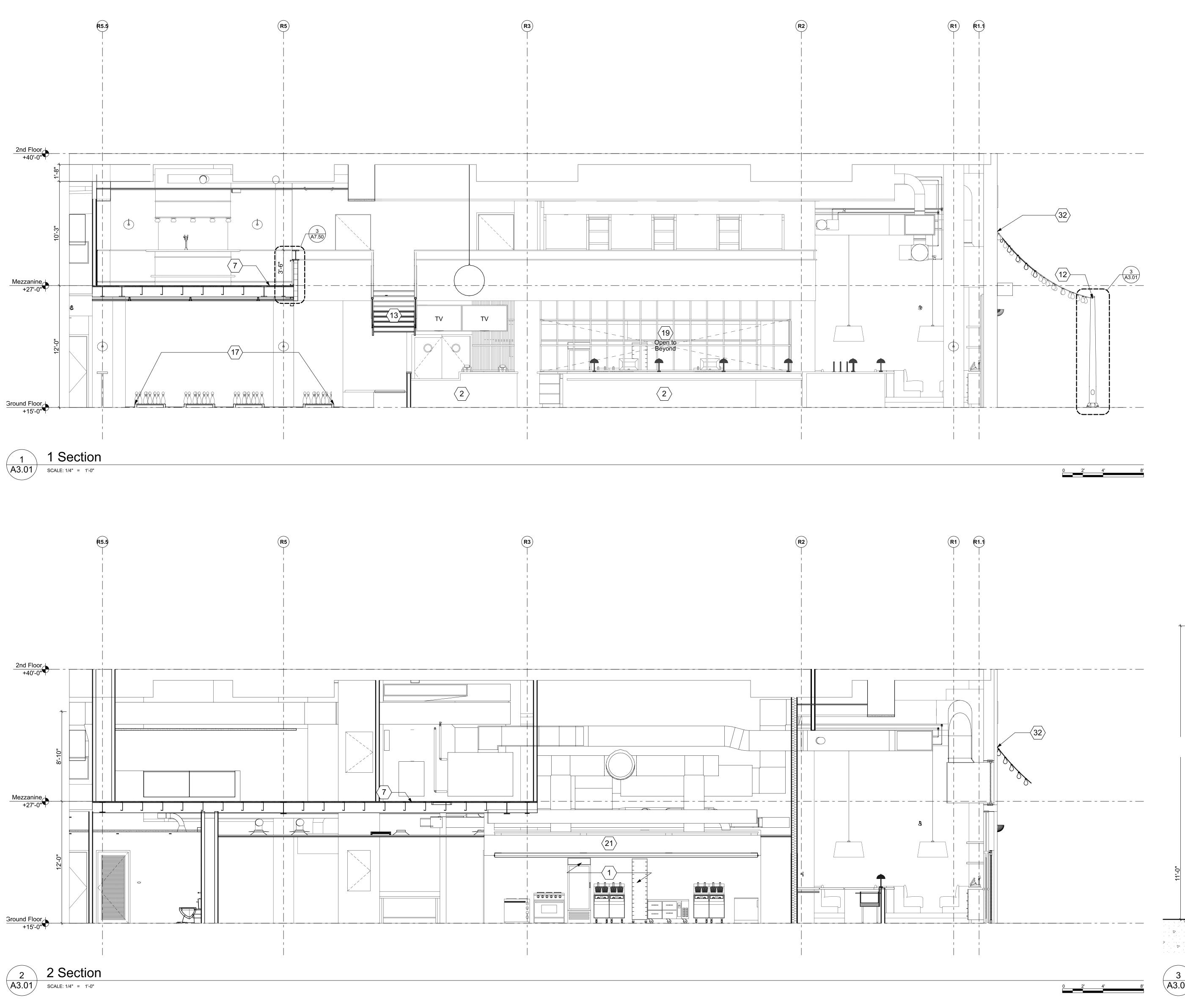
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- $\langle 6 \rangle$ Custom railing, see details.
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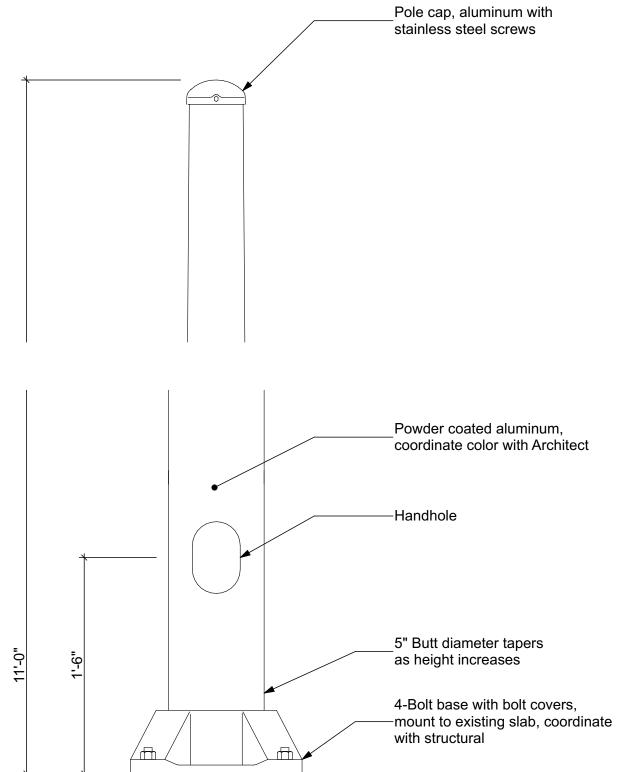


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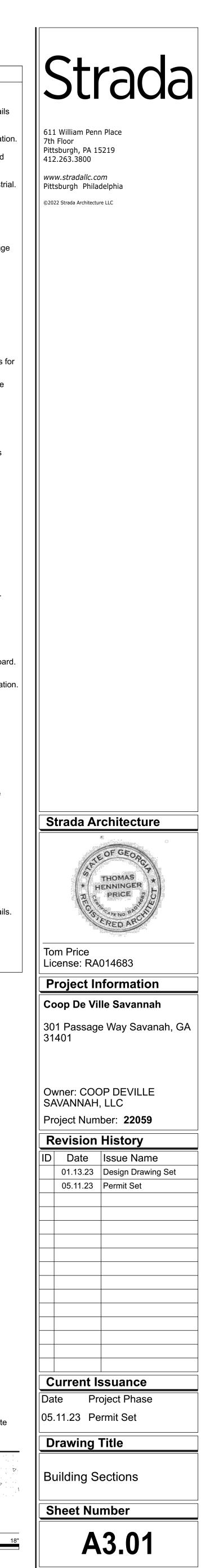
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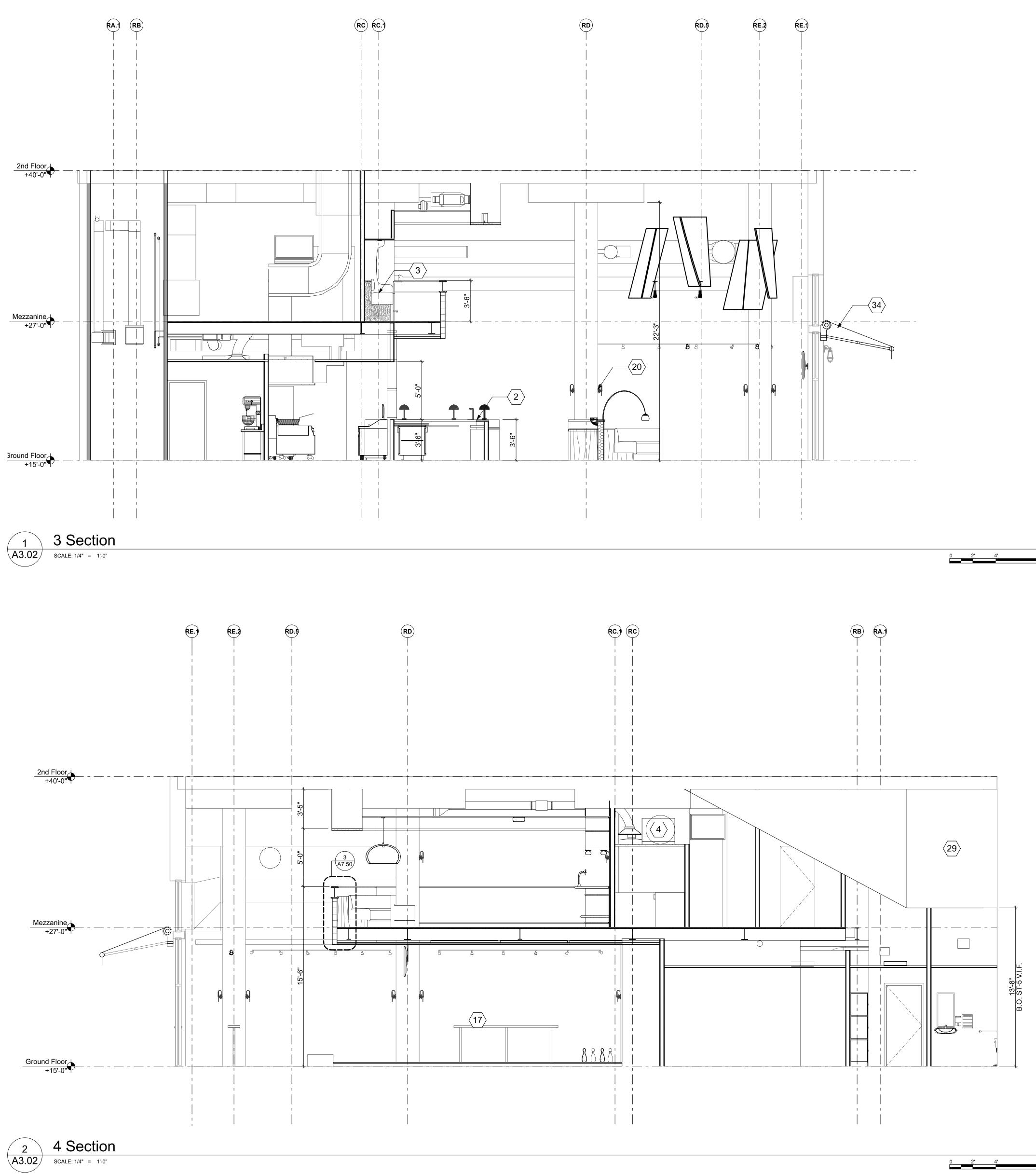


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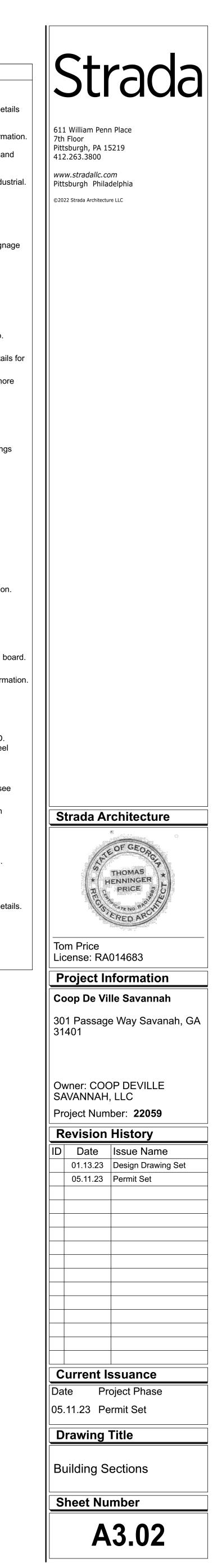
Detail Aluminum Power Pole 3 Detail Alu A3.01 SCALE: 1 1/2"= 1'-0"

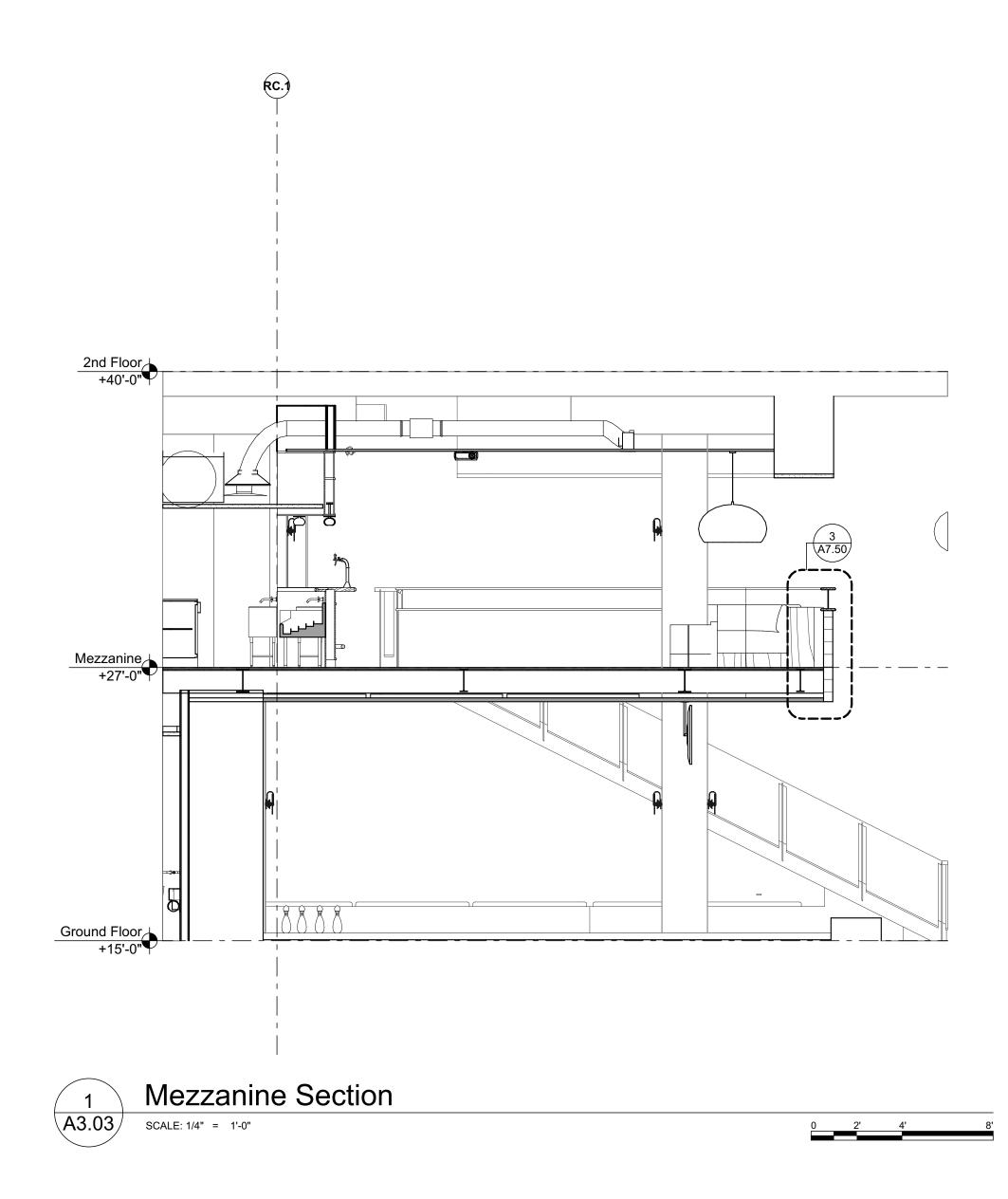
0 6" 12" 18"

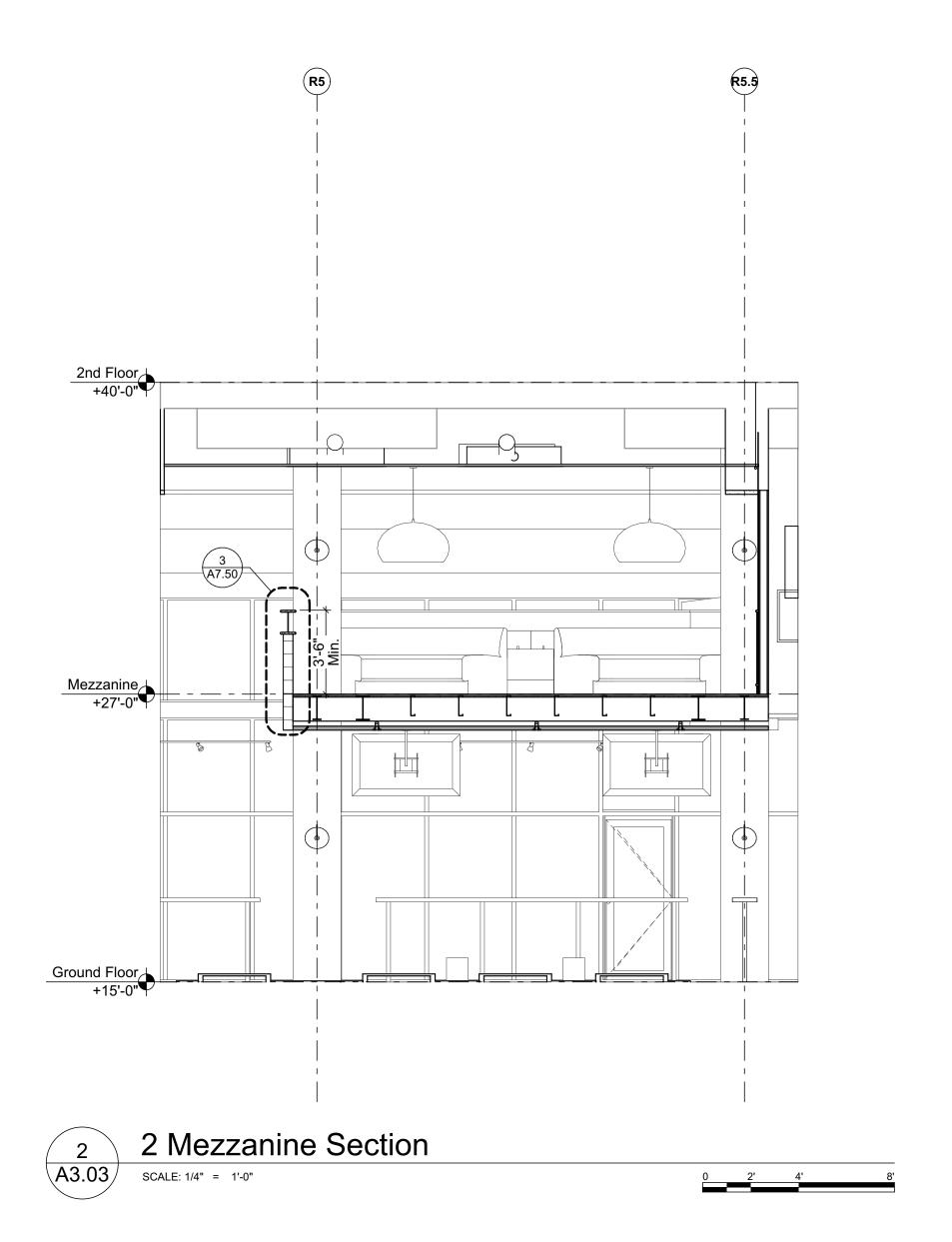




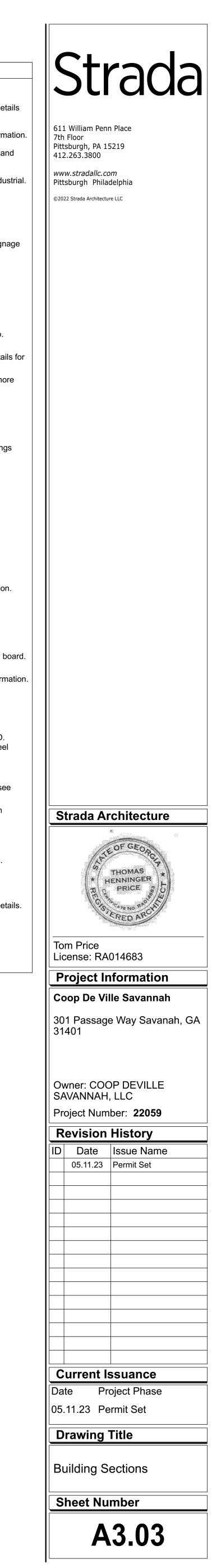
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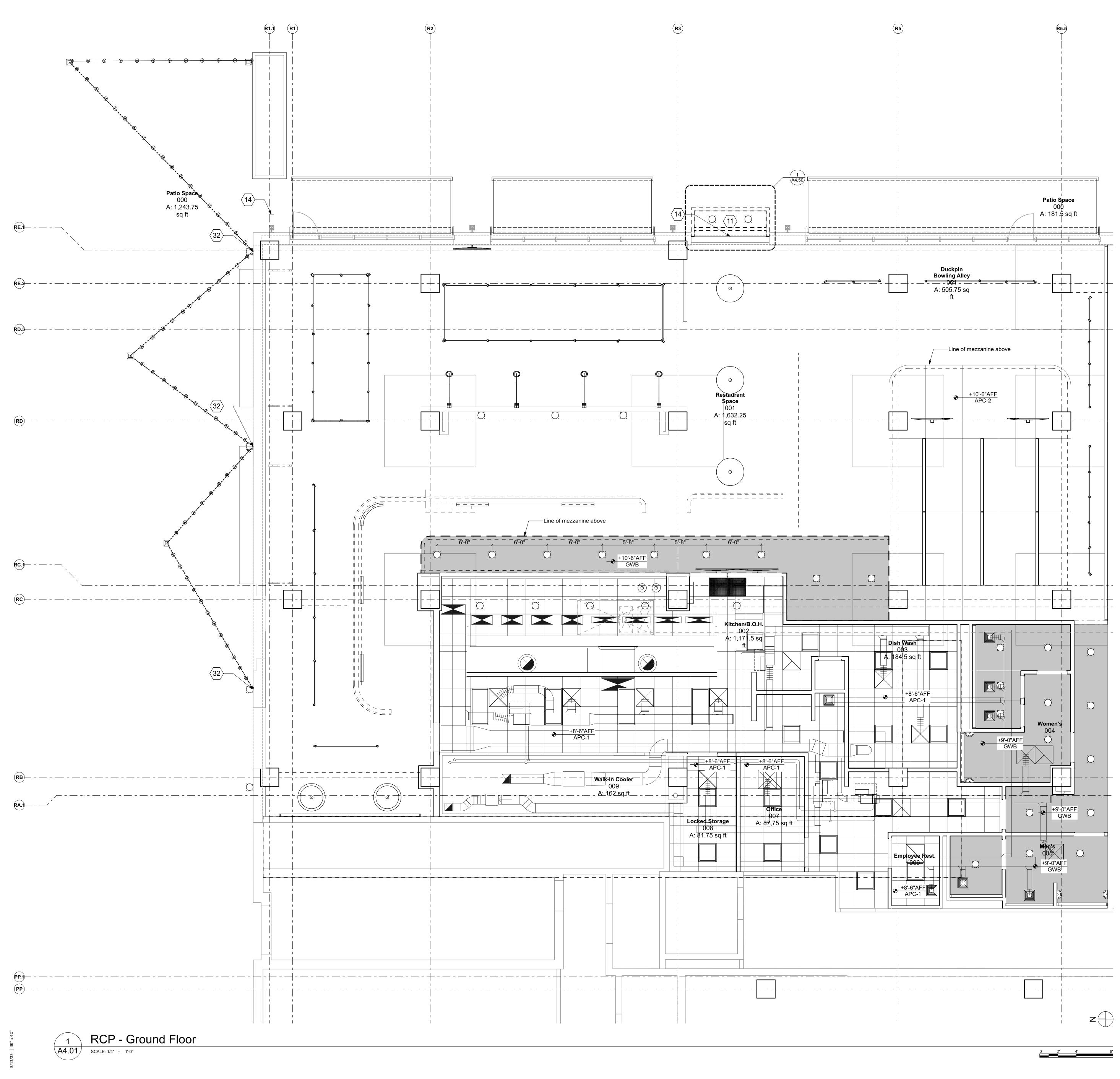






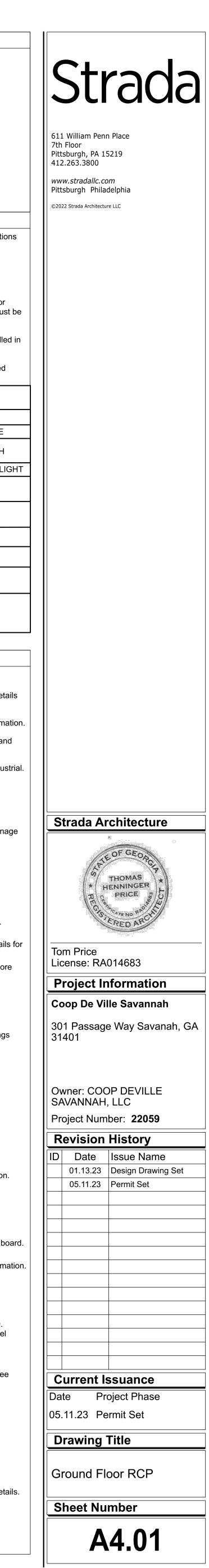
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29	Bottom of existing stair at 13'-8" A.F.F V.I.F.
30	Retractable awning supported by existing steel header, B.O.D. "Palermo" by Retractable Awnings, connection at existing steel header, GC to coordinate.
31	Ductwork for adjacent tenant.
32	Hook holding festoon lighting in mortar joint between bricks, see elevataions.
33	Air curtain supported by existing steel header, coordinate with structural and MEP.
34	Ceiling mounted projector by Owner.
35	Louver painted to match storefront, see mechanical drawings.
36	Paint existing railing.
37	New storefront window and framing to replace existing, see deta
38	Custom countertop, see details.
$\overline{\langle 39 \rangle}$	Provide plywood blocking to walls, 4'-0" AFF, typ.

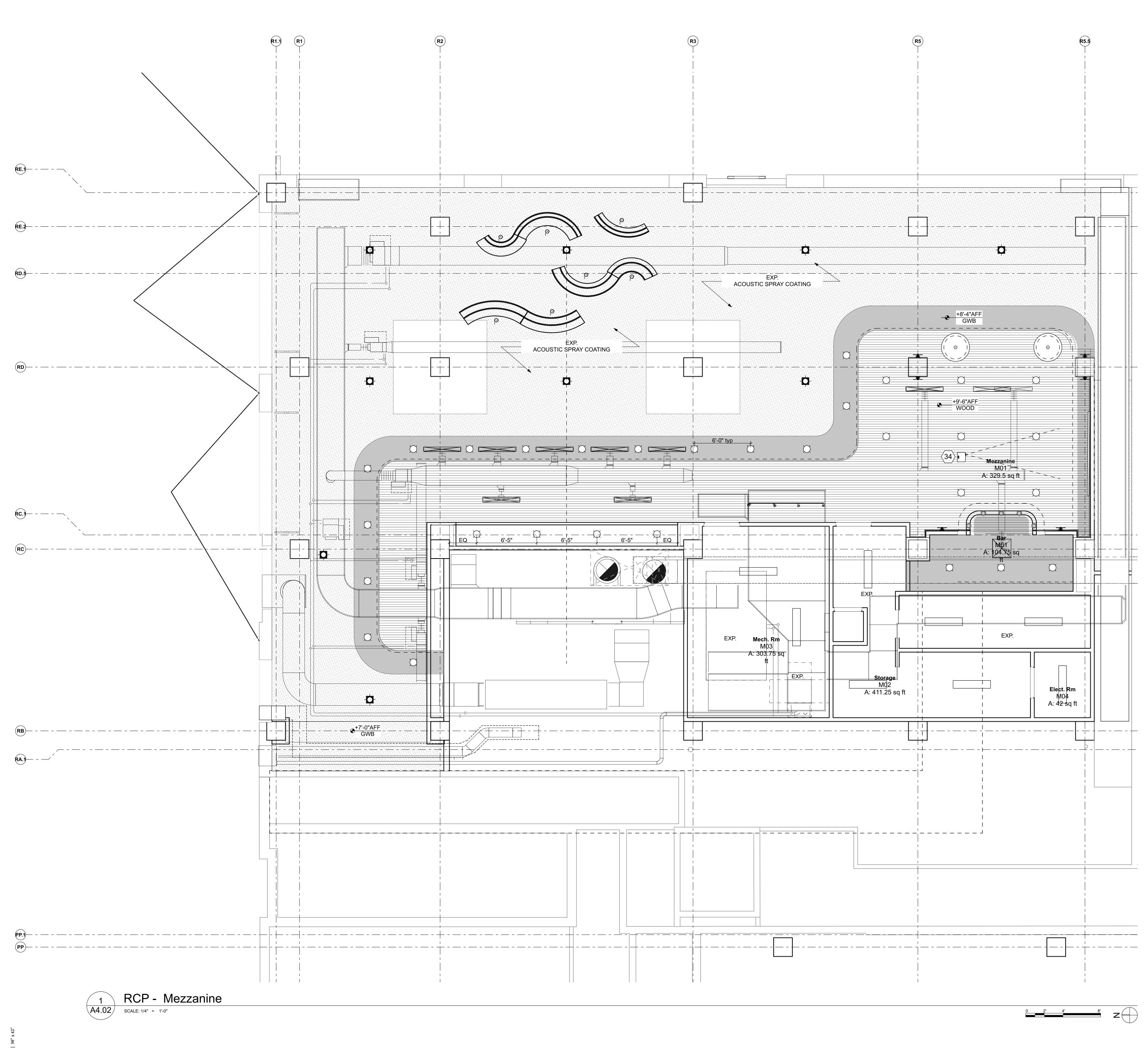




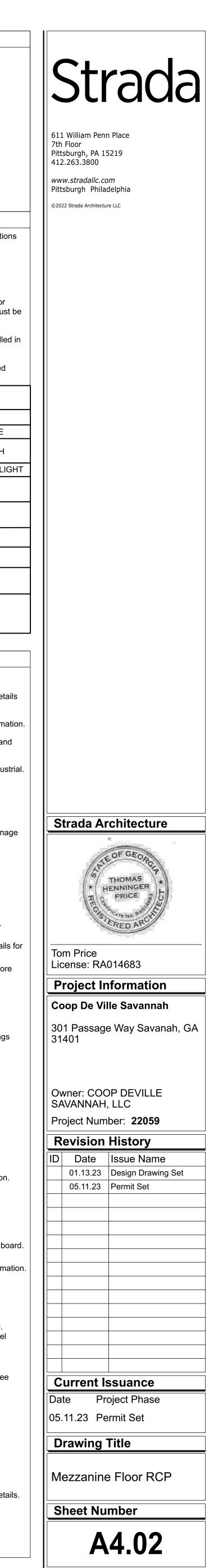
CEILING	LEGEND		
	CLG-1 Painted GWB ceilir	g	
	APC-1		
	2x2 Acoustic panel	ceiling	
	Painted exposed st	ructure	
	Applied Acoustical	Coating	
	CLG-3 Wood Ceiling Pane	ls	
GENERA	L CEILING CONSTRUCTION	I NOTES	
	ne responsibility of the contrac limensions. Report discrepanc		
2. Coord	dinate all work with MEP draw	ngs.	
	mensions are measured to the		
thickr	mensions marked "HOLD" sha nesses of wall finishes. (U.N.O rately maintained and shall not	.) Dimens	sions marked "HOLD" mus
5. All lig	hting fixtures located in acous	•	
6. Notify	enter of the panel, U.N.O. v architect if approximate arrar		
	g systems are not possible pe		ditions.
KEY	TYPE	KEY	ТҮРЕ
8	RECESSED DOWNLIGHT	Ø	EXTERIOR SCONCE
() ()	PENDANT WALL SCONCE		LINEAR WALL WASH
	2 x 2 TROFFER		
	TRACK LIGHTING		
	LED COVE TAPE LIGHT		
- Ċ -	EMERGENCY LIGHT		
	SURFACE FLUSH MOUNT FIXTURE		
0	CUSTOM LIGHT		
Ē	FIXTURE		
ODED	NOTES		
$\overline{\langle 1 \rangle}$	Food Service equipment by	Owner.	
$\langle 2 \rangle$	Custom casework with quart for more information.	z counter	top, height varies see deta
3	Custom casework, banquett	e/booth s	ee details for more informa
$\langle 4 \rangle$	Existing grease shaft, cleand landlord.	out to be o	coordinated with tenant an
(5)	Metal lockers, B.O.D. "Parar	nount 3 T	ïer locker" by Global Indus
6	Custom railing, see details.		
$\langle 7 \rangle$	Mezzanine structure, see str		-
$\langle 8 \rangle$	Toilet room signage adjacen details for more information.	t to each	toilet room door, see signa
$\langle 9 \rangle$	Low wall, see elevations.		
$\langle 10 \rangle$	Provide power and data for		stem.
$\langle 11 \rangle$	New steel canopy, see detai Power pole supporting festo		g, bolted to existing slab.
(12)(13)	Coordinate with Structural. New steel pan stairs with pa	inted C-cl	hannel stringer. See detail
$\langle 13 \rangle$	more information. Custom signage, provide po	wer conn	ections. See detail for mor
$\langle 15 \rangle$	information. Oil management system, co	ordinate v	vith food service.
$\langle 16 \rangle$	Custom millwork feature wal	l, see inte	
$\langle 17 \rangle$	blocking for TVs as required Duckpin bowling lanes, see	enlarged	plan, details, and drawing
$\langle 18 \rangle$	from duck pin bowling consu (2) Levels of coat racks.	illanı.	
$\langle 19 \rangle$	Custom casework open to k	tchen be	yond.
$\langle 20 \rangle$	All exposed conduit to be rig	id and pa	inted.
$\langle 21 \rangle$	Grease shaft protection.		
$\langle 22 \rangle$	Custom casework and P.O.S information.	5. station,	see details for more
23	Raised platform with two ste	ps, see d	etails for more information
$\langle 24 \rangle$	Existing concrete column.		
25	Custom casework standing of information.	drink rail,	see details for more
(26)	Exposed columns in kitchen	are to be	furred out with gypsum bo
27	Custom casework office cou	•	
28	Designated roof equipment a drawings.	area for te	enant space.See MEP
29	Bottom of existing stair at 13 Retractable awning supporte		
$\langle 30 \rangle$	"Palermo" by Retractable Av header, GC to coordinate.		0
$\langle 31 \rangle$	Ductwork for adjacent tenan		
$\langle 32 \rangle$	Hook holding festoon lighting elevataions.	-	
$\langle 33 \rangle$	Air curtain supported by exis structural and MEP.	ting steel	neader, coordinate with
$\langle 34 \rangle$	Ceiling mounted projector by	v Owner.	
$\langle 35 \rangle$	Louver painted to match sto	refront, se	ee mechanical drawings.
$\langle 36 \rangle$	Paint existing railing.		
$\left< \frac{31}{20} \right>$	New storefront window and	-	p replace existing, see deta
$\langle 38 \rangle$	Custom countertop, see deta	ano.	

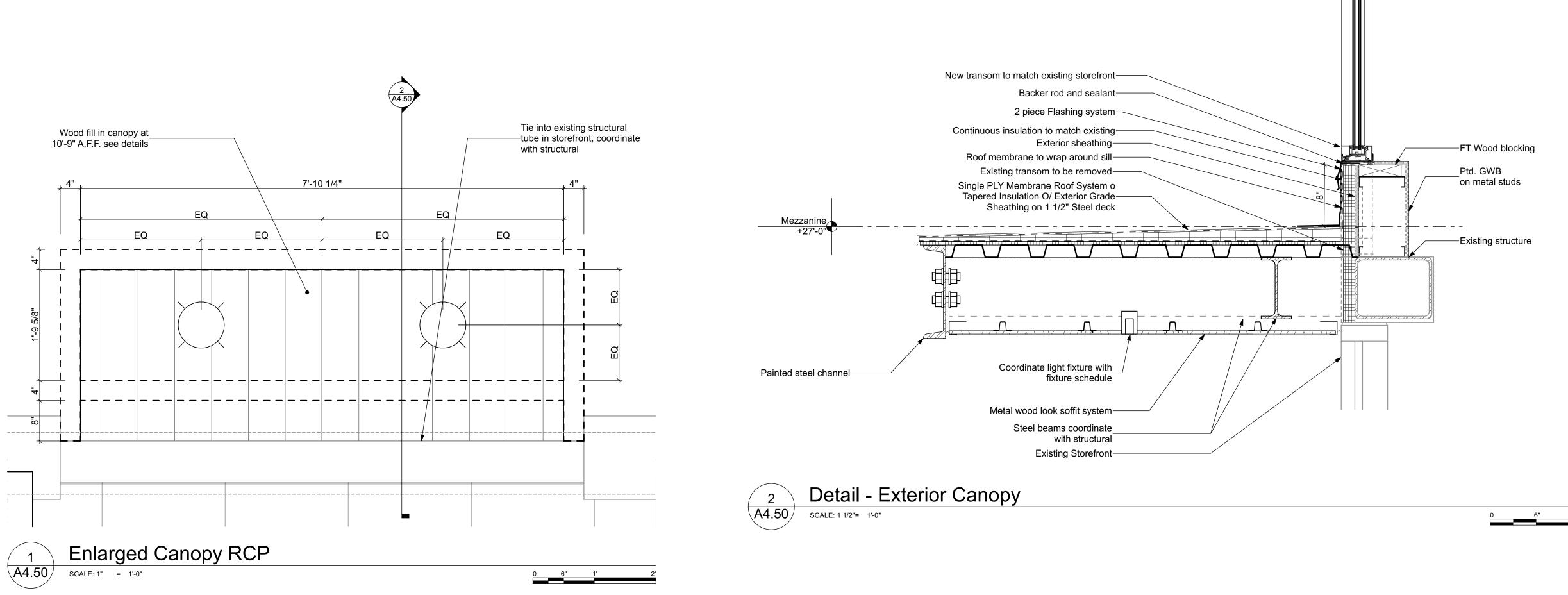
 $\langle 39 \rangle$ Provide plywood blocking to walls, 4'-0" AFF, typ.

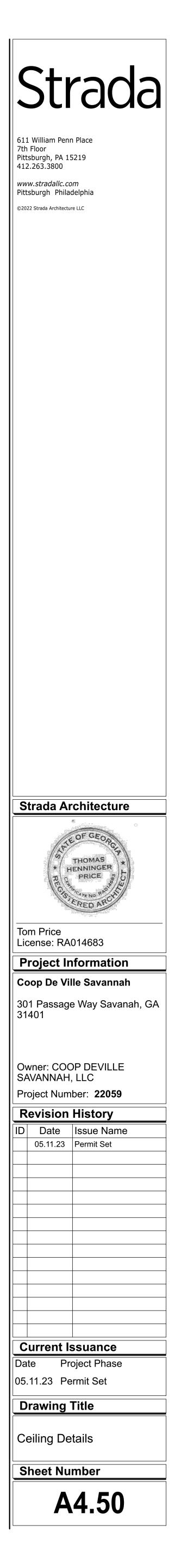


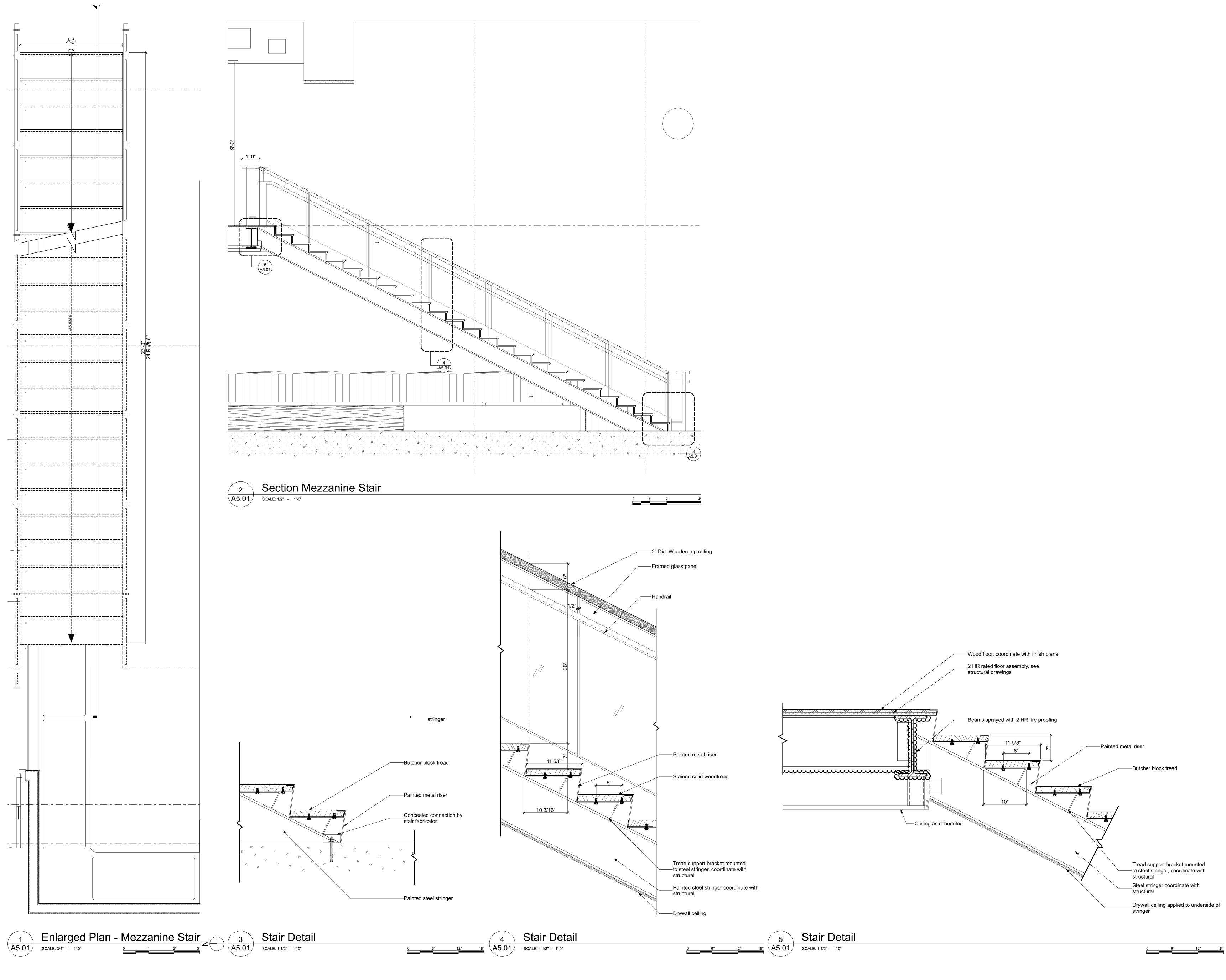


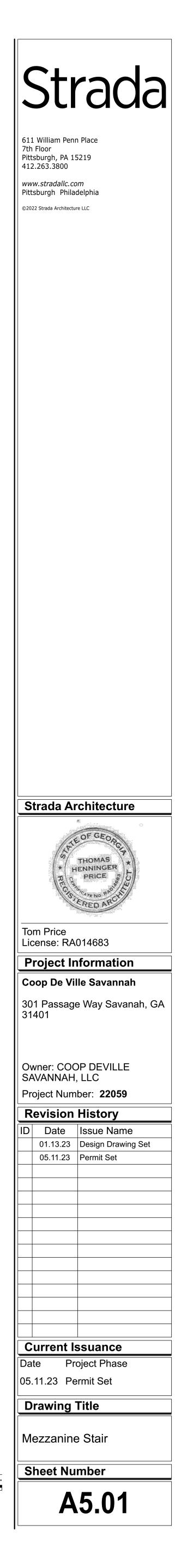
CEILIN	G LEGEND			
		CLG-1 Painted GWB ceilin	a	
		APC-1 2x2 Acoustic panel	0	
		EXP.	-	
		Painted exposed st CLG-2 Applied Acoustical		
		CLG-3 Wood Ceiling Pane	Is	
GENER				
				l verify all existing condition architect immediately.
		work with MEP drawi are measured to the	•	wall surface, U.N.O.
thicl	knesses of	wall finishes. (U.N.O	.) Dimens	tained and shall allow for ions marked "HOLD" mus
5. All li	ighting fixtu		-	e than 1/8". I ceilings are to be installe
6. Noti	ify architect	e panel, U.N.O. if approximate arran are not possible per		f APC grids & suspended
	•••			
KEY ⊗		YPE SED DOWNLIGHT	KEY ¤	TYPE EXTERIOR SCONCE
٢	PENDA			LINEAR WALL WASH
		CONCE		CUSTOM LIBRARY LI
		ROFFER		
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		LIGHTING 		
- <b>Q</b> -		GENCY LIGHT		
		CE FLUSH I FIXTURE		
Ø	CUSTO FIXTUR	M LIGHT E		
	NOTES	ervice equipment by	Owner	
$\left  \begin{array}{c} 1 \\ 2 \end{array} \right $	Custom			top, height varies see deta
$\left  \begin{array}{c} \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\$			e/booth se	ee details for more information
$\left  \begin{array}{c} \\ \end{array} \right  \left\langle 4 \right\rangle$	Existing landlord	•	out to be c	coordinated with tenant an
	Metal lo	ckers, B.O.D. "Parar	nount 3 Ti	ier locker" by Global Indus
	Custom	railing, see details.		
$\left  \left< \frac{7}{7} \right> \right $		ine structure, see str		awings coilet room door, see signa
$\left  \begin{array}{c} \left< 8 \right> \\ \left< 9 \right> \end{array} \right $	details f	or more information.		
10		power and data for F	P.O.S. sys	stem.
	New ste	el canopy, see detail	S.	
	Coordin	ate with Structural.		g, bolted to existing slab. nannel stringer. See detail
$\begin{pmatrix} 13 \\ 14 \end{pmatrix}$	more inf Custom	ormation. signage, provide po		ections. See detail for mor
$\langle 17 \rangle$	informat Oil man	ion. agement system, cod	ordinate w	vith food service.
		millwork feature wal for TVs as required.		rior elevations. Provide
		bowling lanes, see o ck pin bowling consu		olan, details, and drawing
$\left  \begin{array}{c} \left< 18 \right> \\ 10 \end{array} \right $		els of coat racks.	t . h h	
$\left  \begin{array}{c} \left< 19 \right> \\ \left< 20 \right> \end{array} \right $		casework open to ki sed conduit to be rig	-	
$\langle 21 \rangle$	·	shaft protection.		
	Custom	casework and P.O.S ion.	s. station,	see details for more
	Raised	platform with two ste	ps, see de	etails for more information
$\langle 24 \rangle$ $\langle 25 \rangle$	Custom	concrete column. casework standing of	drink rail, s	see details for more
$\langle 26 \rangle$	informat Exposed		are to be	furred out with gypsum be
	Custom	casework office cou	ntertop, se	ee details for more inform
	Designa drawing		area for te	nant space.See MEP
$\left  \begin{array}{c} \left< 29 \right> \\ 0 \end{array} \right $	Retracta	• • •	d by exist	ting steel header, B.O.D.
$\langle 30 \rangle$ $\langle 31 \rangle$	header,	o" by Retractable Av GC to coordinate. k for adjacent tenant		onnection at existing steel
$\langle 31 \rangle$		olding festoon lighting		r joint between bricks, see
	Air curta		ting steel	header, coordinate with
	Ceiling ı	mounted projector by	owner.	
$\left  \begin{array}{c} \left\langle 35 \right\rangle \\ \left\langle 20 \right\rangle \\ \right\rangle$			efront, se	e mechanical drawings.
$\langle 36 \rangle$ $\langle 37 \rangle$		isting railing. refront window and f	raming to	replace existing, see deta
$\langle 38 \rangle$		countertop, see deta	-	,
	Provide	plywood blocking to	walls, 4'-(	)" AFF, typ.

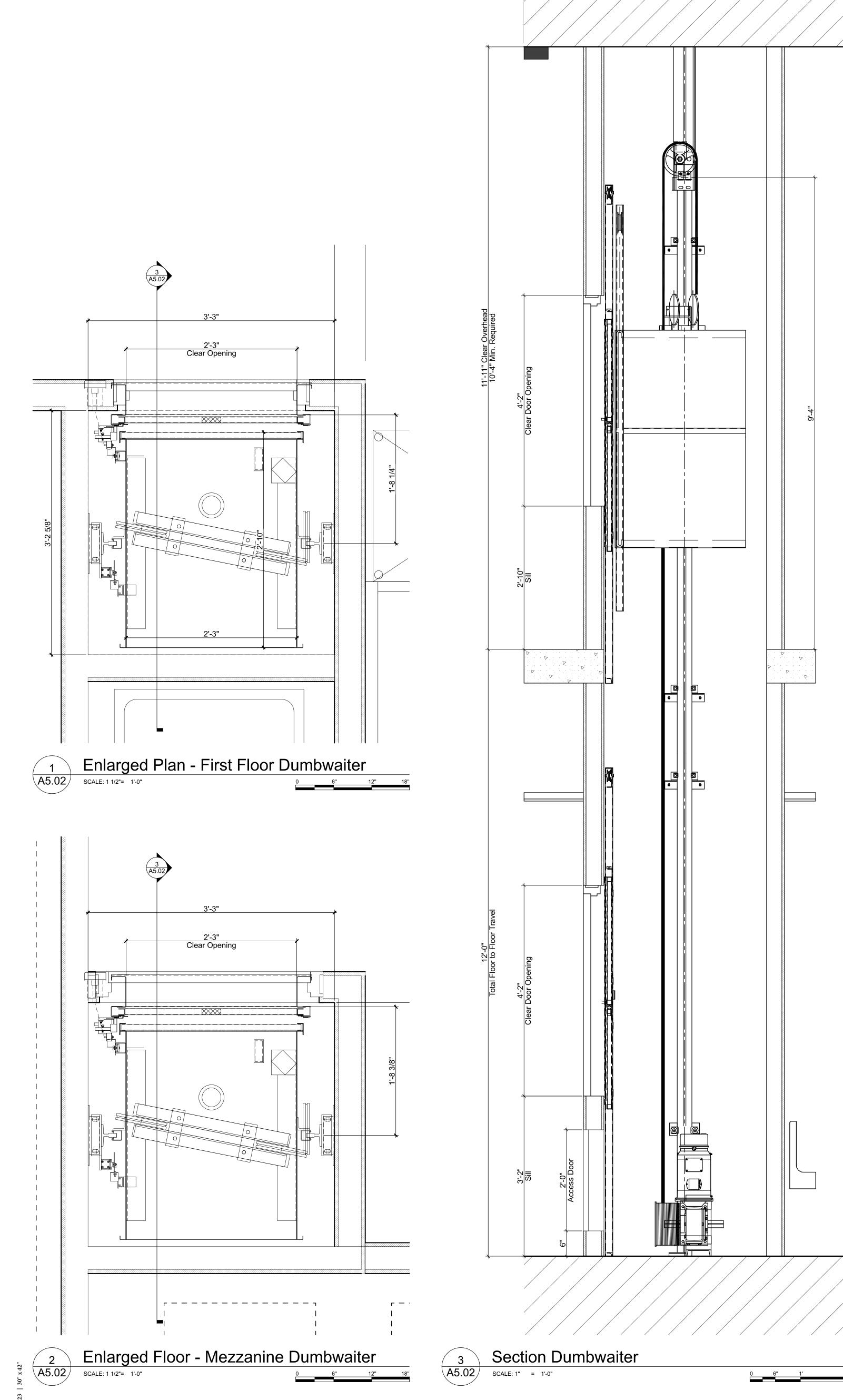


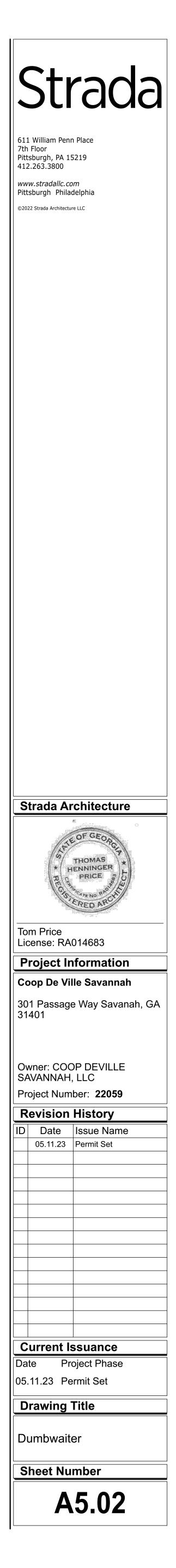






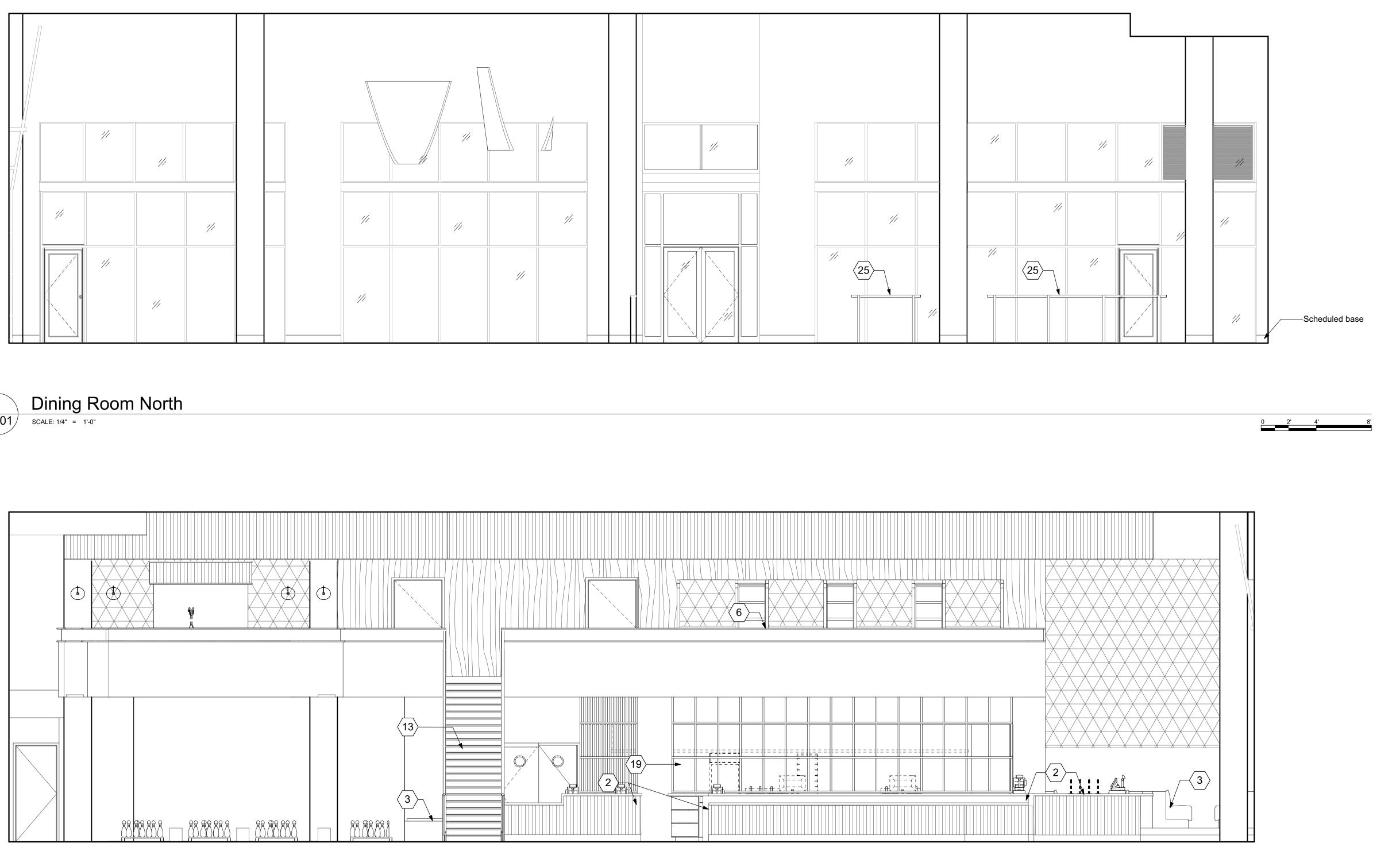




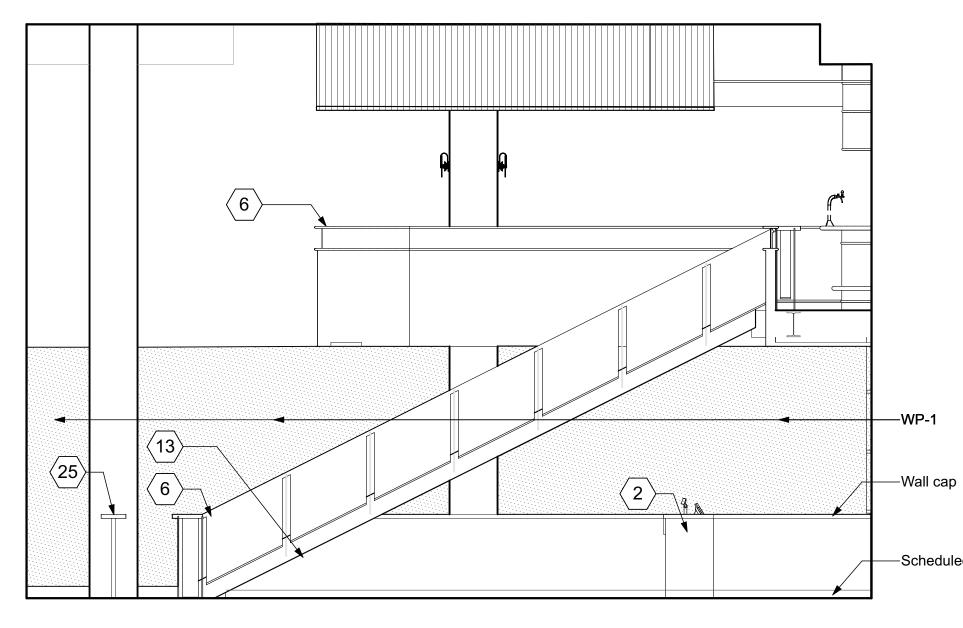


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///		//		//	//	
	//			//		

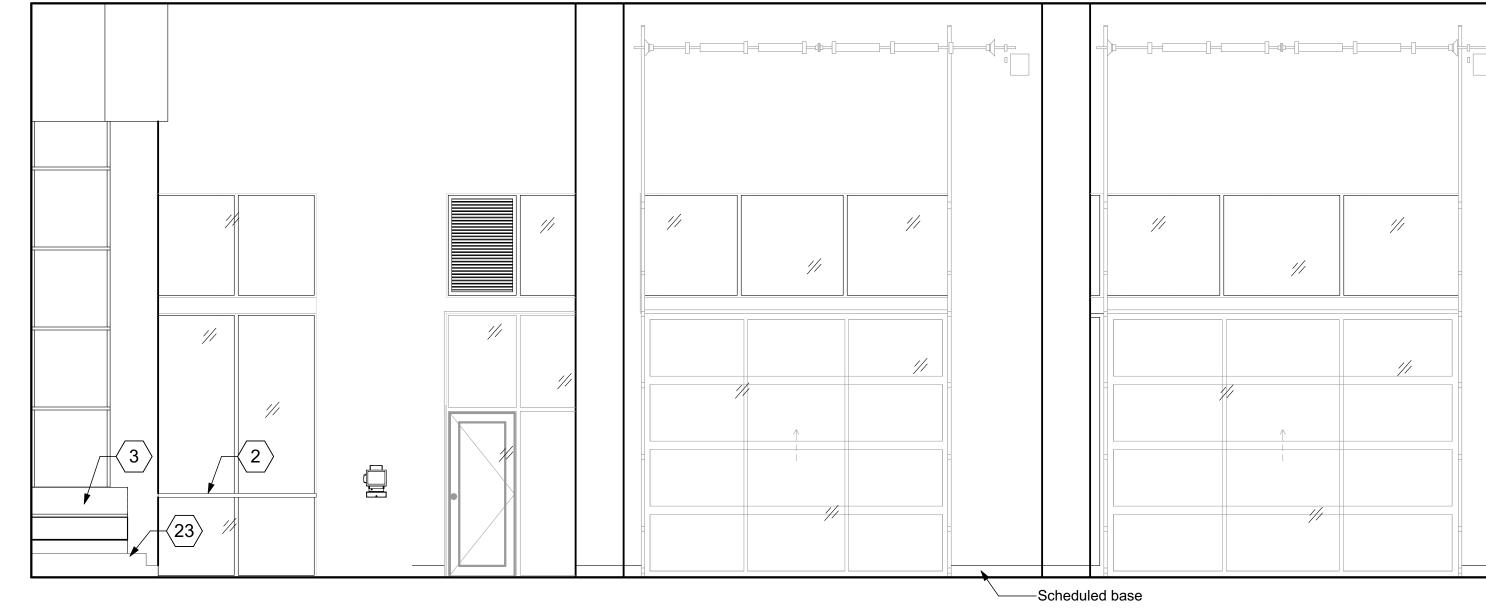






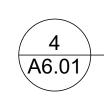


3 Dining Room East A6.01 SCALE: 1/4" = 1'-0"



-Scheduled base

0 2' 4'



4 Dining Room West A6.01 SCALE: 1/4" = 1'-0"



INTERIOR ELEVATION LEGEND



Wallcovering

 $\wedge \wedge \wedge \wedge \wedge \wedge$ 

Wood Veneer Wall Panel

Ceramic Tile Wall

# CODED NOTES

 $\langle 1 \rangle$  Food Service equipment by Owner.

2 Custom casework with for more information. Custom casework with quartz countertop, height varies see details

 $\langle 3 \rangle$  Custom casework, banquette/booth see details for more information.

- Existing grease shaft, cleanout to be coordinated with tenant and landlord.  $\langle 4 \rangle$
- 5 Metal lockers, B.O.D. "Paramount 3 Tier locker" by Global Industrial.

 $\left< \begin{array}{c} 6 \end{array} \right>$  Custom railing, see details.

 $\langle 7 \rangle$ Mezzanine structure, see structural drawings

 $\langle 8 \rangle$ Toilet room signage adjacent to each toilet room door, see signage details for more information.

 $\langle 9 \rangle$  Low wall, see elevations.

 $\langle 10 \rangle$  Provide power and data for P.O.S. system.

 $\langle 11 \rangle$  New steel canopy, see details.

Power pole supporting festoon lighting, bolted to existing slab. Coordinate with Structural.

New steel pan stairs with painted C-channel stringer. See details for more information.

Custom signage, provide power connections. See detail for more

 $\langle 14 \rangle$ information.

 $\langle 15 \rangle$  Oil management system, coordinate with food service.

(16) Custom millwork feature wall, see interior elevations. Provide blocking for TVs as required.

17 Duckpin bowling lanes, see enlarged plan, details, and drawings from duck pin bowling consultant.

 $\langle 18 \rangle$  (2) Levels of coat racks.

 $\langle 19 \rangle$  Custom casework open to kitchen beyond.

 $\langle 20 \rangle$  All exposed conduit to be rigid and painted.

 $\langle 21 \rangle$  Grease shaft protection.

**\(22\)** Custom casework and P.O.S. station, see details for more information.

 $\langle 23 \rangle$  Raised platform with two steps, see details for more information.

 $\langle 24 \rangle$  Existing concrete column.

**(25)** Custom casework standing drink rail, see details for more

information. **(26)** 

Exposed columns in kitchen are to be furred out with gypsum board.

 $\langle 27 \rangle$  Custom casework office countertop, see details for more information. Designated roof equipment area for tenant space.See MEP

**(28)** drawings.

 $\langle 29 \rangle$  Bottom of existing stair at 13'-8" A.F.F. - V.I.F.

Retractable awning supported by existing steel header, B.O.D.
 "Palermo" by Retractable Awnings, connection at existing steel header, GC to coordinate.
 Ductwork for adjacent tenant.

**32** Hook holding festoon lighting in mortar joint between bricks, see elevataions.

Air curtain supported by existing steel header, coordinate with structural and MEP. **33** 

 $\langle 34 \rangle$  Ceiling mounted projector by Owner.

 $\langle 35 \rangle$  Louver painted to match storefront, see mechanical drawings.

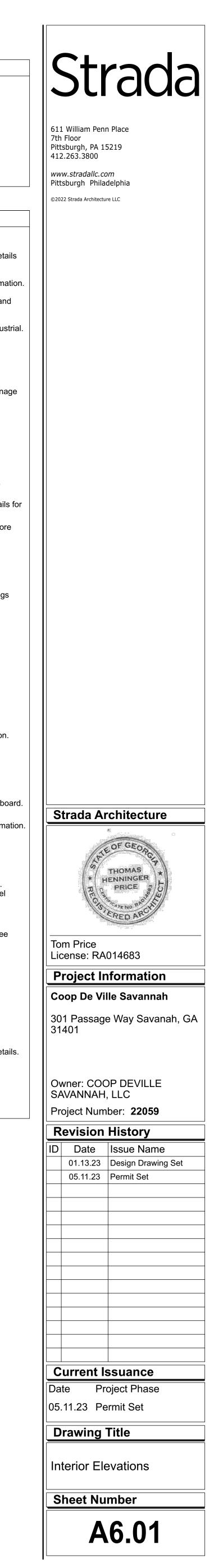
 $\langle 36 \rangle$  Paint existing railing.

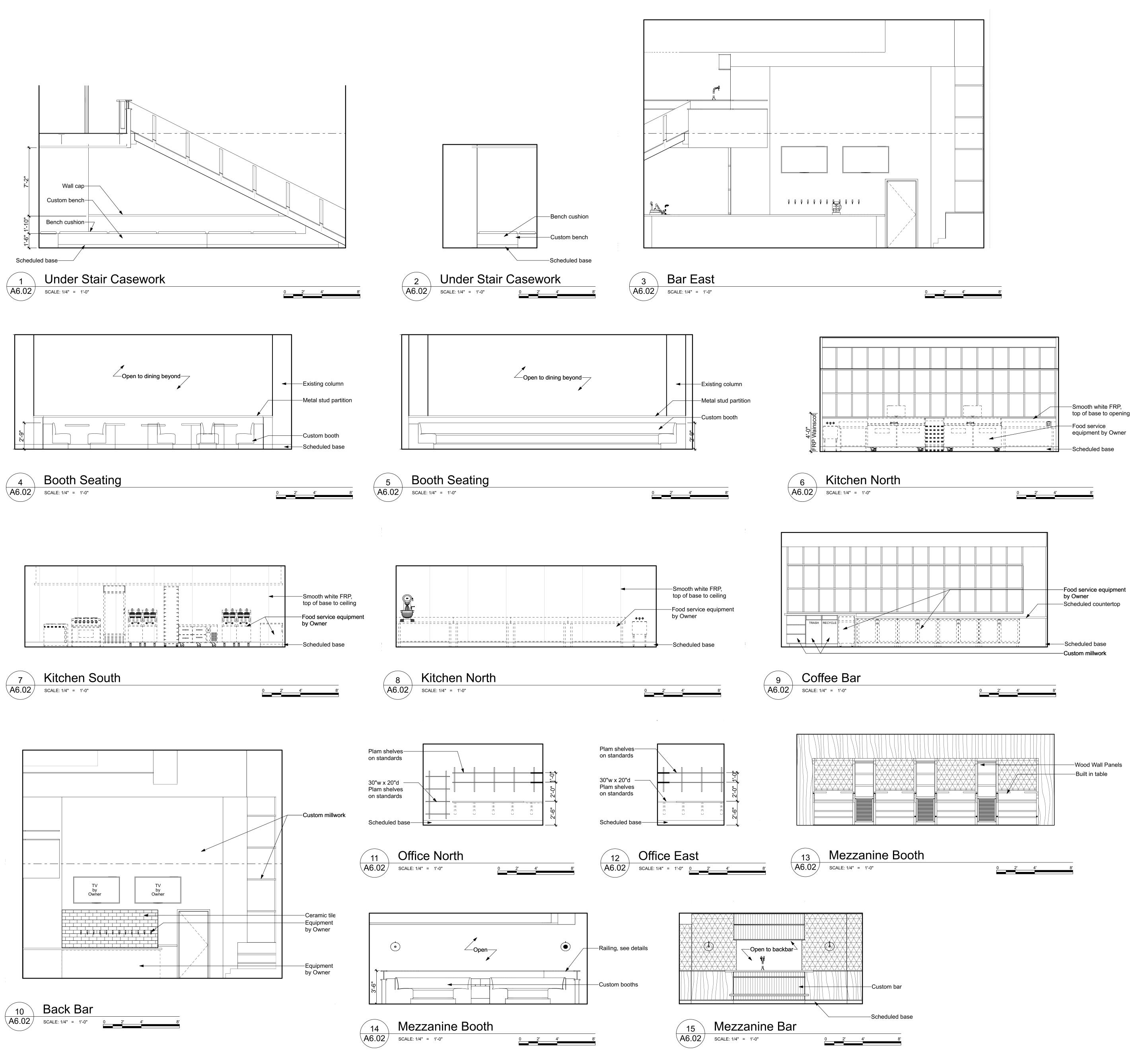
 $\langle 37 \rangle$  New storefront window and framing to replace existing, see details.

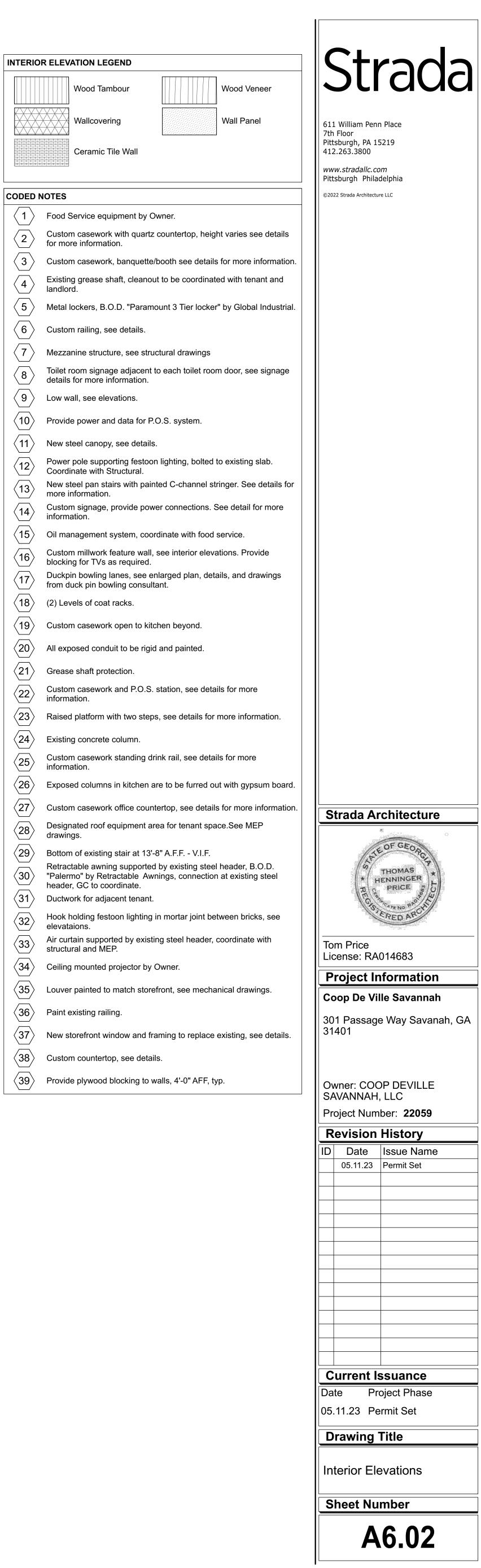
 $\langle 38 \rangle$  Custom countertop, see details.

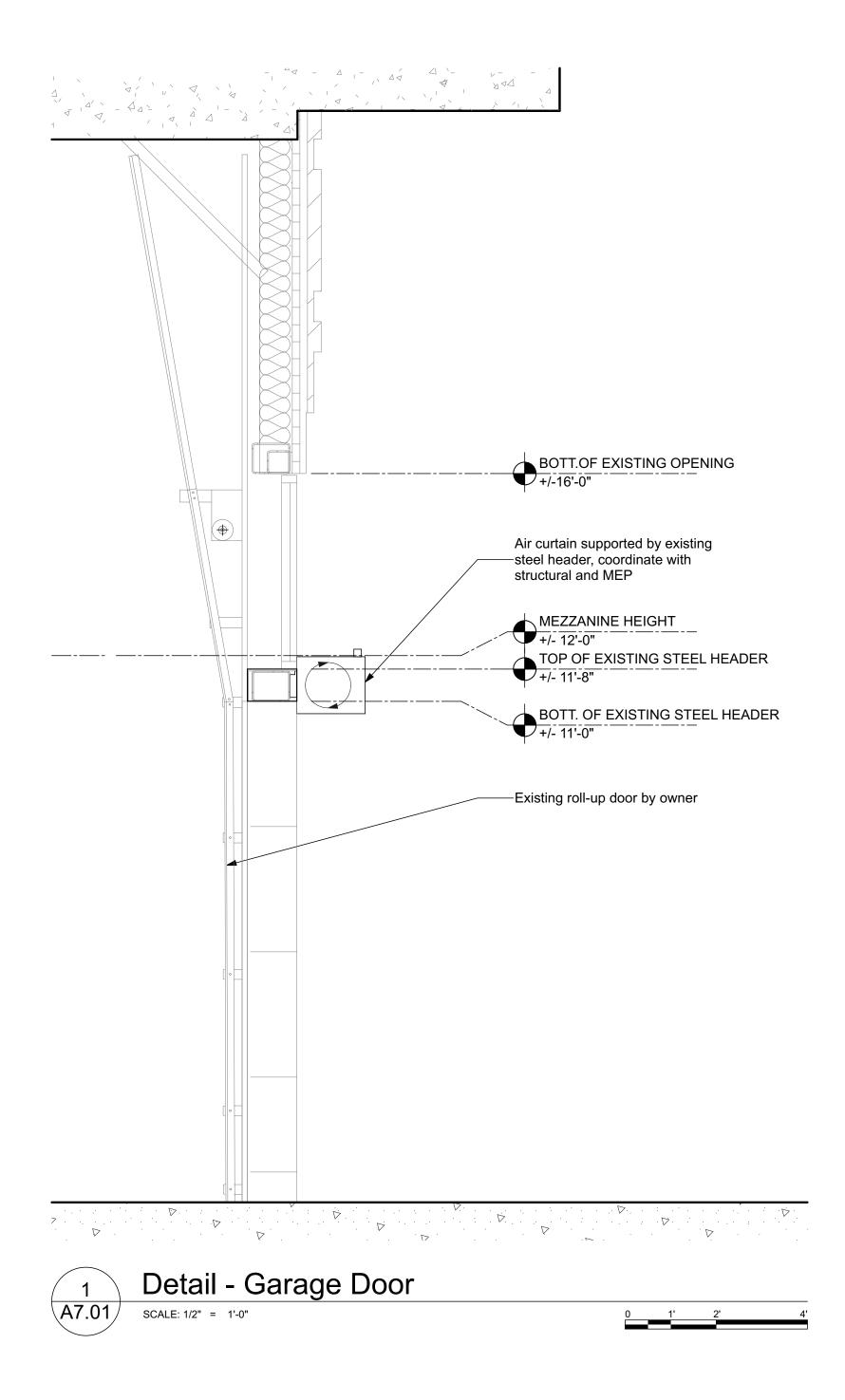
 $\langle 39 \rangle$  Provide plywood blocking to walls, 4'-0" AFF, typ.

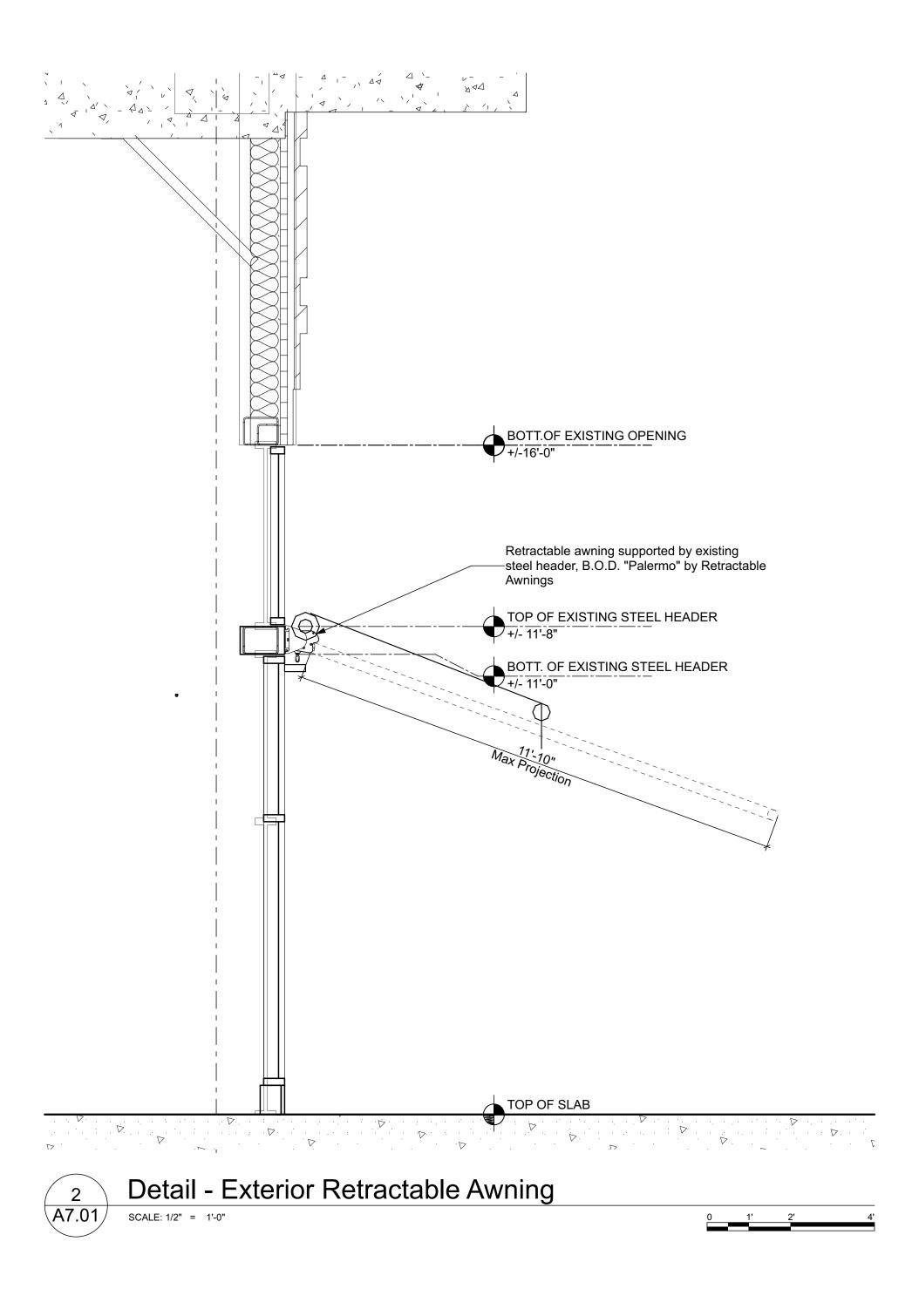
0 2' 4'

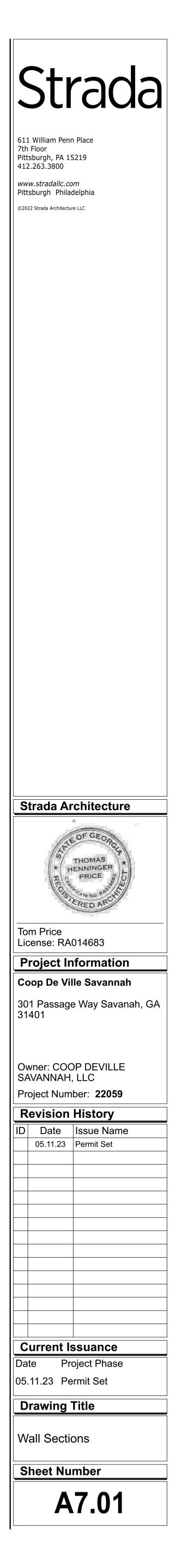


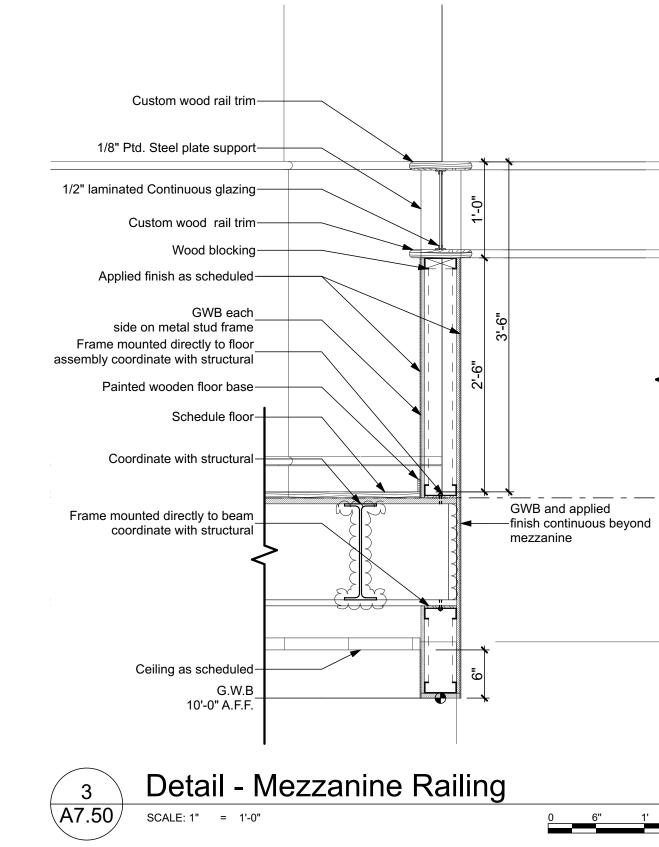






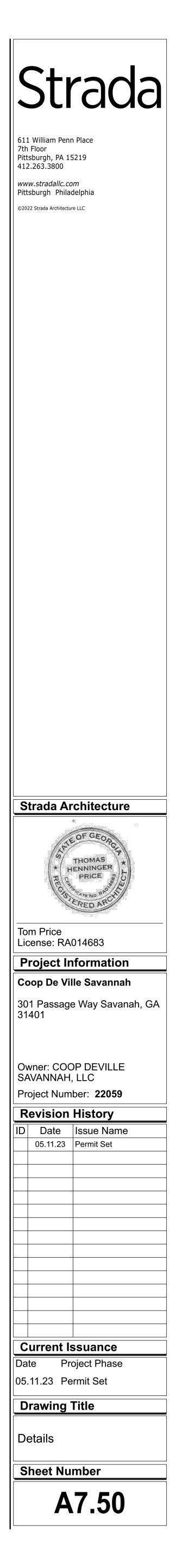




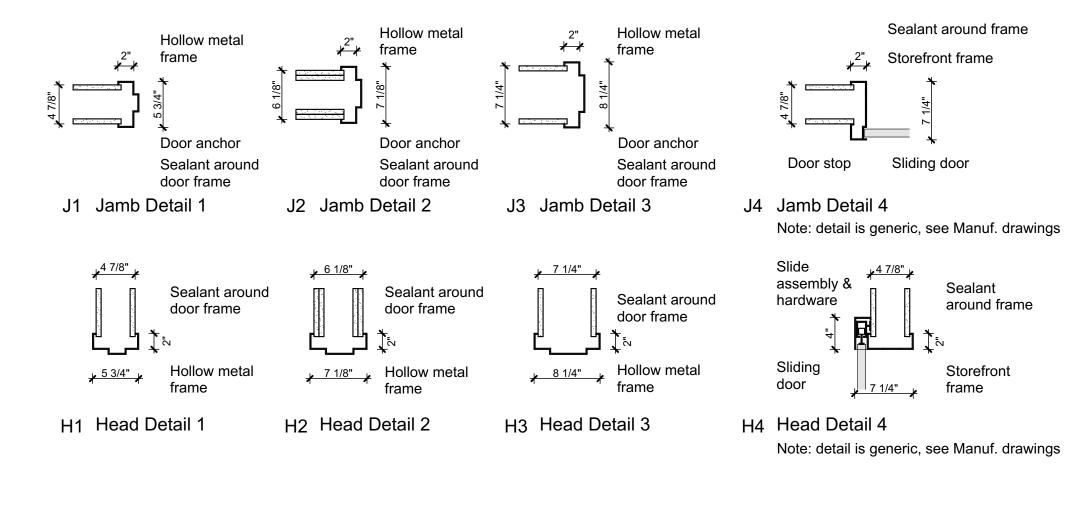


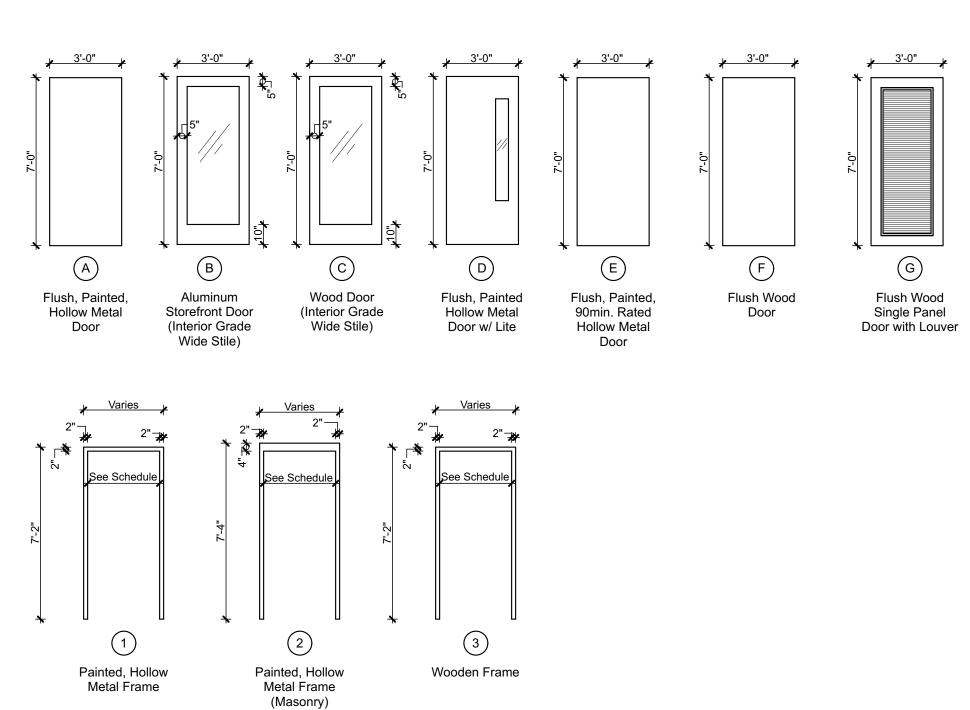
mezzanine

0 6" 1'

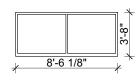


OOR SCHEDULE												
Room	Opening		Door		Nominal Size W x H		Fr	ame		Label	Hardware	Note / Remarks
No.	No.	Туре	Matl	Qty		Туре	Matl	Jamb	Head	Label	Set	Note / Remarks
ound Fl	oor											
002	1		HM	1	5'-6"×7'-0"							
002	2		HM	1	3'-0"×7'-0"							
002	3	A	HM	1	3'-0"×7'-0"							
004	1	A	HM	1	3'-0"×7'-0"							
004	A	G	WD	1	2'-2"×7'-0"							
004	В	G	WD	1	2'-2"×7'-0"							
004	С	G	WD	1	3'-0"×7'-0"							
005	1	A	HM	1	3'-0"×7'-0"							
005	A	G	WD	1	3'-0"×7'-0"							
006	1	A	HM	1	3'-0"×7'-0"							
007	1	A	HM	1	3'-0"×7'-0"							
008	1	A	HM	1	3'-0"×7'-0"							
ezzanine	Э											
M02	1	F	WD	1	3'-6"×7'-0"							
M03	1	F	WD	1	3'-6"×7'-0"							
M04	1	A	HM	1	3'-0"×7'-0"							



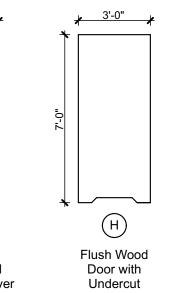


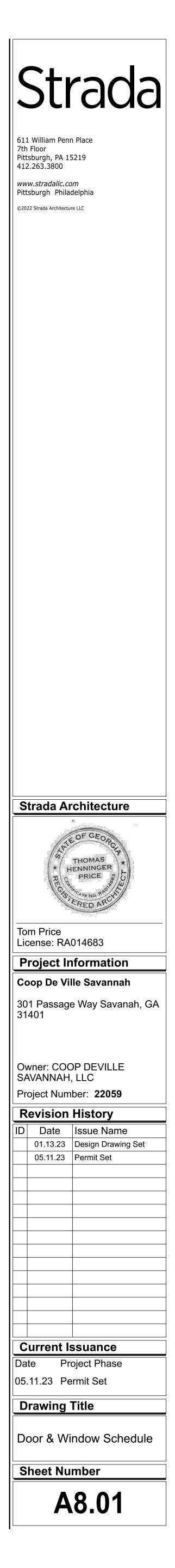
## EXTERIOR WINDOW SCHEDULE

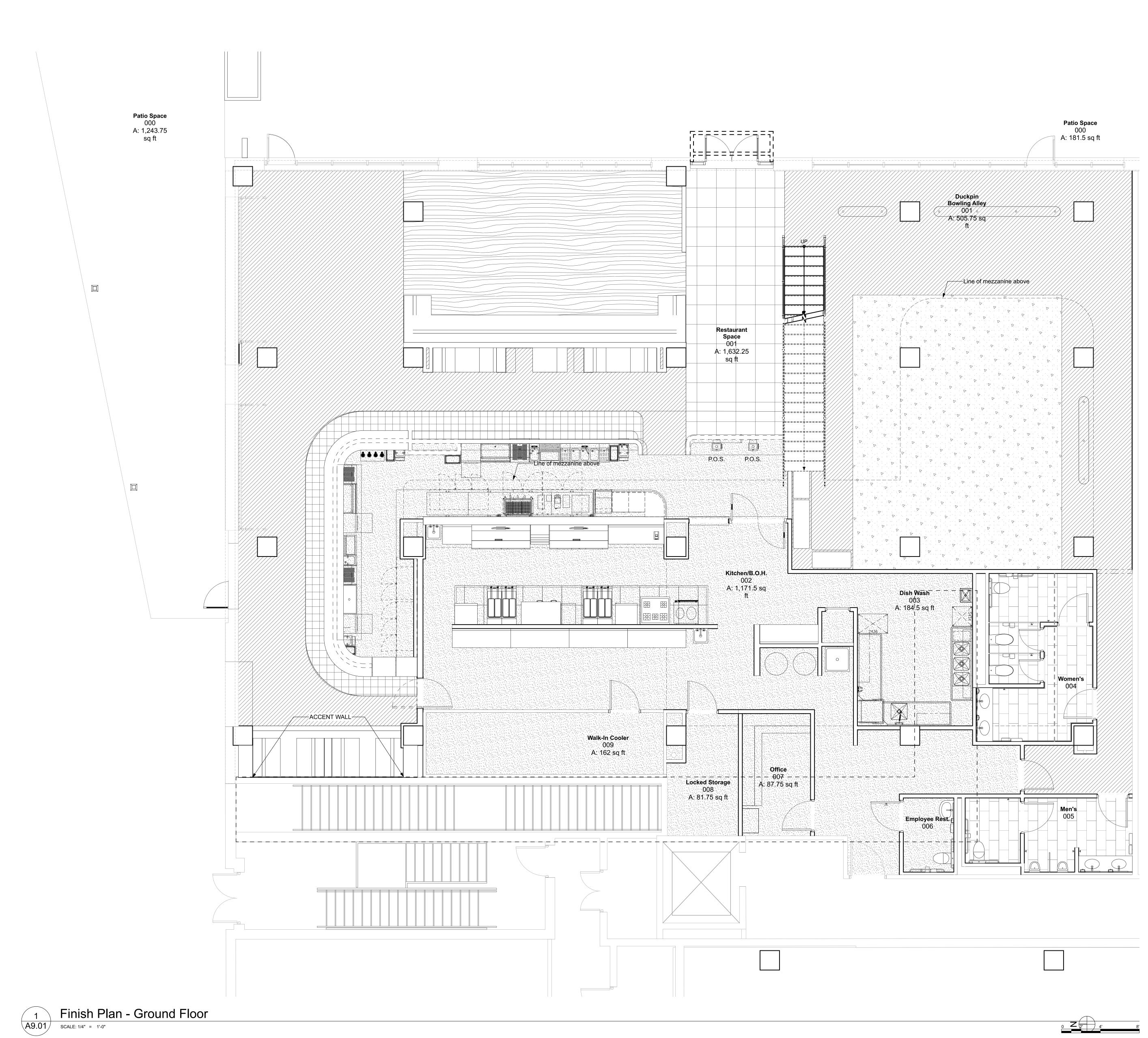


W01 Window frame finish and Glazing to match existing storefront

Storefront





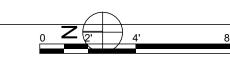




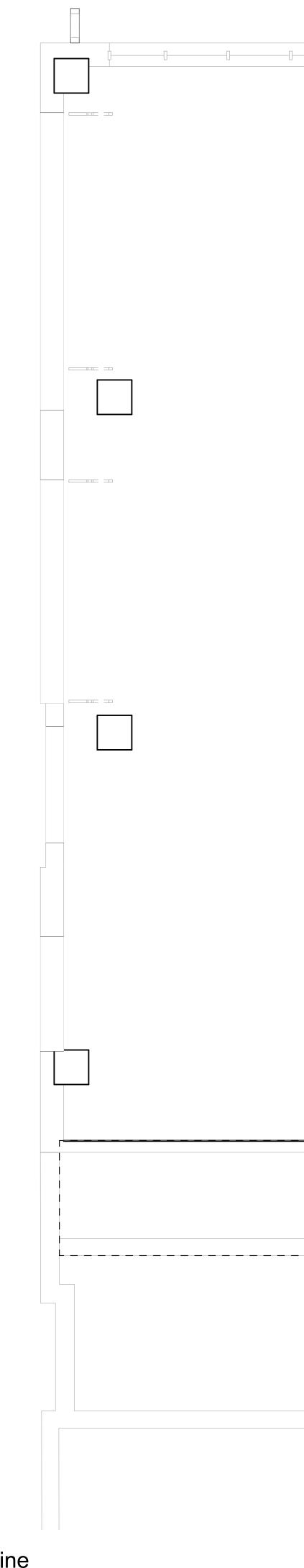
FINISH LEGEND	)		
	CONC-1 Polished Concrete		CONC-2 Stained Concr
	EPOX-1 Epoxy Flooring		CONC-3 Stenciled Cond
	WD-1 Wood Flooring		CONC-4 Stained and Stenciled Cond
	CTF-1 Ceramic Tile Flooring		
pattern, size of	s shown are representa material or installation s and installation inform	direction. Refer	

## GENERAL FINISH NOTES

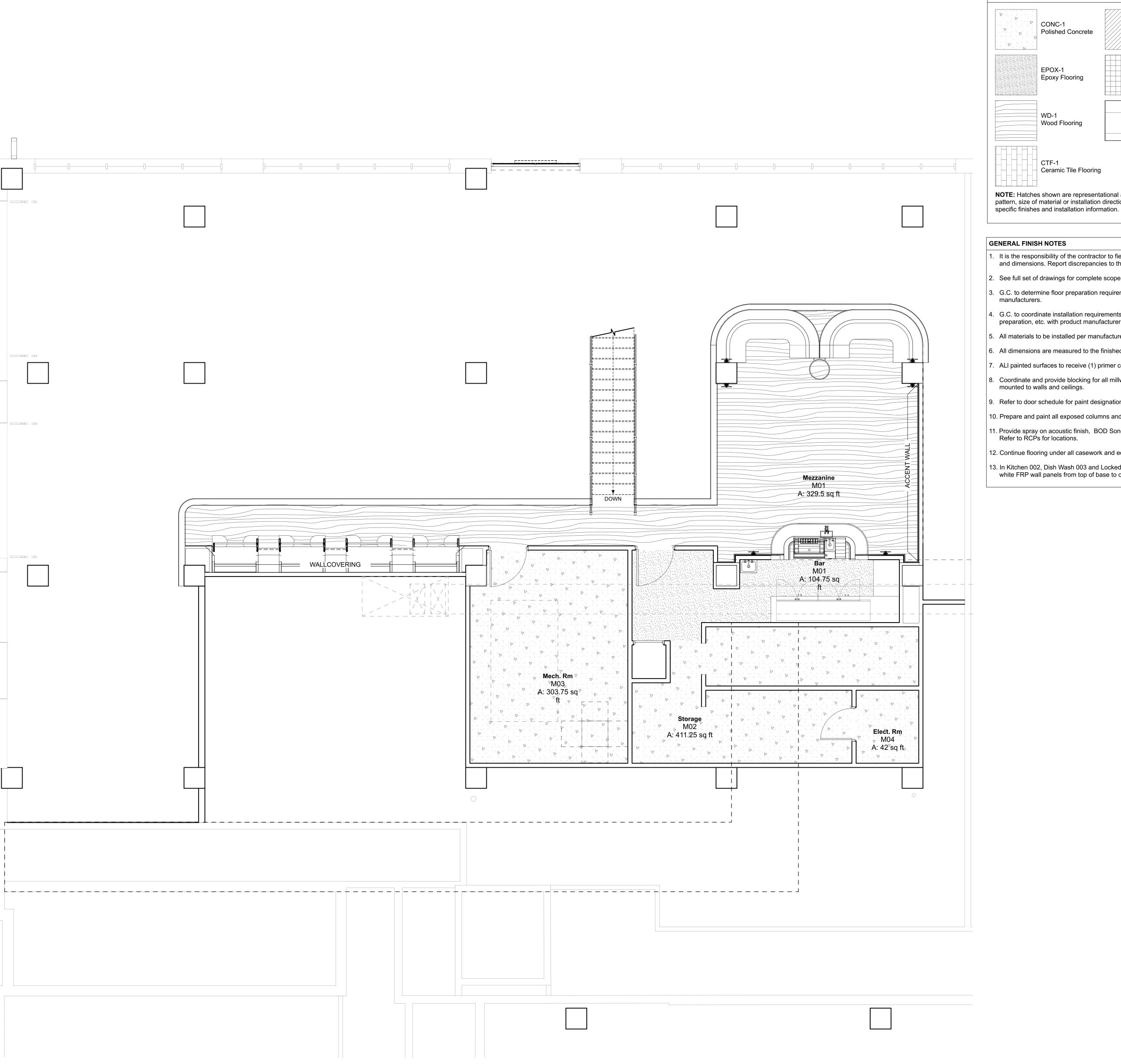
- 1. It is the responsibility of the contractor to field verify all existing conditions and dimensions. Report discrepancies to the architect immediately.
- 2. See full set of drawings for complete scope of work.
- 3. G.C. to determine floor preparation requirements with all flooring manufacturers.
- 4. G.C. to coordinate installation requirements for air moisture, substrate preparation, etc. with product manufacturers.
- 5. All materials to be installed per manufacturer instructions.
- 6. All dimensions are measured to the finished wall surface, U.N.O.
- 7. ALI painted surfaces to receive (1) primer coat and (2) finish coats of paint. 8. Coordinate and provide blocking for all millwork and items attached or
- mounted to walls and ceilings.
- 9. Refer to door schedule for paint designations.
- 10. Prepare and paint all exposed columns and column capitals, UNO. 11. Provide spray on acoustic finish, BOD SonoSpray, on all exposed ceilings. Refer to RCPs for locations.
- 12. Continue flooring under all casework and equipement, typical.
- 13. In Kitchen 002, Dish Wash 003 and Locked Sotrage 008 provide smooth white FRP wall panels from top of base to ceiling.







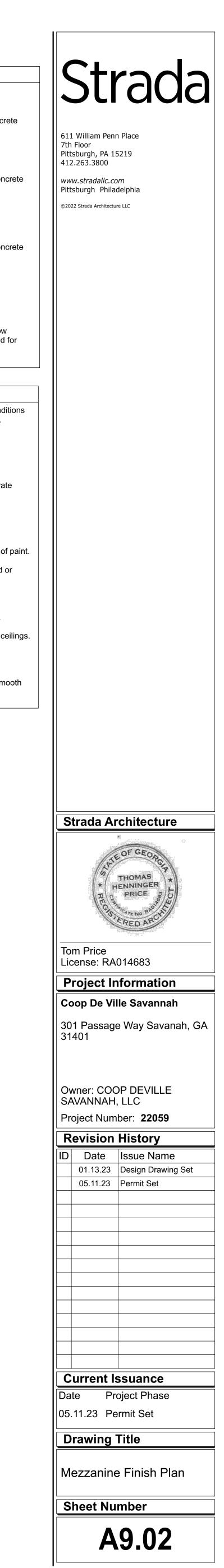




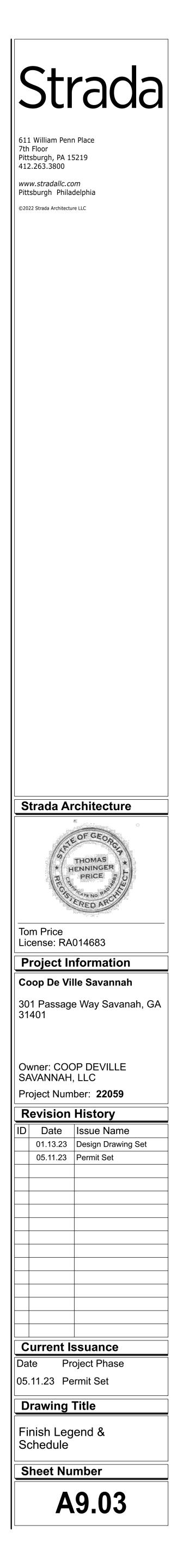
INISH LEGEND	)		
	CONC-1 Polished Concrete		CONC-2 Stained Concr
	EPOX-1 Epoxy Flooring		CONC-3 Stenciled Con
	WD-1 Wood Flooring		CONC-4 Stained and Stenciled Con
	CTF-1 Ceramic Tile Flooring		
pattern, size of	s shown are representa material or installation s and installation inform	direction. Refer	
ENERAL FINIS	HNOTES		

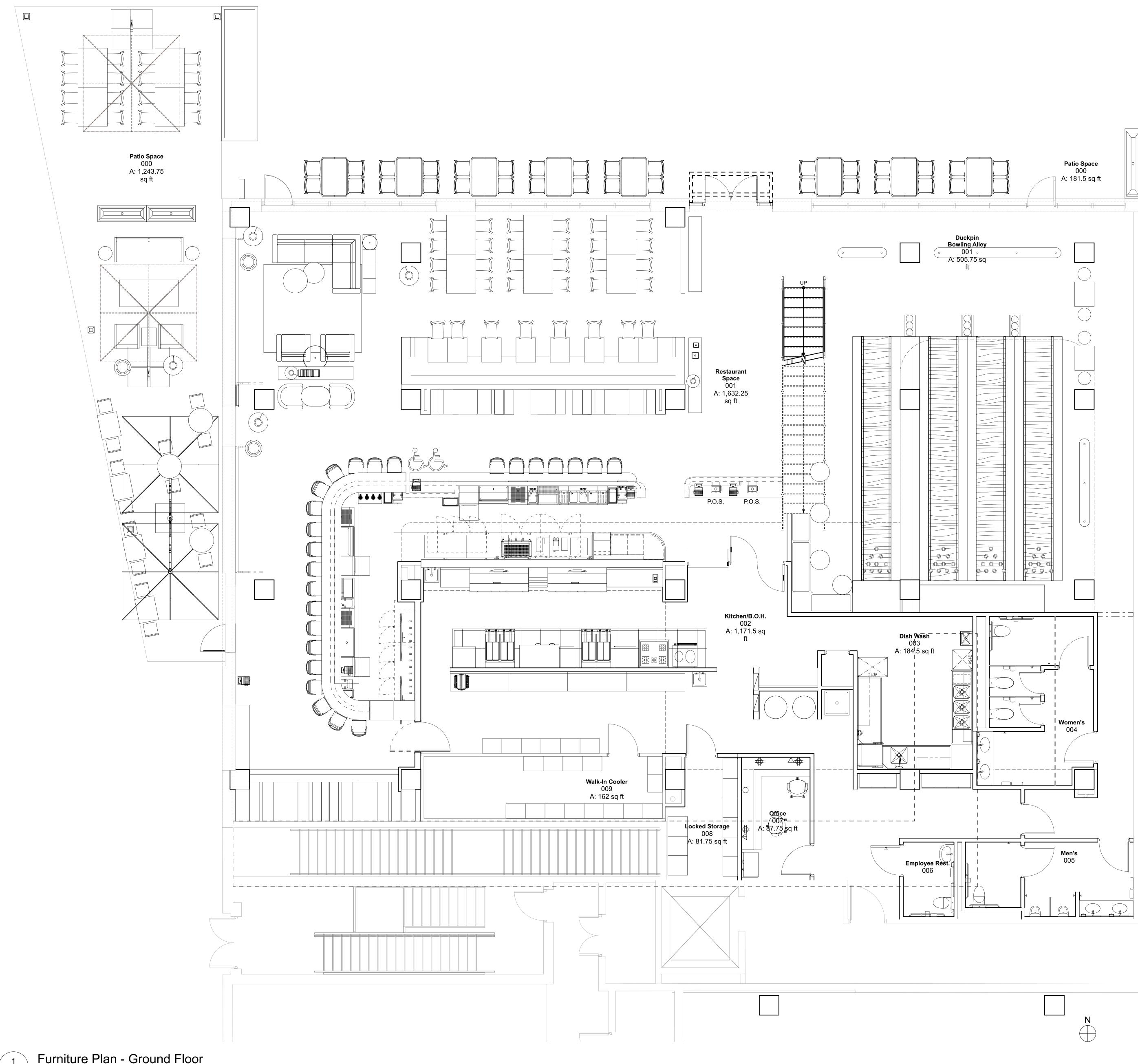
1. It is the responsibility of the contractor to field verify all existing conditions and dimensions. Report discrepancies to the architect immediately.

- 2. See full set of drawings for complete scope of work.
- 3. G.C. to determine floor preparation requirements with all flooring
- 4. G.C. to coordinate installation requirements for air moisture, substrate preparation, etc. with product manufacturers.
- 5. All materials to be installed per manufacturer instructions.
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- 9. Refer to door schedule for paint designations.
- 10. Prepare and paint all exposed columns and column capitals, UNO. 11. Provide spray on acoustic finish, BOD SonoSpray, on all exposed ceilings.
- 12. Continue flooring under all casework and equipement, typical.
- 13. In Kitchen 002, Dish Wash 003 and Locked Sotrage 008 provide smooth white FRP wall panels from top of base to ceiling.



Surface	Material ID	Product	Manufacturer	Model / Color	Remarks
Base					
	CTB-1	Ceramic Base			
	RB-1	Rubber Base	Johnsonite		
Ceiling					
	APC-1	Acoustic Panel Ceiling	Armstrong	Kitchen Zone 673 Square Lay-in, 24"x24", white	Install w/ 15/16" prelude grid in white
	APC-2	Acoustic Panel Ceiling	Armstrong	Tectum Direct Attach High NRC 48"x96"x1" panels, color white and paint P-3	Installation: Direct attach w/C-40 mounting (laid on 1-1/2" furring strips with 2-1/2" batt insulation
	P-2	Paint	Sherwin Williams	Canvas Tan SW7531	
loor					
	CTF-1	Ceramic Tile Flooring	Milestone	Native Wood 8" x 48" - Color Birch 1103295	
	EPOXY-1	Epoxy Flooring	Stonhard	Stonclad UT color TBT	Provide 6" flash cove base, typical.
	PCONC-1	Polished Concrete			
	WD-1	Wood Flooring	Indo Teak Design	Teak Engineered Yacht Flooring, 9/16"	
lisc.	-				
	PLAM-1	Plastic Laminate			
	QTZ-1	Quartz	Nasco	Agglo Vendo 2cm	
	UPH-1	Upholstery	Architex	New Deal color Eleanor	
	UPH-2	Upholstery	Bretano	Yotta color Clementine 1213-05	
Wall					
	CTW-1	Ceramic Tile Wall			
	CTW-2	Ceramic Tile Wall			
	FRP-1	Fiberglass Reinforced Plastic	Marlite	Smooth FRP S100G in color White, Class A	Install from top of cove base to finished ceiling
	P-1	Paint	Sherwin Williams	Canvas Tan SW7531	
	P-3	Paint	Sherwin Williams	Gale Force 7604	
	P-4	Paint	Sherwin Williams	Alchemy 6395	
	WC-1	Wallcovering	Astek	Drunk Monkey in color Bashed AA100-1	
	WC-2	Wallcovering	Wolf Gordon	Samoa SAM282 color Palm GOH 33154309	
	WC-3	Wallcovering	MDC	LEN-TEX Contract Simplify color Lime in the Coconut 7728SI	
	WD-2	Wood Tambour	Surfacing Solution	383-SWN Walnut Tabmour flexible wood panel	Clear satin finish
	WD-3	Wood Veneer	SanFoot	Teak Quarter Cut W8031	Clear satin finish
	WP-1	Wall Panels	Armstrong	Textum Direct Attach w/High NRC panels acoustical backer 48" x 96"	Install with C-20 mounting. To be painted with custom mural.





1Furniture Plan - Ground FloorA9.50SCALE: 1/4" = 1'-0"

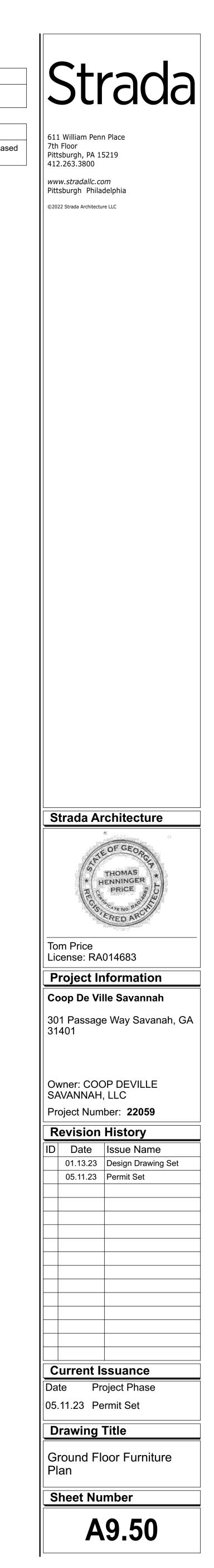
## FURNITURE LEGEND

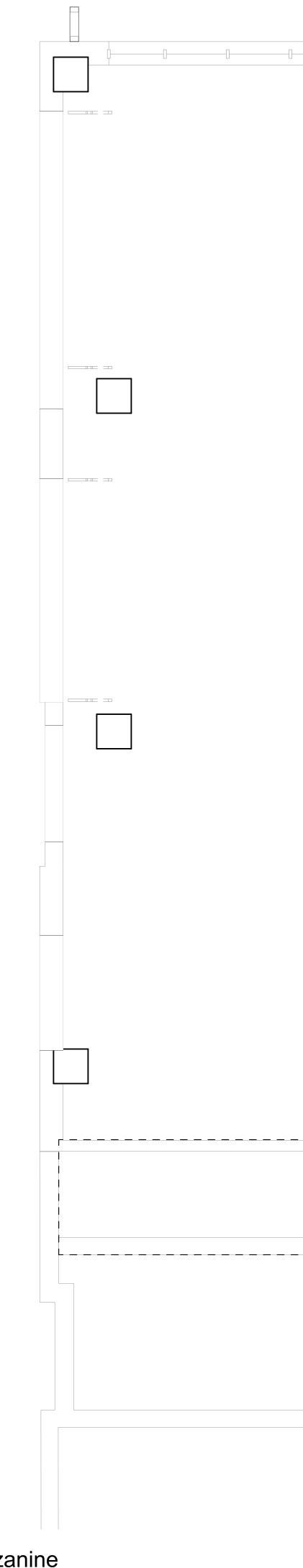
0 2' 4'

Not In Scope

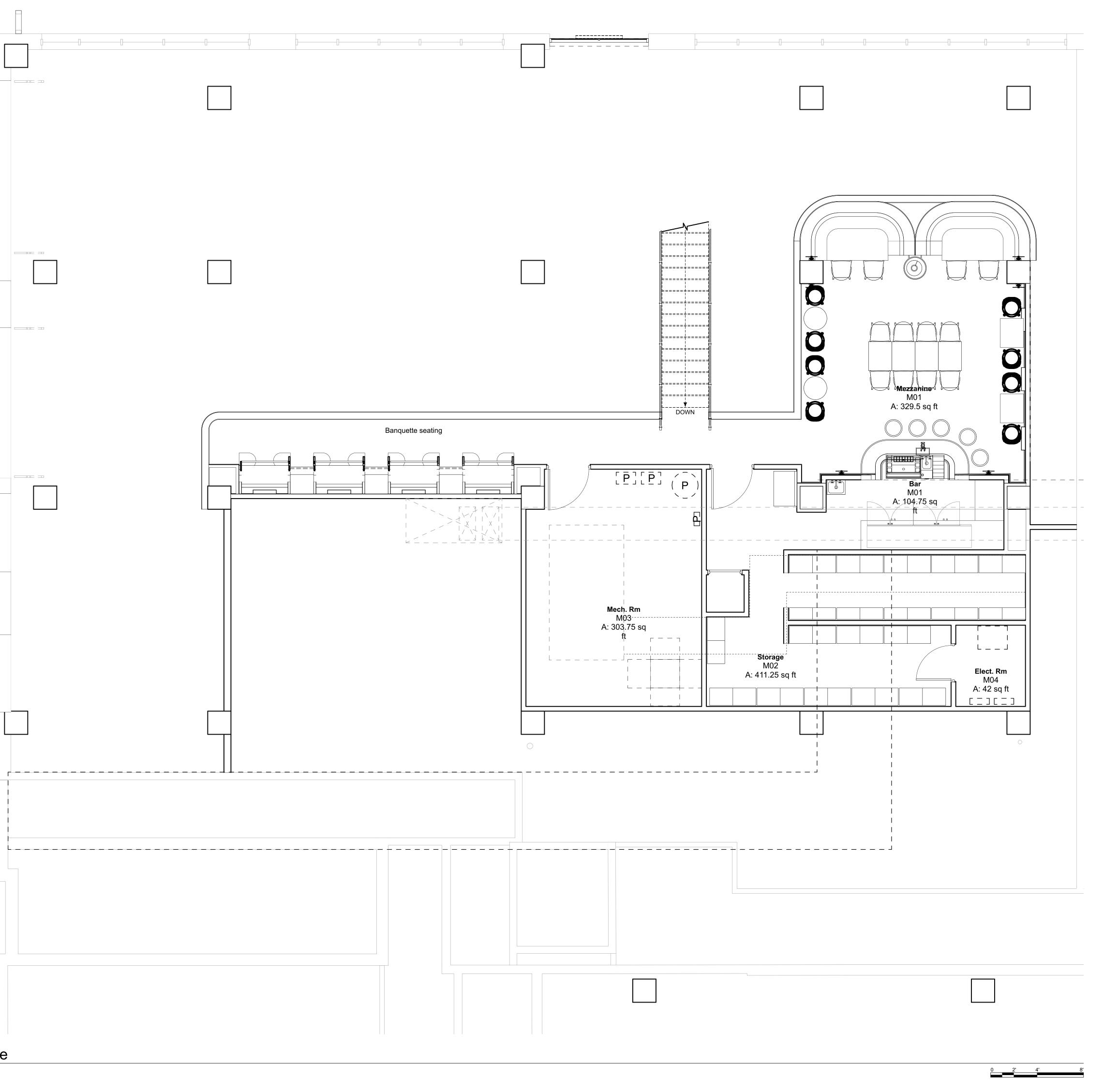
GENERAL FURNITURE NOTES

1. Furniture plan shown for reference only. All new furniture will be purchased by the Owner.







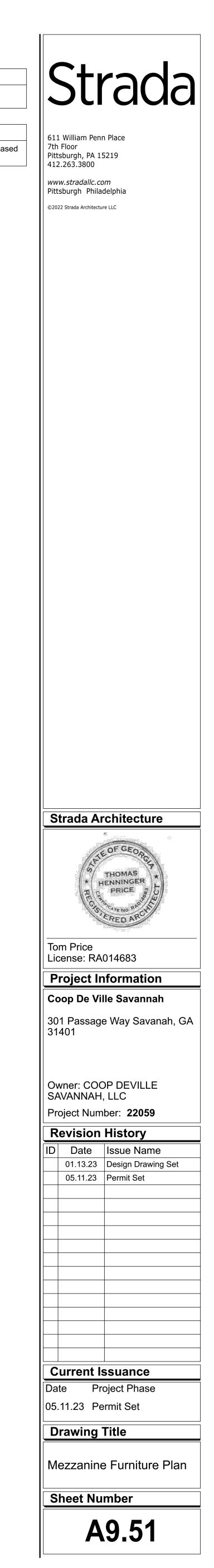


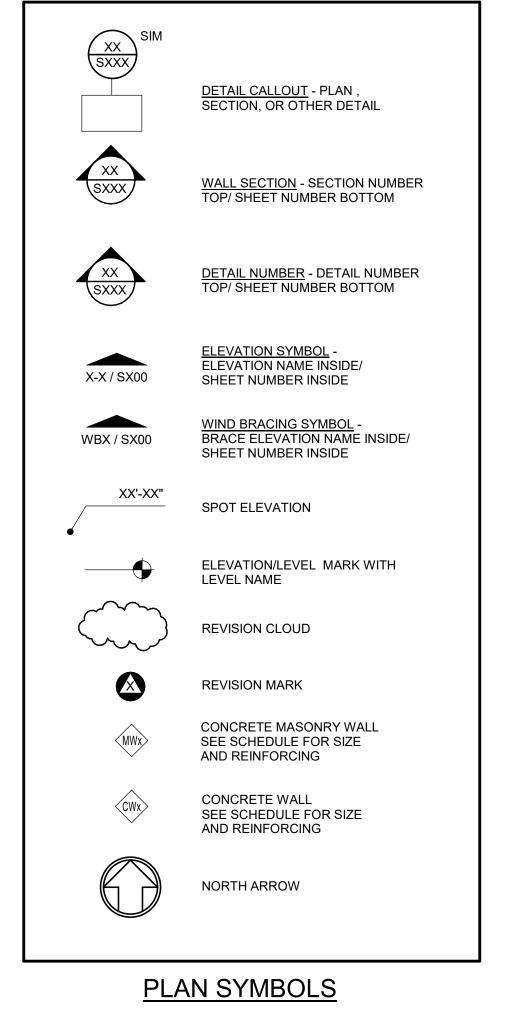
## FURNITURE LEGEND

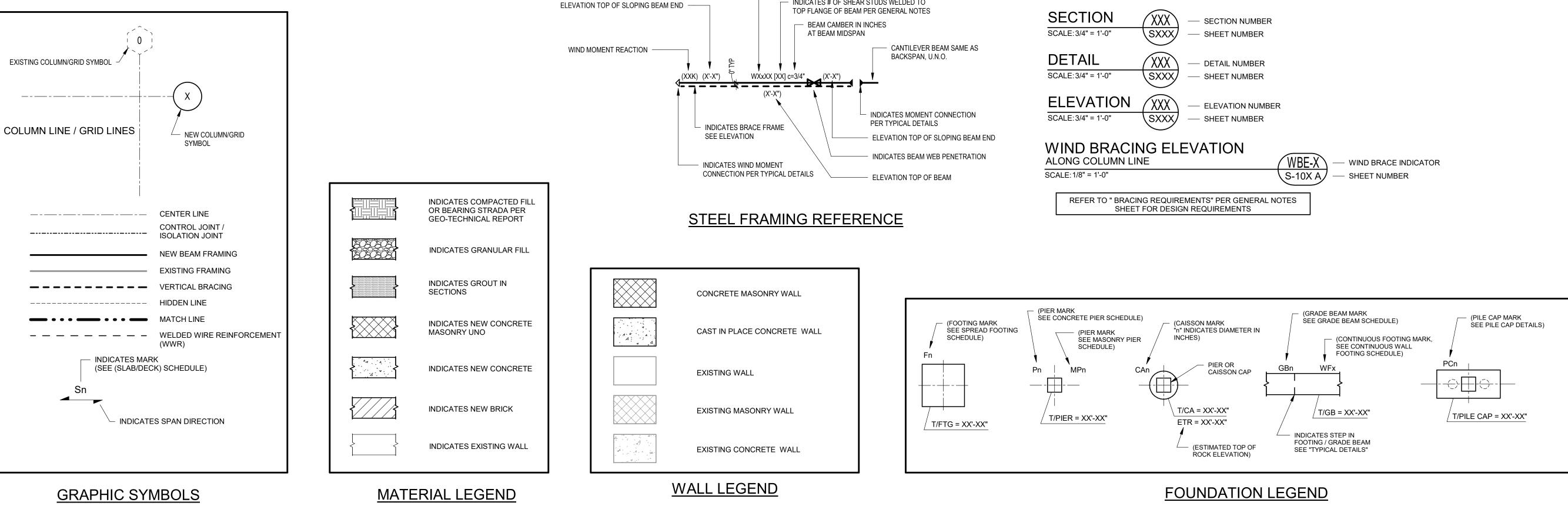
Not In Scope

GENERAL FURNITURE NOTES

1. Furniture plan shown for reference only. All new furniture will be purchased by the Owner.







AISC SHAPE DESIGNATION

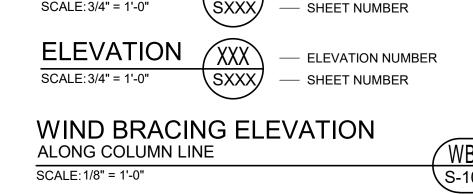
# Coop DeVille Savannah 301 Passage Way Savannah, GA 31401

STRUCTURAL DRAWING SHEET LIST			
SHEET NUMBER	SHEET NAME		
S000	LEGENDS & SYMBOLS		
S001	GENERAL NOTES		
S100 MEZZANINE FLOOR FRAMING PLAN			
S200	SECTIONS AND DETAILS		
Grand total: 4			

## STRUCTURAL ABBREVIATIONS:

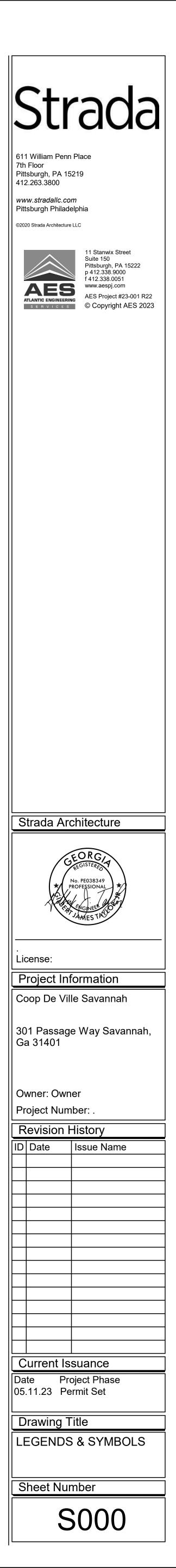
&	AND	HOF	HORIZONTAL OUTSIDE FACE
#	POUNDS	IF	INSIDE FACE
			-
AA	AFTER ALIGNMENT	IN	INCH(ES)
AB	ANCHOR BOLT	INT	INTERIOR
ADDL	ADDITIONAL	JT	JOINT
APP	APPROVED	K	KIPS
	-		
APPROX	APPROXIMATELY	LE	LEFT END
ARCH	ARCHITECT(URAL)	LF	LINEAR FEET
BB	BOND BEAM	LL	LIVE LOAD
BE	BOTH ENDS	LLH	LONG LEG HORIZ.
BEW	BOTTOM EACH WAY	LLV	LONG LEG VERTICAL
B/	BOTTOM OF	LONG	LONGITUDINAL
BLDG	BUILDING	LT	LIGHT
BOT	BOTTOM	L	ANGLE
BPL	BASE/BEARING PLATE	(2) L	DOUBLE ANGLE
BRG	BEARING	(3) L	TRIPLE ANGLE
BS	BOTH SIDES	LTWT	
			LIGHT WEIGHT
CIP	CAST IN PLACE	MAX	MAXIMUM
CJ	CONSTRUCTION JOINT/	MECH	MECHANICAL
	CONTRACTION JOINT	MFR	MANUFACTURER
CFSF	COLD-FORMED	MIN	MINIMUM
	STEEL FRAMING	MISC	MISCELLANEOUS
~ .			
CA	CAISSON	MO	MASONRY OPENING
CANT	CANTILEVER	NF	NEAR FACE
CL	CENTER LINE	NS	NEAR SIDE/NON-SHRINK
CLR	CLEAR	NTS	NOT TO SCALE
CMU	CONCRETE MASONRY UNIT	NWT	NORMAL WEIGHT
COL	COLUMN	OC	ON CENTER
COMP	COMPOSITE OR	OF	OUTSIDE FACE
	COMPRESSIBLE	OPER	OPERATING
CONC	CONCRETE	OPNG	OPENING
CONN	CONNECTION	OPP	OPPOSITE
CONT	CONTINUOUS	PAF	POWDER ACTUATED FASTENER
COORD	COORDINATE	PC	PRECAST CONCRETE
DL	DEAD LOAD	PERP	PERPENDICULAR
DBL	DOUBLE	PEMB	PRE-ENGINEERED
DIA	DIAMETER		METAL BUILDING
DIAG	DIAGONAL	PL	PLATE
DIM	DIMENSIONS	PLF	POUNDS PER LINEAR FOOT
DEG	DEGREE	PSF	POUNDS PER SQUARE FOOT
DOCS	DOCUMENTS	PSI	POUNDS PER SQUARE INCH
DWGS	DRAWINGS	PT	PRESSURE TREATED
EA	EACH	R	RADIUS
EE	EACH END	RE	RIGHT END
EF	EACH FACE	REINF	REINFORCING/REINFORCED
EOD	EDGE OF DECK	REM	REMAINDER
EOR	ENGINEER OF RECORD	REQD	REQUIRED
EOS	EDGE OF SLAB	SC	SLIP CRITICAL
ETR	ESTIMATED TOP	SCHED	SCHEDULE
	OF ROCK ELEVATION	SIM	SIMILAR
EW	EACH WAY	SF	SQUARE FOOT
	ELEVATION	SL	SOCKET LENGTH
EL			
EMBED	EMBEDMENT/EMBEDDED	SOG	SLAB ON GRADE
ENGR	ENGINEER	SPEC	SPECIFICATION
EQ	EQUAL	SQ	SQUARE
EQUIP	EQUIPMENT	SS	STAINLESS STEEL
EQUIV	EQUIVALENT	STD	STANDARD
ES	EACH SIDE/	STL	STEEL
EO			
	EQUAL SPACES	STIFF	STIFFENER
ETC	ETCETERA	STRUCT	STRUCTURAL
EJ	EXPANSION JOINT	Т	TOP
EXT	EXTERIOR/EXTENDED	Τ/	TOP OF
		TEMP	TEMPORARY
EX	EXISTING		
EXP	EXPANSION	TRANS	TRANSVERSE
FAB	FABRICATOR	TYP	TYPICAL
FDN	FOUNDATION	U/S	UNDERSIDE
FIN	FINISH	UNO	UNLESS NOTED OTHERWISE
FTG		VIF	VERIFY IN FIELD OR
	FOOTING		
FT	FOOT		VERTICAL INSIDE FACE
GB	GRADE BEAM	VERT	VERTICAL
GC	GENERAL CONTRACTOR	VEF	VERTICAL EACH FACE
GA	GAUGE/GAGE	VOF	VERTICAL OUTSIDE FACE
GALV	GALVANIZED	W/	WITH
GEN	GENERAL	WP	WORK POINT
HEF	HORIZONTAL EACH FACE	WT	WEIGHT
HORIZ	HORIZONTAL	WWR	WELDED WIRE REINFORCEMENT
HIF	HORIZONTAL INSIDE FACE		

INDICATES # OF SHEAR STUDS WELDED TO



HORIZONTAL INSIDE FACE

HIF



### GENERAL NOTES

- 100. DESIGN CRITERIA
- 100.1 DESIGN BUILDING CODE: A. INTERNATIONAL EXISTING BUILDING CODE, 2018
- 100.2 GRAVITY LOADS: A. FLOOR LIVE LOADS:

1.	FIRST FLOOR DINING AREAS	100 PSF
2.	DINING AREAS ABOVE FIRST FLOOR	80 PSF
		2000 L B.

** FLOOR LIVE LOAD HAS BEEN REDUCED IN ACCORDANCE WITH THE PROVISIONS OF THE INTERNATIONAL BUILDING CODE, SECTION 1607.10 AND ASCE 7, SECTION 4.7.

B. ROOF LIVE LOADS:

STAIRS

- FLAT ROOF
- C. HANDRAIL AND GUARD LOADS: UNIFORM LOAD (ANY DIRECTION) CONCENTRATED LOAD (ANY DIRECTION) 200 LB.
- 100.3 LATERAL LOADS: A. WIND LOADS (IN ACCORDANCE WITH DESIGN BUILDING CODE PER GENERAL NOTE 100.1): NO SIGNIFICANT CHANGE IN WIND EXPOSURE.
  - B. EARTHQUAKE LOADS FOR DESIGN OF BUILDING STRUCTURES (IN ACCORDANCE WITH DESIGN BUILDING CODE PER GENERAL NOTE 100.1): NO SIGNIFICANT CHANGE IN SEISMIC MASS.

100 PSF

20 PSF

- 110. GENERAL
- 110.1 THESE DRAWINGS HAVE BEEN PRODUCED ENTIRELY ON ATLANTIC ENGINEERING SERVICES CADD SYSTEM. ANY OTHER LETTERING, LINES OR SYMBOLS, OTHER THAN PROFESSIONAL STAMPS AND SIGNATURES, HAVE BEEN MADE WITHOUT THE AUTHORIZATION OF ATLANTIC ENGINEERING SERVICES AND ARE INVALID.
- 110.2 THE STRUCTURAL DRAWINGS SHALL GOVERN THE WORK FOR ALL STRUCTURAL FEATURES. UNLESS NOTED OTHERWISE. THE ARCHITECTURAL DRAWINGS SHALL GOVERN THE WORK FOR ALL DIMENSIONS.
- 110.3 DO NOT SCALE DRAWINGS TO OBTAIN DIMENSIONS. ONLY DIMENSIONS INDICATED ON DRAWINGS MAY BE USED TO ESTABLISH THE LOCATION AND EXTENT OF STRUCTURAL WORK. IF A REQUIRED DIMENSION IS NOT FURNISHED ON DRAWINGS, THE CONTRACTOR SHALL SUBMIT A REQUEST FOR INFORMATION TO OBTAIN THE DIMENSION.
- 110.4 UNLESS OTHERWISE INDICATED, PROVIDE EQUAL SPACING OF STRUCTURAL COMPONENTS BETWEEN OVERALL DIMENSIONS INDICATED ON DRAWINGS.
- 110.5 THE METHOD AND FREQUENCY OF ATTACHING MECHANICAL EQUIPMENT UNITS, ETC., TO THE STRUCTURAL ELEMENTS SHALL BE SUBJECT TO THE ENGINEER'S REVIEW AND APPROVAL.
- 110.6 UNLESS OTHERWISE INDICATED, STRUCTURAL COMPONENTS SUPPORTING MECHANICAL EQUIPMENT HAVE NOT BEEN DESIGNED FOR THE VIBRATIONAL EFFECTS OF THE EQUIPMENT. THE CONTRACTOR SHALL PROVIDE VIBRATION ISOLATORS FOR ANY MECHANICAL EQUIPMENT MOUNTED TO THE STRUCTURE IN ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
- THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS, DIMENSIONS, ETC., AND SHALL 110.7 NOTIFY THE ARCHITECT OF ANY AND ALL DISCREPANCIES, ADDITIONAL INFORMATION, ETC., BEFORE BEGINNING THE WORK.
- 110.8 THE CONTRACTOR SHALL USE EXTREME CAUTION IN THE DEMOLITION OF EXISTING STRUCTURES. SUCH DEMOLITION SHALL BE PERFORMED IN SUCH A MANNER AS TO MAINTAIN THE STRUCTURAL INTEGRITY OF ALL EXISTING STRUCTURES TO REMAIN. PROVIDE SHORING AS REQUIRED.
- THE CONTRACTOR SHALL PREPARE A WRITTEN DEMOLITION PLAN TO BE SUBMITTED TO THE 110.9 ARCHITECT FOR REVIEW. THIS PLAN IS TO INDICATE, AS A MINIMUM, SEQUENCE OF DEMOLITION OPERATIONS, LOCATION OF PROPOSED TEMPORARY SHORING, SCAFFOLDING, BRACING, ETC., AND PROPOSED METHOD OF DEMOLITION. THE CONTRACTOR SHALL RETAIN THE SERVICES OF A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF GEORGIA FOR THE DESIGN OF TEMPORARY SHORING AND BRACING. THE REVIEW OF THE PROPOSED DEMOLITION PLAN IS FOR CONFORMANCE WITH THE DESIGN CONCEPT AND FOR GENERAL COMPLIANCE WITH THE INFORMATION CONTAINED IN THE CONTRACT DOCUMENTS, COMMENTS REGARDING THESE SUBMITTALS DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE STRUCTURAL INTEGRITY OF EXISTING STRUCTURE TO REMAIN DURING AND AFTER DEMOLITION AND SUBSEQUENT CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL RETAIN THE SERVICES OF A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF GEORGIA TO EVALUATE THE STABILITY AND STRUCTURAL INTEGRITY OF THE EXISTING STRUCTURE AS ALTERED BY THE CONTRACTOR'S DEMOLITION PLAN. THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING THEIR WORK IN A SAFE AND SATISFACTORY MANNER.
- 110.10 STRUCTURAL WORK SHALL BE INSPECTED IN ACCORDANCE WITH BOTH THE LETTER OF SPECIAL INSPECTIONS PERPARED BY THE DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE AND ALL LOCAL ORDINANCES. THE OWNER SHALL ENGAGE AN EXPERIENCED, QUALIFIED INSPECTION AGENCY, SUBJECT TO THE REVIEW OF THE ARCHITECT, TO PERFORM ALL INSPECTION WORK, AS REQUIRED.
- 110.11 STRUCTURAL WORK SHALL BE TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE GENERAL NOTES. THE OWNER SHALL ENGAGE AN EXPERIENCED, QUALIFIED TESTING AGENCY, SUBJECT TO THE REVIEW OF THE ARCHITECT, TO PERFORM ALL TESTING WORK, AS REQUIRED.
- 120. SHOP DRAWINGS AND DELEGATED DESIGN SUBMITTALS
- 120.1 THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR REVIEW BY ATLANTIC ENGINEERING SERVICES AND THE PROJECT ARCHITECT. SHOP DRAWINGS SHALL BE SUBMITTED FOR ALL STRUCTURAL COMPONENTS INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING: A. FABRICATED STRUCTURAL STEEL
  - C. CONCRETE AND/OR MASONRY POST-INSTALLED ANCHORS

B. STEEL DECK

- D. PRE-FABRICATED STAIRS, PLATFORMS, HANDRAILS AND GUARDS E. COLD FORMED STEEL FRAMING.
- 120.2 SHOP DRAWINGS TO BE SUBMITTED SHALL PROVIDE COMPLETE INFORMATION FOR THE PRODUCTS OR COMPONENTS TO BE SUPPLIED. SUBMITTAL INFORMATION SHALL INCLUDE, BUT NOT BE LIMITED TO: MEMBER SIZES AND DIMENSIONS; GRADES OF MATERIAL FURNISHED; MATERIAL PREPARATION REQUIRED; MATERIAL FINISH AND MATERIAL COATINGS TO BE FURNISHED; INFORMATION REGARDING CUTS, COPES, AND HOLES REQUIRED FOR OTHER TRADES; END CONNECTIONS; CAMBER AND OTHER DEVIATION FROM LINE; SPECIAL ERECTION AND/OR INSTALLATION PROCEDURES, INCLUDING REQUIREMENTS FOR TEMPORARY STABILIZATION.
- ALL SHOP DRAWING RESUBMITTALS AND RECORD COPY SUBMITTALS SHALL HAVE ALL 120.3 REVISIONS SUBSEQUENT TO THE PREVIOUS SUBMISSION CLOUDED OR OTHERWISE IDENTIFIED ON THE RESUBMITTED SHEETS. RESUBMITTALS AND RECORD COPY SUBMITTALS WITHOUT IDENTIFICATION OF REVISIONS WILL BE REJECTED WITHOUT REVIEW.
- THE CONTRACTOR SHALL DESIGN AND SUBMIT CALCULATIONS, SIGNED AND SEALED BY A 120.4 PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF GEORGIA, FOR ALL DELEGATED DESIGN COMPONENTS. DESIGN OF THESE COMPONENTS SHALL MEET ALL RELEVANT REQUIREMENTS OF THE APPLICABLE DESIGN BUILDING CODES. REFERENCE ARCHITECTURAL DOCUMENTS FOR ALL NON-STRUCTURAL DESIGN REQUIREMENTS FOR THESE COMPONENTS]. DELEGATED DESIGN COMPONENTS INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
  - A. STRUCTURAL STEEL FRAMING CONNECTIONS B. PREFABRICATED STAIRS, PLATFORMS, HANDRAILS AND GUARDS

C. COLD FORMED STEEL FRAMING.

- 120.5 ALL STEEL-TO-STEEL SHEAR CONNECTIONS SHALL BE SELECTED BY THE STEEL FABRICATOR IN ACCORDANCE WITH THE AISC CODE OF STANDARD PRACTICE SECTION 3.1.1.(2), BASED ON THE REACTIONS REQUIRED BY SECTION 510 OF THE GENERAL NOTES OR OTHERWISE INDICATED IN THE CONTRACT DOCUMENTS.
- 120.6 THE CONTRACTOR SHALL NOT DIRECTLY INCORPORATE THE STRUCTURAL DRAWINGS, OR PORTIONS THEREOF, INTO SHOP DRAWINGS OR ERECTION DRAWINGS TO BE SUBMITTED FOR THIS PROJECT WITHOUT FIRST OBTAINING THE EXPRESS WRITTEN PERMISSION OF ATLANTIC ENGINEERING SERVICES. SUBMITTED SHOP DRAWINGS WHICH CONTAIN COPIES OR REPRODUCTIONS OF ANY PORTION OF THE STRUCTURAL DRAWINGS WITHOUT THE EXPRESS WRITTEN PERMISSION OF ATLANTIC ENGINEERING SERVICES WILL BE RETURNED REJECTED. PERMISSION FOR A SPECIFIC CONTRACTOR OR SUB-CONTRACTOR TO USE PORTIONS OF THE STRUCTURAL DRAWINGS IN THEIR PREPARATION OF SHOP DRAWINGS REQUIRES THAT CONTRACTOR OR SUB-CONTRACTOR TO ENTER INTO A WRITTEN AGREEMENT WITH ATLANTIC ENGINEERING SERVICES AND TO PAY A SERVICE FEE. SUCH AGREEMENT IS NON-TRANSFERRABLE AND IS EXTENDED ONLY TO THAT CONTRACTOR FOR THE DURATION OF THIS PROJECT.
- 120.7 THE CONTRACTOR SHALL SUBMIT ELECTRONIC OR PRINTED COPIES OF SHOP DRAWINGS (ELECTRONIC COPIES ARE PREFERRED). COPIES SHALL BE SUBMITTED TO ATLANTIC ENGINEERING SERVICES IN PDF FILE FORMAT (ISO 32000-1), WITH ONE (1) ELECTRONIC FILE PER SUBMISSION. ATLANTIC ENGINEERING SERVICES WILL REVIEW, ANNOTATE, AND RETURN ONE (1) FILE TO THE ARCHITECT FOR THEIR REVIEW AND DISTRIBUTION TO THE CONTRACTOR.
- 120.8 THE REVIEW OF SHOP DRAWINGS AND OTHER SUBMITTALS FOR THIS PROJECT IS FOR CONFORMANCE WITH THE DESIGN CONCEPT AND FOR GENERAL COMPLIANCE WITH THE INFORMATION CONTAINED IN THE CONTRACT DOCUMENTS. COMMENTS REGARDING THESE SUBMITTALS DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING HIS WORK IN A SAFE AND SATISFACTORY MANNER.

350.	CONCRETE/MASONRY ANCHORS			
350.1	ALL ADHESIVE FOR ANCHORING TO CONCRETE SHALL BE "HILTI HIT-HY 200 V3 ADHESIVE ANCHORS" AS MANUFACTURED BY HILTI FASTENING SYSTEMS, INC. (OR APPROVED EQUIVALENT).			
350.2	THE "HAS-E THREADED ROD" SHALL CONFORM TO ASTM F1554, GRADE 55 WITH A MINIMUM TENSILE STRENGTH OF 75 KSI. THE NUT SHALL CONFORM TO ASTM A194/194M, GRADE 2H HEAVY or ASTM A563-15 GRADE C.			
350.3	THE "HAS-E-B (SUPER) THREADED ROD" SHALL CONFORM TO ASTM F1554, GRADE 105 WITH A MINIMUM TENSILE STRENGTH OF 125 KSI. THE NUT SHALL CONFORM TO ASTM A194, GRADE 2H, HEAVY.			
350.4	THE "HIT-Z ANCHOR ROD" SHALL CONFORM TO AISI 1038 WITH A MINIMUM TENSILE STRENGTH OF 94.2 KSI. THE NUT SHALL CONFORM TO ASTM A563 AND ANSI B18.2.2. HIT-Z THREADED RODS MAY BE USED IN UN-CLEANED HOLES IN ACCORDANCE WITH HILTI SPECIFICATIONS.			
350.5	ALL EXPANSION ANCHORS FOR ANCHORING TO CONCRETE OR GROUT-FILLED MASONRY SHALL BE "HILTI KWIK-BOLT TZ2 EXPANSION ANCHORS" AS MANUFACTURED BY HILTI FASTENING SYSTEMS, INC. (OR APPROVED EQUIVALENT).			
350.6	ALL SCREW ANCHORS FOR ANCHORING TO CONCRETE OR GROUT-FILLED MASONRY SHALL BE "HILTI KWIK HUS-EZ" AS MANUFACTURED BY HILTI FASTENING SYSTEMS, INC. (OR APPROVED EQUIVALENT).			
350.7 350.8	ALL ADHESIVE ANCHORS FOR ANCHORING TO GROUT-FILLED MASONRY SHALL BE "HILTI HIT-HY 270 ADHESIVE ANCHORS" AS MANUFACTURED BY HILTI FASTENING SYSTEMS, INC. (OR EQUAL). ALL ADHESIVE ANCHORS FOR ANCHORING TO HOLLOW MASONRY SHALL BE HILTI "HIT-HY 270			
350.9	ADHESIVE ANCHORS" WITH PLASTIC MESH SCREEN TUBES INDICATED ON THE DRAWINGS AND MANUFACTURED BY HILTI FASTENING SYSTEMS, INC. (OR APPROVED EQUIVALENT). ALL EXPANSION ANCHORS FOR ANCHORING TO HOLLOW MASONRY SHALL BE "HILTI HLC SLEEVE			
350.10	ANCHORS" AS MANUFACTURED BY HILTI FASTENING SYSTEMS, INC. (OR EQUAL). ALL POWDER ACTUATED FASTENERS FOR ANCHORING TO CONCRETE AND STEEL SHALL BE			
350.11	"HILTI X-U UNIVERSAL KNURLED SHANK FASTENERS" WITH A MINIMUM SHANK DIAMETER (0.157") AS MANUFACTURED BY HILTI FASTENING SYSTEMS, INC. (OR EQUAL).			
	INDICATED ON DRAWINGS. THE INSTALLATION OF THE ANCHORS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED PROCEDURES.			
510.	STRUCTURAL STEEL			
510.1	ALL STRUCTURAL STEEL WORK SHALL BE IN ACCORDANCE WITH ANSI/AISC 360 - 15 "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS." LOADS, FORCES AND MOMENTS INDICATED ARE SERVICE LEVEL AND ARE INTENDED FOR USE WITH THE ALLOWABLE STRENGTH DESIGN PROVISIONS OF THE CODE.			
510.2	GRADE OF STEEL A. STRUCTURAL W SHAPESASTM A992 B. STRUCTURAL C, MC, AND L SHAPESASTM A36			
	C. HOLLOW STRUCTURAL SECTIONS (HSS) (ROUND OR RECTANGULAR)ASTM A500,			
	GRADE B OR ASTM A1085,			
	D. STEEL PIPEASTM A53 GRADE B			
	E. PLATES AND BARSASTM A36			
510.3	GALVANIZED STRUCTURAL STEEL A. STRUCTURAL SHAPES AND RODSASTM A123 B. BOLTS, FASTENERS AND HARDWAREASTM F2329			
510.4	ALL STRUCTURAL STEEL NOTED ON THE DRAWINGS AS STAINLESS STEEL SHALL HAVE A MINIMUM YIELD STRENGTH OF 25,000 (304L), PSI AND SHALL CONFORM TO THE FOLLOWING ASTM SPECIFICATIONS: A. STRUCTURAL BARS, ROUNDS, AND			
	HOT ROLLED SHAPESASTM A276 B. HIGH STRENGTH BOLTING MATERIALASTM F593 C. HIGH STRENGTH NUTSASTM F594			
510.5	ALL BOLTED CONNECTIONS SHALL CONFORM TO THE REQUIREMENTS OF THE RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS (RCSC) "SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS" (LATEST EDITION).			
510.6	ALL BOLTS SHALL BE ASTM A325, TYPE 1, 3/4" DIAMETER MINIMUM, UNLESS OTHERWISE NOTED. WHERE NECESSARY DUE TO CONNECTION REQUIREMENTS THE CONTRACTOR MAY UTILIZE ASTM A490, TYPE 1 BOLTS. THE USE OF BOLTS WITH DIFFERENT ASTM DESIGNATIONS AND THE SAME DIAMETER IS PROHIBITED.			
510.7	PROVIDE THE FOLLOWING BOLTED JOINT TYPES UNLESS OTHERWISE INDICATED OR NOTED ON DRAWINGS:			
	<ul> <li>A. SNUG-TIGHTENED JOINTS: ALL SIMPLE SHEAR CONNECTIONS.</li> <li>B. SLIP-CRITICAL JOINTS: ALL LATERAL BRACING, WIND COLUMN SPLICES, AND MOMENT CONNECTIONS.</li> <li>C. PRETENSIONED JOINTS: CONNECTIONS WHERE A490 BOLTS ARE FURNISHED AND ARE IN</li> </ul>			
510.9	TENSION OR COMBINED SHEAR AND TENSION.			
510.8 510.9	THE USE OF TENSION-CONTROL (T.C.) BOLTS IN SNUG-TIGHTENED JOINTS IS PROHIBITED. ALL BOLTED SLIP-CRITICAL JOINTS SHALL HAVE FAYING SURFACES PREPARED AS REQUIRED TO FURNISH CLASS A SLIP RESISTANCE IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF THE RCSC "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS"			
510.10	(LATEST EDITION). THE CHECKING OF DESIGN SLIP RESISTANCE FOR SLIP-CRITICAL CONNECTIONS SHALL BE AT THE SERVICE-LOAD LEVEL.			
510.11	ALL WELDING SHALL BE IN ACCORDANCE WITH THE STRUCTURAL WELDING CODE, AWS D1.1, LATEST EDITION, OF THE AMERICAN WELDING SOCIETY. ELECTRODES SHALL BE E70XX FOR MANUAL ARC WELDING AND F7X-EXXX FOR SUBMERGED ARC WELDING.			
510.12				
510.13	CUTS, HOLES AND COPING, ETC. REQUIRED FOR OTHER TRADES SHALL BE SHOWN ON THE SHOP DRAWING AND MADE IN THE SHOP. CUTS OR BURNING OR HOLES IN STRUCTURAL STEEL IN THE FIELD WILL NOT BE PERMITTED.			
510.14	ALTERNATE CONNECTION DETAILS MAY BE USED IF SUCH DETAILS ARE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL. HOWEVER, THE ENGINEER SHALL BE THE SOLE JUDGE OF ACCEPTANCE AND THE CONTRACTOR'S BID SHALL ANTICIPATE THE USE OF THOSE SPECIFIED DETAILS SHOWN ON THE DRAWINGS THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF SUCH ALTERNATE DETAILS WHICH HE PROPOSES.			
510.15	ALL STRUCTURAL STEEL FRAMES SHALL BE SECURELY BRACED UNTIL ALL FLOOR SLABS, ROOF DECKS, AND SHEAR WALLS HAVE BEEN INSTALLED AND BECOME CAPABLE OF STABILIZING THE FRAMES.			
510.16	ALL STRUCTURAL STEEL WORK, EXCEPT PORTIONS OF MEMBERS TO BE WELDED, FIELD BOLTED, OR FIREPROOFED, SHALL BE SHOP PAINTED WITH THE FABRICATORS STANDARD PRIMER APPLIED TO A THICKNESS OF 1 MIL ON STEEL THAT HAS BEEN PREPARED IN ACCORDANCE WITH SSPC-SP2. ADDITIONAL AREAS SHALL BE FIELD PAINTED AFTER WELDING.			
510.17	CLEAN ALL EXISTING AND NEW STEEL FREE OF LOOSE SCALE, RUST, OIL, GREASE, AND OTHER BOND-INHIBITING SUBSTANCES IN ACCORDANCE WITH STEEL STRUCTURES PAINTING COUNCIL (SSPC) SURFACE PREPARATION 6. SHOP OR FIELD APPLY ONE PRIMER COAT OF TNEMEC BRAND TNEME-ZINC 90E-92 PRIMER (OR APPROVED EQUIVALENT) AND TWO FINISH COATS OF TNEMEC BRAND TNEME-FASCURE 161 PAINTING SYSTEM (OR APPROVED EQUIVALENT). MIX AND APPLY COATINGS IN STRICT ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS. PROVIDE FINISH COATING COLOR AS SELECTED BY OWNER.			
510.18	BEAMS AND GIRDERS SHALL HAVE BEAM WEB HOLES AS INDICATED ON THE STRUCTURAL DRAWINGS. ALL HOLES SHALL BE CENTERED AT MID-DEPTH OF THE BEAM UNLESS OTHERWISE NOTED. ALL RECTANGULAR WEB HOLES SHALL HAVE A MINIMUM CORNER RADIUS OF 5/8" OR TWICE THE THICKNESS OF THE BEAM WEB, WHICHEVER IS GREATER. ALL WEB OPENINGS SHALL BE MACHINE OXYGEN CUT; MANUAL CUTTING OR BURNING IS NOT PERMITTED. COORDINATE LOCATION AND SIZE OF WEB HOLE WITH MECHANICAL CONTRACTOR SUBJECT TO REVIEW BY THE STRUCTURAL ENGINEER.			
510.19	<ul> <li>BOLT AND WELD TESTING:</li> <li>A. ALL SHOP AND FIELD BOLTS SHALL BE TESTED PER AISC REQUIREMENTS.</li> <li>B. ALL WELDS SHOULD BE VISUALLY INSPECTED.</li> <li>C. TEN PERCENT OF ALL WELDS AT BEAM AND GIRDER SHEAR CONNECTIONS SHALL BE RANDOMLY INSPECTED BY MAGNETIC PARTICLE METHOD, COMPLYING WITH ASTM E109,</li> </ul>			

- RANDOMLY INSPECTED BY MAGNETIC PARTICLE METHOD, COMPLYING WITH ASTM E109, PERFORMED ON ROOT PASS AND ON FINISHED WELD. D. ONE HUNDRED PERCENT OF FULL PENETRATION WELDS SHALL HAVE ULTRASONIC
- INSPECTION, COMPLYING WITH ASTM E164. E. ONE HUNDRED PERCENT OF GROOVE OR BUTT WELDS IN BEAM AND COLUMN MOMENT CONNECTIONS SHALL HAVE ULTRASONIC INSPECTION, COMPLYING WITH ASTM E164.
- 510.20 ALL EXTERIOR STRUCTURAL STEEL SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH THE GENERAL NOTES. CLEAN AREAS WHERE GALVANIZING IS DAMAGED OR MISSING AND REPAIR GALVANIZING TO COMPLY WITH ASTM A780.
- 510.21 PROVIDE TAPERED SHIMS, ANGLES, BENT PLATES, OR OTHER STEEL ACCESSORIES TO FACILITATE BEARING CONNECTIONS AND DECK SUPPORT FOR SLOPING OR CANTED STRUCTURAL STEEL AS REQUIRED.

530.	STEEL DECKING
530.1	ALL STEEL ROOF DECK SHALL BE IN CONFORMANCE WITH THE STEEL DECK INSTITUTE SDI RD-2010, STANDARD FOR STEEL ROOF DECK
530.2	ALL STEEL ROOF DECK SHALL BE, AS A MINIMUM, 1-1/2", 20 GAUGE, WIDE-RIBBED STEEL DE WITH A YIELD STRENGTH OF NOT LESS THAN 33,000 PSI AND SHALL BE HOT-DIPPED GALVANIZED.
530.3	STEEL ROOF DECK SHALL BE CAPABLE OF SUPPORTING 40 POUNDS PER SQUARE FOOT AT SPANS INDICATED ON THE DRAWINGS OR AT A SPAN OF 6'-0", WHICHEVER IS GREATER.
530.4	ALL STEEL ROOF DECK SHALL BE FASTENED TO THE SUPPORTING STEEL AT THE ENDS OF UNITS, AT ALL INTERMEDIATE SUPPORTS, AND AT PERIMETER EDGES WITH 5/8" DIAMETER PUDDLE WELDS OR HILTI POWDER-DRIVEN FASTENERS (PDF'S), OR APPROVED EQUIVALEN FASTENERS SHALL BE SPACED AT 12" O.C. IN A 36/4 PATTERN, UNO. HILTI X-HSN24 PDFS SH BE USED IN MATERIAL RANGING FROM 1/8" TO 3/8" THICKNESS (JOISTS) AND HILTI X-ENP19 SHALL BE USED IN MATERIAL RANGING FROM 1/8" TO 3/8" THICKNESS (JOISTS) AND HILTI X-ENP19 SHALL BE USED IN MATERIAL 1/4" AND THICKER (BEAMS). SIDE DECK LAPS SHALL BE FAST WITH 5/8" DIAMETER WELDS, #10 TEK SCREWS, OR HILTI S-SLC SCREWS AT THIRD POINTS BETWEEN SUPPORTS WITH A SPACING NOT TO EXCEED 2-0" ON CENTER. ANY SPLIT OR PA PANELS SHALL BE FASTENED TO THE SUPPORTING STRUCTURE IN EVERY VALLEY REGARD OF ADJACENT FASTENER PATTERNS. THE CONTRACTOR MAY SUBMIT ALTERNATE FASTEN SYSTEMS TO THE ENGINEER FOR REVIEW AND APPROVAL.
530.5	DECKING CONTRACTOR SHALL PROVIDE ROOF DECK CLOSURE ANGLES AND PLATES AS REQUIRED AT ROOF EDGES AND OPENINGS AND AT ALL CHANGES OF DECK DIRECTION, W HAVE NOT BEEN DETAILED.
530.6	ALL DECK SHALL BE A MINIMUM OF THREE SPANS CONTINUOUS.
530.7	DECKING CONTRACTOR SHALL COORDINATE OPENING SIZES AND LOCATIONS IN FLOORS / ROOFS FROM ARCHITECTURAL AND MECHANICAL DRAWINGS. HE SHALL PROVIDE HEADER MEMBERS IF REQUIRED AS PER THE TYPICAL DETAILS.
530.8	DECKING CONTRACTOR SHALL PROVIDE SCREED ANGLES AND CLOSURE PLATES AS REQU AT THE EDGES OF ALL FLOOR OPENINGS AND AT ALL SLAB DEPRESSIONS OR CHANGES OF DECK DIRECTION, WHICH HAVE NOT BEEN DETAILED.
540.	COLD-FORMED STEEL FRAMING
540.1	THE COLD-FORMED STEEL FRAMING SYSTEM SHALL BE DESIGNED, ENGINEERED, AND CONSTRUCTED TO WITHSTAND, AS A MINIMUM, LOADS FROM GRAVITY, SNOW, WIND, HAND AND ERECTION, MOVEMENT OF BUILDING, AND THERMAL MOVEMENT. THE ATTACHMENT OF COLD-FORMED STEEL FRAMING SYSTEM TO THE STRUCTURE IS SUBJECT TO REVIEW BY T STRUCTURAL ENGINEER.
540.2	THE CONTRACTOR SHALL SUBMIT CALCULATIONS AND SHOP DRAWINGS SIGNED AND SEA BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF GEORGIA AND EXPERIENCED IN THE DESIGN OF COLD-FORMED STEEL FRAMING.
540.3	THE DESIGN, INSTALLATION, AND CONSTRUCTION OF COLD-FORMED STEEL FRAMING SHA CONFORM TO THE MOST CURRENT EDITION OF THE CODE OF STANDARD PRACTICE FOR COLD-FORMED STEEL STRUCTURAL FRAMING, AMERICAN IRON AND STEEL INSTITUTE (AIS 202-15
540.4	THE DESIGN AND INSTALLATION OF COLD-FORMED STEEL BOX HEADERS, BACK-TO-BACK HEADERS, AND SINGLE AND DOUBLE I-HEADERS USED IN SINGLE SPAN CONDITIONS FOR LOAD-CARRYING PURPOSES SHALL BE IN ACCORDANCE WITH THE MOST CURRENT EDITIO AISI S212
540.5	THE DESIGN AND INSTALLATION OF COLD-FORMED STEEL STUDS FOR STRUCTURAL AND NON-STRUCTURAL WALLS SHALL BE IN ACCORDANCE WITH THE MOST CURRENT EDITION ( AISI S211
540.6	ALL WELDING SHALL BE IN ACCORDANCE WITH THE "STRUCTURAL WELDING CODE-SHEET METAL, AWS D.1.3," MOST CURRENT EDITION, OF THE AMERICAN WELDING SOCIETY.
540.7	STEEL USED IN THE MANUFACTURE OF COLD-FORMED STEEL FRAMING SHALL BE HOT-DIP GALVANIZED STEEL, G-90 MINIMUM COATING WEIGHT AND SHALL CONFORM TO ASTM A653 GRADE D, MINIMUM YIELD POINT OF 50,000 PSI FOR 12-, 14- AND 16- GAUGE MEMBERS AND A653 GRADE A, MINIMUM YIELD POINT OF 33,000 PSI FOR 18- AND 20-GAUGE MEMBERS.
540.8	PROVIDE STUD BRIDGING IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION FOR LATERALLY LOADED WALLS, BUT AT SPACING NOT TO EXCEED 4'-0" VERTICALLY.
540.9	ALL FRAMING COMPONENTS SHALL BE CUT SQUARELY FOR ATTACHMENT TO PERPENDICU MEMBERS OR AS REQUIRED FOR AN ANGULAR FIT AGAINST ABUTTING MEMBERS. MEMBER SHALL BE HELD POSITIVELY IN PLACE UNTIL PROPERLY FASTENED.
540.10	ALL FIELD-CUTTING OF STUDS MUST BE DONE BY SAWING OR SHEARING. TORCH CUTTING COLD-FORMED STEEL FRAMING MEMBERS IS UNACCEPTABLE.
540.11	NO SPLICES IN STUDS, JOISTS, OR OTHER LOAD CARRYING MEMBERS MAY BE MADE WITH PRIOR REVIEW BY STRUCTURAL ENGINEER AND SPECIFIC DETAILS FOR ANY SUCH SPLICE
540.12	REQUESTS FOR ALLOWABLE SUBSTITUTIONS FOR THE ABOVE NOTED STUD SYSTEMS SHA SUBJECT TO THE REVIEW OF THE ENGINEER.
540.13	PROVIDE JOIST BRIDGING PER JOIST MANUFACTURER RECOMMENDATIONS. ONE ROW OF BRIDGING SHALL BE PROVIDED AT CENTER LINE OF JOIST SPAN. ALL BRIDGING SHALL BE 1 GAUGE, 2" WIDE STEEL STRAPS FASTENED TO BOTTOM FLANGE OF EACH JOIST AND TO ADJACENT END WALL.

540.14 NO LOAD SHALL BE APPLIED TO THE JOISTS UNTIL ALL BRIDGING HAS BEEN INSTALLED AND JOIST ENDS HAVE BEEN SECURED.

GE, WIDE-RIBBED STEEL DECK,

NDS PER SQUARE FOOT AT THE

NG STEEL AT THE ENDS OF DGES WITH 5/8" DIAMETER ARC OR APPROVED EQUIVALENT. JNO. HILTI X-HSN24 PDFS SHALL IOISTS) AND HILTI X-ENP19 PDFS DECK LAPS SHALL BE FASTENED CREWS AT THIRD POINTS I CENTER. ANY SPLIT OR PARTIAL E IN EVERY VALLEY REGARDLESS JBMIT ALTERNATE FASTENING

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ED, ENGINEERED, AND RAVITY, SNOW, WIND, HANDLING MENT. THE ATTACHMENT OF THE SUBJECT TO REVIEW BY THE

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EADERS, BACK-TO-BACK SPAN CONDITIONS FOR HE MOST CURRENT EDITION OF

FOR STRUCTURAL AND MOST CURRENT EDITION OF

AMING SHALL BE HOT-DIPPED CONFORM TO ASTM A653 16- GAUGE MEMBERS AND ASTM D 20-GAUGE MEMBERS.

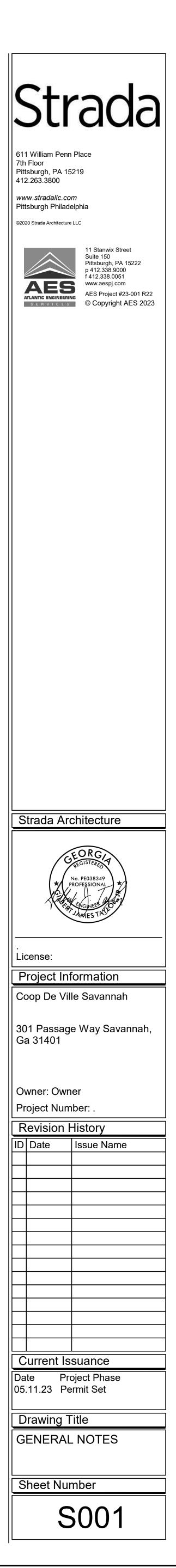
URER'S RECOMMENDATIONS ED 4'-0" VERTICALLY.

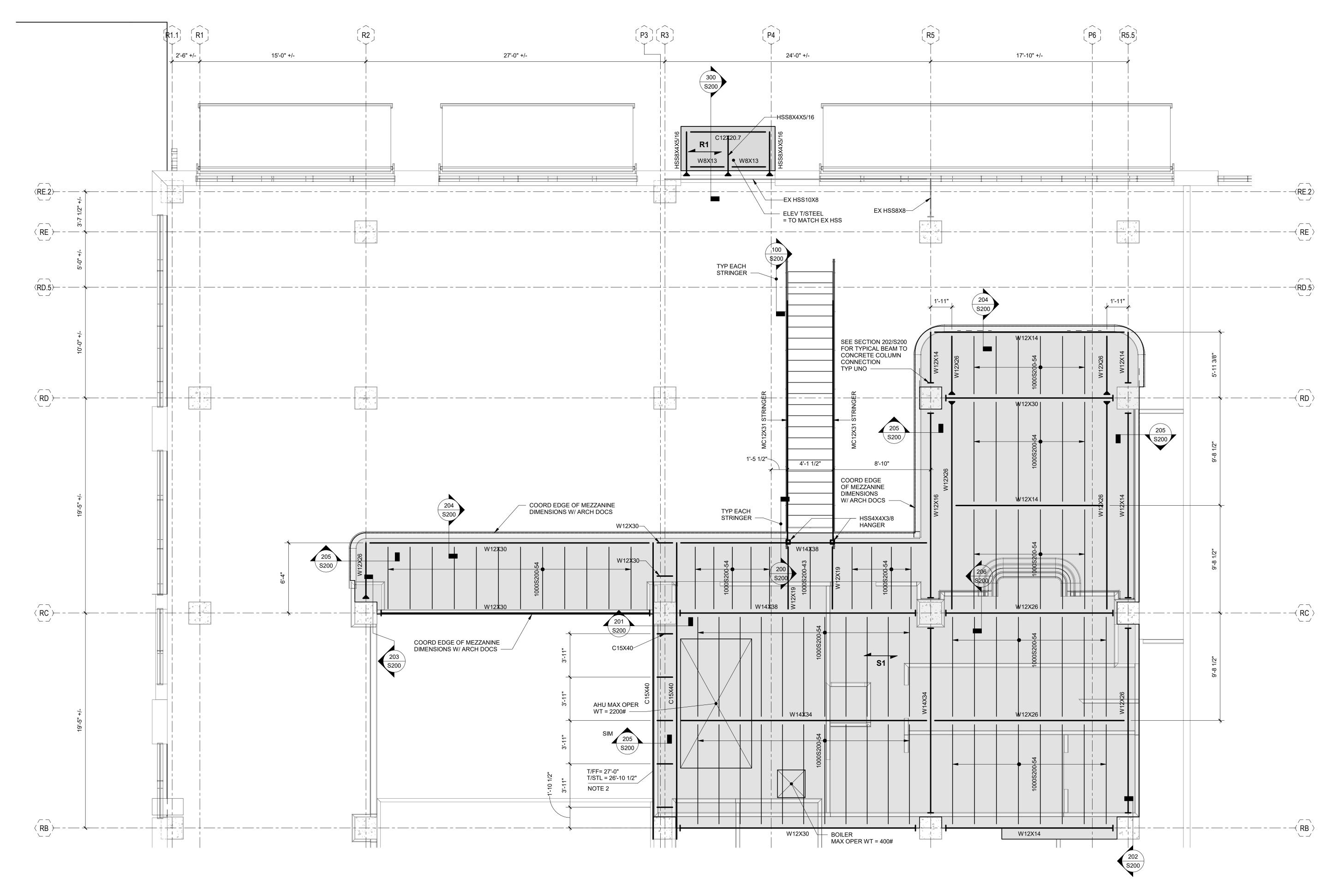
ACHMENT TO PERPENDICULAR TTING MEMBERS. MEMBERS

HEARING. TORCH CUTTING OF

IBERS MAY BE MADE WITHOUT ILS FOR ANY SUCH SPLICE(S). DTED STUD SYSTEMS SHALL BE

NDATIONS. ONE ROW OF ALL BRIDGING SHALL BE 18





ROOF (SLAB/DECK) SCHEDULE					
MARK	TYPE	NOTES	TOTAL THICKNESS		
R1	1 1/2"-20 GA GALV STEEL ROOF DECK	3 SPANS CONT	1 1/2"		
S1	3/4" GYPSUM FLOOR SHEATHING + 3/4" WOOD FLOORING		1 1/2"		

 $\bigcirc$ 

MEZZANINE FLOOR FRAMING PLAN

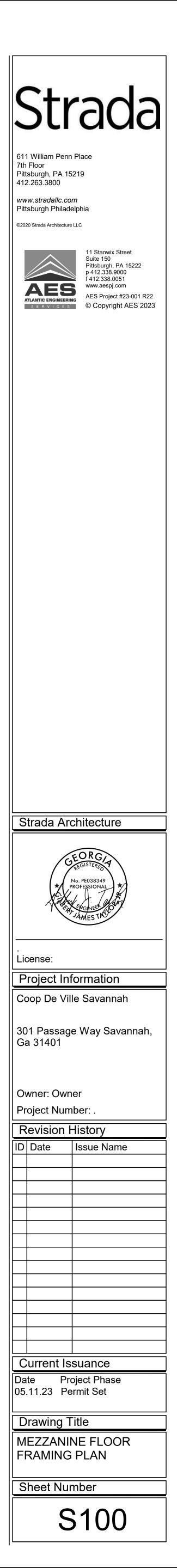
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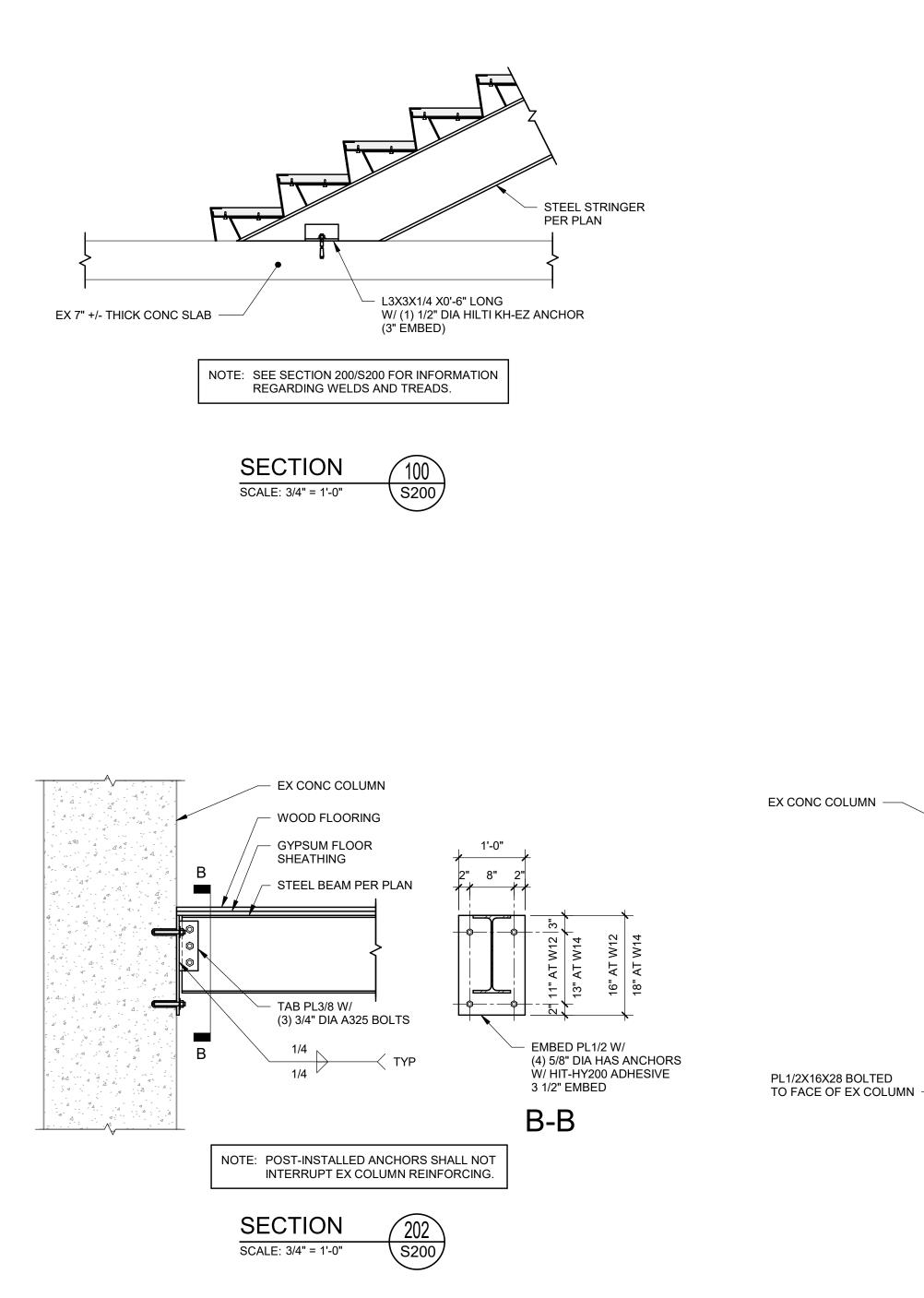
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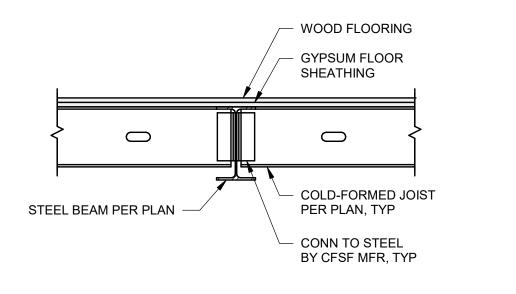
SCALE: 1/4" = 1'-0"

1. COORD EDGE OF MEZZANINE DIMENSIONS W/ ARCH DOCS.

- VERIFY THICKNESS OF FLOORING PRIOR TO ERECTING STEEL.
- COORD FINAL LOCATION OF ALL EQUIPMENT WITH ARCH AND MEP DOCS AND MECH CONTRACTOR.





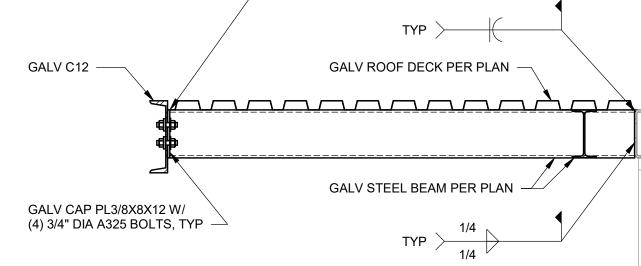


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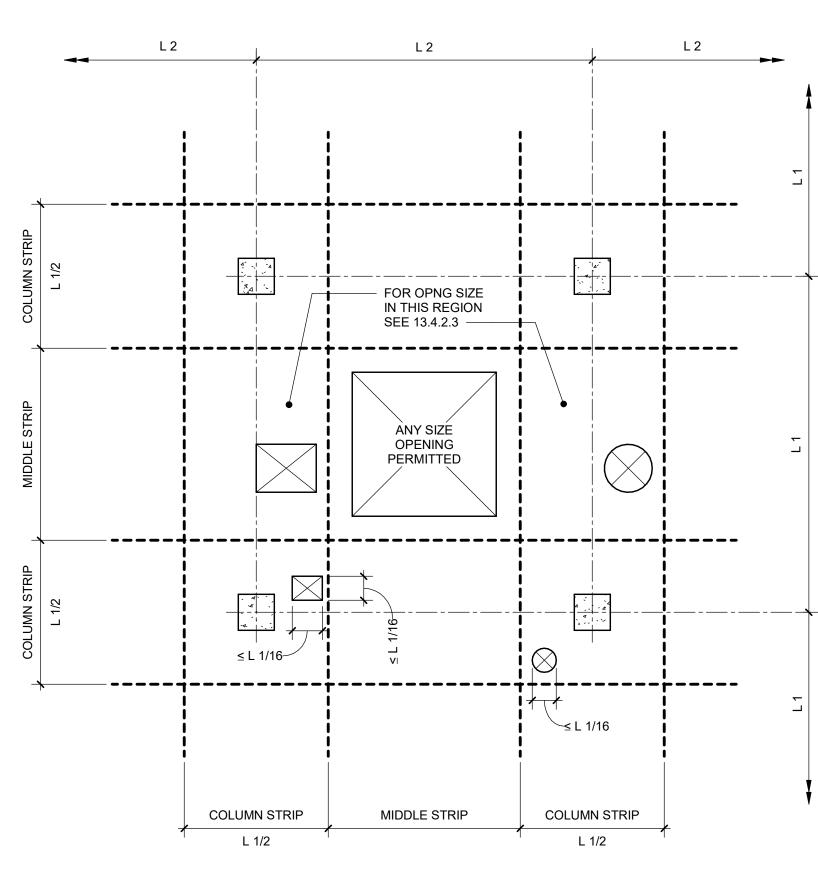
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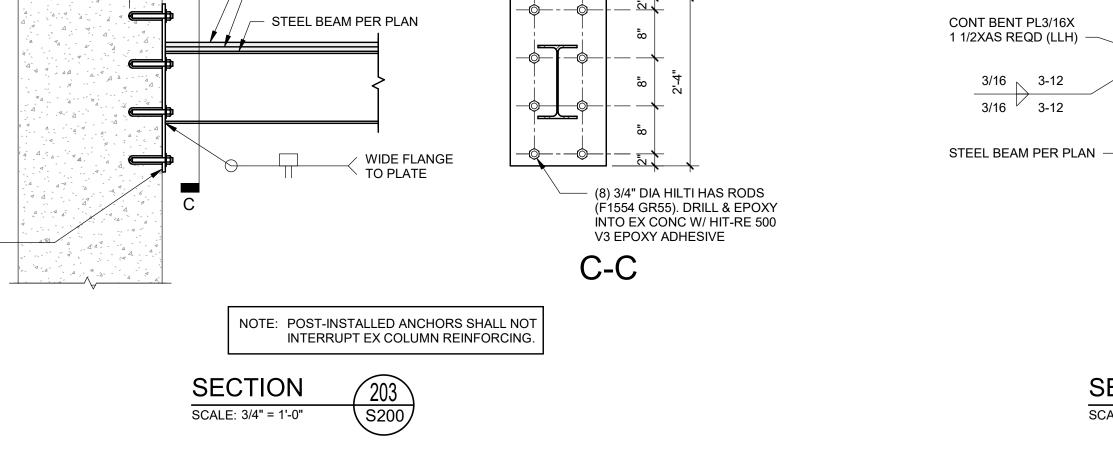
SECTION

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









1'-4"

4" 8" 4'

WOOD FLOORING

GYPSUM FLOOR

— EX CURTAINWALL

— EX STEEL HSS

— EX CURTAINWALL

 $< {
m TYP\ CAP\ PL} \ {
m TO\ HSS}$ 

GALV ROOF DECK PER PLAN -

GALV STEEL BEAM PER PLAN

SECTION

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

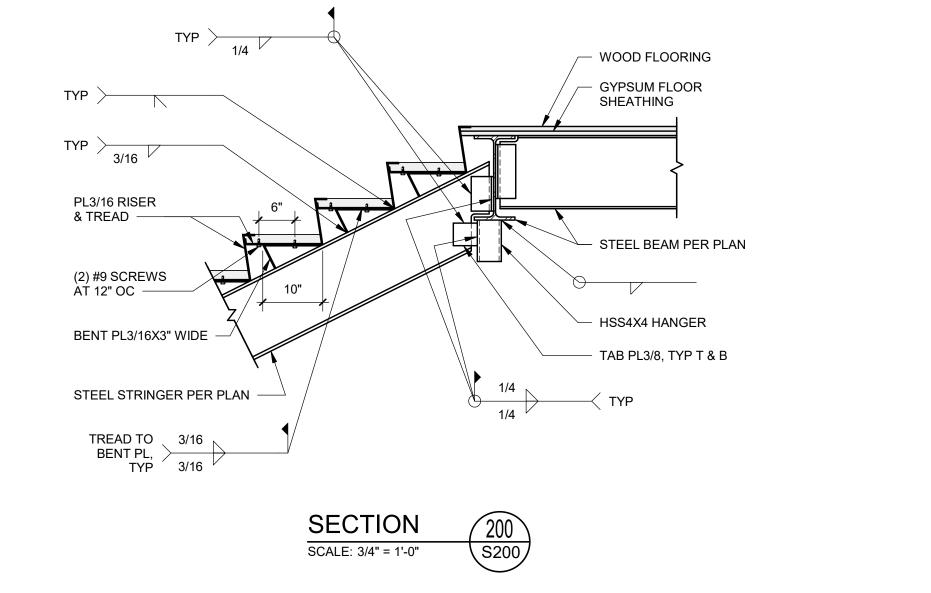
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SHEATHING

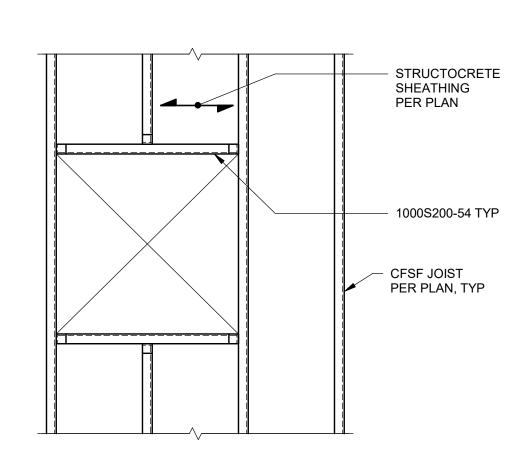
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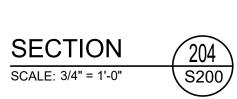


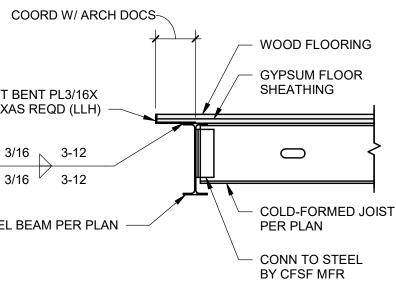
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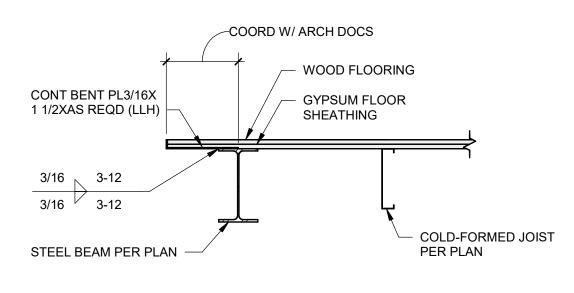
NOTE: ALL PENETRATIONS LARGER THAN 6" IN ANY DIRECTION SHALL BE DIRECTLY COORDINATED WITH THE STRUCTURAL ENGINEER PRIOR TO BEING PLACED IN THE LAB.







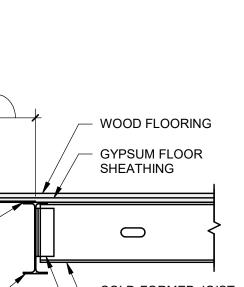


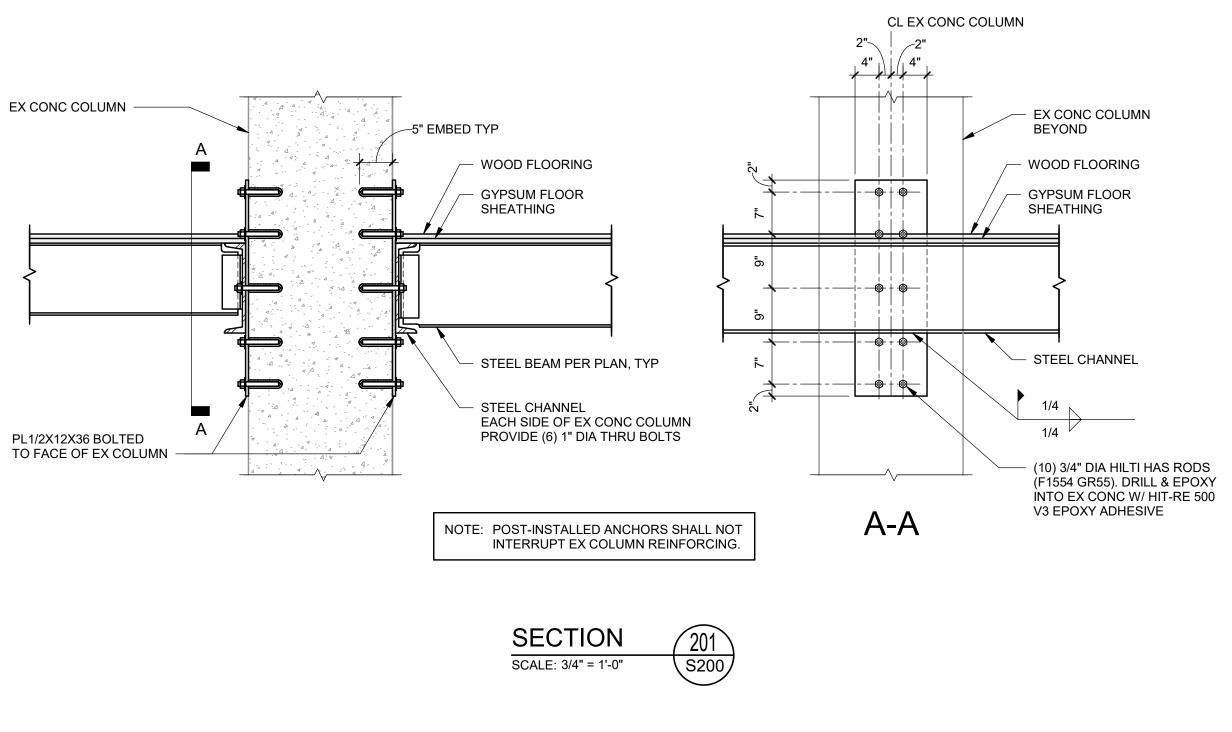


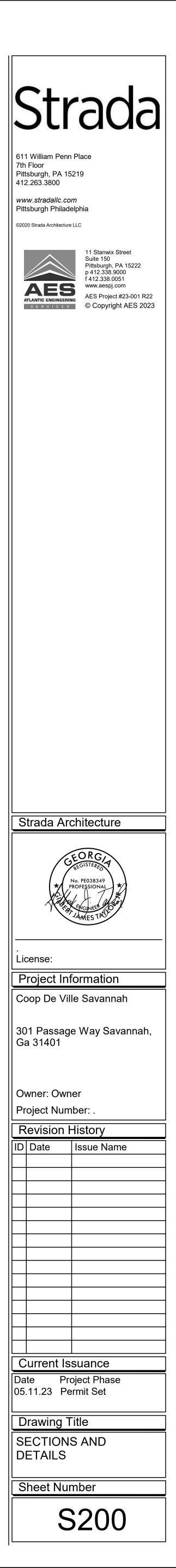
205 S200

SECTION

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







GENERAL ELECTRICAL NOTES:

GENERAL: UNLESS SPECIFICALLY INDICATED OTHERWISE, ALL WORK SHOWN ON THE ELECTRICAL DRAWINGS IS NEW WORK TO BE PROVIDED UNDER THIS CONTRACT. DEMOLITION: SEE "ELECTRICAL GENERAL DEMOLITION NOTES FOR ADDITIONAL

DEMOLITION REQUIREMENTS.

RECORD DRAWINGS: SECURE AN EXTRA SET OF ELECTRICAL DRAWINGS TO BE KEPT ON SITE AND MARK DAILY. THE DRAWINGS IN RED AS THE PROJECT PROGRESSES IN ORDER TO KEEP AN ACCURATE RECORD OF ALL DEVIATIONS BETWEEN THE WORK SHOWN ON THE DRAWINGS AND THE WORK WHICH IS ACTUALLY INSTALLED. THESE MARKED DRAWINGS SHALL REFLECT ANY AND ALL CHANGES AND REVISIONS TO THE ORIGINAL DESIGN WHICH EXISTS IN THE COMPLETED WORK. DELIVER THE MARKED DRAWINGS TO THE ARCHITECT OR ENGINEER AT PROJECT CLOSE-OUT.

TESTS: TEST ALL WIRING FOR CONTINUITY AND GROUNDS BEFORE CONNECTING ANY FIXTURES OR DEVICES. PERFORM INSULATION RESISTANCE TESTS ON ALL WIRING #8 OR LARGER TO ENSURE THAT ALL PORTIONS ARE FREE FROM SHORT-CIRCUITS AND GROUNDS.

INSPECTIONS: ARRANGE ALL NECESSARY INSPECTIONS. DELIVER ALL REQUIRED INSPECTION CERTIFICATES TO THE OWNER.

SYSTEM, INCLUDING EQUIPMENT FRAMES CONDUITS, SWITCHES, CONTROLLERS, WIRE-WAYS, NEUTRAL CONDUCTORS AND OTHER EQUIPMENT. PROVIDE A GROUNDING CONDUCTOR IN ALL CIRCUITS.

LABELS: PROVIDE LABELS FOR ALL PANELBOARDS, CABINETS, SAFETY SWITCHES, MOTOR-DISCONNECT SWITCHES, AND MOTOR CONTROLLERS. LABELS SHALL BE MACHINE ENGRAVED, LAMINATED PLASTIC.

J-BOX LABELING: LABEL ALL JUNCTION BOXES WITH PERMANENT MARKER IDENTIFYING CIRCUIT NUMBER AND PANELBOARD OF CIRCUITS WITHIN.

PANELBOARD, INCLUDING EXISTING PANELBOARDS MODIFIED FOR THIS PROJECT, WITH CIRCUIT LOAD INFORMATION AND ROOM NUMBER CLEARLY IDENTIFIED. USE ACTUAL ROOM NUMBERS IN THE BUILDING, NOT THE ROOM NUMBERS SHOWN ON THE CONTRACT DRAWINGS, AS THEY ARE OFTEN DIFFERENT.

MOTOR COORDINATION: MOTORS, MOTOR STARTERS, CONTROLLERS, INTEGRAL DISCONNECT SWITCHES, AND CONTACTORS SHALL BE PROVIDED WITH THEIR RESPECTIVE PIECES OF EQUIPMENT BY THE EQUIPMENT SUPPLIER. COMMUNICATE WITH THE TRADES PROVIDING THE EQUIPMENT, VERIFYING ALL REQUIREMENTS. PROVIDE ALL ELECTRICAL CONNECTIONS REQUIRED THEREIN AND INSTALL MOTOR STARTERS. MOTOR DISCONNECTS: ALL MOTORS SHALL HAVE DISCONNECTING MEANS.

MOTOR FUSE PROTECTION: WHERE FUSE PROTECTION IS SPECIFICALLY REQUIRED BY THE EQUIPMENT MANUFACTURER, PROVIDE FUSIBLE SWITCHES IN LIEU OF NON-FUSIBLE SWITCHES OR FUSIBLE ENCLOSED CIRCUIT BREAKERS OR OTHER DEVICES INDICATED.

CONNECTION DETAILS: SECURE APPROVED SHOP DRAWINGS SHOWING WIRING DIAGRAMS, ROUGH-IN AND HOOK UP DETAILS FOR EQUIPMENT WHICH MUST BE CONNECTED ELECTRICALLY.

THE MECHANICAL CONTRACTOR. THE LOCATIONS SHOWN ON THE ELECTRICAL DRAWINGS ARE APPROXIMATE. COORDINATE WITH THE MECHANICAL CONTRACTOR TO DETERMINE THE EXACT LOCATION OF EACH PIECE OF EQUIPMENT AND DETERMINE THE EXACT ROUGH-IN AND CONNECTION REQUIREMENTS.

STARTER MOUNTING: WHERE AN INDIVIDUALLY MOUNTED SAFETY SWITCH, STARTER OR CIRCUIT BREAKER IS SHOWN ADJACENT TO ITS RESPECTIVE LOAD AND NOT MOUNTED ON A WALL, PROVIDE ALL SUPPORTS, BRACKETS, ANCHORING, ETC. NECESSARY TO PROPERLY SUPPORT THE DEVICE.

LIGHTING ARRANGEMENT: ARRANGE LIGHTING FIXTURES IN ACCORDANCE WITH THE ARCHITECTURAL REFLECTED CEILING PLANS.

LIGHTING COORDINATION: COORDINATE LIGHTING FIXTURES WITH GRILLES, DIFFUSERS, SPRINKLER HEADS, ACCESS PANELS, ETC.

PRIOR TO ORDERING LIGHT FIXTURES OR OTHER DEVICES TO ENSURE PROPER FIXTURES OR DEVICES ARE FURNISHED TO MATCH CONSTRUCTION.

MOUNTING HEIGHTS: MOUNTING HEIGHTS INDICATED ARE FROM THE FINISHED FLOOR TO THE CENTERLINE OF THE WIRING DEVICE UNLESS OTHERWISE NOTED. MOUNTING HEIGHTS OF LIGHTING FIXTURES AND FIRE ALARM DEVICES ARE TO THE BOTTOM OF THE FIXTURE OR DEVICE UNLESS OTHERWISE NOTED.

DEVICE LOCATIONS: COORDINATE LOCATIONS OF SWITCHES, RECEPTACLES, AND TELE/DATA OUTLETS WITH OTHER WALL MOUNTED DEVICES SUCH AS THERMOSTATS AND CONTROL STATIONS. DO NOT MOUNT WIRING DEVICES BACK TO BACK.

INSTALLED OUT OF VIEW AND BEHIND THE EWC ENCLOSURE. VERIFY THE MOUNTING HEIGHT WITH THE EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN. DEVICE COORDINATION: THOROUGHLY REVIEW AND COORDINATE ALL CASEWORK, DOOR

LOCATIONS PRIOR TO ROUGH-IN OF OUTLET BOXES. BARRIERS: WHERE A MULTIPLE GANG BOX HAS CIRCUITS OF DIFFERENT VOLTAGES OR

SEPARATION, USING A FULL HEIGHT AND DEPTH BARRIER PLATE. FIRE PROOFING: FOR ANY WALL OR FLOOR PENETRATIONS THROUGH FIRE RATED STRUCTURES, PROVIDE FIRE-PROOFING TO SEAL ALL THE PENETRATIONS AFTER THE CONDUIT HAS BEEN INSTALLED. FIRE PROOFING FOR PENETRATIONS SHALL BE UL APPROVED PER THE THE PENETRATION MADE IN ORDER TO MAINTAIN FIRE RATED

CLEAN UP: ON PROJECT CLOSE-OUT, CLEAN ALL ELECTRICAL DEVICES, LIGHTING FIXTURES, LAMPS AND LENSES, AND REMOVE ALL PAINT SPATTERS FROM DEVICES, FIXTURES, AND PLATES. REPLACE ALL INOPERATIVE LAMPS.

INTEGRITY OF THE STRUCTURE.

OWNER FURNISHED EQUIPMENT: CONTRACTOR SHALL OBTAIN CUT SHEETS, INSTALLATION DATA, AND ROUGH-IN REQUIREMENTS FOR OWNER FURNISHED, CONTRACTOR INSTALLED EQUIPMENT AND COORDINATE ROUGH-IN AND POWER REQUIREMENTS WITH THE OWNER'S REPRESENTATIVE PRIOR TO STARTING ANY ASSOCIATED WORK.

CONDUIT ROUTING: ALL CONDUIT RUN OVERHEAD SHALL BE RUN AT THE BOTTOM OF THE FLOOR, ROOF STRUCTURE, OR LOWEST CHORD OF JOIST SPACE (AS APPLICABLE) ABOVE IN ORDER TO AVOID CONFLICTS WITH OTHER TRADES.

PLASTIC LAMINATED LABEL WITH BLACK TEXT, NOTING PANELBOARD DESIGNATION AND CIRCUIT NUMBER FROM WHICH IT IS FED.

EQUIPMENT DEMONSTRATION: PROVIDE A DEMONSTRATION OF THE OPERATION OF ALL ELECTRICAL COMPONENTS.

CEILING AND MECHANICAL ROOM PLENUM: ALL WIRING THAT WILL NOT BE RUN IN METAL CONDUIT SHALL BE PLENUM RATED.

COORDINATION: COORDINATE AND COOPERATE WITH ALL TRADES ON THE PROJECT.

GROUNDING: PROVIDE GROUNDING IN ACCORDANCE WITH THE NEC FOR THE ELECTRICAL

PANEL DIRECTORY: PROVIDE TYPEWRITTEN PANELBOARD DIRECTORY CARD IN EACH

EQUIPMENT DETAILS: MECHANICAL EQUIPMENT WILL BE FURNISHED AND INSTALLED BY

MATERIAL COORDINATION: VERIFY CEILING AND WALL CONSTRUCTION AND MATERIAL

EWC RECEPTACLES: RECEPTACLES FOR ELECTRIC WATER COOLERS (EWC) SHALL BE

SWINGS, AND CABINET DRAWINGS AND ARCHITECTURAL ELEVATIONS WITH DEVICE

SYSTEMS WHICH ARE REQUIRED TO BE SEPARATED, PROVIDE THE CODE-REQUIRED

WIRING DEVICES: ALL RECEPTACLES AND SWITCHES SHALL BE LABELED WITH CLEAR

**GENERAL SPECIAL SYSTEM NOTES:** 

TELEPHONE AND DATA SYSTEMS

THE TELEPHONE AND DATA SYSTEMS WILL BE FURNISHED AND INSTALLED THROUGH THE OWNER'S VENDOR (THE VENDOR) UNDER A SEPARATE CONTRACT. ALL CABLING AND WIRING (EXCEPT FOR POWER WIRING), J-HOOKS, JACKS, COVER PLATE COMPATIBLE WITH THE EQUIPMENT, DEVICES, RACKS, AND COMPONENT EQUIPMENT WILL BE PROVIDED BY THE VENDOR, UNLESS INDICATED OTHERWISE. THE VENDOR WILL PROVIDE INSTALLATION DURING CONSTRUCTION. THE ELECTRICAL CONTRACTOR (THE CONTRACTOR) SHALL COORDINATE ALL ROUGH-IN, BOX SIZES AND CONFIGURATIONS, CONDUIT SIZES AND ROUTING WITH THE VENDOR PRIOR TO INSTALLATION OF THE RACEWAY SYSTEM.

THE CONTRACTOR SHALL PROVIDE ALL CONDUIT WITH PULL WIRE, AND 4"X4"X2 1/4"BOX WITH SINGLE GANG PLASTER RING UNLESS OTHERWISE NOTED. ELECTRICAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELECTRICAL REQUIREMENTS WITH THE VENDOR PRIOR TO ROUGH-IN.

STUB ALL CONDUITS WITH PULL WIRE FOR COMMUNICATIONS DEVICES TO ABOVE AN ACCESSIBLE CORRIDOR CEILING AND TERMINATE WITH INSULATED NYLON BUSHING. THE VENDOR WILL PROVIDE J-HOOKS ABOVE THE CEILING FROM THE STUB OUT TO EQUIPMENT LOCATION AS REQUIRED FOR HIS CABLING AND TERMINATE WITH INSULATED NYLON BUSHING. WHERE A WALL SEPARATES THE CONDUIT STUB OUT FROM THE EQUIPMENT LOCATION, PROVIDE A 1" MINIMUM SLEEVE THROUGH THE WALL, ABOVE AN ACCESSIBLE CEILING, TO ACCOMMODATE THE CABLING. ALL CONDUITS AND SLEEVES PENETRATING RATED FIRE OR SMOKE WALLS SHALL BE PROVIDED WITH APPROVED FIRE RETARDANT TO PROVIDE A UL RATED WALL PENETRATION ASSEMBLY. MAINTAIN VENDOR RECOMMENDED SEPARATION BETWEEN WIRING OF DIFFERENT SYSTEMS AND FROM INTERFERENCE PRODUCING ELECTRICAL DEVICES SUCH AS FLUORESCENT LIGHTS, BALLAST, TRANSFORMERS, RELAYS, MOTOR CONTROLS, ETC.

PROVIDE POWER CIRCUITS FOR TELECOMMUNICATIONS EQUIPMENT AS INDICATED.

THE CONTRACTOR SHALL PROVIDE ALL BACKBOXES, CONDUIT, GROUNDING AND SHALL INSTALL ALL SPECIAL BOXES WITH PLASTER RING FURNISHED BY THE VENDOR FOR THE TELECOMMUNICATIONS SYSTEMS IN ACCORDANCE WITH THE APPLICABLE CODES.

THE CONTRACTOR SHALL INSTALL ALL COMMUNICATIONS SLEEVES AND CONDUIT IN ACCORDANCE WITH DRAWINGS, ELECTRICAL SPECIFICATIONS, VENDOR WIRING DIAGRAMS, AND ALL APPLICABLE CODES.

THE GENERAL CONTRACTOR SHALL PROVIDE IN-WALL REINFORCEMENT AS NECESSARY FOR ALL COMMUNICATIONS CABINETS, SHELVES, BRACKETS, FURNITURE MOUNTS, ETC. AND SHALL MOUNT CABINETS, SHELVES, BRACKETS, AND FURNITURE MOUNTS IN ACCORDANCE WITH DRAWINGS, VENDOR SUBMITTALS, AND ALL APPLICABLE CODES.

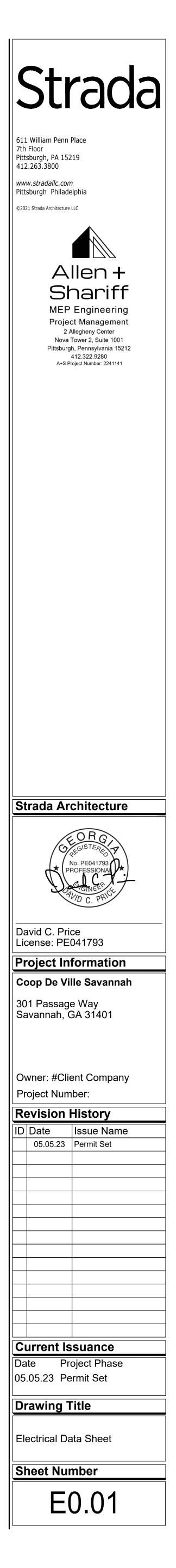
COORDINATE FINAL LOCATIONS AND ELEVATIONS OF ALL TELECOMMUNICATIONS DEVICES AND OUTLETS WITH ARCHITECTURAL PLANS, CASEWORK AND ELEVATIONS, AND VENDOR REQUIREMENTS.

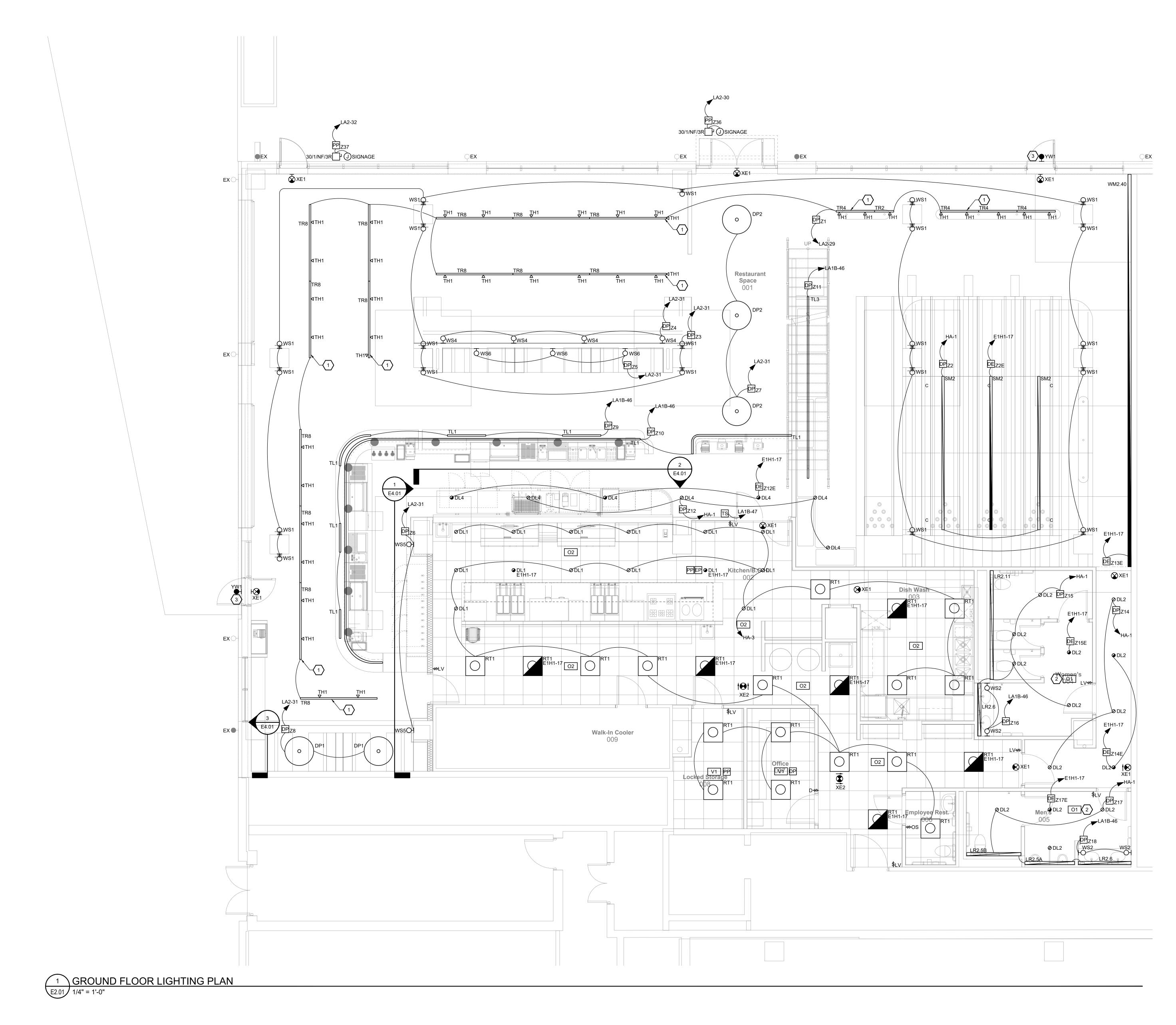
THE CONTRACTOR SHALL PROVIDE A COMPLETION SCHEDULE BROKEN DOWN BY PROJECT PHASES. FOR TURNOVER OF COMPLETED COMMUNICATIONS ROUGH-IN FOR VENDOR FINISH WORK. THE CONTRACTOR SHALL COORDINATE TURNOVER WITH VENDORS, AND SHALL TURNOVER AREAS FOR VENDOR FINISH WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY EXTRA VENDOR COST RESULTING FROM INCORRECT COMMUNICATIONS ROUGH-IN.

	LIGHTING		POWER
0	LIGHTING FIXTURE.	Ф	DUPLEX RECEPTACLE, 20A, 120V, 18"AFF, UON.
	LIGHTING FIXTURE ON EMERGENCY CIRCUIT. SUBSCRIPT "NL" WHERE	•	DUPLEX RECEPTACLE, GROUND FAULT INTERRUPTING TYPE, 20A, 120V, 18"AFF, UON.
	USED, INDICATES NIGHT LIGHT CONNECTED AHEAD OF LIGHTING CONTROLS.	Φus	B DUPLEX RECEPTACLE WITH (2) USB PORTS (ONE TYPE A AND ONE TYPE C PORT), 20A, 120V. PROVIDE LEGRANG #PTTR20AACUSBXX OR EQUAL.
0	DOWNLIGHT FIXTURE.		SERVICE OR TOE KICK OF SEATING. COORDINATE EXACT LOCATION
۲	PENDANT LIGHTING FIXTURE.		
$\bigcirc$	WALL WASH LIGHTING FIXTURE. SHADED AREA INDICATES LIGHT THROW DIRECTION.	♦	DUPLEX RECEPTACLE, 20A, 120V, 40"AFF OR 4" ABOVE COUNTER TOP OR IN CASEWORK (AS APPLICABLE), UON.
Ø	DOWNLIGHT FIXTURE ON EMERGENCY CIRCUIT. SUBSCRIPT "NL" WHERE USED, INDICATES NIGHT LIGHT CONNECTED AHEAD OF LIGHTING CONTROLS.	<₽	DUPLEX RECEPTACLE, GROUND FAULT INTERRUPTING TYPE, 20A, 120V, 40" AFF OR 4" ABOVE COUNTER TOP OR IN CASEWORK (AS APPLICABLE), UON.
Ŷ	WALL MOUNTED LIGHTING FIXTURE.	_ ⊕	(2) DUPLEX RECEPTACLES IN COMMON BOX, 20A, 120V, 18"AFF, UON.
P	WALL MOUNTED LIGHTING FIXTURE ON EMERGENCY CIRCUIT. SUBSCRIPT "NL" WHERE USED, INDICATES NIGHT LIGHT CONNECTED AHEAD OF LIGHTING CONTROLS.	♦ ^{WP}	DUPLEX RECEPTACLE, GROUND FAULT INTERRUPTING TYPE, 20A, 120V, WITH COOPER MODEL WIU-1D (OR EQUAL) "WHILE-IN-USE" WEATHERPROOF COVER, 18"AFG UON.
<u>v v v</u>	TRACK LIGHTING FIXTURE. INDIVIDUAL FIXTURE HEADS ON THE TRACK AS SHOWN ON LIGHTING PLAN.	$\bigcirc$	SPECIAL RECEPTACLE. NEMA CONFIGURATION AS NOTED. MOUNT 18"AFF UON.
$\overline{\otimes}$	EXIT LIGHTING FIXTURE WITH DIRECTIONAL ARROWS AS INDICATED ON DRAWINGS. SHADED AREA DENOTES LIGHTED FACE.	J	JUNCTION BOX - ABOVE CEILINGS OR FLUSH IN WALLS.
\$ _a	SINGLE POLE SWITCH, 20A, 120/277V, 44"AFF UON. SUBSCRIPT "a" INDICATES ASSOCIATED FIXTURES TO BE CONTROLLED.		DISCONNECT SWITCH - SIZE AS INDICATED ON PLANS 30/2/20/3R — NEMA RATING (IF OTHER THAN 1)     FUSE SIZE (AMPS), N.F. INDICATES NON-FUSED
\$ _{3a}	THREE-WAY SWITCH, 20A, 120/277V, 44"AFF UON. SUBSCRIPT "a" INDICATES ASSOCIATED FIXTURES TO BE CONTROLLED.		No. OF POLES SIZE (AMPS)
\$ _{LVa}	LOW VOLTAGE SWITCH WITH ON/OFF CONTROL OF A SINGLE ZONE, 44" AFF UON. SUBSCRIPT "a" INDICATES ASSOCIATED FIXTURES TO BE	\$ _M	HORSEPOWER RATED MOTOR SWITCH
	CONTROLLED. NLIGHT MODEL NPODMA OR APPROVED EQUAL.		EMON DMON METER. REFER TO POWER PLAN FOR ADDITIONAL INFORMATION.
\$ _{Da}	SINGLE ZONE, 44" AFF UON. SUBSCRIPT "a" INDICATES ASSOCIATED FIXTURES TO BE CONTROLLED. NLIGHT MODEL NPODMA-DX OR APPROVED EQUAL.	SPD	SURGE PROTECTIVE DEVICE
\$ _{OS}	LINE VOLTAGE DUAL TECHNOLOGY WALL SWITCH OCCUPANCY SENSOR,		ELECTRICAL METER. MOUNT 54" AFF (MINIMUM).
\$ _{VS}	44" AFF UON. SENSOR SWITCH MODEL WSXA OR APPROVED EQUAL. LINE VOLTAGE DUAL TECHNOLOGY WALL SWITCH VACANCY SENSOR,		ELECTRICAL PANELBOARD
105	44" AFF UON. SENSOR SWITCH MODEL WSXA-SA OR APPROVED EQUAL. LOW VOLTAGE DUAL TECHNOLOGY STANDARD RANGE OCCUPANCY		DRY-TYPE TRANSFORMER
01 _a	SENSOR, CEILING MOUNTED. SUBSCRIPT "a", WHERE USED, INDICATES ASSOCIATED FIXTURES TO BE CONTROLLED. NLIGHT MODEL NCM-PDT-9-RJB OR APPROVED EQUAL.		ELECTRICAL CIRCUIT RUN IN CONDUIT AND CIRCUIT HOMERUN TO PANELBOARD (PANEL AND CIRCUIT DESIGNATION AS INDICATED). AS A MINIMUM CONDITION, EACH SINGLE PHASE CIRCUIT SHALL HAVE 1 #12
V1 a	LOW VOLTAGE DUAL TECHNOLOGY STANDARD RANGE VACANCY SENSOR, CEILING MOUNTED. SUBSCRIPT "a", WHERE USED, INDICATES ASSOCIATED FIXTURES TO BE CONTROLLED. NLIGHT MODEL NCM-PDT-9-RJB OR APPROVED EQUAL.		PHASE CONDUCTOR, 1 #12 NEUTRAL CONDUCTOR, AND 1 #12 GROUNDING CONDUCTOR IN 3/4" CONDUIT. PROVIDE ADDITIONAL PHASE CONDUCTORS AS REQUIRED FOR "MULTIPLE PHASED" ELECTRICAL LOADS. PROVIDE ADDITIONAL "SWITCH LEG" CONDUCTORS TO PROVIDE THE LIGHT FIXTURE CONTROL INDICATED. MULTIPLE SINGLE PHASE
O2 _a	LOW VOLTAGE DUAL TECHNOLOGY EXTENDED RANGE OCCUPANCY SENSOR, CEILING MOUNTED. SUBSCRIPT "a", WHERE USED, INDICATES ASSOCIATED FIXTURES TO BE CONTROLLED. NLIGHT MODEL NCM-PDT-10-RJB OR APPROVED EQUAL.		CONDUCTORS SHALL BE GROUPED TOGETHER IN A COMMON CONDUIT IN ACCORDANCE WITH THE NEC AND AT THE CONTRACTOR'S DISCRETION. NEUTRAL AND GROUNDING CONDUCTORS SHALL BE SHARED AS ALLOWED BY THE NEC. CONDUIT LARGER THAN 3/4" AND
V2 a	LOW VOLTAGE DUAL TECHNOLOGY EXTENDED RANGE VACANCY SENSOR, CEILING MOUNTED. SUBSCRIPT "a", WHERE USED, INDICATES		CONDUCTORS LARGER THAN #12 SHALL BE AS INDICATED.
<u> </u>	ASSOCIATED FIXTURES TO BE CONTROLLED. NLIGHT MODEL NCM-PDT-10-RJB OR APPROVED EQUAL.	· · · · · ·	
ТС	ELECTRONIC TIME CLOCK FOR LIGHTING CONTROL. PROVIDE INTERMATIC ET70000C SERIES OR APPROVED EQUAL.		COMMUNICATIONS TELE/DATA BOX, 4"X4"X2 1/4"D BOX WITH SINGLE GANG PLASTER RING
PP	nLIGHT POWER PACK MODEL nPP16.	V	18"AFF, UON, WITH 1-1/4"C WITH PULL STRING STUBBED ABOVE ACCESSIBLE CEILING AND TERMINATED WITH PLASTIC BUSHING.
EP	nLIGHT EMERGENCY POWER PACK MODEL nPP16-ER.		TELE/DATA BOX, 4"X4"X2 1/4"D BOX WITH SINGLE GANG PLASTER RING 40"AFF OR 4" ABOVE COUNTER TOP OR BACKSPLASH (WHICHEVER IS
DP	nLIGHT DIMMING POWER PACK MODEL nPP16D.		HIGHER) OR IN CASEWORK AS APPLICABLE, UON, WITH 1-1/4"C WITH PULL STRING STUBBED ABOVE ACCESSIBLE CEILING AND TERMINATED WITH PLASTIC BUSHING.
DE	nLIGHT EMERGENCY DIMMING POWER PACK MODEL nPP16D-ER.	•	TELE/DATA BOX, 4"X4"X2 1/4"D BOX WITH SINGLE GANG PLASTER RING 54"AFF, UON, WITH 1-1/4"C WITH PULL STRING STUBBED ABOVE
DS	DAYLIGHT SENSOR.		ACCESSIBLE CEILING AND TERMINATED WITH PLASTIC BUSHING. TELEPHONE PLYWOOD BACKBOARD 3/4"x8'x4', FIRE RETARDANT.
	LIGHTING FIXTURE KEY		BOTTOM AT 0'-4" AFF. CABLE TELEVISION OUTLET BOX, 4"X4"X2-1/4"D BOX WITH SINGLE GANG
	1. TAG "RT1" DENOTES FIXTURE TYPE. REFER TO LIGHTING FIXTURE SCHEDULE. ASSOCIATED LETTER "a", WHERE USED, INDICATES LIGHTING FIXTURE CONTROL DEVICE DESIGNATION.	TV	PLASTER RING, WITH 1"C WITH PULL STRING STUBBED ABOVE ACCESSIBLE CEILING AND TERMINATED WITH INSULATED BUSHING. MOUNT 18"AFF, UON.
RT1 LNA-3 Z#	2. SUBSCRIPT "LNA" INDICATES NAME OF PANELBOARD FROM WHICH FIXTURE IS FED. ASSOCIATED NUMBER "3" INDICATES CIRCUIT NUMBER IN PANELBOARD FROM WHICH FIXTURE IS FED.		
	3. SUBSCRIPT "Z#", WHERE USED, INDICATES LIGHTING FIXTURE CONTROL ZONE DESIGNATION CIRCUITED THROUGH TIMECLOCK LIGHTING CONTROL SYSTEM. REFER TO DRAWING E5.01 FOR ADDITIONAL INFORMATION.		

	ELECTRICAL ABBREVIATIONS
А	AMPERE
AFF	ABOVE FINISHED FLOOR ABOVE FINISHED GRADE
AFG AHU	ABOVE FINISHED GRADE
AIC	AMPERE INTERRUPTING CURRENT
ATS	AUTOMATIC TRANSFER SWITCH
AV	
BFG C	BELOW FINISHED GRADE
CATV	CABLE ANTENNA TELEVISION
СВ	CIRCUIT BREAKER
CCTV	
CFL CKT	COMPACT FLUORESCENT
EBU	EMERGENCY BATTERY UNIT
EC	EMPTY CONDUIT
EC	ELECTRICAL CONTRACTOR
ECB	ENCLOSED CIRCUIT BREAKER
EF	EXHAUST FAN ENERGY RECOVERY UNIT
EQUIP	EQUIPMENT
ETR	EXISTING TO REMAIN
EWC	
EWH	ELECTRIC WATER HEATER
FLA	FULL LOAD AMPS
FPC	FIRE PROTECTION CONTRACTOR
GC	GENERAL CONTRACTOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND HID	GROUND HIGH INTENSITY DISCHARGE
HP	HORSE POWER/HEAT PUMP
HVAC	HEATING, VENTILATING,
	AND AIR CONDITIONING
IG	
JB KVA	JUNCTION BOX KILO-VOLT AMPERE
KW	KILO-WATT
LC	LIGHTING CONTACTOR
LTG	LIGHTING
MAU MCA	MAKE UP AIR UNIT MINIMUM CIRCUIT AMPS
MCA	MINIMOM CIRCOTT AMPS
MC	METAL CLAD
MCB	MAIN CIRCUIT BREAKER
MFR	
MLO MTD	MAIN LUGS ONLY MOUNTED
NEC	NATIONAL ELECTRICAL CODE
NF	NON-FUSED
NIC	
NL NTS	NIGHT LIGHT NOT TO SCALE
OC	ON CENTER
OFCI	OWNER FURNISHED
P	CONTRACTOR INSTALLED POLE
PC	PLUMBING CONTRACTOR
PCP	PUMP CONTROL PANEL
PF	POWER FACTOR
PNLBD Ø	PANELBOARD PHASE
PRI	PRIMARY
REC	RECEPTACLE
RTU	
SE SEC	SERVICE ENTRANCE
TBB	TELEPHONE BACKBOARD
TR	TAMPER RESISTANT
TVSS	
TYP	SURGE SUPPRESSER
UON	UNLESS OTHERWISE NOTED
V	VOLTS
VAC	VOLTS ALTERNATING CURRENT
VAV	VARIABLE AIR VOLUME VOLTS DIRECT CURRENT
VDC VFD	VARIABLE REQUENCY DRIVE
W	WATTS/WIRE
WG	WIRE GUARD
WP	WEATHERPROOF
XFMR	TRANSFORMER
	GENERAL
	KEYNOTE.

APPLICABLE CODES	
THE INTERNATIONAL ENERGY CONSERVATION CODE(IECC)	2018
THE INTERNATIONAL BUILDING CODE (IBC)	2018
NATIONAL ELECTRIC CODE (NFPA 70)	2017



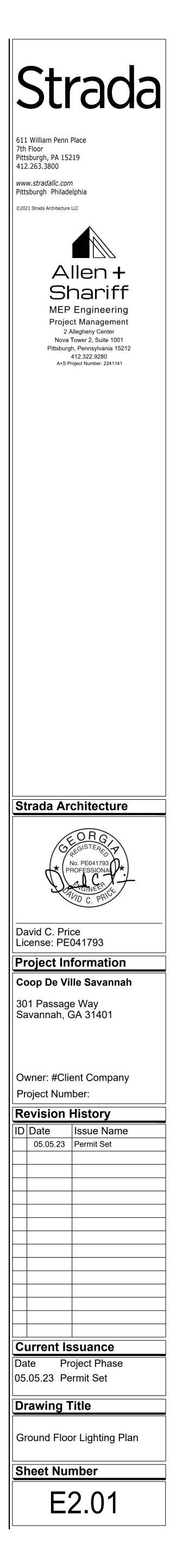


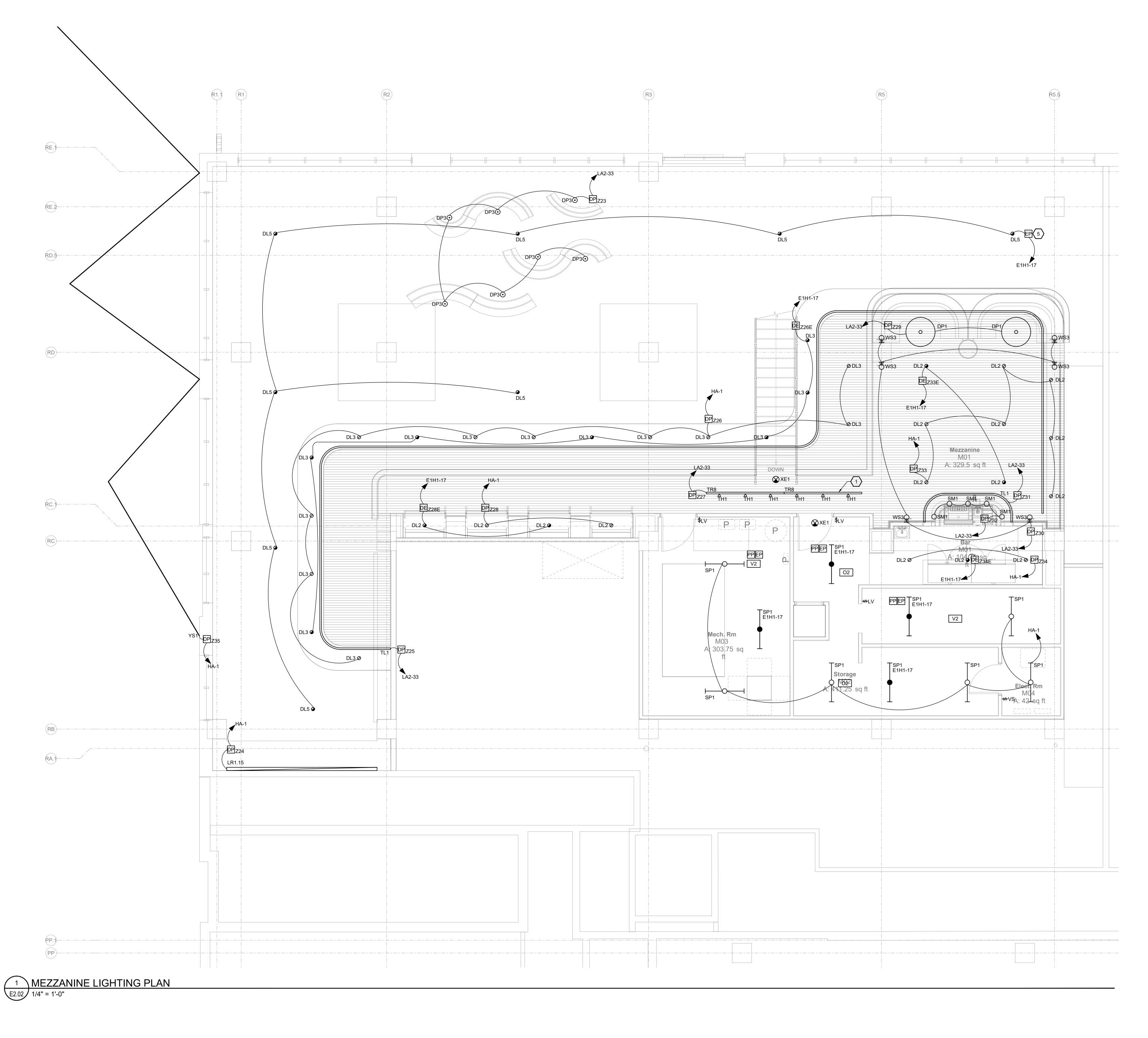
LIGHTING GENERAL NOTES:

- FIRE STOP ALL FIRE RATED FLOORS, CEILINGS, AND WALLS AS REQUIRED BY CODE. PENETRATIONS INTO OR THROUGH FIRE RESISTANCE RATED WALLS SHALL COMPLY WITH IBC CHAPTER 7.
- 2. PROVIDE EXPANSION FITTINGS AS REQUIRED AT ALL EXPANSION JOINTS. COORDINATE WITH ARCHITECTURAL DRAWINGS.
- 3. WHERE EXPOSED, BRANCH CIRCUITS SHALL BE RUN IN EMT CONDUIT ROUTED PARALLEL AND PERPENDICULAR TO BUILDING STRUCTURE. WHERE CONCEALED WITHIN WALLS OR ABOVE CEILING, MC CABLE IS PERMISSIBLE. EXPOSED CONDUIT SHALL BE PAINTED PER THE ARCHITECTURAL DRAWINGS.
- 4. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES AND EXACT LIGHTING FIXTURE LOCATIONS AND DIMENSIONAL INFORMATION.
- 5. EXIT SIGNS SHALL BE CIRCUITED TO AN UNSWITCHED HOT LEG OF THE NORMAL/EMERGENCY LIGHTING BRANCH CIRCUIT SERVING THE SPACE, AHEAD OF LOCAL CONTROLS.
- 6. OCCUPANCY / VACANCY SENSORS HAVE BEEN LOCATED PER THE RECOMMENDED SPACING OF THE BASIS OF DESIGN PRODUCTS. THE EXACT LOCATIONS AND QUANTITY OF SENSORS SHALL BE VERIFIED BY THE MANUFACTURER FOR PRODUCTS SUBMITTED AS EQUALS.
- REFER TO LIGHTING CONTROL DETAIL AND SCHEDULE ON DRAWING E5.01 FOR ADDITIONAL INFORMATION.

LIGHTING KEY NOTES:

- 1. PROVIDE 1 AMP CURRENT LIMITING DEVICE FOR TRACK. PROVIDE LUMENTURE MODEL #JA-2X-FINISH-BRK10 OR APPROVED EQUAL. FINISH SHALL BE PROVIDED BY ARCHITECT.
- 2. RESTROOM LIGHTING SHALL TIE INTO LIGHTING CONTROL SYSTEM FOR PROGRAMMING ON LIGHTING LEVELS ONLY, BUT SHALL BE CONTROLLED THROUGH THE LOCAL OCCUPANCY SENSOR AND OVERRIDE SWITCH IN RESTROOM.
- 3. LIGHT FIXTURE SHALL BE CIRCUITED TO EXISTING NORMAL/EMERGENCY LIGHTING BRANCH CIRCUIT FEEDING ADJACENT EXTERIOR LIGHT FIXTURES. LIGHT FIXTURE SHALL BE CONTROLLED VIA BUILDING LIGHTING CONTROL SYSTEM.



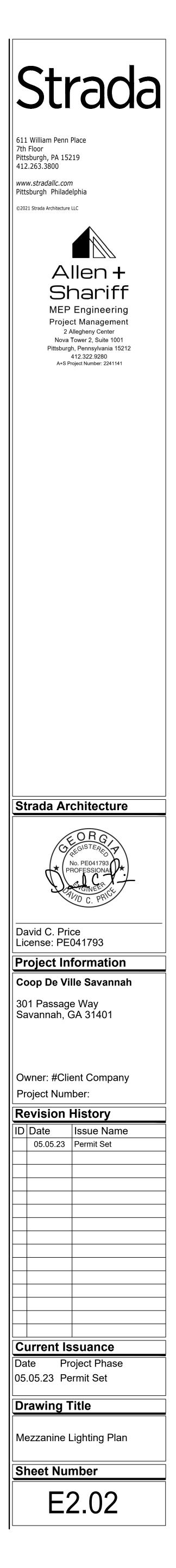


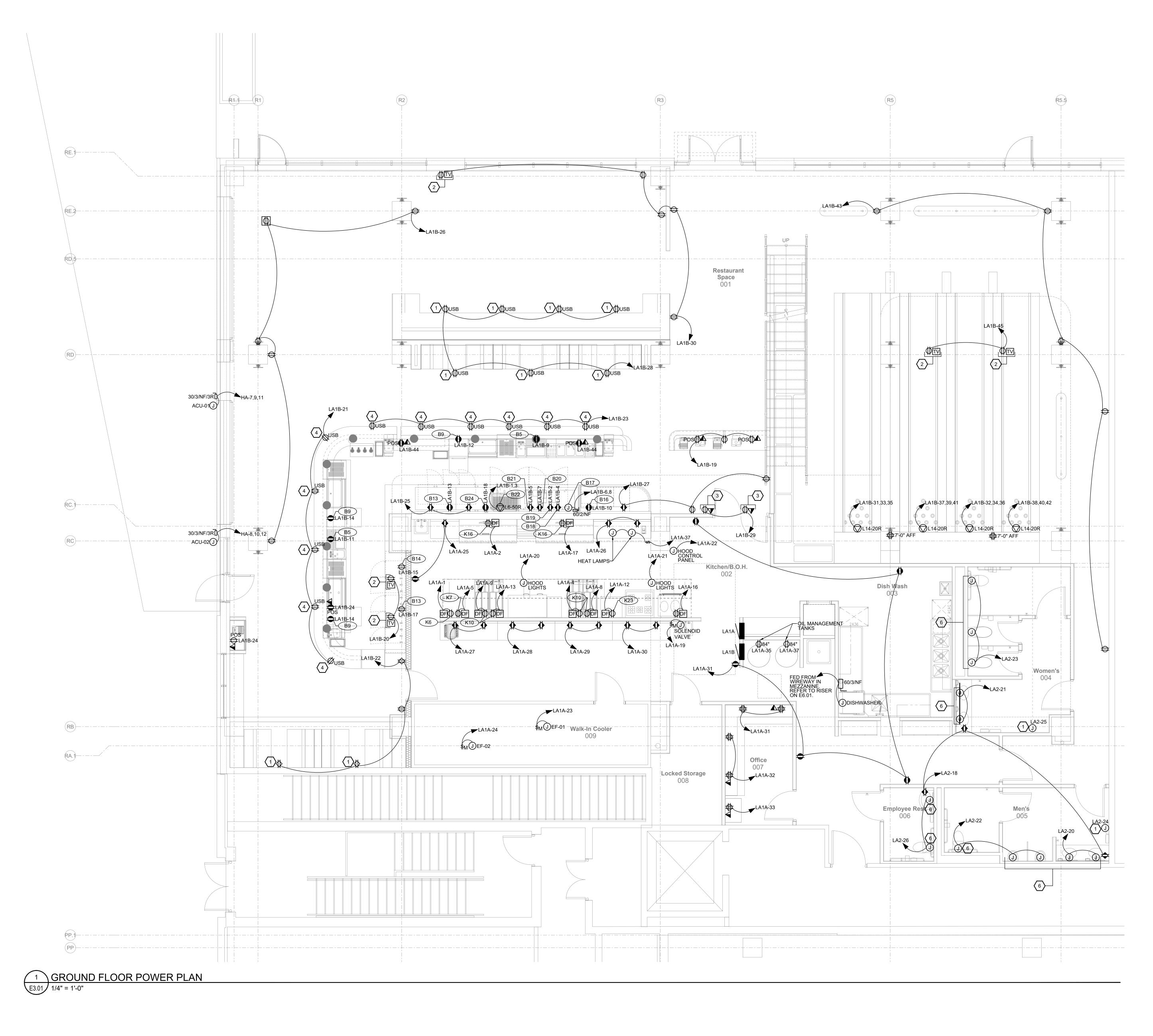
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LIGHTING KEY NOTES: (#)

- 1. PROVIDE 1 AMP CURRENT LIMITING DEVICE FOR TRACK. PROVIDE LUMENTURE MODEL #JA-2X-FINISH-BRK10 OR APPROVED EQUAL. FINISH SHALL BE PROVIDED BY ARCHITECT.
- 2. LIGHT FIXTURE TYPE 'DL5' SHALL ONLY TURN ON DURING EMERGENCY POWER CONDITIONS.



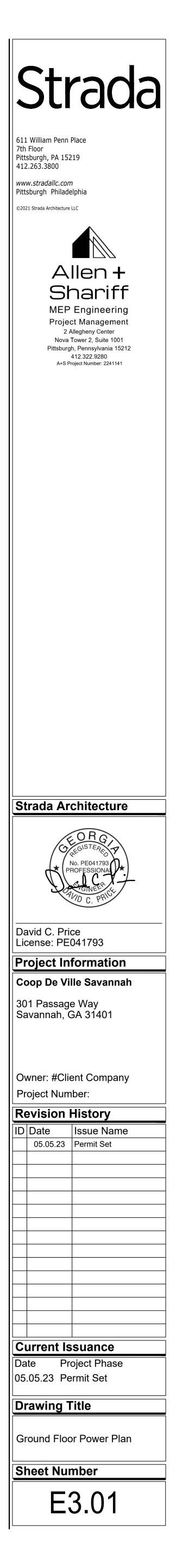


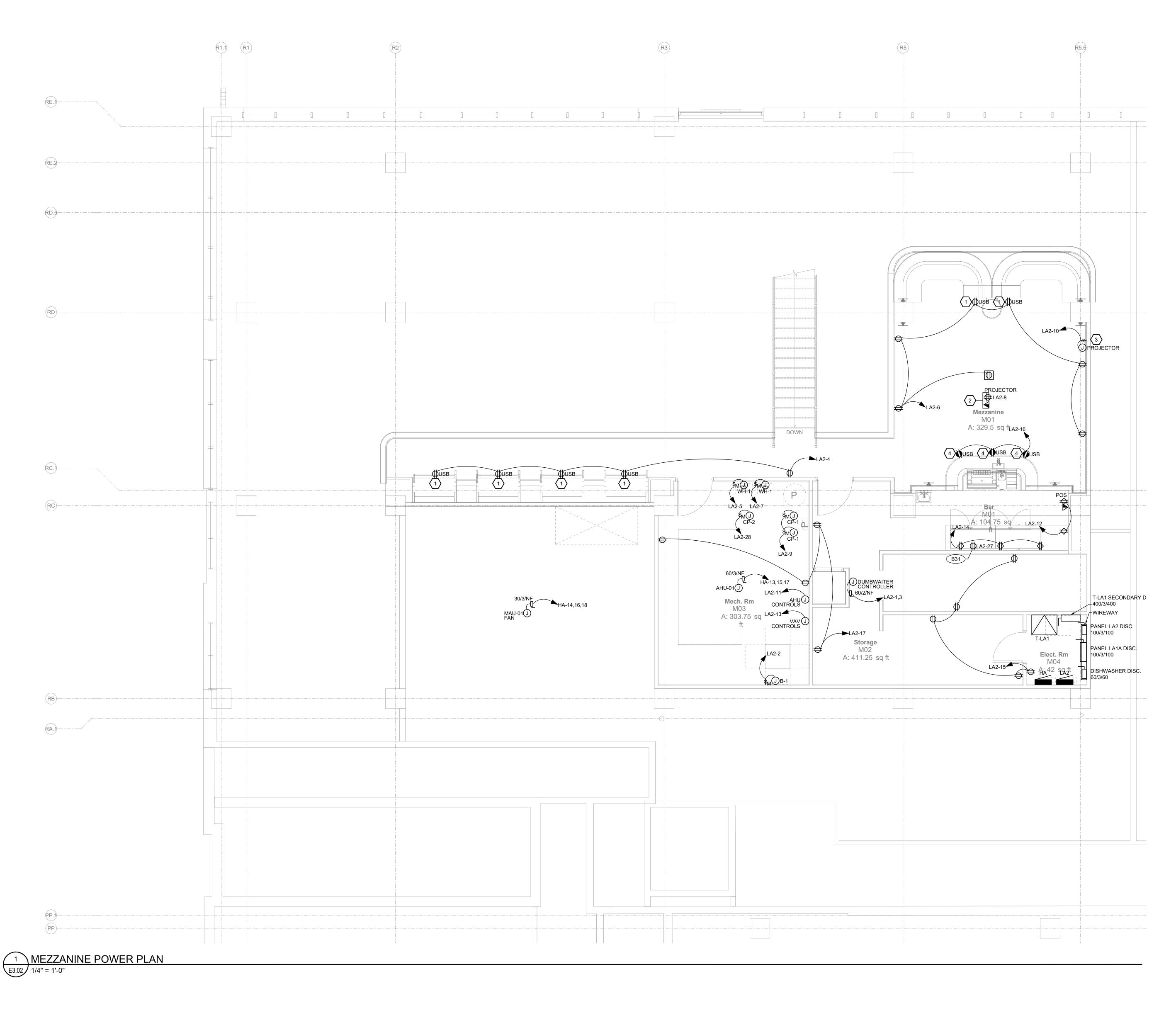
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- 4. COORDINATE EXACT LOCATIONS OF MECHANICAL EQUIPMENT WITH DIVISION 23. UNLESS NOTED OTHERWISE, MECHANICAL EQUIPMENT DISCONNECTS AND VARIABLE FREQUENCY DRIVES SHALL BE FURNISHED BY DIVISION 23, INSTALLED AND WIRED BY EC. THESE DISCONNECTS HAVE NOT BEEN SHOWN ON THIS PLAN.
- COORDINATE EXACT LOCATIONS OF PLUMBING EQUIPMENT WITH DIVISION 22. UNLESS NOTED OTHERWISE, PLUMBING EQUIPMENT DISCONNECTS SHALL BE FURNISHED, INSTALLED, AND WIRED BY EC.
- EC SHALL NOT HAVE MORE THAN THREE CURRENT CARRYING CONDUCTORS IN A CONDUIT WITHOUT DERATING AMPACITIES PER THE NEC.
- 7. WHERE DEVICES ARE INCLUDED AND DIMENSIONED ON THE ARCHITECTURAL DRAWINGS, THOSE LOCATIONS SHALL GOVERN. WHERE DEVICES ARE OMITTED FROM THE ARCHITECTURAL DRAWINGS, INSTALL IN ACCORDANCE WITH THIS PLAN AND THE DEFAULT LOCATIONS IN THE ELECTRICAL SPECIFICATIONS. ALL DEVICES SHALL BE INSTALLED PER ADA. IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO VERIFY EXACT DEVICE LOCATIONS. WHERE DEVICES ARE INSTALLED IN THE FIELD AND DIFFER FROM DESIGN DOCUMENT DIMENSIONS, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CORRECT DEVICE LOCATIONS TO MATCH CONSTRUCTION DOCUMENTS, AT NO COST TO THE OWNER.

 $\underline{\mathsf{POWER}\,\mathsf{KEY}\,\mathsf{NOTES}}\left<\#\right>$ 

- 1. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT OF BANQUETTE RECEPTACLES WITH ARCHITECTURAL ELEVATION PRIOR TO ROUGH-IN.
- 2. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT OF RECEPTACLE AND TELE/DATA ROUGH-IN FOR TV WITH ARCHITECT PRIOR TO ROUGH-IN.
- 3. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT OF RECEPTACLE AND TELE/DATA ROUGH-IN FOR DIGITAL MENU BOARD WITH ARCHITECT PRIOR TO ROUGH-IN.
- COORDINATE EXACT LOCATION OF AND MOUNTING RECEPTACLES IN BAR FACE WITH ARCHITECTURAL ELEVATIONS.
- 5. RECEPTACLE AND TELE/DATA ROUGH-IN SHALL BE CEILING MOUNTED. COORDINATE EXACT LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.
- COORDINATE LOCATION OF POWER CONNECTIONS FOR SINKS, TOILETS, AND URINALS WITH PLUMBING CONTRACTOR PRIOR TO ROUGH-IN.



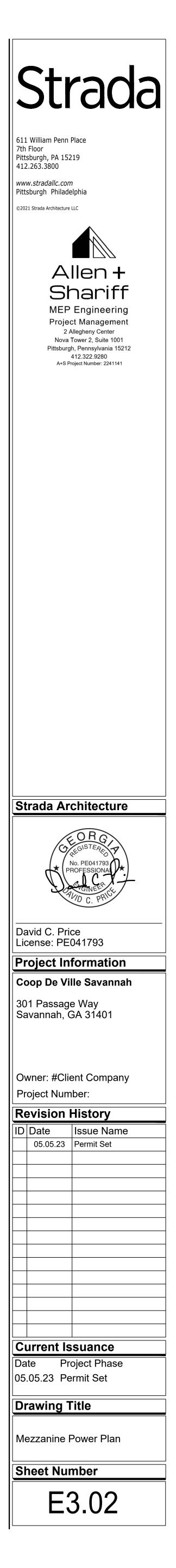


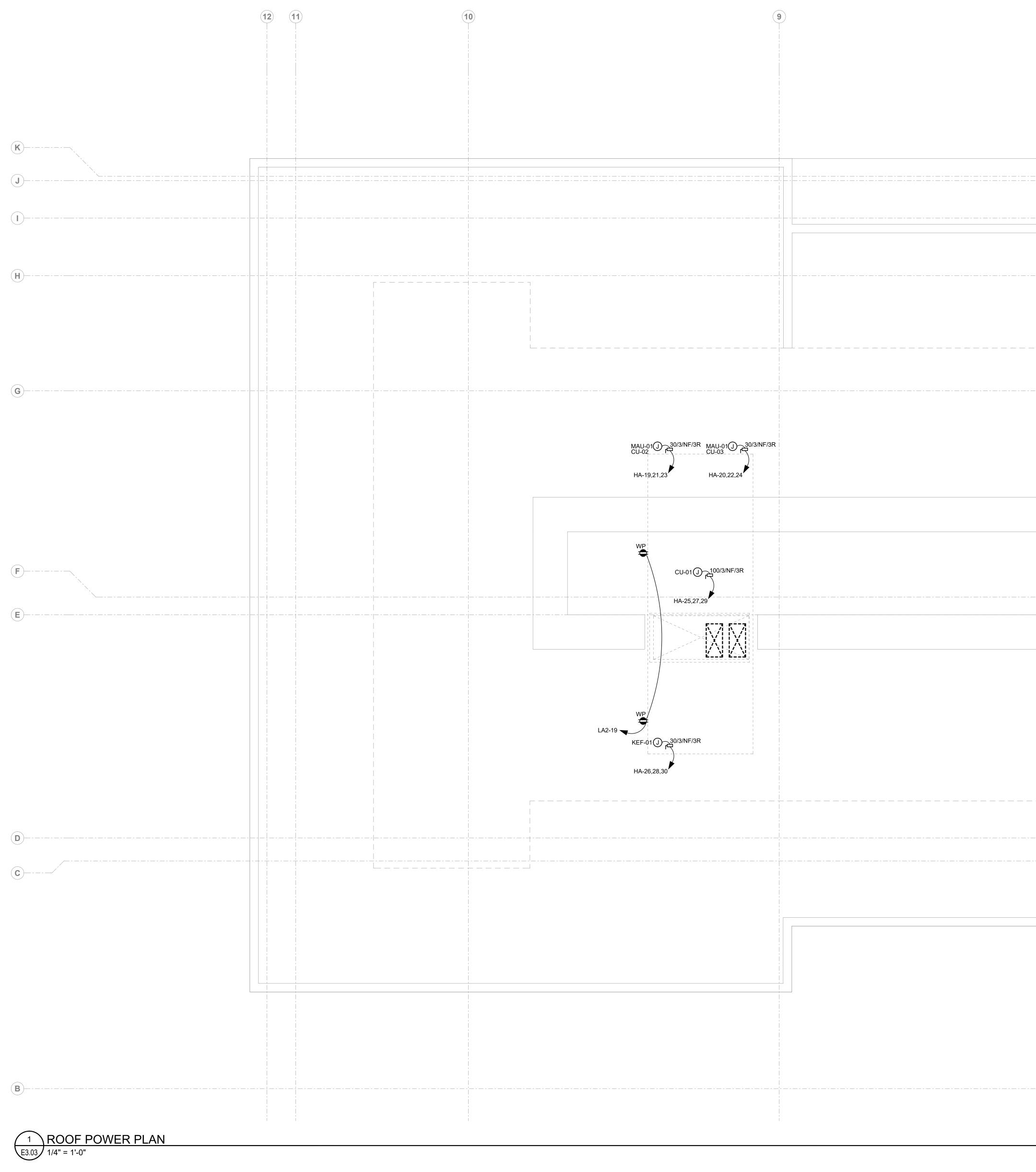
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- 3. WHERE EXPOSED, BRANCH CIRCUITS SHALL BE RUN IN EMT CONDUIT ROUTED PARALLEL AND PERPENDICULAR TO BUILDING STRUCTURE. WHERE CONCEALED WITHIN WALLS OR ABOVE CEILING, MC CABLE IS PERMISSIBLE. EXPOSED CONDUIT SHALL BE PAINTED PER THE ARCHITECTURAL DRAWINGS.
- 4. COORDINATE EXACT LOCATIONS OF MECHANICAL EQUIPMENT WITH DIVISION 23. UNLESS NOTED OTHERWISE, MECHANICAL EQUIPMENT DISCONNECTS AND VARIABLE FREQUENCY DRIVES SHALL BE FURNISHED BY DIVISION 23, INSTALLED AND WIRED BY EC. THESE DISCONNECTS HAVE NOT BEEN SHOWN ON THIS PLAN.
- COORDINATE EXACT LOCATIONS OF PLUMBING EQUIPMENT WITH DIVISION 22. UNLESS NOTED OTHERWISE, PLUMBING EQUIPMENT DISCONNECTS SHALL BE FURNISHED, INSTALLED, AND WIRED BY EC.
- 6. EC SHALL NOT HAVE MORE THAN THREE CURRENT CARRYING CONDUCTORS IN A CONDUIT WITHOUT DERATING AMPACITIES PER THE NEC.
- 7. WHERE DEVICES ARE INCLUDED AND DIMENSIONED ON THE ARCHITECTURAL DRAWINGS, THOSE LOCATIONS SHALL GOVERN. WHERE DEVICES ARE OMITTED FROM THE ARCHITECTURAL DRAWINGS, INSTALL IN ACCORDANCE WITH THIS PLAN AND THE DEFAULT LOCATIONS IN THE ELECTRICAL SPECIFICATIONS. ALL DEVICES SHALL BE INSTALLED PER ADA. IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO VERIFY EXACT DEVICE LOCATIONS. WHERE DEVICES ARE INSTALLED IN THE FIELD AND DIFFER FROM DESIGN DOCUMENT DIMENSIONS, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CORRECT DEVICE LOCATIONS TO MATCH CONSTRUCTION DOCUMENTS, AT NO COST TO THE OWNER.

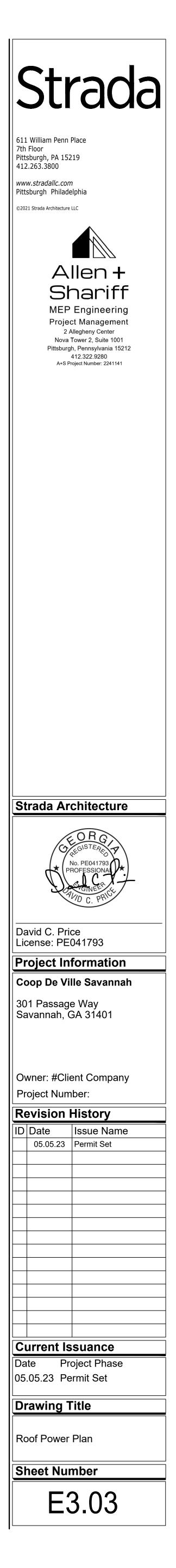
 $\underline{\mathsf{POWER}\,\mathsf{KEY}\,\mathsf{NOTES}}\left<\#\right>$ 

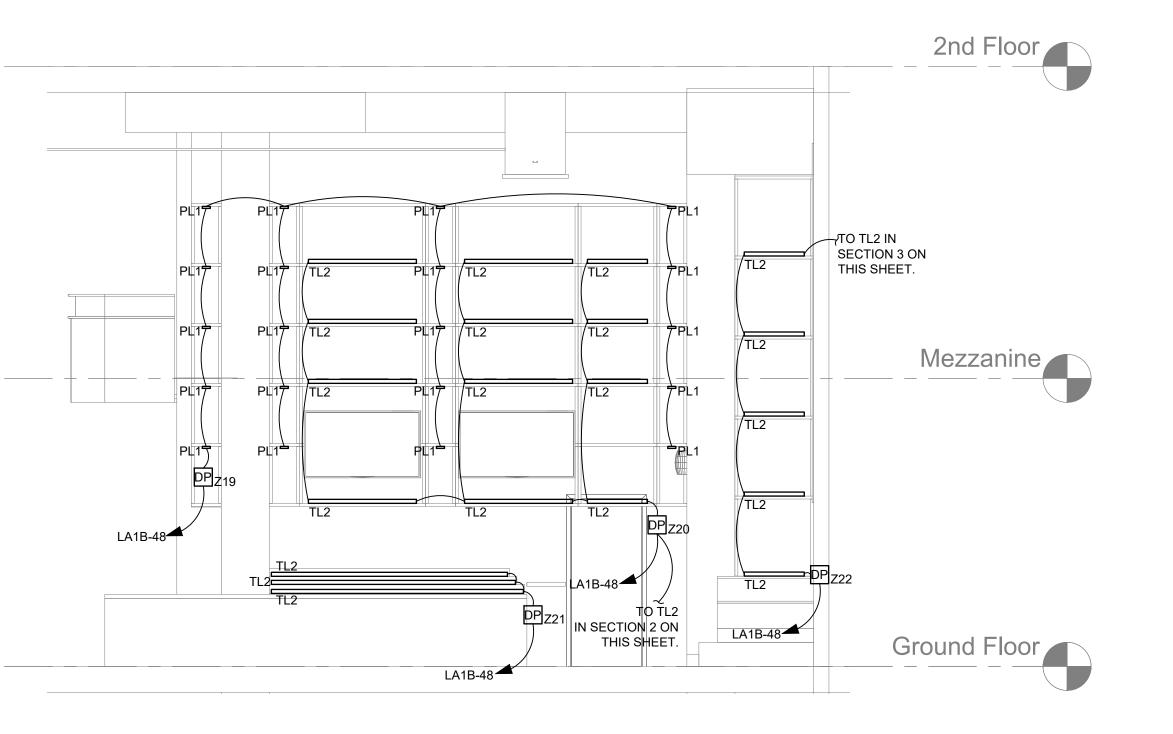
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- 2. RECEPTACLE AND TELE/DATA ROUGH-IN SHALL BE CEILING MOUNTED. COORDINATE EXACT LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.
- COORDINATE LOCATION OF PROJECTION SCREEN POWER CONNECTION AND CONTROLS WITH ARCHITECT PRIOR TO ROUGH-IN.
- COORDINATE EXACT LOCATION OF AND MOUNTING RECEPTACLES IN BAR FACE WITH ARCHITECTURAL ELEVATIONS.





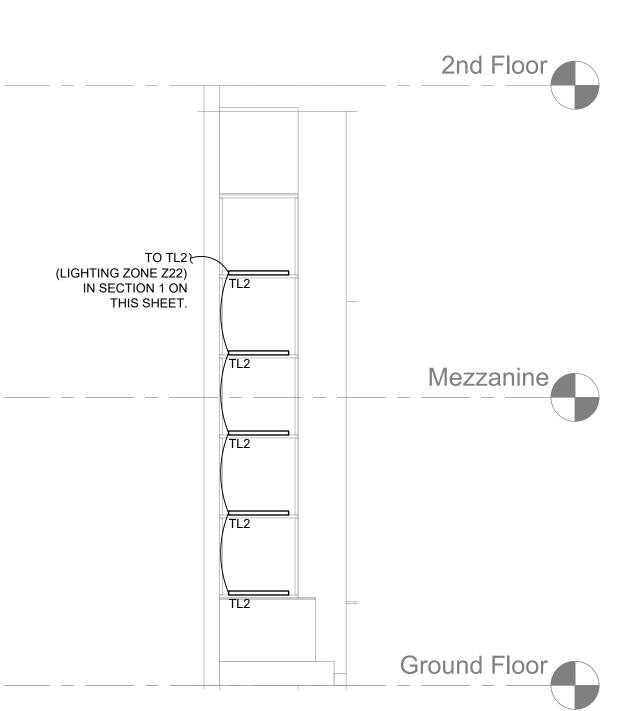
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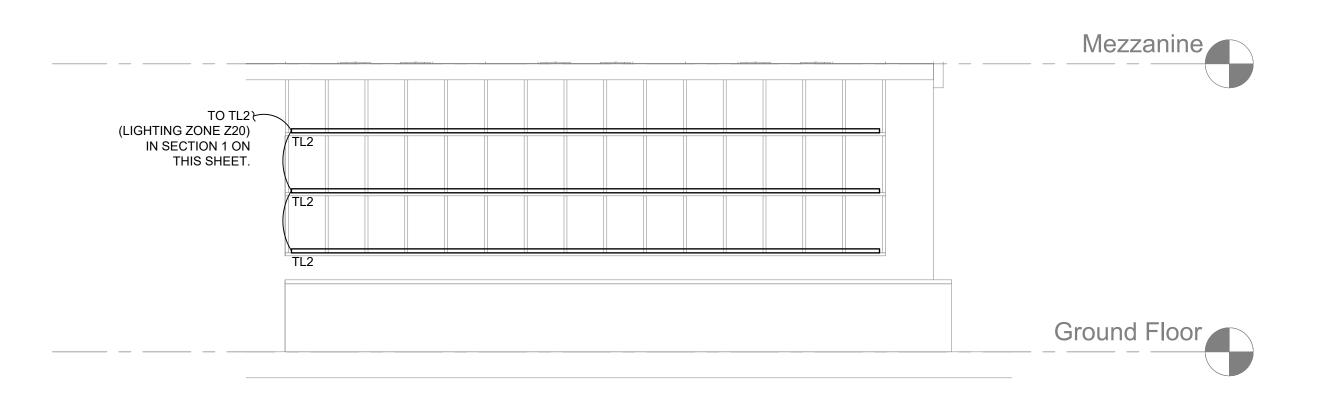


**I** LIGHTING ELEVATION - BAR WEST WALL E4.01 1/4" = 1'-0"

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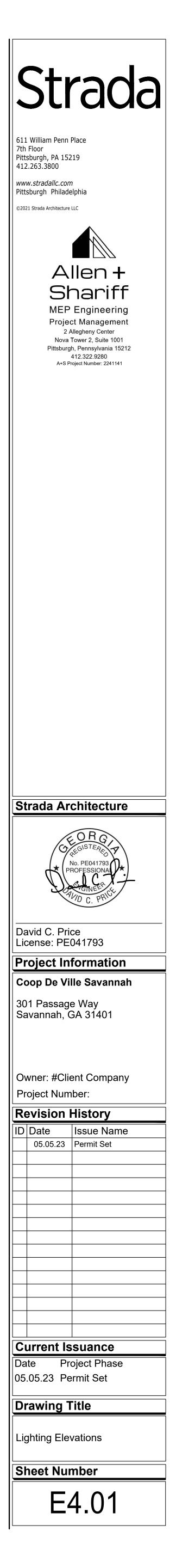
3 LIGHTING ELEVATION - BOOTH E4.01 1/4" = 1'-0"

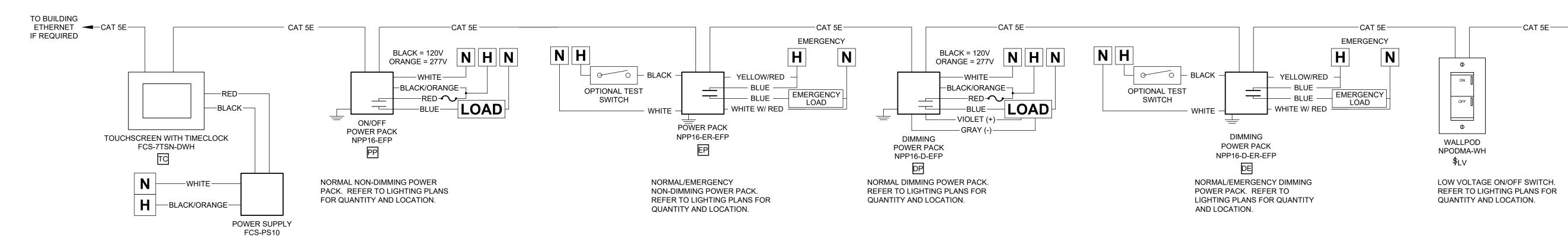




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- 6. REFER TO LIGHTING CONTROL DETAIL AND SCHEDULE ON DRAWING E5.01 FOR ADDITIONAL INFORMATION.

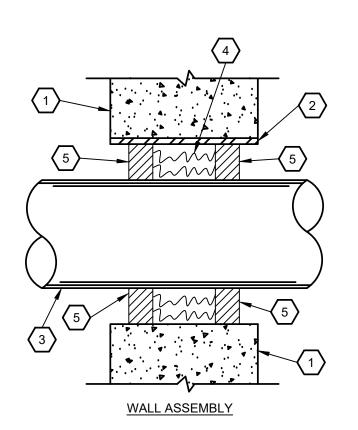


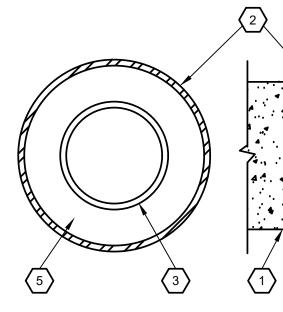


GENERAL NOTES:

- 1. TOUCH SCREEN REQUIRES A DEDICATED 120V CIRCUIT FOR POWER SUPPLY TRANSFORMER. 2. ELECTRICAL CONTRACTOR TO CONNECT ALL DEVICES WITH CAT5E DATA CABLE IN A DAISY CHAIN. 3. ALL CAT5E CABLE RUNS NEED TO BE CHECKED WITH A CAT5E METER FOR PROPER TERMINATION OF RJ45
- CONNECTORS. 4. REFER TO LIGHTING PLANS FOR ALL ZONE INFORMATION.
- 5. DIMMING POWER PACK TYPE SHALL BE COORDINATED WITH LIGHT FIXTURES DIMMING PROTOCOL.

LIGHT CONTROL DETAIL E5.01 NOT TO SCALE





FLOOR ASSEMBLY

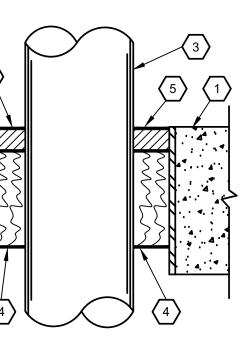
## KEYED NOTES: (#)

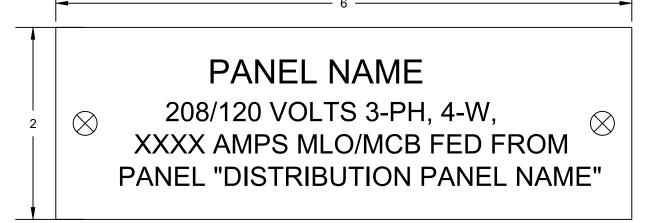
- 1. FLOOR OR WALL ASSEMBLY MINIMUM 5" THICK NORMAL WEIGHT CONCRETE FLOOR OR WALL OR MINIMUM 7-5/8" THICK MASONRY WALL HAVING A MINIMUM 2 HOUR FIRE RESISTIVE RATING WITH A NOMINAL 6" DIAMETER OPENING. 2. STEEL PIPE SLEEVE (OPTIONAL) NOMINAL 6" DIAMETER SCHEDULE 40 OR HEAVIER STEEL PIPE SLEEVE. (2 TRADE SIZES LARGER THAN CONDUIT).
- 3. STEEL OR EMT CONDUIT NOMINAL 4" DIAMETER CENTERED THROUGH THE OPENING.
- 4. FORMING MATERIAL MINERAL WOOL, MINIMUM DENSITY OF 4.4 PCF FIRMLY PACKED WITHIN THE OPENING TO A NOMINAL THICKNESS OF 3" FOR FLOORS. FOR WALLS, THE MINERAL WOOL SHALL BE CENTERED IN THE OPENING.
- 5. FILL, VOID OR CAVITY MATERIAL* FILL MATERIAL THAT IS TROWELED INTO THE OPENING TO A MINIMUM THICKNESS OF 1/2" IN ACCORDANCE WITH THE ACCOMPANYING INSTALLATION INSTRUCTIONS. IN WALLS, THE FILL MATERIAL SHALL BE INSTALLED ON BOTH SURFACES OF THE OPENING.

* BEARING THE "UL" CLASSIFICATION MARKING



LIGHTING ZONE	DESCRIPTION / LOCATION	DIMMING TYPE	VOLTAGE	CIRCUIT	NOTES
Z1	TRACK LIGHTING - RESTAURANT SPACE	ELVDIMMING	120V	LA2-29	-
Z2	LINEAR FIXTURES - BOWLING AREA	0-10V DIMMING	277V	HA-1	LIGHTING ZONES Z2 AND Z2E SHALL BE CONTROLLED TOGETHER UNDER NORMAL
Z2E	LINEAR FIXTURE - BOWLING AREA	0-10V DIMMING	277V	E1H1-17	POWER CONDITIONS.
Z3	WALL SCONCES - RESTAURANT SPACE & BOWLING AREA	ELVDIMMING	120V	LA2-31	-
Z4	WALL SCONCES - BOOTHS	ELVDIMMING	120V	LA2-31	-
Z5	WALL SCONCES - BOOTHS	ELVDIMMING	120V	LA2-31	-
Z6	WALL SCONCES - BAR	ELVDIMMING	120V	LA2-31	-
Z7	PENDANT FIXTURES - RESTAURANT ENTRY	ELVDIMMING	120V	LA2-31	_
Z8	PENDANT FIXTURES - BOOTHS	ELVDIMMING	120V	LA2-31	_
Z9	BAR LAMP (TAPE LIGHT) - BAR	0-10V DIMMING	120V	LA1B-46	_
Z10	TAPE LIGHT - BAR FRONT	0-10V DIMMING	120V	LA1B-46	
Z11	TAPE LIGHT - STAIR	0-10V DIMMING	120V	LA1B-46	
Z12	DOWNLIGHTS - BAR	0-10V DIMMING	277V	HA-1	LIGHTING ZONES Z12 AND Z12E SHALL BE CONTROLLED TOGETHER UNDER NORMAL
Z12E	DOWNLIGHTS - BAR	0-10V DIMMING	277V	E1H1-17	POWER CONDITIONS.
Z13E	LINEAR WALL WASHER - BOWLING AREA MURAL	0-10V DIMMING	277V	E1H1-17	
Z14	DOWNLIGHTS - RESTROOM CORRIDOR	0-10V DIMMING	277V	HA-1	LIGHTING ZONES Z14 AND Z14E SHALL BE CONTROLLED TOGETHER UNDER NORMAL
Z14E	DOWNLIGHTS - RESTROOM CORRIDOR	0-10V DIMMING	277V	E1H1-17	POWER CONDITIONS.
Z14L	DOWNLIGHTS & LINEARS - WOMEN'S RESTROOM	0-10V DIMMING	277V	HA-1	
Z15E	DOWNLIGHTS & LINEARS - WOMEN'S RESTROOM	0-10V DIMMING	277V	E1H1-17	
Z16	WALL SCONCES - WOMEN'S RESTROOM	ELV DIMMING	120V	LA1B-46	
Z10 Z17	DOWNLIGHTS & LINEARS - MEN'S RESTROOM	0-10V DIMMING	277V	HA-1	
Z17 Z17E	DOWNLIGHTS & LINEARS - MEN'S RESTROOM	0-10V DIMMING	277V	E1H1-17	LIGHTING ZONES Z17 AND Z17E SHALL BE CONTROLLED TOGETHER UNDER NORMAL POWER CONDITIONS.
Z17E	WALL SCONCES - MEN'S RESTROOM	ELVDIMMING	120V	LA1B-46	
					-
Z19	PUCK LIGHTS - SHELVES	0-10V DIMMING	120V	LA1B-48	-
Z20	TAPE LIGHT - SHELVES	0-10V DIMMING	120V	LA1B-48	-
Z21		0-10V DIMMING	120V	LA1B-48	-
Z22	TAPE LIGHT - BOOTH SHELVES	0-10V DIMMING	120V	LA1B-48	
Z23	PENDANTS - RESTAURANT AREA	ELVDIMMING	120V	LA2-33	-
Z24	LINEAR WALL WASHER - BOOTH MURAL	0-10V DIMMING	277V	HA-1	-
Z25	TAPE LIGHT - CEILING	0-10V DIMMING	120V	LA2-33	-
Z26	DOWNLIGHTS - MEZZANINE CEILING	0-10V DIMMING	277V	HA-1	LIGHTING ZONES Z26 AND Z26E SHALL BE CONTROLLED TOGETHER UNDER NORMAL
Z26E	DOWNLIGHTS - MEZZANINE CEILING	0-10V DIMMING	277V	E1H1-17	POWER CONDITIONS.
Z27	TRACK LIGHTING - MEZZANINE	ELVDIMMING	120V	LA2-33	-
Z28	DOWNLIGHTS - MEZZANINE BOOTHS	0-10V DIMMING	277V	HA-1	LIGHTING ZONES Z28 AND Z28E SHALL BE CONTROLLED TOGETHER UNDER NORMAL
Z28E	DOWNLIGHTS - MEZZANINE BOOTHS	0-10V DIMMING	277V	E1H1-17	POWER CONDITIONS.
Z29	PENDANTS - MEZZANINE BOOTHS	ELVDIMMING	120V	LA2-33	-
Z30	SCONCES - MEZZANINE BAR	ELVDIMMING	120V	LA2-33	-
Z31	TAPE LIGHT - MEZZANINE BAR	0-10V DIMMING	120V	LA2-33	-
Z32	SCONCES - MEZZANINE BAR	ELVDIMMING	120V	LA2-33	-
Z33	DOWNLIGHTS - MEZZANINE BAR	0-10V DIMMING	277V	HA-1	LIGHTING ZONES Z33 AND Z33E SHALL BE CONTROLLED TOGETHER UNDER NORMAL
Z33E	DOWNLIGHTS - MEZZANINE BAR	0-10V DIMMING	277V	E1H1-17	POWER CONDITIONS.
Z34	DOWNLIGHTS - MEZZANINE BAR	0-10V DIMMING	277V	HA-1	LIGHTING ZONES Z34 AND Z34E SHALL BE CONTROLLED TOGETHER UNDER NORMAL
Z34E	DOWNLIGHTS - MEZZANINE BAR	0-10V DIMMING	277V	E1H1-17	POWER CONDITIONS.
Z35	FESTOON LIGHTS - EXTERIOR	ELVDIMMING	277V	HA-1	-
Z36	SIGNAGE	0-10V	120V		
Z37	SIGNAGE	0-10V	120V		-





NOTES:

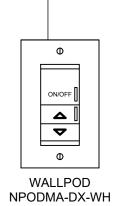
1. PANEL NAME SHALL HAVE A MINIMUM LETTER HEIGHT OF 3/8". ALL OTHER TEXT SHALL HAVE A MINIMUM LETTER HEIGHT OF 1/4".

2. NAMEPLATE SHALL BE MACHINE ENGRAVED, LAMINATED PLASTIC, WITH WHITE LETTERING. BACKGROUND COLOR SHALL BE BLACK. 3. NAMEPLATE SHALL BE ATTACHED WITH RIVETS OR SELF TAPPING SCREWS.

4. DIMENSIONS INDICATED ARE MINIMUM DIMENSIONS. PROVIDE LARGER NAMEPLATE IF REQUIRED TO FIT ALL SPECIFIED INFORMATION ON NAMEPLATE.

5. "X" INDICATES FIELD TO BE FILLED IN PER PANEL SCHEDULE.

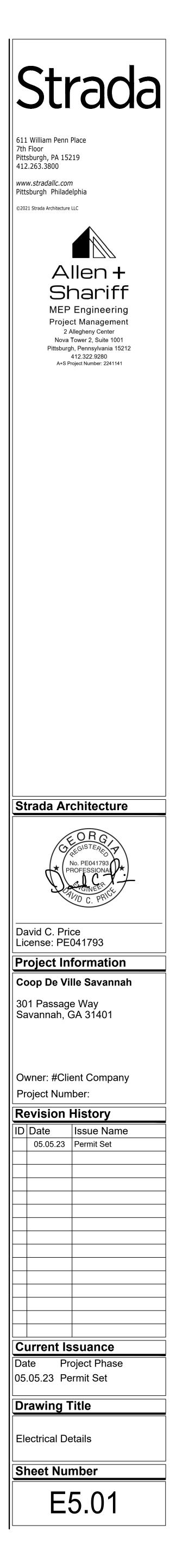




\$ D LOW VOLTAGE ON/OFF+RAISE/LOWER SWITCH. REFER TO LIGHTING

PLANS FOR QUANTITY AND LOCATION.

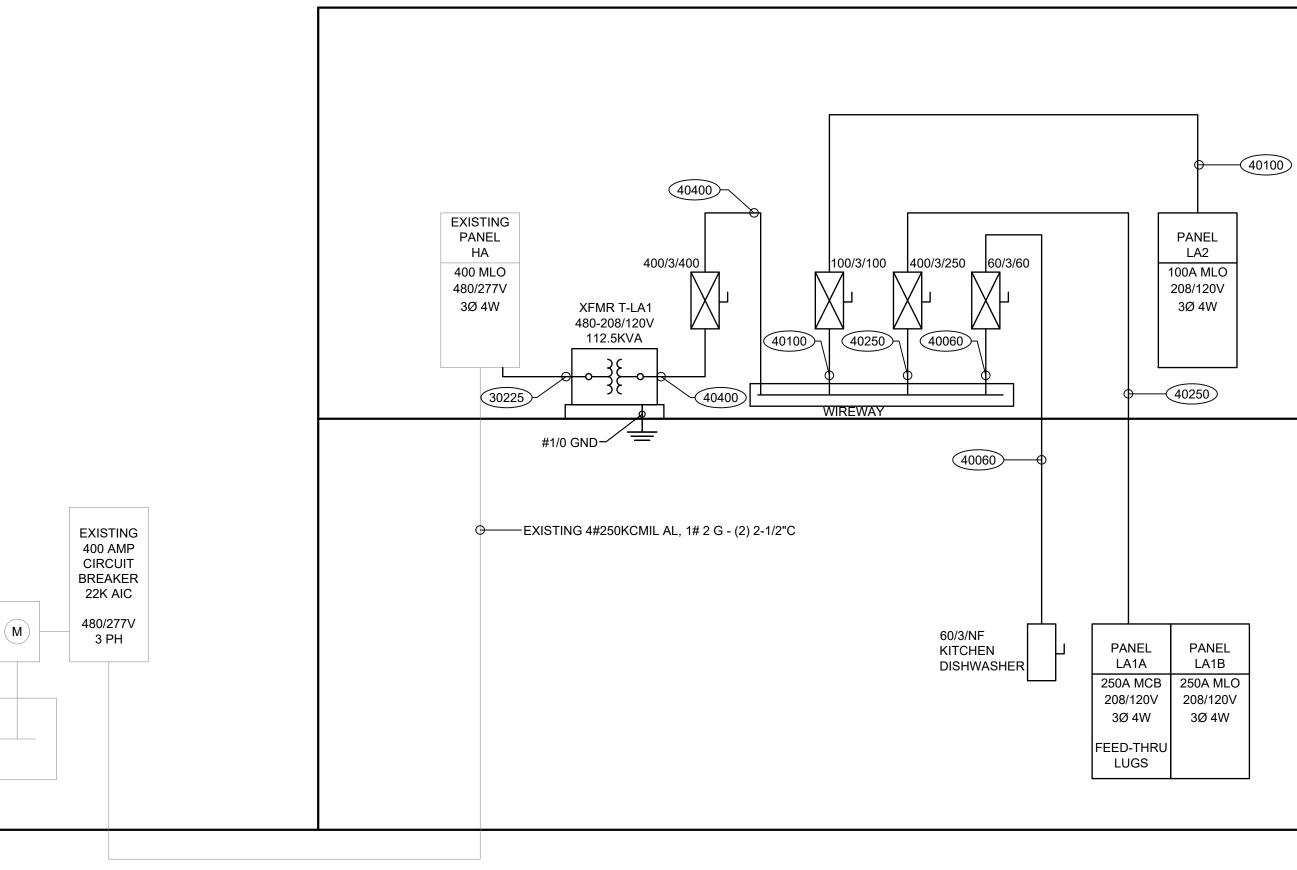
LIGHTING	CONTRO	LS SCHEDULE



EXISTING WIRING TROUGH

 $(\mathbf{M})$ 

1 ELECTRICAL RISER DIAGRAM E6.1



### GENERAL RISER NOTES:

- 1. THE RISER DIAGRAM IS DIAGRAMMATIC IN NATURE AND IS INTENDED TO SHOW SYSTEM CONNECTIVITY AND FEEDER SIZES. REFER TO POWER PLANS FOR EQUIPMENT LAYOUTS AND LOCATIONS. ELECTRICAL CONTRACTOR SHALL VERIFY THAT THE SUBMITTED EQUIPMENT DIMENSIONS FIT WITHIN THE CORRESPONDING ELECTRICAL SPACE(S). ALL EQUIPMENT CLEARANCES AND MOUNTING HEIGHTS REQUIRED BY THE NEC SHALL BE MAINTAINED.
- 2. ELECTRICAL CONTRACTOR SHALL PROVIDE CONCRETE PADS FOR ALL ELECTRICAL EQUIPMENT REQUIRING A HOUSEKEEPING PAD. THIS INCLUDES GENERATORS, TRANSFORMERS, SWITCHBOARDS, LARGE DISTRIBUTION PANELS, ETC. ALL PADS SHALL BE PROVIDED PER THE EQUIPMENT SPECIFICATIONS.
- 3. PROVIDE PULL BOXES WHERE REQUIRED PER NEC FOR CONDUIT BENDS.
- 4. THE BASIS OF DESIGN MATERIAL FOR ALL EQUIPMENT BUSES IS COPPER.
- 5. ALUMINUM FEEDERS ARE ACCEPTABLE FOR CIRCUITS 100 AMPS AND ABOVE.
- SHORT CIRCUIT STUDY AND ARC-FLASH STUDY SHALL BE PERFORMED PRIOR TO PURCHASE OF ELECTRICAL DISTRIBUTION EQUIPMENT.

FEEDER

## KEYNOTES: (#)

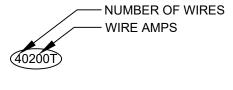
1. PROVIDE UL LISTED, MULTI-PORT FEEDER TAP DEVICE TO TAP WIREWAY FEEDERS.

### COPPER FEEDER SCHEDULE:

FEEDER TAG	FEEDER AMPS
30225	225
40060 40100 40250 40400	60 100 250 400

3#4/0, 1#2 GND - 2"C 4#4, 1#10G- 1-1/4"C 4#2, 1#8 GND - 1-1/4"C 4-250 KCMIL, 1#4 GND - 2-1/2"C 4-600 KCMIL, 1#3 GND - 4"C





1ST FLOOR

MEZZANINE

Stra 611 William Penn Place 7th Floor Pittsburgh, PA 15219 412.263.3800 www.stradallc.com Pittsburgh Philadelphia ©2021 Strada Architecture LLC Allen+ Shariff MEP Engineering Project Management 2 Allegheny Center Nova Tower 2, Suite 1001 Pittsburgh, Pennsylvania 15212 412.322.9280 A+S Project Number: 2241141 Strada Architecture OR No. PE04179 David C. Price License: PE041793 Project Information Coop De Ville Savannah 301 Passage Way Savannah, GA 31401 Owner: #Client Company Project Number: **Revision History** ID Date Issue Name 05.05.23 Permit Set _____ Current Issuance Date Project Phase 05.05.23 Permit Set Drawing Title Electrical Riser Diagrams Sheet Number E6.01

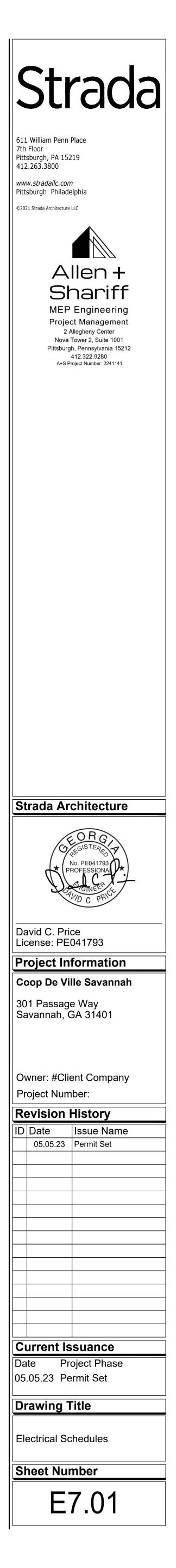
			LIGHTING FIXTURE SCHEDULE		LAMP(S)				1	
TYPE	FIXTURE DESCRIPTION	MANUFACTURER	MODEL	LAMP #	LAMP TYPE	DRIVER/ BALLAST	INPUT WATTS	VOLTS	MOUNTING	NOTES
DL1	6" DOWNLIGHT (FOOD SERVICE AREA COMPLIANT)	GOTHAM	EVO6FS-30/20-DFR-SMO-MVOLT-EZ1	~	LED 3000K 1729LM	0-10V DIMMING DRIVER	19.7	277V	RECESSED, CEILING	
DL2	4" DOWNLIGHT, WARM DIMMING	ACULUX	AX4D-12LM-WDIM HALR-90CRI-55D-GZ1-MVOLT-4DP-FINISH-WHSF-CEILING		LED 1800K-3000K 1200LM	0-10V DIMMING DRIVER	26	277V	RECESSED, CEILING	
DL3	4" DOWNLIGHT, WARM DIMMING	ACULUX	AX4D-17LM-WDIM HALR-90CRI-55D-GZ1-MVOLT-4DP-FINISH-WHSF-CEILING		LED 1800K-3000K 1700LM	0-10V DIMMING DRIVER	33	277V	RECESSED, CEILING	
DL4	4" CYLINDER DOWNLIGHT, WARM DIMMING	USA	BLRD5-16WG2-3022KS-50-FINISH-RB-UNV-D2		LED 2200K-3000K 1275LM	0-10V DIMMING DRIVER	16	277V	SURFACE, CEILING	
DL5	6" CYLINDER DOWNLIGHT, EMERGENCY LIGHTING ONLY	LITHONIA	LDN6CYL-30/20-L06-FINISH-LSS-MVOLT-GZ10-FCM-FINISH		LED 3000K 2000LM	0-10V DRIVER	22.5	277V	SURFACE, CEILING	
DP1	DECORATIVE PENDANT	ARTERIORS	MIA PENDANT ARR1746009 LAMP: PHILIPS 8.8A19/PER/927-22/P/E26/WG 6/1FB T20	1	8.8W A19 E26 LED WARM DIM 2200K-2700K	ELV DIMMING	8.8	120V	PENDANT, CEILING	COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS.
DP2	DECORATIVE PENDANT	HERMAN MILLER	NELSON SAUCER BUBBLE PENDANT GNB673233 LAMP: PHILIPS 16A19/PER/927-22/P/E26/WG 6/1FB T20	1	16W A19 E26 LED WARM DIM 2200K-2700K	ELV DIMMING	16	120V	PENDANT, CEILING	COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS.
DP3	DECORATIVE PENDANT, WARM DIMMING	MSUAL COMFORT MODERN	ALVA PENDANT TLG895524 (BRASS BODY WITH WHITE CORD)		LED 2200K-3000K 241LM	ELV DIMMING	9	120V	PENDANT, CEILING	COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS.
.R1.15	15'-6" LINEAR WITH REGRESSED LENS, WARM DIMMING	CORONET	FLAWLESS-2-15'-WD-MED-UNV-DB-FINISH-NT-2"RG		LED 2200K-3000K 639 LM/FT	0-10V DIMMING DRIVER	105	277V	RECESSED, CEILING	FIXTURE LENGTH SHALL BE VERIFIED IN F PRIOR TO ORDERING.
_R2.5A	5'-2" LINEAR WITH REGRESSED LENS, WARM DIMMING	CORONET	FLAWLESS-2-5'2"-WD-LOW-UNV-DB-FINISH-NT-2"RG		LED 2200K-3000K 457 LM/FT	0-10V DIMMING DRIVER	26	277V	RECESSED, CEILING	FIXTURE LENGTH SHALL BE VERIFIED IN F PRIOR TO ORDERING.
.R2.5B	5'-8" LINEAR WITH REGRESSED LENS, WARM DIMMING	CORONET	FLAWLESS-2-5'8"-WD-LOW-UNV-DB-FINISH-NT-2"RG		LED 2200K-3000K 457 LM/FT	0-10V DIMMING DRIVER	28	277V	RECESSED, CEILING	FIXTURE LENGTH SHALL BE VERIFIED IN F PRIOR TO ORDERING.
LR2.6	6'-0" LINEAR WITH REGRESSED LENS, WARM DIMMING	CORONET	FLAWLESS-2-6'-WD-LOW-UNV-DB-FINISH-NT-2"RG		LED 2200K-3000K 457 LM/FT	0-10V DIMMING DRIVER	30	277V	RECESSED, CEILING	FIXTURE LENGTH SHALL BE VERIFIED IN F PRIOR TO ORDERING.
.R2.11	11'-4" LINEAR WITH REGRESSED LENS, WARM DIMMING	CORONET	FLAWLESS-2-11'4"-WD-LOW-UNV-DB-FINISH-NT-2"RG		LED 2200K-3000K 457 LM/FT	0-10V DIMMING DRIVER	56.5	277V	RECESSED, CEILING	FIXTURE LENGTH SHALL BE VERIFIED IN F PRIOR TO ORDERING.
PL1	PUCK LIGHT (SHELVES), WARM DIMMING	MP LIGHTING	L52-F-2-WD-F-NA-FINISH		LED 2100K-3000K 220LM	0-10V DIMMING DRIVER	3	277V	SHELF	
RT1	2'X2' LUMINOUS PANEL (KITCHEN)	LITHONIA	EPANL-2X2-4000LM-80CRI-30K-MIN10-ZT-MVOLT		LED 3000K 4000LM	0-10V DIMMING DRIVER	33	277V	RECESSED, CEILING	
SM1	DECORATIVE SURFACE FIXTURE	LIGHTOLOGY	DAINOLITE BURLAT WALL SCONCE DAI1174793		LED	ELV DIMMING	25	120V	WALL, SURFACE	COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS.
SM2	16' LINEAR WITH FLUSH LENS, WARM DIMMING	CORONET	LS1 LP-16'-WD-LOW-UNV-DB-FINISH-SM-FL-NA-NA		LED 2200K-3000K 474 LM/FT	0-10V DIMMING DRIVER	80	277V	SURFACE, CEILING	
SP1	4' LENSED STRIP FIXTURE	LITHONIA	ZL1D-L48-5000LM-FST-M/OLT-30K-80CRI-WH-ZACVHM100		LED 3000K 5000LM	0-10V DIMMING DRIVER	41	277V	PENDANT, CEILING	COORDINATE MOUNTING HEIGHT AND LOCATION AROUND EQUIPMENT.
TH1	TRACK HEAD, WARM DIMMING	LUMENTURE	T50-30D-110-22-FINISH-J-SN		LED 1800K-3000K 220LM	ELV DIMMING	14	120V	TRACK	
TL1	FLEXIBLE TAPE LIGHT (UNDER BAR FRONT & CUSTOM BAR FIXTURE), WARM DIMMING	LUMINII	KBM-SF-H-WD18K30K-XXXX-XXXX-LENGTH		LED 1800K-3000K 152 LM/FT	0-10V DIMMING DRIVER	3.7W/FT	120V	SURFACE	PROVIDE COMPATIBLE REMOTE DIMMING DRIVER, MOUNTING ACCESSORIES, ETC. COMPLETE AND FUNCTIONAL INSTALLATI
TL2	TAPE LIGHT (SHELVES) FROSTED LENS, WARM DIMMING	LUMINII	KS-LENGTH-WD68SO-19K27K-F-FC-FINISH-E		LED 1900K-2700K 300 LM/FT	0-10V DIMMING DRIVER	5.4W/FT	120V	SHELVES	PROVIDE COMPATIBLE REMOTE DIMMING DRIVER, MOUNTING ACCESSORIES, ETC. COMPLETE AND FUNCTIONAL INSTALLATI
TL3	TAPE LIGHT (STAIR) WITH FROSTED LENS, WARM DIMMING	LUMINII	KL-LENGTH-WD68SO-19K27K-F-FC-FINISH-B		LED 1900K-2700K 283 LM/FT	0-10V DIMMING DRIVER	108	120V	UNDERSIDE OF STAIR	PROVIDE COMPATIBLE REMOTE DIMMING DRIVER, MOUNTING ACCESSORIES, ETC. COMPLETE AND FUNCTIONAL INSTALLATI
TR2	2' TRACK	LUMENTURE	JT-2-FINISH / JAC-150-FINISH			ELV DIMMING	-	120V	PENDANT, CEILING	COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS.
TR4	4'TRACK	LUMENTURE	JT-4-FINISH / JAC-150-FINISH			ELV DIMMING	-	120V	PENDANT, CEILING	COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS.
TR8	8' TRACK	LUMENTURE	JT-8-FINISH / JAC-150-FINISH			ELV DIMMING	-	120V	PENDANT, CEILING	COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS.
VM2.40	40' LINEAR WITH REGRESSED LENS, WARM DIMMING	CORONET	LS2 RG-40'-WD-MD-UNV-DB-FINISH-WM-FL		LED 2200K-3000K 422 LM/FT	0-10V DIMMING DRIVER	280	277V	SURFACE, WALL	COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS.
WS1	DECORATIVE WALL SCONCE	LIGHTOLOGY	IN COMMON WITH ICW1009110	2	G16.5 CANDELABRA (E12)	ELV DIMMING	12	120V	SURFACE, WALL	COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS.
WS2	DECORATIVE WALL SCONCE (RESTROOMS)	HINKLEY LIGHTING	SOMERSET WALL SCONCE HIN990480	1	G40 MEDIUM E26	ELV DIMMING	100	120V	SURFACE, WALL	COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS.
WS3	DECORATIVE WALL SCONCE	LIGHTOLOGY	FERROLUCE VINTAGE BULKHEAD VERTICAL WALL LIGHT FER67906		LED	ELV DIMMING	29	120V	SURFACE, WALL	COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS.
WS4	DECORATIVE WALL SCONCE	SAVOY HOUSE	WHEATON WALL SCONCE SVY1011985	- - 1	EDISON MEDIUM E26 LED	ELV DIMMING	8	120V	SURFACE, WALL	COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS.
WS5	DECORATIVE WALL SCONCE	LIGHTOLOGY	ORIGNAL BTC BRASS BULKHEAD OUTDOOR WALL SCONCE OBT1084992 LAMP: PHILIPS 5A19/PER/927-22/P/E26/WG 6/1FB T20	1	5W A19 E26 LED WARM DIM 2200K-2700K	ELV DIMMING	5	120V	SURFACE, WALL	COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS.
WS6	DECORATIVE WALL SCONCE	ORINGAL BTC	OVAL BULKHEAD OUTDOOR WALL SCONCE WITH EYELID SHIELD BTC613795 LAMP: PHILIPS 5A19/PER/927-22/P/E26/WG 6/1FB T20	1	5W A19 E26 LED WARM DIM 2200K-2700K	ELV DIMMING	5	120V	SURFACE, WALL	COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS.
XE1	SINGLE FACE EDGE-LIT EXIT SIGN, MIRRORED FACE	LITHONIA	EDG-1-RMR			STANDARD	4	277V	UNIVSERSAL	REFER TO LIGHTING PLANS FOR CHEVRO
XE2	DOUBLE FACE EDGE-LIT EXIT SIGN, MIRRORED FACE	LITHONIA	EDG-2-RMR		LED	STANDARD	4	277V	UNIVSERSAL	REFER TO LIGHTING PLANS FOR CHEVRO
YS1	EXTERIOR FESTOON LIGHTS, LAMPS 18" OC, HARDWRED	ALUZ	A5-ZOZO-18"-27K-GSF-DM-WET		LED 2700K	PHASE DIMMING	65	277V	WALL/POLE	PROVIDE MOUNTING AIRCRAFT CABLE, C. LOCK(S), MOUNTING PLATE(S), ETC. FOR COMPLETEL AND FUNCTIONAL INSTALLA
	EXTERIOR WALL FIXTURE	SIGNTEX INC.	MAE-AC-10-FINISH-WALL		LED	0-10V DRIVER	10	277V	WALL, SURFACE	STALLA INSTALLA

1. ARCHITECT SHALL SPECIFY / VERIFY ALL FINISH SELECTIONS.

2. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.
 3. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL MOUNTING ACCESSORIES.

4. LIGHTING FIXTURE SUBSTITUTIONS THAT ARE CONSIDERED EQUAL TO THE SPECIFIED PRODUCTS MAY BE SUBMITTED AND WILL BE REVIEWED BY ARCHITECT AND ELECTRICAL ENGINEER. ACCEPTANCE WILL BE EVALUATED BASED ON AESTHETICS, PERFORMANCE, AND QUALITY. DO NOT PROVIDE VALUE ENGINEERING OPTIONS UNLESS SPECIFICALLY DIRECTED BY THE OWNER,

ARCHITECT, OR ENGINEER. 5. THE STANDARD DRIVER OPTION FOR MOST FIXTURES IS 0-10V DIM. THE CONTRACTOR IS ONLY REQUIRED TO PROVIDE 0-10V WRING WHERE DIMMING CONTROLS ARE SHOWN ON THE LIGHTING PLAN.



# Eviating Branch Denals 114

	Locatio Supply Fror Mountin	h Pa n: MEZZAN n: WIRE TF g: SURFAC e: TYPE 1			I	Volts: Phases: Wires:		V	A.I.C. Rating: 22K KAIC Mains Type: MLO Mains Rating: 400 MCB Rating: -								
скт	Circuit Description	Notes	Wire Size	Trip	Pole	/	4	LOAD	) (VA) 3	(	)	Pole	Trip	Wire Size	Notes	Circuit Description	CK
1	SPARE			20A	1							1	20A			SPARE	2
3	SPARE			20A	1							1	20A			SPARE	4
5	SPARE			20A	1							1	20A			SPARE	6
7						2838	2838										8
9	AIR CURTAIN ACU-01	2	2#12, 1#12G - 3/4"C	20A	3			2838	2838			3	20A	4#12, 1#12G - 3/4"C	2	AIR CURTAIN ACU-02	10
11										2838	2838						12
13						5055	2356										14
15	AUH-01	2	4#8, 1#10G - 1"C	40A	3			5055	2356			3	15A	4#12, 1#12G - 3/4"C	2	MAU-1 FAN	16
17										5055	2356	1					18
19						2938	2938										20
21	MAU-1 CU-02	2	4#8, 1#10G - 1"C	15A	3			2938	2938			3	15A	4#12, 1#12G - 3/4"C	2	MAU-1 CU-03	22
23										2938	2938						24
25						18268	3880										26
27	CU-01	2	4#2, 1#8G - 1-1/4"C	100A	3			18268	3880			3	20A	4#12, 1#12G - 3/4"C	2	KEF-01	28
29										18268	3880						30
31	PROVISION															PROVISION	32
33	PROVISION															PROVISION	34
35	PROVISION															PROVISION	36
37		T				34581										PROVISION	38
39	TRANSFORMER T-LA1	2	REFER TO RISER	150A	3			30558								PROVISION	40
41										25815						PROVISION	42
				Total	_oad:	75	692	716		669	26						
				P	mps:			25	7.7								
	ES: NLESS OTHERWISE NOTED WHERE NOTED) PROVIDE N							RER, MC	DEL, AI	ND AIC F	RATING	OF EX	XISTING	CIRCUIT BREAKERS.			

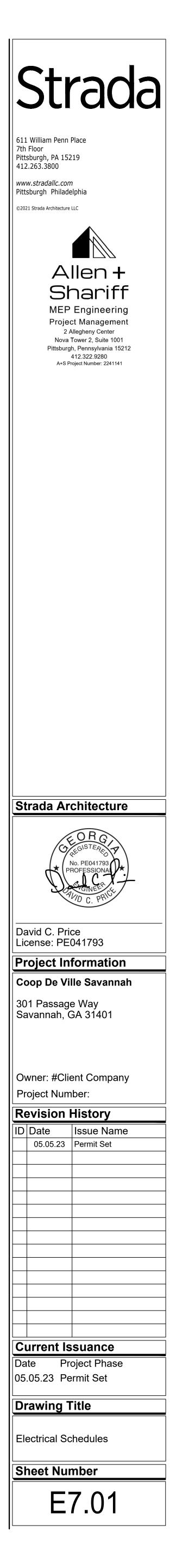
D	ranch Panel: Location: Supply From: Mounting: Enclosure:			I	Volts: Phases: Wires:		V	A.I.C. Rating: KAIC Mains Type: MCB Mains Rating: 250 MCB Rating: 250									
CKT	Circuit Description	Notes	Wire Size	Trip	Pole		4	LOAD	0 0	(	2	Pole	Trip	Wire Size	Notes	Circuit Description	СКТ
1	REC FRY HOLDING STATION		2#12, 1#12G - 3/4"C	20A	1	1200	1032					1	20A	2#12, 1#12G - 3/4"C	-	REC FOOD PREP TABLE	2
	SHUNT TRIP	2	-	_	-			0	1150			1	20A	2#12, 1#12G - 3/4"C		REC PRESSURE FRYER	4
	REC FRY HOLDING STATION	-	2#12, 1#12G - 3/4"C	20A	1					245	0	-	-	-	2	SHUNT TRIP	6
7	SHUNT TRIP	2	-	-	-	0	1150					1	20A	2#12, 1#12G - 3/4"C	-	REC PRESSURE FRYER	8
	REC PRESSURE FRYER		2#12, 1#12G - 3/4"C	20A	1			1150	0			-	-	-	2	SHUNT TRIP	10
	SHUNT TRIP	2	-	-	-0					0	600	1	20A	2#12, 1#12G - 3/4"C		REC REFRIGERATOR	12
	REC PRESSURE FRYER	-	2#12, 1#12G - 3/4"C	20A	1	1150	0					_	-	-	2	SHUNT TRIP	14
15	SHUNT TRIP	2	-	-	-			0	948			1	20A	2#12, 1#12G - 3/4"C		REC CONVECTION OVEN	16
17	REC FOOD PREP TABLE	-11	2#12, 1#12G - 3/4"C	20A	1					1032	0		-	-	2	SHUNT TRIP	18
19	SOLENOID VALVE	-	2#12, 1#12G - 3/4"C	20A	1	500	500					1	20A	2#12, 1#12G - 3/4"C	-	HOOD LIGHTS	20
21	HOOD LIGHTS	-	2#12, 1#12G - 3/4"C	20A	1			500	500			1	20A	2#12, 1#12G - 3/4"C	-	HOOD CONTROL PANEL	22
23	EF-01		2#12, 1#12G - 3/4"C	20A	1					<mark>1176</mark>	200	1	20A	2#12, 1#12G - 3/4"C	_	EF-02	24
25	REC KITCHEN	-	2#12, 1#12G - 3/4"C	20A	1	360	360					1	20A	2#12, 1#12G - 3/4"C		REC KITCHEN	26
27	REC KITCHEN	- 1	2#12, 1#12G - 3/4"C	20A	1			360	360			1	20A	2#12, 1#12G - 3/4"C	-	REC KITCHEN	28
29	REC KITCHEN	-	2#12, 1#12G - 3/4"C	20A	1					360	360	1	20A	2#12, 1#12G - 3/4"C	-	REC KITCHEN	30
31	REC KITCHEN	-	2#12, 1#12G - 3/4"C	20A	1	900	720					1	20A	2#12, 1#12G - 3/4"C	-0	REC OFFICE	32
33	REC OFFICE	-	2#12, 1#12G - 3/4"C	20A	1			720	360			1	20A	2#12, 1#12G - 3/4"C	- 1	REC OFFICE	34
35	SPARE	-		20A	1							1	20A		-	SPARE	36
37	SPARE	-		20A	1	-						1	20A		-	SPARE	38
39	SPARE			20A	1							1	20A			SPARE	40
41	SPARE	-		20A	1							1	20A		-0	SPARE	42
	SPARE	_		20A	1							1	20A		-	SPARE	44
45	SPARE	-		20A	1							1	20A		_	SPARE	46
47	SPARE	-		20A	1							1	20A		-	SPARE	48
49	SPARE	-		20A	1							1	20A		-	SPARE	50
51	SPARE	-		20A	1							1	20A		-	SPARE	52
53	SPARE	-0		20A	1							1	20A			SPARE	<mark>5</mark> 4
55	SPARE	-0		20A	1							1	20A		-	SPARE	56
57	SPARE	-		20A	1							1	20A		-	SPARE	58
59	SPARE	-		20A	1							1	20A		-	SPARE	60
				Total	Load:	78	372	60	48	39	73						
				ŀ	Amps:			49	.7								

	Location: Supply From: Mounting:	Volts: 208/120V Phases: 3 Wires: 4							A.I.C. Rating: KAIC Mains Type: MCB Mains Rating: 100								
	Enclosure:	TYPE 1												MCB Rating	: 100		
CKT	Circuit Description	Notes	Wire Size	Trip	Pole		^	LOAD			_	Pole	Trip	Wire Size	Notes	Circuit Description	С
1		+				2162	4 200	E	3		2	1	20A	2#12, 1#12G- 3/4"C	-	BOILER B-1	┢
3	DUMBWAITER	2	3#8, 1#10G- 3/4"C	35A	2			2162	900			1	20A	2#12, 1#12G- 3/4"C	-	REC MEZZANINE	
5	WH-1	-	2#12, 1#12G- 3/4"C	20A	1					500	1080	1	20A	2#12, 1#12G- 3/4"C	-	REC MEZZANINE	
	WH-1	-	2#12, 1#12G- 3/4"C	20A	1	500	180					1	20A	2#12, 1#12G- 3/4"C	-	REC PROJECTOR	
	(2) CP-1	-	2#12, 1#12G- 3/4"C	20A	1			110	360			1	20A	2#12, 1#12G- 3/4"C	-	PROJECTION SCREEN	1
	AHU-01 CONTROLS	- 1	2#12, 1#12G- 3/4"C	20A	1					500	360	1	20A	2#12, 1#12G- 3/4"C	-	REC MEZZANINE BAR	1
	VAV CONTROLS	-	2#12, 1#12G- 3/4"C	20A	1	500	540					1	20A	2#12, 1#12G- 3/4"C	-	REC MEZZANINE BAR	1
15	REC MEZZANINE BOH	-	2#12, 1#12G- 3/4"C	20A	1			900	540			1	20A	2#12, 1#12G- 3/4"C	-	REC MEZZANINE BAR	1
17	REC MEZZANINE BOH	-	2#12, 1#12G- 3/4"C	20A	1					720	540	1	20A	2#12, 1#12G- 3/4"C	-	REC RESTROOMS	1
19	REC ROOF	-	2#12, 1#12G- 3/4"C	20A	1	360	400					1	20A	2#12, 1#12G- 3/4"C	-	MENS RR SINKS	2
21	WOMENS RR SINKS	- 1	2#12, 1#12G- 3/4"C	20A	1			400	600			1	20A	2#12, 1#12G- 3/4"C	-	MENS RR TOILETS	2
23	WOMENS RR TOILETS	-	2#12, 1#12G- 3/4"C	20A	1					600	1400	1	20A	2#12, 1#12G- 3/4"C	-	MENS RR HAND DRYER	2
25	WOMENS RR HAND DRYER	-	2#12, 1#12G- 3/4"C	20A	1	1400	400					1	20A	2#12, 1#12G- 3/4"C	-	EMPLOYEE RR SINK/TOILET	2
27									270			1	20A	2#12, 1#12G- 3/4"C	-	CP-2	2
29																	3
31																	3
33				1											1		3
35				1													3
37																	3
39																	4
41																	4
				Total I	_oad:	66	42	62	42	57	00						
				A	mps:			51	.6								

В	ranch Panel: Location: Supply From: Mounting: Enclosure:	K P S
СКТ	Circuit Description	1
1 3	ESPRESSO MACHINE	
5	ESPRESSO GRINDER	
7	AUTO TAMPER	
9	REC GLASSWASHER	
11	REC GLASSWASHER	
13	REC BACKBAR REFRIG	
15	REC BACKBAR REFRIG	
17	REC BACKBAR REFRIG	
19	REC POS	
21	REC USB BAR FRONT	
23	REC USB BAR FRONT	
25	REC BAR	
27	REC BAR	
29	REC TVS	
31		
33	REC DUCK PIN BOWLING MACHINE	
35	MACHINE	
37		
39	REC DUCK PIN BOWLING MACHINE	
41	MACHINE	
43	REC DINING AREA	
45	REC TVS	
47	SPARE	
49	SPARE	
<mark>5</mark> 1	SPARE	
53	SPARE	
55	SPARE	
57	SPARE	
59	SPARE	
NOT	ES:	

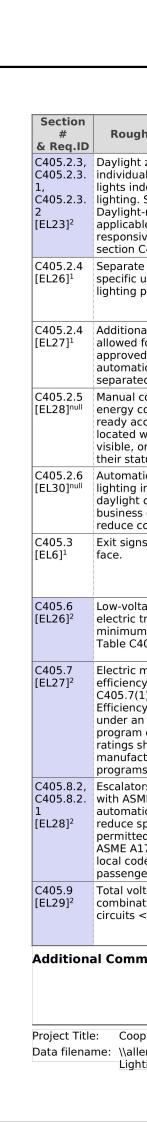
NOTES:

LA1 :: KITCHEI :: PANEL :: SURFAC :: TYPE 1	N LA2A						Volts: Phases: Wires:		V			A.I.C. Rating Mains Type Mains Rating MCB Rating	: MLO : 250		
Notes	Wire Size	Trip	Pole		A		) (VA) 3	(	2	Pole	Trip	Wire Size	Notes	Circuit Description	СКТ
		+		3400	1320					1	20A	2#12, 1#12G - 3/4"C	-	COFFEE GRINDER	2
-	3#6, 1#10G - 3/4"C	50A	2	0100	1020	3400	600			1	20A	2#12, 1#12G - 3/4"C	-0	DECAF GRINDER	4
_	2#12, 1#12G - 3/4"C	20A	1			0100		500	3750						6
_	2#12, 1#12G - 3/4"C	20A	1	65	3750				0100	2	50A	3#6, 1#10G - 3/4"C	-	COFFEE BREWER	8
-	2#12, 1#12G - 3/4"C	20A	1	00	0100	420	1800			1	20A	2#12, 1#12G - 3/4"C	-	REC ICE MAKER	10
-	2#12, 1#12G - 3/4"C	20A	1			120	1000	420	288	1	20A	2#12, 1#12G - 3/4"C		REC UC FREEZER	12
_	2#12, 1#12G - 3/4"C	20A	1	504	288			120	200	1	20A	2#12, 1#12G - 3/4"C	-0	REC UC FREEZER	14
-	2#12, 1#12G - 3/4"C	20A	1	001	200	300	288			1	20A	2#12, 1#12G - 3/4"C		REC UC FREEZER	16
-	2#12, 1#12G - 3/4"C	20A	1				200	504	300	1	20A	2#12, 1#12G - 3/4"C	-	REC UC REFRIGERATOR	18
_	2#12, 1#12G - 3/4"C	20A	1	540	360			001	000	1	20A	2#12, 1#12G - 3/4"C		REC TVS	20
-	2#12, 1#12G - 3/4"C	20A	1	010		900	720			1	20A	2#12, 1#12G - 3/4"C	-	REC DINING ROOM	22
_	2#12, 1#12G - 3/4"C	20A	1				120	1080	360	1	20A	2#12, 1#12G - 3/4"C		REC POS	24
-	2#12, 1#12G - 3/4"C	20A	1	360	900			1000			20A	2#12, 1#12G - 3/4"C	_	REC DINING ROOM	26
_	2#12, 1#12G - 3/4"C	20A	1			540	1260			1	20A	2#12, 1#12G - 3/4"C		REC DINING ROOM	28
-	2#12, 1#12G - 3/4"C	20A	1				1200	360	900	1	20A	2#12, 1#12G - 3/4"C	-	REC DINING ROOM	30
			· ·	1920	1920					· ·					32
-	3#12, 1#12G - 3/4"C	20A	3	1020	1020	1920	1920			3	20A	3#12, 1#12G - 3/4"C	-0	REC DUCK PIN BOWLING	34
	0,12,1,120 0,10	20/1	ľ			1020	1020	1920	1920		20/1	on 12, 11 120 of 10		MACHINE	36
				1920	1920			1020	1020						38
<u>_</u>	3#12, 1#12G - 3/4"C	20A	3	1020	1020	1920	1920			3	20A	3#12, 1#12G - 3/4"C	-	REC DUCK PIN BOWLING	40
	on 12, 10 120 of 10	20/1	Ŭ			1020	1020	1920	1920		20/1	on 12, 11 120 of 10		MACHINE	42
-	2#12, 1#12G - 3/4"C	20A	1	900				1020	1020	1	20A		_	SPARE	44
-	2#12, 1#12G - 3/4"C	20A	1			360				1	20A		_	SPARE	46
_		20A	1							1	20A		-	SPARE	48
÷		20A	1							1	20A		-	SPARE	50
-		20A	1							1	20A		-	SPARE	52
-		20A	1							1	20A		-	SPARE	54
-		20A	1							1	20A		-	SPARE	56
-		20A	1							1	20A			SPARE	58
-		20A	1							1	20A		-	SPARE	60
		Total	Load:	20	067	18	268	161	142						_
			Amps:				1.2								



Project Information Energy Code: Project Title: Project Type:	2018 IECC				
Project Title:					
	Coop De Ville Savannah				
	New Construction				
Construction Site: 301 Passage Way	Owner/Agent:	Designer/C Allen + S	Shariff		
Savannah, GA 31401		eny Center wer 2, Suite	1001		
Additional Efficiency Pack	kage(s)	Pittsburg 412-325-	ih, PA 15212 -2449	2	
Credits: 1.0 Required 1.0 Propose Reduced Lighting Power, 1.0 cre					
Allowed Interior Lighting P	Power				
ŀ	A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2		D wed Watts (B X C)
1-Restuarant/Bar (Dining: Family)		8186	0.70		5747
		To	tal Allowed W	′atts =	5747
Proposed Interior Lighting	Power				
	Α	В	С	D	E
		B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
1-Restuarant/Bar (Dining: Fami	A iption / Lamp / Wattage Per Lamp / Ballast 	Lamps/	# of	Fixture Watt.	(C X D)
Fixture ID : Descrip <u>1-Restuarant/Bar (Dining: Famil</u> LED 1: DL1: 6" DOWNLIGHT: O	A iption / Lamp / Wattage Per Lamp / Ballast ily) other:	Lamps/ Fixture 1	<b># of</b> <b>Fixtures</b> 14	Fixture Watt. 20	(C X D)
Fixture ID : Description <u>1-Restuarant/Bar (Dining: Famil</u> LED 1: DL1: 6" DOWNLIGHT: O LED 2: DL2: 4" DOWNLIGHT: O	A iption / Lamp / Wattage Per Lamp / Ballast ily) Dther: Dther:	Lamps/ Fixture 1 1	<b># of</b> <b>Fixtures</b> 14 30	Fixture Watt.	(C X D) 276 780
Fixture ID : Description 1-Restuarant/Bar (Dining: Familt LED 1: DL1: 6" DOWNLIGHT: O LED 2: DL2: 4" DOWNLIGHT: O LED 3: DL3: 4" DOWNLIGHT: O	A iption / Lamp / Wattage Per Lamp / Ballast ily) Dther: Dther: Dther:	Lamps/ Fixture 1	# of Fixtures	<b>Fixture</b> <b>Watt.</b> 20 26 33	(C X D) 276 780 561
Fixture ID : Description <u>1-Restuarant/Bar (Dining: Famil</u> LED 1: DL1: 6" DOWNLIGHT: O LED 2: DL2: 4" DOWNLIGHT: O	A iption / Lamp / Wattage Per Lamp / Ballast ily) Other: Other: Other: WNLIGHT: Other:	Lamps/ Fixture 1 1	<b># of</b> <b>Fixtures</b> 14 30	Fixture Watt.	(C X D) 276 780
Fixture ID : Description 1-Restuarant/Bar (Dining: Familt LED 1: DL1: 6" DOWNLIGHT: O LED 2: DL2: 4" DOWNLIGHT: O LED 3: DL3: 4" DOWNLIGHT: O LED 4: DL4: 5" CYLINDER DOW	A iption / Lamp / Wattage Per Lamp / Ballast ily) other: other: WNLIGHT: Other: NDANT: Other:	Lamps/ Fixture 1 1	# of Fixtures	<b>Fixture</b> <b>Watt.</b> 20 26 33 16	(C X D) 276 780 561 112
Fixture ID : Description 1-Restuarant/Bar (Dining: Famile LED 1: DL1: 6" DOWNLIGHT: O LED 2: DL2: 4" DOWNLIGHT: O LED 3: DL3: 4" DOWNLIGHT: O LED 4: DL4: 5" CYLINDER DOW LED 5: DP1: DECORATIVE PEN	A iption / Lamp / Wattage Per Lamp / Ballast ily) other: Other: VNLIGHT: Other: NDANT: Other: NDANT: Other:	Lamps/ Fixture 1 1	# of Fixtures	<b>Fixture</b> <b>Watt.</b> 20 26 33 16 9	(C X D) 276 780 561 112 35
Fixture ID : Description 1-Restuarant/Bar (Dining: Familie LED 1: DL1: 6" DOWNLIGHT: O LED 2: DL2: 4" DOWNLIGHT: O LED 3: DL3: 4" DOWNLIGHT: O LED 4: DL4: 5" CYLINDER DOW LED 5: DP1: DECORATIVE PEN LED 6: DP2: DECORATIVE PEN LED 7: DP3: DECORATIVE PEN LED 8: LR1.15: 15'-6" LINEAR: (	A iption / Lamp / Wattage Per Lamp / Ballast ily) other: other: WNLIGHT: Other: NDANT: Other: NDANT: Other: NDANT: Other: Other: Other:	Lamps/ Fixture 1 1	# of Fixtures	<b>Fixture</b> <b>Watt.</b> 20 26 33 16 9 16 9 16 9 105	(C X D) 276 780 561 112 35 48 63 105
Fixture ID : Description 1-Restuarant/Bar (Dining: Familie LED 1: DL1: 6" DOWNLIGHT: O LED 2: DL2: 4" DOWNLIGHT: O LED 3: DL3: 4" DOWNLIGHT: O LED 4: DL4: 5" CYLINDER DOW LED 5: DP1: DECORATIVE PEN LED 6: DP2: DECORATIVE PEN LED 7: DP3: DECORATIVE PEN LED 8: LR1.15: 15'-6" LINEAR: O LED 9: LR2.5A: 5'-2" LINEAR: O	A iption / Lamp / Wattage Per Lamp / Ballast ily) other: other: WNLIGHT: Other: NDANT: Other: NDANT: Other: NDANT: Other: Other: Other: Other: Other:	Lamps/ Fixture 1 1	# of Fixtures	<b>Fixture</b> <b>Watt.</b> 20 26 33 16 9 16 9 105 26	(C X D) 276 780 561 112 35 48 63 105 26
Fixture ID : Description 1-Restuarant/Bar (Dining: Familie LED 1: DL1: 6" DOWNLIGHT: O LED 2: DL2: 4" DOWNLIGHT: O LED 3: DL3: 4" DOWNLIGHT: O LED 4: DL4: 5" CYLINDER DOW LED 5: DP1: DECORATIVE PEN LED 6: DP2: DECORATIVE PEN LED 7: DP3: DECORATIVE PEN LED 8: LR1.15: 15'-6" LINEAR: O LED 9: LR2.5A: 5'-2" LINEAR: O LED 10: LR2.5B: 5'-6" LINEAR: O	A iption / Lamp / Wattage Per Lamp / Ballast ily) other: other: other: NDANT: Other: NDANT: Other: NDANT: Other: Other: Other: Other: Other:	Lamps/ Fixture 1 1	# of Fixtures	<b>Fixture</b> <b>Watt.</b> 20 26 33 16 9 16 9 105 26 28	(C X D) 276 780 561 112 35 48 63 105 26 28
Fixture ID : Description 1-Restuarant/Bar (Dining: Familie LED 1: DL1: 6" DOWNLIGHT: O LED 2: DL2: 4" DOWNLIGHT: O LED 3: DL3: 4" DOWNLIGHT: O LED 4: DL4: 5" CYLINDER DOW LED 5: DP1: DECORATIVE PEN LED 6: DP2: DECORATIVE PEN LED 7: DP3: DECORATIVE PEN LED 8: LR1.15: 15'-6" LINEAR: O LED 9: LR2.5A: 5'-2" LINEAR: O LED 10: LR2.5B: 5'-6" LINEAR: O LED 11: LR2.6: 6' LINEAR: Othe	A iption / Lamp / Wattage Per Lamp / Ballast ily) other: other: other: NDANT: Other: NDANT: Other: NDANT: Other: Other: Other: othe	Lamps/ Fixture 1 1	# of Fixtures	<b>Fixture</b> <b>Watt.</b> 20 26 33 16 9 16 9 105 26 28 30	(C X D) 276 780 561 112 35 48 63 105 26 28 60
Fixture ID : Description 1-Restuarant/Bar (Dining: Families LED 1: DL1: 6" DOWNLIGHT: O LED 2: DL2: 4" DOWNLIGHT: O LED 3: DL3: 4" DOWNLIGHT: O LED 4: DL4: 5" CYLINDER DOW LED 5: DP1: DECORATIVE PEN LED 6: DP2: DECORATIVE PEN LED 7: DP3: DECORATIVE PEN LED 8: LR1.15: 15'-6" LINEAR: O LED 9: LR2.5A: 5'-2" LINEAR: O LED 10: LR2.5B: 5'-6" LINEAR: O LED 11: LR2.6: 6' LINEAR: Othe LED 12: LR2.11: 11'-4" LINEAR:	A iption / Lamp / Wattage Per Lamp / Ballast ily) other: other: other: NDANT: Other: NDANT: Other: NDANT: Other: Other: Other: other: other: er: : Other:	Lamps/ Fixture 1 1	# of Fixtures	<b>Fixture</b> <b>Watt.</b> 20 26 33 16 9 16 9 105 26 28 30 56	(C X D) 276 780 561 112 35 48 63 105 26 28 60 56
Fixture ID : Description 1-Restuarant/Bar (Dining: Families LED 1: DL1: 6" DOWNLIGHT: O LED 2: DL2: 4" DOWNLIGHT: O LED 3: DL3: 4" DOWNLIGHT: O LED 4: DL4: 5" CYLINDER DOW LED 5: DP1: DECORATIVE PEN LED 6: DP2: DECORATIVE PEN LED 7: DP3: DECORATIVE PEN LED 8: LR1.15: 15'-6" LINEAR: O LED 9: LR2.5A: 5'-2" LINEAR: O LED 10: LR2.5B: 5'-6" LINEAR: O LED 11: LR2.6: 6' LINEAR: Othe LED 12: LR2.11: 11'-4" LINEAR: LED 13: PL1: PUCK LIGHT: Othe	A iption / Lamp / Wattage Per Lamp / Ballast ily) other: other: other: WNLIGHT: Other: NDANT: Other: NDANT: Other: NDANT: Other: Other: Other: other: er: : Other: her:	Lamps/ Fixture 1 1	# of Fixtures	<b>Fixture</b> <b>Watt.</b> 20 26 33 16 9 16 9 105 26 28 30	(C X D) 276 780 561 112 35 48 63 105 26 28 60
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Section #	<b>Rough-In Electrical Inspection</b>	Complies?	Comments/Assumptions
& Req.ID C405.2.2. 2 [EL22] ¹	Spaces required to have light- reduction controls have a manual control that allows the occupant to reduce the connected lighting load in a reasonably uniform illumination pattern >= 50 percent.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
C405.2.1, C405.2.1. 1 [EL18] ¹	Occupancy sensors installed in classrooms/lecture/training rooms, conference/meeting/multipurpose rooms, copy/print rooms, lounges/breakrooms, enclosed offices, open plan office areas, restrooms, storage rooms, locker rooms, warehouse storage areas, and other spaces <= 300 sqft that are enclosed by floor-to-ceiling height partitions. Reference section language C405.2.1.2 for control function in warehouses and section C405.2.1.3 for open plan office spaces.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
C405.2.1. 2 [EL19] ¹	Occupancy sensors control function in warehouses: In warehouses, the lighting in aisleways and open areas is controlled with occupant sensors that automatically reduce lighting power by 50% or more when the areas are unoccupied. The occupant sensors control lighting in each aisleway independently and do not control lighting beyond the aisleway being controlled by the sensor.	□Complies □Does Not □Not Observable □Not Applicable	<b>Exception:</b> Requirement does not apply.
C405.2.1. 3 [EL20] ¹	Occupant sensor control function in open plan office areas: Occupant sensor controls in open office spaces >= 300 sq.ft. have controls 1) configured so that general lighting can be controlled separately in control zones with floor areas <= 600 sq.ft. within the space, 2) automatically turn off general lighting in all control zones within 20 minutes after all occupants have left the space, 3) are configured so that general lighting power in each control zone is reduced by >= 80% of the full zone general lighting power within 20 minutes of all occupants leaving that control zone, and 4) are configured such that any daylight responsive control will activate space general lighting only when occupancy for the same area is detected.		Exception: Requirement does not apply.
C405.2.2, C405.2.2. 1, C405.2.2. 2 [EL21] ²	Each area not served by occupancy sensors (per C405.2.1) have time- switch controls and functions detailed in sections C405.2.2.1 and C405.2.2.2.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
	1 High Impact (Tier 1)	2 Medium Imp	act (Tier 2) 3 Low Impact (Tier 3)
Project Title	•	s 22/22/11/1 Stra	Report date: 05/11/2 da - COOP Savannah\8_Electrical\Misc\Coc Page 5 of 9
	Lighting Comcheck.cck	5_22\2241141 SUð	a - COOF Savannan o_Electrical Misc (Col Page 3 01 S



Exemption-Furniture-mounted supplemental task lighting LED 20: TL3: TAPE LIGHT: Other: 1 1 1 108 Exempt Exemption-Furniture-mounted supplemental task lighting Track lighting 1 copy 1: TR2, TR4, TR8: TRACK: Wattage based on current limiting device capacity 0 0 120 120 Track lighting 1 copy 2: TR2, TR4, TR8: TRACK: Wattage based on current limiting device 0 0 120 120 Track lighting 1 copy 2: TR2, TR4, TR8: TRACK: Wattage based on current limiting device 0 0 120 120 Track lighting 1 copy 3: TR2, TR4, TR8: TRACK: Wattage based on current limiting device 0 0 120 120 Track lighting 1 copy 4: TR2, TR4, TR8: TRACK: Wattage based on current limiting device 0 0 120 120 capacity Track lighting 1 copy 5: TR2, TR4, TR8: TRACK: Wattage based on current limiting device 0 0 120 120 capacity Track lighting 1 copy 5: TR2, TR4, TR8: TRACK: Wattage based on current limiting device 0 0 120 120 capacity Track lighting 1 copy 5: TR2, TR4, TR8: TRACK: Wattage based on current limiting device 0 0 120 120 capacity Track lighting 1 copy 5: TR2, TR4, TR8: TRACK: Wattage based on current limiting device 0 0 120 120 capacity Track lighting 1 copy 5: TR2, TR4, TR8: TRACK: Wattage based on current limiting device 0 0 120 120 capacity Track lighting 1 copy 7: TR2, TR4, TR8: TRACK: Wattage based on current limiting device 0 0 120 120 capacity Track lighting 1 copy 8: TR2, TR4, TR8: TRACK: Wattage based on current limiting device 0 0 120 120 capacity Track lighting 1 copy 8: TR2, TR4, TR8: TRACK: Wattage based on current limiting device 0 0 120 120 capacity Track lighting 1 copy 8: TR2, TR4, TR8: TRACK: Wattage based on current limiting device 0 0 120 120 capacity Track lighting 1 copy 8: TR2, TR4, TR8: TRACK: Wattage based on current limiting device 0 0 120 120 capacity Track lighting 1 copy 8: TR2, TR4, TR8: TRACK: Wattage based on current limiting device 0 0 120 120 capacity Track lighting 1 copy 8: TR2, TR4, TR8: TRACK: Wattage based on current limiting device 0 0 120 120 capacity Track lighting 1 copy 8: TR2	Exemption-Furniture-mounted supplemental task lighting LED 20: TL3: TAPE LIGHT: Other: Exemption-Furniture-mounted supplemental task lighting Track lighting 1: TR2, TR4, TR8: TRACK: Wattage based on current limiting device capacity Track lighting 1 copy 1: TR2, TR4, TR8: TRACK: Wattage based on current limiting device capacity Track lighting 1 copy 2: TR2, TR4, TR8: TRACK: Wattage based on current limiting device capacity Track lighting 1 copy 3: TR2, TR4, TR8: TRACK: Wattage based on current limiting device capacity Track lighting 1 copy 3: TR2, TR4, TR8: TRACK: Wattage based on current limiting device capacity Track lighting 1 copy 4: TR2, TR4, TR8: TRACK: Wattage based on current limiting device capacity Track lighting 1 copy 5: TR2, TR4, TR8: TRACK: Wattage based on current limiting device capacity Track lighting 1 copy 5: TR2, TR4, TR8: TRACK: Wattage based on current limiting device capacity Track lighting 1 copy 5: TR2, TR4, TR8: TRACK: Wattage based on current limiting device capacity Track lighting 1 copy 7: TR2, TR4, TR8: TRACK: Wattage based on current limiting device capacity Track lighting 1 copy 8: TR2, TR4, TR8: TRACK: Wattage based on current limiting device capacity Track lighting 1 copy 8: TR2, TR4, TR8: TRACK: Wattage based on current limiting device capacity Track lighting 1 copy 8: TR2, TR4, TR8: TRACK: Wattage based on current limiting device capacity Track lighting 1 copy 8: TR2, TR4, TR8: TRACK: Wattage based on current limiting device capacity Track lighting 1 copy 8: TR2, TR4, TR8: TRACK: Wattage based on current limiting device capacity Track lighting 1 copy 8: TR2, TR4, TR8: TRACK: Wattage based on current limiting device capacity Track lighting 1 copy 8: TR2, TR4, TR8: TRACK: Wattage based on current limiting device capacity track lighting 1 copy 8: TR2, TR4, TR8: TRACK: Wattage based on current limiting device capacity track lighting 1 copy 8: TR2, TR4, TR8: TRACK: Wattage based on current limiting device capacity track lighting 1 copy 8: TR2	A Fixture ID : Description / Lamp / Wattag	ge Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
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Track lighting 1 copy 7: TR2, TR4, TR8: TRACK: Wattage based on current limiting device       0       0       120       120         Track lighting 1 copy 8: TR2, TR4, TR8: TRACK: Wattage based on current limiting device       0       0       120       120         Track lighting 1 copy 8: TR2, TR4, TR8: TRACK: Wattage based on current limiting device       0       0       120       120         Capacity       1       1       280       280         LED 21: WM2.40: 40 LINEAR: Other:       1       21       12       253         Incandescent 1: WS2: WALL SCONCE: Other:       1       4       60       244         LED 23: WS3: WALL SCONCE: Other:       1       4       8       33         LED 24: WS4: WALL SCONCE: Other:       1       4       8       33         LED 25: WS5: WALL SCONCE: Other:       1       2       5       10         LED 26: WS6: WALL SCONCE: Other:       1       3       5       11         LED 26: WS6: WALL SCONCE: Other:       1       3       5       14         LED 26: WS6: WALL SCONCE: Other:       1       3       5       14         LED 26: WS6: WALL SCONCE: Other:       1       3       5       14         Devide the infort Lighting Compliance Statement       Total Proposed Wa	Track lighting 1 copy 7: TR2, TR4,TR8: TRACK: Wattage based on current limiting device       0       0       120       120         capacity       Track lighting 1 copy 8: TR2, TR4,TR8: TRACK: Wattage based on current limiting device       0       0       120       120         capacity       I       1       280       280         LED 21: WM2.40: 40 LINEAR: Other:       1       1       21       22       252         Incandescent 1: WS2: WALL SCONCE: Other:       1       4       60       240         LED 23: WS3: WALL SCONCE: Other:       1       4       29       116         LED 24: WS4: WALL SCONCE: Other:       1       4       8       32         LED 25: WS5: WALL SCONCE: Other:       1       2       5       10         LED 26: WS6: WALL SCONCE: Other:       1       3       5       15         Total Proposed Watts =       5644         terior Lighting Compliance Statement         ompliance Statement:       The proposed interior lighting design represented in this document is consistent with the building plan         pecifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been asigned to meet the 2018 IECC requirements in COMcheck Version 4.1.5.5 and to comply with any applicable mandatory quirements listed in the Inspection Checklist.    <		based on current limiting device	0	0	120	120
capacity Track lighting 1 copy 8: TR2, TR4, TR8: TRACK: Wattage based on current limiting device 0 0 120 120 capacity LED 21: WM2.40: 40 LINEAR: Other: 1 1 1 1 280 280 LED 22: WS1: WALL SCONCE: Other: 1 1 1 1 2 25 LICandescent 1: WS2: WALL SCONCE: Incandescent 60W: 1 4 60 244 LED 23: WS3: WALL SCONCE: Other: 1 4 29 110 LED 24: WS4: WALL SCONCE: Other: 1 4 8 33 LED 25: WS5: WALL SCONCE: Other: 1 2 5 10 LED 26: WS6: WALL SCONCE: Other: 1 2 5 10 Control of the control o	capacity Track lighting 1 copy 8: TR2, TR4, TR8: TRACK: Wattage based on current limiting device 0 0 120 120 capacity LED 21: WM2.40: 40 LINEAR: Other: 1 1 1 2 2 5 1 1 2 1 2 2 5 1 1 2 2 5 1 1 2 2 5 1 1 2 2 5 1 1 2 5 1 1 2 5 1 1 2 5 1 1 2 5 1 1 2 5 1 1 2 5 1 1 2 5 1 1 2 5 1 1 2 5 1 1 2 5 1 1 2 5 1 1 2 5 1 1 2 5 1 1 2 5 1 1 2 5 1 1 2 5 1 1 2 5 1 1 2 5 1 1 2 5 1 1 2 5 1 1 2 5 1 1 2 5 1 1 2 5 1 1 2 5 1 2 5 1 2 5 1 2 5 1 2		based on current limiting device	0	0	120	120
capacityLED 21: WM2.40: 40 LINEAR: Other:11280280LED 22: WS1: WALL SCONCE: Other:12112252Incandescent 1: WS2: WALL SCONCE: Incandescent 60W:1460244LED 23: WS3: WALL SCONCE: Other:1429116LED 24: WS4: WALL SCONCE: Other:14833LED 25: WS5: WALL SCONCE: Other:12510LED 26: WS6: WALL SCONCE: Other:13513LED 26: WS6: WALL SCONCE: Other:13514Total Proposed Watts = 5644terior Lighting PASSES: Design 2% better than codemetrior Lighting Compliance Statementcompliance Statement:The proposed interior lighting design represented in this document is consistent with the building planbecifications, and other calculations submitted with this permit application. The proposed interior lighting systems have beensequirements in COMcheck Version 4.1.5.5 and to comply with any applicable mandatoryequirements listed in the Inspection Checklist.	capacity LED 21: WM2.40: 40 LINEAR: Other: LED 22: WS1: WALL SCONCE: Other: Incandescent 1: WS2: WALL SCONCE: Incandescent 60W: LED 23: WS3: WALL SCONCE: Other: LED 23: WS3: WALL SCONCE: Other: LED 24: WS4: WALL SCONCE: Other: LED 24: WS4: WALL SCONCE: Other: LED 25: WS5: WALL SCONCE: Other: LED 26: WS5: WALL SCONCE: Other: Total Proposed Watts = 5644 terior Lighting PASSES: Design 2% better than code terior Lighting Compliance Statement propliance Statement: The proposed interior lighting design represented in this document is consistent with the building plan becifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been asigned to meet the 2018 IECC requirements in COM <i>check</i> Version 4.1.5.5 and to comply with any applicable mandatory quirements listed in the Inspection Checklist.	capacity	ç	-			
LED 22: WS1: WALL SCONCE: Other:       1       21       12       255         Incandescent 1: WS2: WALL SCONCE: Incandescent 60W:       1       4       60       244         LED 23: WS3: WALL SCONCE: Other:       1       4       29       114         LED 24: WS4: WALL SCONCE: Other:       1       4       8       33         LED 25: WS5: WALL SCONCE: Other:       1       2       5       16         LED 26: WS6: WALL SCONCE: Other:       1       3       5       14         LED 26: WS6: WALL SCONCE: Other:       1       3       5       14         LED 26: WS6: WALL SCONCE: Other:       1       3       5       14         LED 26: WS6: WALL SCONCE: Other:       1       3       5       14         LED 26: WS6: WALL SCONCE: Other:       1       3       5       14         LED 26: WS6: WALL SCONCE: Other:       1       3       5       14         Interior Lighting PASSES: Design 2% better than code       Total Proposed Watts =       5644         Interior Lighting Compliance Statement       Total Proposed interior lighting design represented in this document is consistent with the building planeesigned to meet the 2018 IECC requirements in COMcheck Version 4.1.5.5 and to comply with any applicable mandatory and and to proposed interior lighting.       Hereica and the pro	LED 22: WS1: WALL SCONCE: Other:12112252Incandescent 1: WS2: WALL SCONCE: Incandescent 60W:1460240LED 23: WS3: WALL SCONCE: Other:1429116LED 24: WS4: WALL SCONCE: Other:14832LED 25: WS5: WALL SCONCE: Other:12510LED 26: WS6: WALL SCONCE: Other:13515Total Proposed Watts = 5644terior Lighting PASSES: Design 2% better than codeterior Lighting Compliance StatementDompliance Statement:The proposed interior lighting design represented in this document is consistent with the building planbecifications, and other calculations submitted with this permit application. The proposed interior lighting systems have beenesigned to meet the 2018 IECC requirements in COM <i>check</i> Version 4.1.5.5 and to comply with any applicable mandatoryquirements listed in the Inspection Checklist.		based on current limiting device	0	0	120	120
Incandescent 1: WS2: WALL SCONCE: Incandescent 60W: LED 23: WS3: WALL SCONCE: Other: LED 24: WS4: WALL SCONCE: Other: LED 24: WS4: WALL SCONCE: Other: LED 25: WS5: WALL SCONCE: Other: LED 26: WS6: WALL SCONCE: Other: Total Proposed Watts = 5644 <b>Aterior Lighting Compliance Statement</b> <b>order Compliance Statement:</b> <b>the proposed interior lighting design represented in this document is consistent with the building plan pecifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been pesigned to meet the 2018 IECC requirements in COM<i>check</i> Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.</b>	Incandescent 1: WS2: WALL SCONCE: Incandescent 60W: LED 23: WS3: WALL SCONCE: Other: LED 24: WS4: WALL SCONCE: Other: LED 24: WS4: WALL SCONCE: Other: LED 25: WS5: WALL SCONCE: Other: LED 26: WS6: WALL SCONCE: Other: Total Proposed Watts = 5644 terior Lighting PASSES: Design 2% better than code terior Lighting Compliance Statement proposed interior lighting design represented in this document is consistent with the building plan becifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been esigned to meet the 2018 IECC requirements in COM <i>check</i> Version 4.1.5.5 and to comply with any applicable mandatory quirements listed in the Inspection Checklist.	LED 21: WM2.40: 40 LINEAR: Other:		1	1	280	280
LED 23: WS3: WALL SCONCE: Other:       1       4       29       116         LED 24: WS4: WALL SCONCE: Other:       1       4       8       32         LED 25: WS5: WALL SCONCE: Other:       1       2       5       10         LED 26: WS6: WALL SCONCE: Other:       1       3       5       14         LED 26: WS6: WALL SCONCE: Other:       1       3       5       16         LED 26: WS6: WALL SCONCE: Other:       1       3       5       16         terior Lighting PASSES: Design 2% better than code         terior Lighting Compliance Statement         ompliance Statement:         The proposed interior lighting design represented in this document is consistent with the building plan         opecifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been besigned to meet the 2018 IECC requirements in COM <i>check</i> Version 4.1.5.5 and to comply with any applicable mandatory equirements listed in the Inspection Checklist.	LED 23: WS3: WALL SCONCE: Other:       1       4       29       116         LED 24: WS4: WALL SCONCE: Other:       1       4       8       32         LED 25: WS5: WALL SCONCE: Other:       1       2       5       10         LED 26: WS6: WALL SCONCE: Other:       1       3       5       15         Total Proposed Watts = 5644         terior Lighting PASSES: Design 2% better than code         terior Lighting Compliance Statement         ompliance Statement:         The proposed interior lighting design represented in this document is consistent with the building plan beecifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been been been been the 2018 IECC requirements in COM <i>check</i> Version 4.1.5.5 and to comply with any applicable mandatory quirements listed in the Inspection Checklist.	LED 22: WS1: WALL SCONCE: Other:		1	21	12	252
LED 24: WS4: WALL SCONCE: Other:       1       4       8       32         LED 25: WS5: WALL SCONCE: Other:       1       2       5       10         LED 26: WS6: WALL SCONCE: Other:       1       3       5       14         LED 26: WS6: WALL SCONCE: Other:       1       3       5       14         LED 26: WS6: WALL SCONCE: Other:       1       3       5       14         Let 26: WS6: WALL SCONCE: Other:       1       3       5       14         Let 26: WS6: WALL SCONCE: Other:       1       3       5       14         Let 26: WS6: WALL SCONCE: Other:       1       3       5       14         Let 26: WS6: WALL SCONCE: Other:       1       3       5       14         Let 26: WS6: WALL SCONCE: Other:       1       3       5       14         Let 26: WS6: WALL SCONCE: Other:       1       3       5       14         Iterior Lighting PASSES: Design 2% better than code       1       3       5       14         Iterior Lighting Compliance Statement       Iterior Lighting design represented in this document is consistent with the building plan       15       16       16         Decifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been	LED 24: WS4: WALL SCONCE: Other:       1       4       8       32         LED 25: WS5: WALL SCONCE: Other:       1       2       5       10         LED 26: WS6: WALL SCONCE: Other:       1       3       5       15         Total Proposed Watts =       5644         terior Lighting PASSES: Design 2% better than code         terior Lighting Compliance Statement         ompliance Statement:       The proposed interior lighting design represented in this document is consistent with the building plan         pecifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been       systems that been and atory         esigned to meet the 2018 IECC requirements in COM <i>check</i> Version 4.1.5.5 and to comply with any applicable mandatory       quirements listed in the Inspection Checklist.	Incandescent 1: WS2: WALL SCONCE: Incandescent 60	W:	1	4	60	240
LED 25: WS5: WALL SCONCE: Other:       1       2       5       10         LED 26: WS6: WALL SCONCE: Other:       1       3       5       14         Total Proposed Watts =       5644         Iterior Lighting PASSES: Design 2% better than code       5       14         Iterior Lighting Compliance Statement       5       14         ompliance Statement:       The proposed interior lighting design represented in this document is consistent with the building plane becifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been besigned to meet the 2018 IECC requirements in COM <i>check</i> Version 4.1.5.5 and to comply with any applicable mandatory quirements listed in the Inspection Checklist.	LED 25: WS5: WALL SCONCE: Other:       1       2       5       10         LED 26: WS6: WALL SCONCE: Other:       1       3       5       15         Total Proposed Watts =       5644         terior Lighting PASSES: Design 2% better than code       5       5         terior Lighting Compliance Statement       5       5         ompliance Statement:       The proposed interior lighting design represented in this document is consistent with the building plan         pecifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been       5         esigned to meet the 2018 IECC requirements in COMcheck Version 4.1.5.5 and to comply with any applicable mandatory       5         quirements listed in the Inspection Checklist.       5       10	LED 23: WS3: WALL SCONCE: Other:		1	4	29	116
LED 26: WS6: WALL SCONCE: Other:       1       3       5       14         Total Proposed Watts =       5644         Iterior Lighting PASSES: Design 2% better than code       5644         Iterior Lighting Compliance Statement       5         ompliance Statement:       The proposed interior lighting design represented in this document is consistent with the building plane becifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been besigned to meet the 2018 IECC requirements in COMcheck Version 4.1.5.5 and to comply with any applicable mandatory quirements listed in the Inspection Checklist.	LED 26: WS6: WALL SCONCE: Other:       1       3       5       15         Total Proposed Watts =       5644         terior Lighting PASSES: Design 2% better than code         terior Lighting Compliance Statement         ompliance Statement:         The proposed interior lighting design represented in this document is consistent with the building plan         becifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been         esigned to meet the 2018 IECC requirements in COM <i>check</i> Version 4.1.5.5 and to comply with any applicable mandatory         quirements listed in the Inspection Checklist.	LED 24: WS4: WALL SCONCE: Other:		1	4	8	32
Total Proposed Watts =       5644         Interior Lighting PASSES: Design 2% better than code       5644         Interior Lighting Compliance Statement       5644         compliance Statement:       The proposed interior lighting design represented in this document is consistent with the building plane         compliance Statement:       The proposed interior lighting design represented in this document is consistent with the building plane         compliance Statement:       The proposed interior lighting design represented in this document is consistent with the building plane         compliance Statement:       The proposed interior lighting design represented in this document is consistent with the building plane         compliance Statement:       The proposed interior lighting design represented in this document is consistent with the building plane         compliance Statement:       The proposed interior lighting design represented in this document is consistent with the building plane         compliance Statement:       The proposed interior lighting design represented in this document is consistent with the building plane         compliance Statement:       The proposed interior lighting design represented in the proposed interior lighting design represented in the proposed interior lighting design represented in the lighting design represente	Total Proposed Watts =       5644         terior Lighting PASSES: Design 2% better than code       5644         terior Lighting Compliance Statement       5644         compliance Statement:       The proposed interior lighting design represented in this document is consistent with the building plan         becifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been         esigned to meet the 2018 IECC requirements in COM <i>check</i> Version 4.1.5.5 and to comply with any applicable mandatory         quirements listed in the Inspection Checklist.	LED 25: WS5: WALL SCONCE: Other:		1	2	5	10
Interior Lighting PASSES: Design 2% better than code Interior Lighting Compliance Statement Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plan Descifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2018 IECC requirements in COM <i>check</i> Version 4.1.5.5 and to comply with any applicable mandatory equirements listed in the Inspection Checklist.	terior Lighting PASSES: Design 2% better than code terior Lighting Compliance Statement ompliance Statement: The proposed interior lighting design represented in this document is consistent with the building plan becifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been assigned to meet the 2018 IECC requirements in COM <i>check</i> Version 4.1.5.5 and to comply with any applicable mandatory quirements listed in the Inspection Checklist.						
Interior Lighting PASSES: Design 2% better than code Interior Lighting Compliance Statement Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plan Descifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2018 IECC requirements in COM <i>check</i> Version 4.1.5.5 and to comply with any applicable mandatory equirements listed in the Inspection Checklist.	terior Lighting PASSES: Design 2% better than code terior Lighting Compliance Statement ompliance Statement: The proposed interior lighting design represented in this document is consistent with the building plan becifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been assigned to meet the 2018 IECC requirements in COM <i>check</i> Version 4.1.5.5 and to comply with any applicable mandatory quirements listed in the Inspection Checklist.	LED 26: WS6: WALL SCONCE: Other:		1	3	5	15
ame - Title Date Date	ame - Title Date Date	terior Lighting PASSES: Design 2% better to the terior Lighting Compliance Statement to the proposed interior lighting the p	ng design represented in this doc	ument is co	Total Propos	ed Watts =	5644 ding plans
		terior Lighting PASSES: Design 2% better to terior Lighting Compliance Statement compliance Statement: The proposed interior lightin becifications, and other calculations submitted with esigned to meet the 2018 IECC requirements in CO	g design represented in this doc this permit application. The prop	ument is co	Total Propos onsistent with	th the build	5644 ding plans ve been
		terior Lighting PASSES: Design 2% better a sterior Lighting Compliance Statement compliance Statement: The proposed interior lightin becifications, and other calculations submitted with esigned to meet the 2018 IECC requirements in CO quirements listed in the Inspection Checklist.	ng design represented in this doc this permit application. The prop M <i>check</i> Version 4.1.5.5 and to co	ument is co	Total Propos onsistent wit or lighting s any applical	th the build systems ha	5644 ding plans ve been
		terior Lighting PASSES: Design 2% better to terior Lighting Compliance Statement compliance Statement: The proposed interior lightin becifications, and other calculations submitted with esigned to meet the 2018 IECC requirements in CO quirements listed in the Inspection Checklist.	ng design represented in this doc this permit application. The prop M <i>check</i> Version 4.1.5.5 and to co	ument is co	Total Propos onsistent wit or lighting s any applical	th the build systems ha	5644 ding plans ve been
		terior Lighting PASSES: Design 2% better to terior Lighting Compliance Statement compliance Statement: The proposed interior lightin becifications, and other calculations submitted with esigned to meet the 2018 IECC requirements in CO quirements listed in the Inspection Checklist.	ng design represented in this doc this permit application. The prop M <i>check</i> Version 4.1.5.5 and to co	ument is co	Total Propos onsistent wit or lighting s any applical	th the build systems ha	5644 ding plans ve been
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		<b>Aterior Lighting PASSES: Design 2% better a</b> <b>Iterior Lighting Compliance Statement</b> <i>compliance Statement:</i> The proposed interior lighting becifications, and other calculations submitted with designed to meet the 2018 IECC requirements in CO equirements listed in the Inspection Checklist.	ng design represented in this doc this permit application. The prop M <i>check</i> Version 4.1.5.5 and to co	ument is co	Total Propos onsistent wit or lighting s any applical	th the build systems ha	5644 ding plans ve been
		terior Lighting PASSES: Design 2% better a sterior Lighting Compliance Statement compliance Statement: The proposed interior lightin becifications, and other calculations submitted with esigned to meet the 2018 IECC requirements in CO quirements listed in the Inspection Checklist.	ng design represented in this doc this permit application. The prop M <i>check</i> Version 4.1.5.5 and to co	ument is co	Total Propos onsistent wit or lighting s any applical	th the build systems ha	5644 ding plans ve been
		<b>Aterior Lighting PASSES: Design 2% better a</b> <b>Iterior Lighting Compliance Statement</b> <i>compliance Statement:</i> The proposed interior lighting becifications, and other calculations submitted with designed to meet the 2018 IECC requirements in CO equirements listed in the Inspection Checklist.	ng design represented in this doc this permit application. The prop M <i>check</i> Version 4.1.5.5 and to co	ument is co	Total Propos onsistent wit or lighting s any applical	th the build systems ha	5644 ding plans ve been
		<b>Aterior Lighting PASSES: Design 2% better a</b> <b>Iterior Lighting Compliance Statement</b> <i>compliance Statement:</i> The proposed interior lighting becifications, and other calculations submitted with designed to meet the 2018 IECC requirements in CO equirements listed in the Inspection Checklist.	ng design represented in this doc this permit application. The prop M <i>check</i> Version 4.1.5.5 and to co	ument is co	Total Propos onsistent wit or lighting s any applical	th the build systems ha	5644 ding plans ve been
		terior Lighting PASSES: Design 2% better terior Lighting Compliance Statement ompliance Statement: The proposed interior lightin ecifications, and other calculations submitted with esigned to meet the 2018 IECC requirements in CO quirements listed in the Inspection Checklist.	ng design represented in this doc this permit application. The prop M <i>check</i> Version 4.1.5.5 and to co	ument is co	Total Propos onsistent wit or lighting s any applical	th the build systems ha	5644 ding plans ve been
oject Title: Coop De Ville Savannah nita filename: \\allenshariff.com\ENG\PIT\Jobs\Jobs 22\2241141 Strada - COOP Savannah\8 Electrical\Misc\Coc Page 2 of		terior Lighting Compliance Statement ompliance Statement: The proposed interior lighting ecifications, and other calculations submitted with esigned to meet the 2018 IECC requirements in CO quirements listed in the Inspection Checklist. ame - Title bject Title: Coop De Ville Savannah	ng design represented in this doc this permit application. The prop Mcheck Version 4.1.5.5 and to co Signature	ument is co posed interio posed with a	Total Propos	red Watts =	5644 ding plans ve been tory

Project Informat	ion						
Energy Code:		2018 IECC					
Project Title:		Coop De Ville Savannał New Construction	า				
Project Type: Exterior Lighting Zone	)	2 (Neighborhood busine	ess district (LZ2))				
Construction Site: 301 Passage Way Savannah, GA 314		Owner/Agent:		Nova Tov	hariff eny Center ver 2, Suite h, PA 15212		
Allowed Exterior	r Lighting Power						
	Α		В	С	D		E
Area	a/Surface Category		Quantity	Allowed Watts / Unit	Tradable Wattage		d Watts K C)
Patio (Plaza area)			962 ft2	0.1	Yes		96
					ble Watts (a) =		96 06
()		etween tradable areas/surface 00 watts may be applied towa	es.	Total All lowed Supplement	owed Watts = tal Watts (b) =	= = 4	96 100
(b) A supplementa Proposed Exteri	al allowance equal to 40	00 watts may be applied towa	es. ard compliance of b	Total All lowed Supplement	owed Watts = tal Watts (b) =	= = 4	96 100
(b) A supplementa Proposed Exteri Fixture	al allowance equal to 40	00 watts may be applied towa r A .amp / Wattage Per Lam	es. ard compliance of b	Total All lowed Supplement ooth non-tradable a <b>B</b> Lamps/	tal Watts = tal Watts (b) = and tradable a C # of	= 4 areas/surface D Fixture	96 400 es. E
(b) A supplementa Proposed Exteria Fixture Patio (Plaza area 9 LED 1: YS1: FEST	al allowance equal to 40 or Lighting Powe ID : Description / L 062 ft2): Tradable Wa OON LIGHTS: Other:	00 watts may be applied towa r A .amp / Wattage Per Lam	es. ard compliance of b	Total All lowed Supplement ooth non-tradable a B Lamps/ Fixture	tal Watts = tal Watts (b) = and tradable a <b>C</b> <b># of</b> <b>Fixtures</b> 1	= 4 areas/surface D Fixture Watt. 65	96 100 ess. (C X D) 65
(b) A supplementa Proposed Exteri Fixture Patio ( Plaza area 9	al allowance equal to 40 or Lighting Powe ID : Description / L 062 ft2): Tradable Wa OON LIGHTS: Other:	00 watts may be applied towa r A .amp / Wattage Per Lam	es. ard compliance of b	Total All lowed Supplement both non-tradable a B Lamps/ Fixture 1 1	tal Watts = tal Watts (b) = and tradable a <b>C</b> <b># of</b> <b>Fixtures</b> 1 2	= 4 areas/surface D Fixture Watt. 65 10	96 900 955. <b>E</b> (C X D)
(b) A supplementa Proposed Exteria Fixture Patio (Plaza area 9 LED 1: YS1: FESTO LED 2: YW1: WALD	al allowance equal to 40 or Lighting Powe ID : Description / L 262 ft2): Tradable Wa OON LIGHTS: Other: L FIXTURE: Other:	00 watts may be applied towa r A .amp / Wattage Per Lam	es. ard compliance of b <b>p / Ballast</b>	Total All lowed Supplement both non-tradable a B Lamps/ Fixture 1 1	tal Watts = tal Watts (b) = and tradable a <b>C</b> <b># of</b> <b>Fixtures</b> 1	= 4 areas/surface D Fixture Watt. 65 10	96 100 ess. (C X D) 65 20
(b) A supplementa Proposed Exteria Fixture Patio (Plaza area 9 LED 1: YS1: FESTO LED 2: YW1: WALD Exterior Lighting	al allowance equal to 40 or Lighting Powe ID : Description / L 2062 ft2): Tradable Wa OON LIGHTS: Other: L FIXTURE: Other:	00 watts may be applied towa r A .amp / Wattage Per Lam attage n 83% better than coo	es. ard compliance of b <b>p / Ballast</b>	Total All lowed Supplement both non-tradable a B Lamps/ Fixture 1 1	tal Watts = tal Watts (b) = and tradable a <b>C</b> <b># of</b> <b>Fixtures</b> 1 2	= 4 areas/surface D Fixture Watt. 65 10	96 100 ess. (C X D) 65 20
(b) A supplementa Proposed Exterio Fixture Patio (Plaza area 9 LED 1: YS1: FEST LED 2: YW1: WALL Exterior Lighting Compliance Statem specifications, and designed to meet t	al allowance equal to 40 or Lighting Powe ID : Description / L 262 ft2): Tradable Wa OON LIGHTS: Other: L FIXTURE: Other: g PASSES: Desig g Compliance Sta nent: The proposed other calculations si	00 watts may be applied towa r A .amp / Wattage Per Lam attage n 83% better than coo tement exterior lighting design re ubmitted with this permit ements in COM <i>check</i> Vers	es. ard compliance of b p / Ballast de epresented in thi application. The	Total All lowed Supplement ooth non-tradable a B Lamps/ Fixture 1 1 Total Trans s document is co proposed exteri	owed Watts = tal Watts (b) = and tradable a <b>C</b> <b># of</b> <b>Fixtures</b> 1 2 dable Propos	= 4 areas/surface D Fixture Watt. 65 10 ed Watts = th the build systems ha	96 100 es. <b>E</b> ( <b>C X D</b> ) 65 20 85 ding plans, ve been
(b) A supplementa Proposed Exterio Fixture Patio (Plaza area 9 LED 1: YS1: FESTO LED 2: YW1: WALD Exterior Lighting Compliance Statem specifications, and designed to meet t requirements listed	al allowance equal to 40 or Lighting Powe ID : Description / L 262 ft2): Tradable Wa OON LIGHTS: Other: L FIXTURE: Other: g PASSES: Desig g Compliance Sta nent: The proposed other calculations so the 2018 IECC requir	00 watts may be applied towa r A .amp / Wattage Per Lam attage n 83% better than coo tement exterior lighting design re ubmitted with this permit ements in COM <i>check</i> Vers	es. ard compliance of b p / Ballast de epresented in thi application. The	Total All lowed Supplement ooth non-tradable a B Lamps/ Fixture 1 1 Total Trans s document is co proposed exteri	owed Watts = tal Watts (b) = and tradable a <b>C</b> <b># of</b> <b>Fixtures</b> 1 2 dable Propos	= 4 areas/surface D Fixture Watt. 65 10 ed Watts = th the build systems ha	96 100 es. <b>E</b> ( <b>C X D</b> ) 65 20 85 ding plans, ve been
(b) A supplementa Proposed Exterio Fixture Patio (Plaza area 9 LED 1: YS1: FESTO LED 2: YW1: WALD Exterior Lighting Compliance Statem specifications, and designed to meet t requirements listed Name - Title	al allowance equal to 40 or Lighting Powe ID : Description / L 262 ft2): Tradable Wa OON LIGHTS: Other: L FIXTURE: Other: g PASSES: Desig g Compliance Sta nent: The proposed other calculations so the 2018 IECC requir	00 watts may be applied towa r A amp / Wattage Per Lam attage n 83% better than coo tement exterior lighting design re ubmitted with this permit ements in COM <i>check</i> Vers hecklist.	es. ard compliance of b p / Ballast de epresented in thi application. The	Total All lowed Supplement ooth non-tradable a B Lamps/ Fixture 1 1 Total Trans s document is co proposed exteri	owed Watts = tal Watts (b) = and tradable a <b>C</b> <b># of</b> <b>Fixtures</b> 1 2 dable Propos onsistent wi ior lighting s any applicat	= 4 areas/surface D Fixture Watt. 65 10 ed Watts = th the build systems ha	96 100 es. (C X D) 65 20 85 ding plans, ve been ory

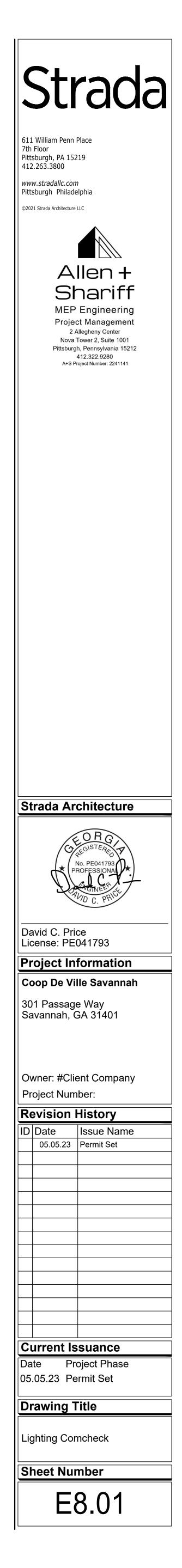
h-In Electrical Inspection	Complies?	Comments/Assumptions
t zones provided with al controls that control the dependent of general area . See code section C405.2.3 t-responsive controls for ble spaces, C405.2.3.1 Daylight ive control function and C405.2.3.2 Sidelit zone.	□Complies □Does Not □Not Observable □Not Applicable	<b>Exception:</b> Requirement does not apply.
5 5	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
5 51	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
controls required by the code are in a location with ccess to occupants and where the controlled lights are or identify the area served and tus.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
tic lighting controls for exterior installed. Controls will be controlled, set based on s operation time-of-day, or connected lighting > 30%.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
s do not exceed 5 watts per	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
-	□Complies □Does Not □Not Observable □Not Applicable	
motors meet the minimum y requirements of Tables 1) through C405.7(4). y verified through certification a approved certification or the equipment efficiency shall be provided by motor cturer (where certification as do not exist).	□Complies □Does Not □Not Observable □Not Applicable	
rs and moving walks comply ME A17.1/CSA B44 and have tic controls configured to speed to the minimum ed speed in accordance with L7.1/CSA B44 or applicable de when not conveying ers.	□Complies □Does Not □Not Observable □Not Applicable	
tage drop across the tion of feeders and branch <= 5%.	□Complies □Does Not □Not Observable □Not Applicable	
ments/Assumptions:		
	2 Medium Imp	act (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Final Inspection	Complies?	
C303.3, C408.2.5. 2 [FI17] ³	Furnished O&M instructions for systems and equipment to the building owner or designated representative.	□Complies □Does Not □Not Observable □Not Applicable	Requi
C405.4.1 [FI18] ¹	Interior installed lamp and fixture lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	□Complies □Does Not □Not Observable □Not Applicable	See the
C405.5.1 [FI19] ¹	Exterior lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	□Complies □Does Not □Not Observable □Not Applicable	See the
C408.1.1 [FI57] ¹	Building operations and maintenance documents will be provided to the owner. Documents will cover manufacturers' information, specifications, programming procedures and means of illustrating to owner how building, equipment and systems are intended to be installed, maintained, and operated.	□Complies □Does Not □Not Observable □Not Applicable	
C408.2.5. 1 [FI16] ³	Furnished as-built drawings for electric power systems within 90 days of system acceptance.	□Complies □Does Not □Not Observable □Not Applicable	Requi
C408.3 [FI33] ¹	Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation.	□Complies □Does Not □Not Observable □Not Applicable	Requi

1 High Impact (Tier 1) 2 Medium Impact (Ti Project Title: Coop De Ville Savannah Data filename: \\allenshariff.com\ENG\PIT\Jobs\Jobs_22\2241141 Strada - CC Lighting Comcheck.cck

Comments/Assumptions
irement will be met.
he Interior Lighting fixture schedule for values.
he Exterior Lighting fixture schedule for values.
irement will be met.
irement will be met.
ier 2) 3 Low Impact (Tier 3)
OOP Savannah\8_Electrical\Misc\Coc Page 8 of 9

Text in th requirem	ent, the user certifies that a code re	n is provided by t equirement will b	Mcheck software he user in the COMcheck Requirements screen. For e e met and how that is documented, or that an except table, a reference to that table is provided.
Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
C103.2 [PR4] ¹	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
C103.2 [PR8] ¹	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the exterior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include exterior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
C406 [PR9] ¹	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the additional energy efficiency package options.	□Complies □Does Not □Not Observable □Not Applicable	
	al Comments/Assumptions:		



### GENERAL ELECTRICAL NOTES:

GENERAL: UNLESS SPECIFICALLY INDICATED OTHERWISE, ALL WORK SHOWN ON THE ELECTRICAL DRAWINGS IS NEW WORK TO BE PROVIDED UNDER THIS CONTRACT. DEMOLITION: SEE "ELECTRICAL GENERAL DEMOLITION NOTES FOR ADDITIONAL

DEMOLITION REQUIREMENTS.

COORDINATION: COORDINATE AND COOPERATE WITH ALL TRADES ON THE PROJECT.

RECORD DRAWINGS: SECURE AN EXTRA SET OF ELECTRICAL DRAWINGS TO BE KEPT ON SITE AND MARK DAILY, THE DRAWINGS IN RED AS THE PROJECT PROGRESSES IN ORDER TO KEEP AN ACCURATE RECORD OF ALL DEVIATIONS BETWEEN THE WORK SHOWN ON THE DRAWINGS AND THE WORK WHICH IS ACTUALLY INSTALLED. THESE MARKED DRAWINGS SHALL REFLECT ANY AND ALL CHANGES AND REVISIONS TO THE ORIGINAL DESIGN WHICH EXISTS IN THE COMPLETED WORK. DELIVER THE MARKED DRAWINGS TO THE ARCHITECT OR ENGINEER AT PROJECT CLOSE-OUT.

TESTS: TEST ALL WIRING FOR CONTINUITY AND GROUNDS BEFORE CONNECTING ANY FIXTURES OR DEVICES. PERFORM INSULATION RESISTANCE TESTS ON ALL WIRING #8 OR LARGER TO ENSURE THAT ALL PORTIONS ARE FREE FROM SHORT-CIRCUITS AND GROUNDS.

INSPECTIONS: ARRANGE ALL NECESSARY INSPECTIONS. DELIVER ALL REQUIRED INSPECTION CERTIFICATES TO THE OWNER.

GROUNDING: PROVIDE GROUNDING IN ACCORDANCE WITH THE NEC FOR THE ELECTRICAL SYSTEM, INCLUDING EQUIPMENT FRAMES CONDUITS, SWITCHES, CONTROLLERS, WIRE-WAYS, NEUTRAL CONDUCTORS AND OTHER EQUIPMENT. PROVIDE A GROUNDING CONDUCTOR IN ALL CIRCUITS.

LABELS: PROVIDE LABELS FOR ALL PANELBOARDS, CABINETS, SAFETY SWITCHES, MOTOR-DISCONNECT SWITCHES, AND MOTOR CONTROLLERS. LABELS SHALL BE MACHINE ENGRAVED, LAMINATED PLASTIC.

J-BOX LABELING: LABEL ALL JUNCTION BOXES WITH PERMANENT MARKER IDENTIFYING CIRCUIT NUMBER AND PANELBOARD OF CIRCUITS WITHIN.

PANEL DIRECTORY: PROVIDE TYPEWRITTEN PANELBOARD DIRECTORY CARD IN EACH PANELBOARD, INCLUDING EXISTING PANELBOARDS MODIFIED FOR THIS PROJECT, WITH CIRCUIT LOAD INFORMATION AND ROOM NUMBER CLEARLY IDENTIFIED. USE ACTUAL ROOM NUMBERS IN THE BUILDING, NOT THE ROOM NUMBERS SHOWN ON THE CONTRACT DRAWINGS, AS THEY ARE OFTEN DIFFERENT.

CONNECTION DETAILS: SECURE APPROVED SHOP DRAWINGS SHOWING WIRING DIAGRAMS, ROUGH-IN AND HOOK UP DETAILS FOR EQUIPMENT WHICH MUST BE CONNECTED ELECTRICALLY.

MATERIAL COORDINATION: VERIFY CEILING AND WALL CONSTRUCTION AND MATERIAL PRIOR TO ORDERING LIGHT FIXTURES OR OTHER DEVICES TO ENSURE PROPER FIXTURES OR DEVICES ARE FURNISHED TO MATCH CONSTRUCTION.

MOUNTING HEIGHTS: MOUNTING HEIGHTS INDICATED ARE FROM THE FINISHED FLOOR TO THE CENTERLINE OF THE WIRING DEVICE UNLESS OTHERWISE NOTED. MOUNTING HEIGHTS OF LIGHTING FIXTURES AND FIRE ALARM DEVICES ARE TO THE BOTTOM OF THE FIXTURE OR DEVICE UNLESS OTHERWISE NOTED.

DEVICE COORDINATION: THOROUGHLY REVIEW AND COORDINATE ALL CASEWORK, DOOR SWINGS, AND CABINET DRAWINGS AND ARCHITECTURAL ELEVATIONS WITH DEVICE LOCATIONS PRIOR TO ROUGH-IN OF OUTLET BOXES.

FIRE PROOFING: FOR ANY WALL OR FLOOR PENETRATIONS THROUGH FIRE RATED STRUCTURES. PROVIDE FIRE-PROOFING TO SEAL ALL THE PENETRATIONS AFTER THE CONDUIT HAS BEEN INSTALLED. FIRE PROOFING FOR PENETRATIONS SHALL BE UL APPROVED PER THE THE PENETRATION MADE IN ORDER TO MAINTAIN FIRE RATED INTEGRITY OF THE STRUCTURE.

CLEAN UP: ON PROJECT CLOSE-OUT, CLEAN ALL ELECTRICAL DEVICES, LIGHTING FIXTURES, LAMPS AND LENSES, AND REMOVE ALL PAINT SPATTERS FROM DEVICES, FIXTURES, AND PLATES. REPLACE ALL INOPERATIVE LAMPS.

OWNER FURNISHED EQUIPMENT: CONTRACTOR SHALL OBTAIN CUT SHEETS, INSTALLATION DATA, AND ROUGH-IN REQUIREMENTS FOR OWNER FURNISHED, CONTRACTOR INSTALLED EQUIPMENT AND COORDINATE ROUGH-IN AND POWER REQUIREMENTS WITH THE OWNER'S REPRESENTATIVE PRIOR TO STARTING ANY ASSOCIATED WORK.

CONDUIT ROUTING: ALL CONDUIT RUN OVERHEAD SHALL BE RUN AT THE BOTTOM OF THE FLOOR, ROOF STRUCTURE, OR LOWEST CHORD OF JOIST SPACE (AS APPLICABLE) ABOVE IN ORDER TO AVOID CONFLICTS WITH OTHER TRADES.

EQUIPMENT DEMONSTRATION: PROVIDE A DEMONSTRATION OF THE OPERATION OF ALL ELECTRICAL COMPONENTS.

CEILING AND MECHANICAL ROOM PLENUM: ALL WIRING THAT WILL NOT BE RUN IN METAL CONDUIT SHALL BE PLENUM RATED.

### ELECTRICAL GENERAL DEMOLITIO GENERAL: DEMOLITION DRAWINGS ARE BASE FIELD INVESTIGATION PRIOR TO DEMOLITION. BUILDING PRIOR TO BID IN ORDER TO BECOM EXISTING CONDITIONS AND IN ORDER TO AVC

DASHED ITEMS: ALL ITEMS SHOWN DASHED ( EXISTING AND SHALL BE REMOVED COMPLET CONDUIT, WIRE, FASTENERS, AND ASSOCIATE

SOLID ITEMS: ALL ITEMS SHOWN SOLID ON DE EXISTING TO REMAIN.

CIRCUITING TO REMAIN: WHERE AFFECTED BY CIRCUITING TO REMAIN SHALL BE REROUTED REQUIRED, IN ORDER TO MAINTAIN CONTINUI

REUSE OF EXISTING CIRCUITRY: EXISTING CIR WHERE CONVENIENT TO SERVE THE NEW LAY MODIFICATIONS INDICATED OR REQUIRED TO EXISTING CIRCUITS THAT REMAIN.

EXISTING CONDUIT: ALL EXISTING CONDUITS / NOT BE REUSED SHALL BE REMOVED. EXISTIN CONCEALED IN WALLS SHALL BE ABANDONEI REMAIN BELOW FLOOR SLAB SHALL BE CUT ( ROUGH FLOOR AND GROUTED FLUSH. ALL EX CONDUITS TO BE ABANDONED SHALL BE DISC SOURCE AND REMOVED.

REPAIR DAMAGE: EXERCISE CARE IN REMOVA REPAIR, AT NO ADDITIONAL COST TO OWNER, EXISTING CONSTRUCTION AND/OR EQUIPMEN

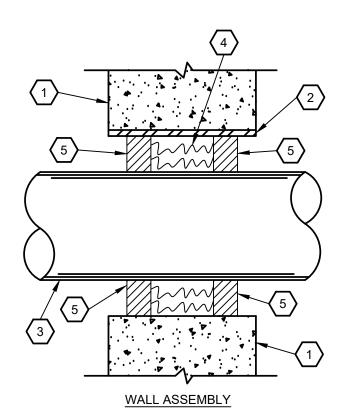
ASSOCIATED APPURTENANCES: REMOVE ALL **APPURTENANCES (DISCONNECTS, STARTERS** ASSOCIATED WITH EQUIPMENT TO BE REMOV

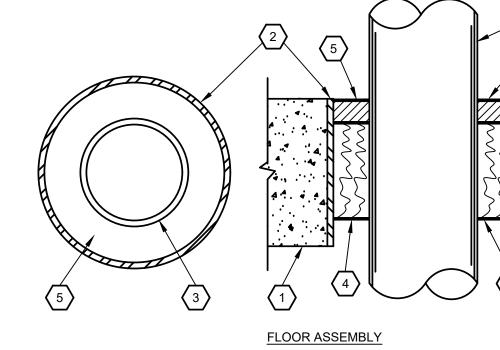
KNOCKOUT PLUGS AND COVERS: ALL CONDU REMOVED IN ITS ENTIRETY, INCLUDING FITTIN MOUNTING HARDWARE, ETC. PROVIDE CONDU FOR ALL OPENINGS CREATED BY THE REMOV BLANK COVER PLATES FOR ALL OPENED OUT THE REMOVAL OF THE EQUIPMENT AND/OR D

DEMOLISHED MATERIALS: ALL MATERIALS REI DEMOLITION, NOT TO BE RELOCATED OR DES OVER TO THE OWNER, SHALL BECOME PROPE CONTRACTOR AND SHALL BE REMOVED COMI

SCHEDULE OUTAGES: ALL WORK AND ALL PO' SCHEDULED AT TIMES CONVENIENT TO THE NOTIFICATION: NOTIFY THE OWNER PRIOR TO TURNING OFF ANY

DETERMINED BY THE CONTRACTOR THAT AN EXISTING CIRCUIT BECOMES SPARE, THE CONTRACTOR SHALL UPDATE THE PANELBOARD DIRECTORY TO INDICATE SUCH, EVEN IF IT IS NOT EXPLICITLY MARKED ON THE ELECTRICAL PLANS.





## KEYED NOTES: (#)

1. FLOOR OR WALL ASSEMBLY MINIMUM 5" THICK NORMAL WEIGHT CONCRETE FLOOR OR WALL OR MINIMUM 7-5/8" THICK MASONRY WALL HAVING A MINIMUM 2 HOUR FIRE RESISTIVE RATING WITH A NOMINAL 6" DIAMETER OPENING. 2. STEEL PIPE SLEEVE (OPTIONAL) NOMINAL 6" DIAMETER SCHEDULE 40 OR HEAVIER STEEL PIPE SLEEVE. (2 TRADE SIZES LARGER THAN CONDUIT).

3. STEEL OR EMT CONDUIT NOMINAL 4" DIAMETER CENTERED THROUGH THE OPENING.

4. FORMING MATERIAL MINERAL WOOL, MINIMUM DENSITY OF 4.4 PCF FIRMLY PACKED WITHIN THE OPENING TO A NOMINAL THICKNESS OF 3" FOR FLOORS. FOR WALLS, THE MINERAL WOOL SHALL BE CENTERED IN THE OPENING.

5. FILL, VOID OR CAVITY MATERIAL* - FILL MATERIAL THAT IS TROWELED INTO THE OPENING TO A MINIMUM THICKNESS OF 1/2" IN ACCORDANCE WITH THE ACCOMPANYING INSTALLATION INSTRUCTIONS. IN WALLS, THE FILL MATERIAL SHALL BE INSTALLED ON BOTH SURFACES OF THE OPENING. * BEARING THE "UL" CLASSIFICATION MARKING

FIRE STOP DETAIL

	FIRE ALARM		ELECTRICAL ABBREVIATIONS
FACP	FIRE ALARM CONTROL PANEL, SURFACE MOUNTED, TOP 5'-9" AFF.	A	AMPERE
		AFF	ABOVE FINISHED FLOOR
FAAP	FIRE ALARIM ANNUNCIATOR PANEL, RECESSED, TOP 5-0 AFF.	AFG	ABOVE FINISHED GRADE
NACP	FIRE ALARM NOTIFICATION APPLIANCE CIRCUIT EXTENDER PANEL,	AIC	AMPERE INTERRUPTING CURRENT
		AV	AUDIO/VISUAL
FATP	FIRE ALARM TRANSPONDER PANEL, SURFACE MOUNTED, TOP 5'-9" AFF.	BFG	BELOW FINISHED GRADE
F	FIRE ALARM MANUAL PULL STATION, 44"AFF TO ACTUATING ARM, UON.	С	CONDUIT
	ADDRESSABLE FIRE ALARM SYSTEM PHOTO-FLECTRIC SMOKE	СКТ	CIRCUIT
SD	DETECTOR, CEILING MOUNTED.	EBU	EMERGENCY BATTERY UNIT
	DUCT MOUNTED ADDRESSABLE FIRE ALARM SYSTEM PHOTO-ELECTRIC	EC	EMPTY CONDUIT
DD	SMOKE DETECTOR.	EC	ELECTRICAL CONTRACTOR
	ADDRESSABLE FIRE ALARM SYSTEM HEAT DETECTOR, FIXED		ENCLOSED CIRCUIT BREAKER
HD	TEMPERATURE/RATE OF RISE TYPE. CEILING MOUNTED.	EF	EXHAUST FAN
IM	FIRE ALARM SYSTEM ADDRESSABLE INPUT MONITOR MODULE.		EQUIPMENT
		ETR	EXISTING TO REMAIN
MM	FIRE ALARM SYSTEM MONITOR MODULE.	EWC	ELECTRIC WATER COOLER
СМ	FIRE ALARM SYSTEM CONTROL MODULE.	EWH	ELECTRIC WATER HEATER
 		EX	EXISTING
КI		FLA	FULL LOAD AMPS
$\bigcap_{20}$	FIRE ALARM VISUAL (STROBE) APPLIANCE, CEILING MOUNTED.	FPC	FIRE PROTECTION CONTRACTOR
~30		GC	GENERAL CONTRACTOR
$\sim$		GFCI	GROUND FAULT CIRCUIT INTERRUPTER
$\bigvee_{30}$	WHICHEVER IS LOWER, UON. SUBSCRIPT INDICATES MINIMUM CANDELA	GND	GROUND
	RATING.	HP	HORSE POWER/HEAT PUMP
AVX	FIRE ALARM AUDIO/VISUAL (HORN/STROBE) APPLIANCE, CEILING	JB	JUNCTION BOX
<u>5</u> 30	MOUNTED. SUBSCRIPT INDICATES MINIMUM CANDELA RATING.	KVA	KILO-VOLT AMPERE
	FIRE ALARM AUDIO/VISUAL (HORN/STROBE) APPLIANCE, WALL MOUNTED	KW	KILO-WATT
(AV)		MCA	MINIMUM CIRCUIT AMPS
<b>→</b> 30	RATING.	MC	METAL CLAD
	FIRE ALARM SYSTEM HORN, CEILING MOUNTED, RECESSED	MCB	MAIN CIRCUIT BREAKER
$\Theta$		MFR	MANUFACTURER
(A)		MLO	MAIN LUGS ONLY
<u> </u>		NEC	NATIONAL ELECTRICAL CODE
TS		NF	NON-FUSED
		NIC	NOT IN CONTRACT
FS	SPRINKLER SYSTEM SUPERVISORY FLOW SWITCH CONNECTION.	NTS	NOT TO SCALE
PS	SPRINKLER SYSTEM PRESSURE SWITCH CONNECTION.	OC	ON CENTER
	FIRE ALARM MAGNETIC DOOR HOLDER CONNECTION POWERED	OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
	FAAP         NACP         FATP         F         SD         DD         HD         MM         CM         RT         Jao         AX         Jao         AX	FACP       FIRE ALARM CONTROL PANEL, SURFACE MOUNTED, TOP 5'-9" AFF.         FAAP       FIRE ALARM ANNUNCIATOR PANEL, RECESSED, TOP 5'-0" AFF.         NACF       SURFACE MOUNTED, TOP, 5'-9" AFF.         FATP       FIRE ALARM NOTIFICATION APPLIANCE CIRCUIT EXTENDER PANEL, SURFACE MOUNTED, TOP, 5'-9" AFF.         F       FIRE ALARM TRANSPONDER PANEL, SURFACE MOUNTED, TOP 5'-9" AFF.         F       FIRE ALARM MANUAL PULL STATION, 44"AFF TO ACTUATING ARM, UON.         SD       ADDRESSABLE FIRE ALARM SYSTEM PHOTO-ELECTRIC SMOKE DETECTOR, CELLING MOUNTED.         DD       DUCT MOUNTED ADDRESSABLE FIRE ALARM SYSTEM PHOTO-ELECTRIC SMOKE DETECTOR.         HD       ADDRESSABLE FIRE ALARM SYSTEM HEAT DETECTOR, FIXED TEMPERATURE/RATE OF RISE TYPE, CEILING MOUNTED.         IMM       FIRE ALARM SYSTEM ADDRESSABLE INPUT MONITOR MODULE.         MM       FIRE ALARM SYSTEM ADDRESSABLE REMOTE TEST SWITCH.         Q30       FIRE ALARM SYSTEM VISUAL (STROBE) APPLIANCE, CEILING MOUNTED.         MM       FIRE ALARM SYSTEM VISUAL (STROBE) APPLIANCE, WALL MOUNTED AT 80" AFF TO BOTTOM OF LENS, OR 6" BELOW FINISHED CEILING, WHICHEVER IS LOWER, UON. SUBSCRIPT INDICATES MINIMUM CANDELA RATING.         Q30       FIRE ALARM AUDIO/VISUAL (HORN/STROBE) APPLIANCE, WALL MOUNTED AT 80" AFF TO BOTTOM OF LENS, OR 6" BELOW FINISHED CEILING, WHICHEVER IS LOWER, UON. SUBSCRIPT INDICATES MINIMUM CANDELA RATING.         Q30       FIRE ALARM AUDIO/VISUAL (HORN/STROBE) APPLIANCE, WALL MOUNTED AT 80" AFF TO BOTTOM OF LENS, OR 6" BELOW F	FACE       FIRE ALARM CONTROL PANEL, SURFACE MOUNTED, TOP 5'-9' AFF.         FAAP       FIRE ALARM ANNUNCIATOR PANEL, RECESSED, TOP 5'-9' AFF.         FAAP       FIRE ALARM NOTIFICATION APPLIANCE CIRCUIT EXTENDER PANEL, SURFACE MOUNTED, TOP, 5'-9' AFF.         FATP       FIRE ALARM NOTIFICATION APPLIANCE CIRCUIT EXTENDER PANEL, SURFACE MOUNTED, TOP, 5'-9' AFF.         F       FIRE ALARM MANUAL PULL STATION, 44"AFF TO ACTUATING ARM, UON.         CD       ADDRESSABLE FIRE ALARM SYSTEM PHOTO-ELECTRIC SMOKE DETECTOR, CEILING MOUNTED.         DD       DOLT MOUNTED ADDRESSABLE FIRE ALARM SYSTEM PHOTO-ELECTRIC SMOKE DETECTOR.         CD       UOT MOUNTED ADDRESSABLE FIRE ALARM SYSTEM PHOTO-ELECTRIC SMOKE DETECTOR.         IPD       ADDRESSABLE FIRE ALARM SYSTEM HEAT DETECTOR, FIXED         EF       EGUIP         IMM       FIRE ALARM SYSTEM ADDRESSABLE INPUT MONITOR MODULE.         CM       FIRE ALARM SYSTEM ADDRESSABLE REMOTE TEST SWITCH.         CM       FIRE ALARM SYSTEM MONTOR MODULE.         RT       FIRE ALARM SYSTEM ADDRESSABLE REMOTE TEST SWITCH.         GC       GC         GO       SUBSCRIPT INDICATES MINIMUM CANDELA RATING.         GC       FIRE ALARM AUDIOVISUAL (STROBE) APPLIANCE, WALL MOUNTED AT 80' AFF TO BOTTOM OF LENS, OR 6' BELOW FINISHED CELING, WHICHEVER IS LOWER, UON. SUBSCRIPT INDICATES MINIMUM CANDELA RATING.         GO       FIRE ALARM AUDIOVISUAL (HORNISTROBE) APPLIANCE, W

ASSOCIATED DOOR MOUNTED DEVICE.

THROUGH FIRE ALARM SYSTEM. COORDINATE MOUNTING HEIGHT WITH

MOTORIZED FIRE/SMOKE DAMPER CONNECTION, 120V. REFER TO DETAIL

EXISTING CIRCUITS: IF DURING THE COURSE OF CONSTRUCTION, IT IS

DH

FSD

X ON FAX.XX.

WP	WEAT	HERPR	DOF					
	GENERAL							
(1	1 KEYNOTE.							
		LINEV	/EIGHTS					
	NEW							
EXI			EXISTING					
	AP	PLICA	BLE CODES					
	THE INTERNATIONAL ENERGY CONSERVATION CODE(IECC)							
THE INTE (IBC)	ERNAT	IONAL B	UILDING CODE	2018				
NATIONA			ODE (NFPA 70)	2017				
NATIONA SIGNALI				2016				

PNL PANEL

Ø PHASE

TYP TYPICAL

V VOLTS

W WIRE

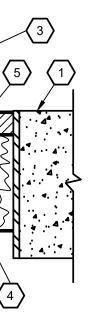
PNLBD PANELBOARD

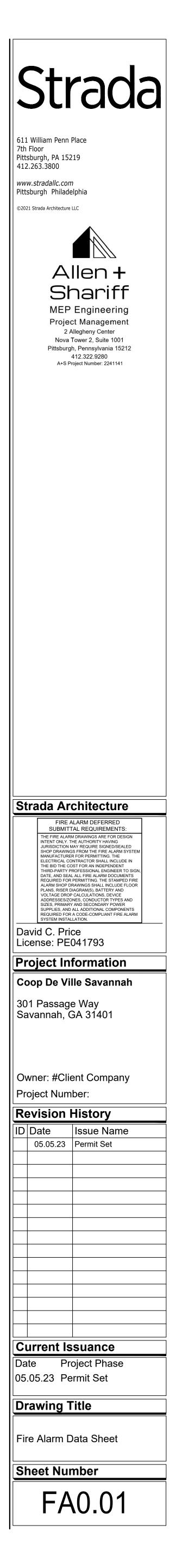
TBB TELEPHONE BACKBOARD

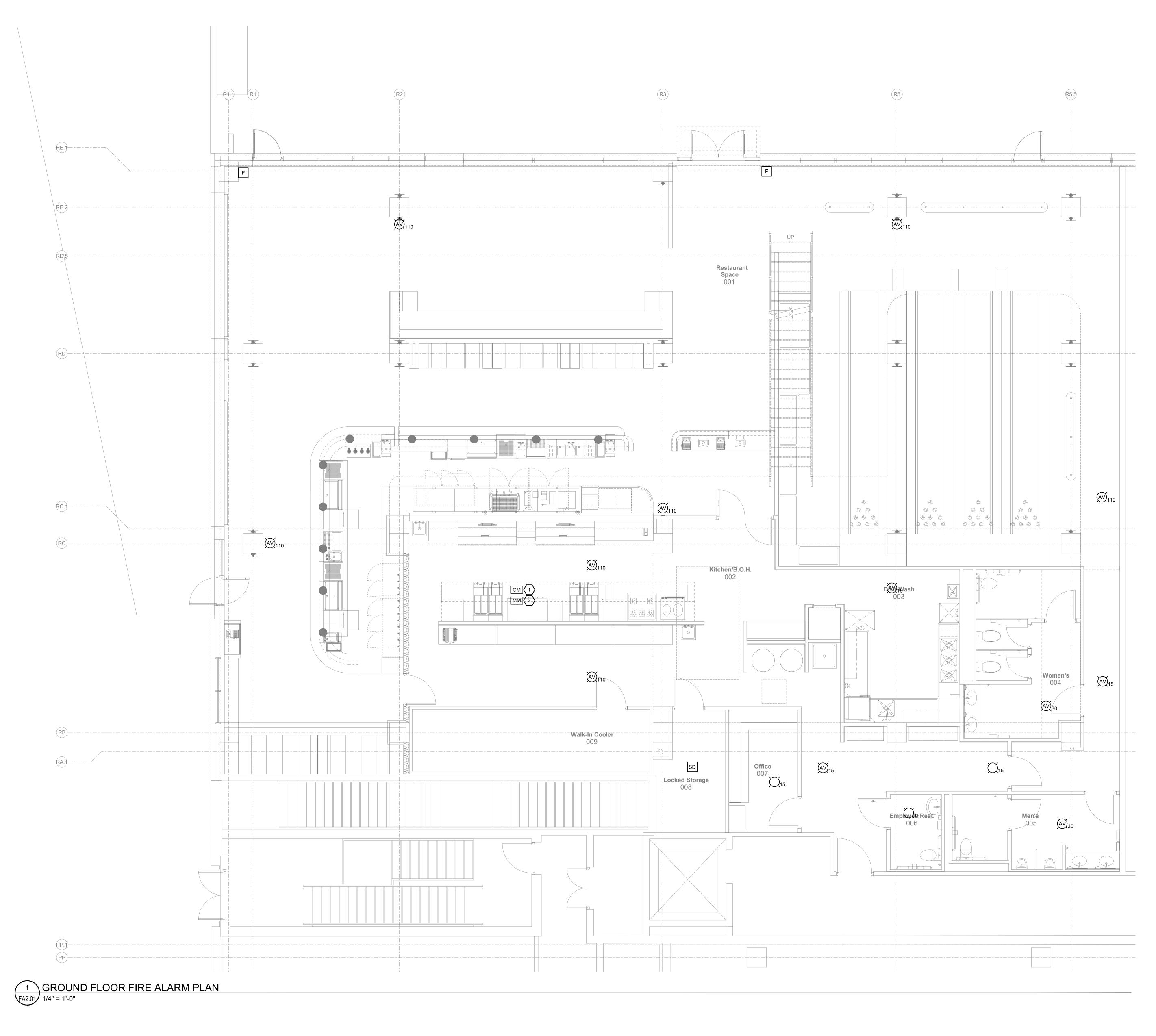
UON UNLESS OTHERWISE NOTED

VDC VOLTS DIRECT CURRENT

VAC VOLTS ALTERNATING CURRENT





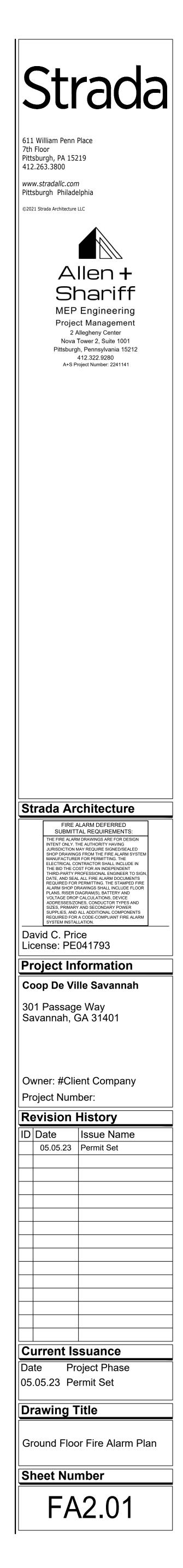


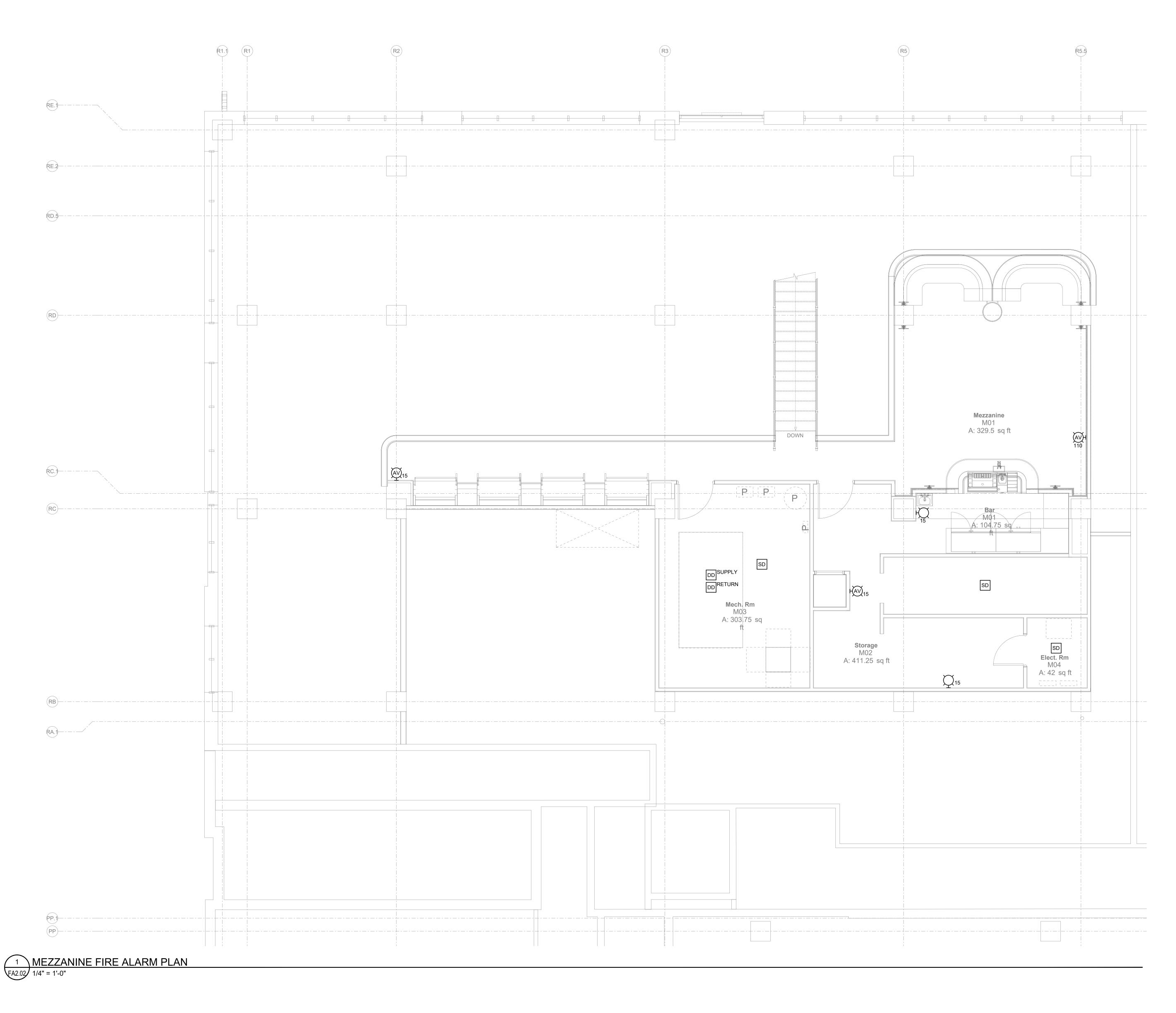
FIRE ALARM GENERAL NOTES:

- REFER TO PARTIAL FIRE ALARM RISER DIAGRAM 1/FA401 FOR GENERAL FIRE ALARM SYSTEM NOTES.
- FIRE STOP ALL FIRE RATED FLOORS, CEILINGS, AND WALLS AS REQUIRED BY CODE. PENETRATIONS INTO OR THROUGH FIRE RESISTANCE RATED WALLS SHALL COMPLY WITH IBC CHAPTER 7.
- 3. PROVIDE EXPANSION FITTINGS AS REQUIRED AT ALL EXPANSION JOINTS. COORDINATE WITH ARCHITECTURAL DRAWINGS.
- 4. WHERE EXPOSED, BRANCH CIRCUITS SHALL BE RUN IN EMT CONDUIT ROUTED PARALLEL AND PERPENDICULAR TO BUILDING STRUCTURE. WHERE CONCEALED WITHIN WALLS OR ABOVE CEILING, MC CABLE IS PERMISSIBLE. EXPOSED CONDUIT SHALL BE PAINTED PER THE ARCHITECTURAL DRAWINGS.
- THE COLOR OF FIRE ALARM NOTIFICATION DEVICES SHALL BE VERIFIED WITH ARCHITECT PRIOR TO PROCUREMENT.
- THE EXACT LOCATION OF ALL DEVICES AND ASSOCIATED EQUIPMENT SHALL BE LOCATED PER NFPA, ADA, AND ALL OTHER CODES HAVING JURISDICTION.

FIRE ALARM KEY NOTES: (#)

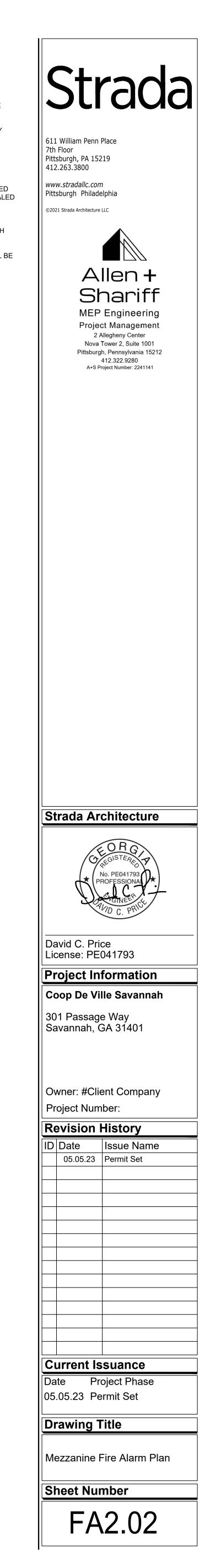
- PROVIDE ADDRESSABLE MODULE TO SHUTOFF GAS SERVICE AND EQUIPMENT IN THE EVENT OF ANSUL SYSTEM ACTIVATION.
- PROVIDE ADDRESSABLE INTERFACE MODULE TO MONITOR HOOD ANSUL SYSTEM.

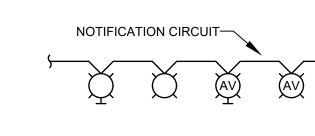




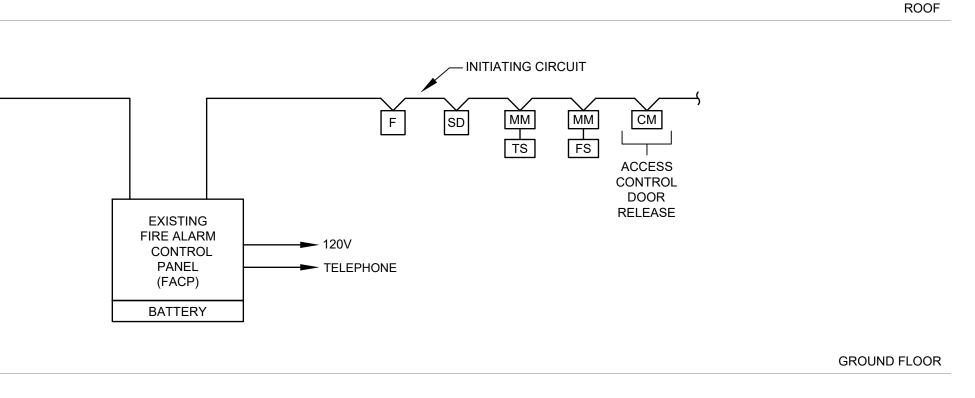
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- THE COLOR OF FIRE ALARM NOTIFICATION DEVICES SHALL BE VERIFIED WITH ARCHITECT PRIOR TO PROCUREMENT.
- THE EXACT LOCATION OF ALL DEVICES AND ASSOCIATED EQUIPMENT SHALL BE LOCATED PER NFPA, ADA, AND ALL OTHER CODES HAVING JURISDICTION.





1 FIRE ALARM RISER DIAGRAM

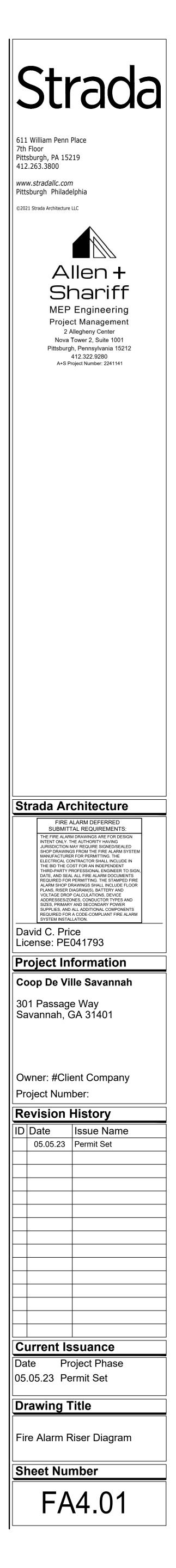


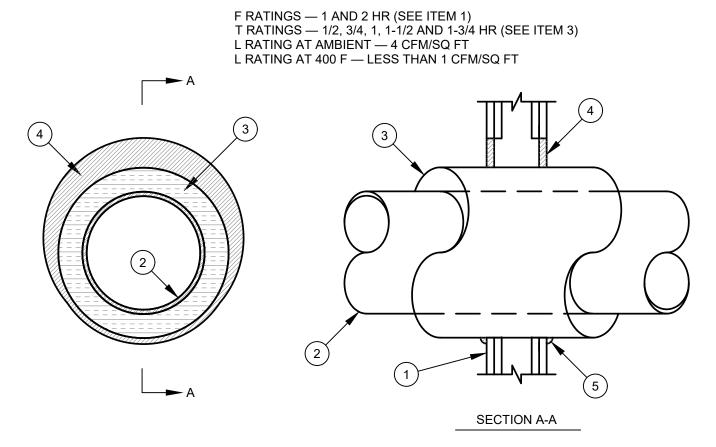
GENERAL FIRE ALARM SYSTEM NOTES:

- 1. REFER TO FLOOR PLAN FOR QUANTITY AND LOCATION OF SYSTEM COMPONENTS. EXACT ARRANGEMENT AND QUANTITY OF DEVICES SHALL BE INDICATED ON THE SHOP DRAWINGS. PROVIDE COMPLETE RISER DIAGRAM AS PART OF SHOP DRAWINGS.
- 2. VERIFY WIRING SIZES WITH THE FIRE ALARM SYSTEM MANUFACTURER AND INSTALL AS DIRECTED. DO NOT LOAD ANY CIRCUIT BEYOND 80% OF RATED CAPACITY. ADD CIRCUITS AS REQUIRED AND SUBMIT CALCULATIONS TO SUBSTANTIATE.
- 3. FIRE ALARM WIRING SHALL BE ROUTED VIA A SEPARATE CONDUIT SYSTEM (3/4" MINIMUM). FIRE RATED MC CABLE IS ACCEPTABLE WHERE CONCEALED. MC CABLE SHALL BE COLORED RED. PROVIDE CONDUIT SLEEVES WITH ESCUTCHEON PLATES WHERE PASSING THROUGH WALLS, FLOOR, OR CEILINGS. WIRING SHALL BE INSTALLED IN THE APPROPRIATE RACEWAY TO MEET THE SURVIVABILITY REQUIREMENTS OF THE LOCAL JURISDICTION.
- 4. FIRE ALARM CIRCUITS SHALL BE CLEARLY IDENTIFIED AT TERMINAL AND JUNCTION LOCATIONS IN COMPLIANCE WITH 2017 NEC SECTION 760.30.
- 5. PROVIDE ADDITIONAL POWER SUPPLIES, BATTERIES, EXTENDER PANELS, ETC. AS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. PROVIDE BATTERY CALCULATIONS, WIRING DIAGRAMS, EQUIPMENT CUTS, ETC. AS PART OF THE SHOP DRAWING SUBMITTAL.
- 6. CANDELA RATING SHALL BE PER 2016 NFPA-72 CHAPTER 18 REQUIREMENTS. ALL VISUAL AND AUDIO DEVICES SHALL BE SYNCHRONIZED.
- 7. AUDIBLE ALARM SYSTEM SOUND PRESSURE LEVELS SHALL COMPLY WITH 2018 IBC SECTION 907.5.2.1.
- 8. COORDINATE WITH DIVISION 23 TO PROVIDE DUCT DETECTORS WHERE REQUIRED FOR HVAC EQUIPMENT. COORDINATE LOCATION OF REMOTE TEST SWITCHES WITH OWNER PRIOR TO INSTALLATION. THESE SHALL BE LOCATED IN UTILITY OR BACK OF HOUSE SPACES.
- 9. COORDINATE THE EXACT QUANTITY OF TAMPER, FLOW, AND PRESSURE SWITCH CONNECTIONS, AS APPLICABLE, WITH DIVISION 21 PRIOR TO PROCUREMENT.
- 10. PROVIDE 120V CONNECTION, DUCT DETECTOR(S), ADDRESSABLE CONTROL MODULE, AND REMOTE TEST SWITCH FOR EACH FIRE SMOKE AND SMOKE DAMPER. COORDINATE QUANTITY AND LOCATION WITH DIVISION 23. COORDINATE LOCATION OF REMOTE TEST SWITCHES WITH OWNER PRIOR TO INSTALLATION. THESE SHALL BE LOCATED IN UTILITY OR BACK OF HOUSE SPACES.
- 11. PROVIDE ADDRESSABLE CONTROL MODULES TO INTERFACE WITH ALL ACCESS CONTROLLED DOORS AS REQUIRED BY CODE.
- 12. THE COMPLETED FIRE ALARM SYSTEM SHALL BE FULLY TESTED IN ACCORDANCE WITH NFPA-72 AND LOCAL FIRE DEPARTMENT REQUIREMENTS BY THE INSTALLER, IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE AND THE LOCAL FIRE MARSHALL. UPON COMPLETION OF A SUCCESSFUL TEST, THE INSTALLER SHALL SO CERTIFY, IN WRITING, TO THE OWNER AND GENERAL CONTRACTOR.
- 13. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS, PRODUCTS, EXECUTION, AND INSTALLATION OF THE FIRE ALARM SYSTEM.
- 14. NEW EQUIPMENT AND DEVICES SHALL BE COMPATIBLE WITH THE EXISTING SYSTEM.
- 15. PROVIDE EXTENSION OF EXISTING FIRE ALARM CIRCUITS TO SUPPLY NEW FIRE ALARM DEVICES. WHERE EXISTING CIRCUITS ARE NOT SIZED TO ACCOMMODATE ADDITIONAL FIRE ALARM DEVICES, PROVIDE NEW FIRE ALARM CIRCUIT(S).
- 16. THE COMPLETE EXTENT OF THE EXISTING FIRE ALARM SYSTEM HAS NOT BEEN REPRESENTED ON THIS RISER DIAGRAM. EXISTING FIRE ALARM CONNECTIONS TO OTHER SYSTEMS, INCLUDING DUCT DETECTORS, FIRE SMOKE AND SMOKE DAMPERS, FIRE PROTECTION SYSTEM INTERFACES, ELEVATOR CONNECTIONS, AND RELATED EQUIPMENT (NOT SHOWN) SHALL REMAIN IN PLACE AND IN SERVICE DURING THIS RENOVATION. WHERE REQUIRED, EC SHALL RELOCATE ALL TEST SWITCHES ASSOCIATED WITH EXISTING EQUIPMENT TO MAINTAIN ACCESSIBILITY IN NEW CEILINGS. EXTEND FIRE ALARM CIRCUIT(S) AS REQUIRED.

FIRE ALARM PERMIT NOTE: THE E.C. BID SHALL INCLUDE THE COST FOR AN INDEPENDENT THIRD PARTY PROFESSIONAL ENGINEER TO SIGN, DATE, AND SEAL ALL FIRE ALARM DOCUMENTS REQUIRED FOR BUILDING PERMIT. THE FIRE ALARM DOCUMENTS INCLUDED WITH THE E-SERIES DRAWINGS ARE PROVIDED FOR FIRE ALARM DESIGN INTENT. THE AUTHORITY HAVING JURISDICTION MAY REQUIRE SIGNED/SEALED MANUFACTURER SHOP DRAWINGS (BY THE INDEPENDENT THIRD PARTY) FOR PERMIT APPROVAL BEYOND THE DOCUMENTS CONTAINED IN THE E-SERIES DRAWINGS. THE FIRE ALARM SHOP DRAWINGS SHALL INCLUDE AT A MINIMUM FIRE ALARM FLOOR PLANS AND A RISER DIAGRAM. EACH PLAN OR RISER SHALL INDICATE THE NUMBER AND TYPES OF FIRE ALARM DEVICES INSTALLED ON EACH CIRCUIT, DEVICE ADDRESSES, CONDUCTOR TYPES AND SIZES, FIRE ALARM ZONES, PRIMARY AND

SECONDARY POWER SUPPLIES (AS NECESSARY), AND ALL NEW FIRE ALARM DEVICES AS ADDED TO EXISTING CIRCUITS. DOCUMENTS SHALL ALSO CONTAIN BATTERY AND VOLTAGE DROP CALCULATIONS.



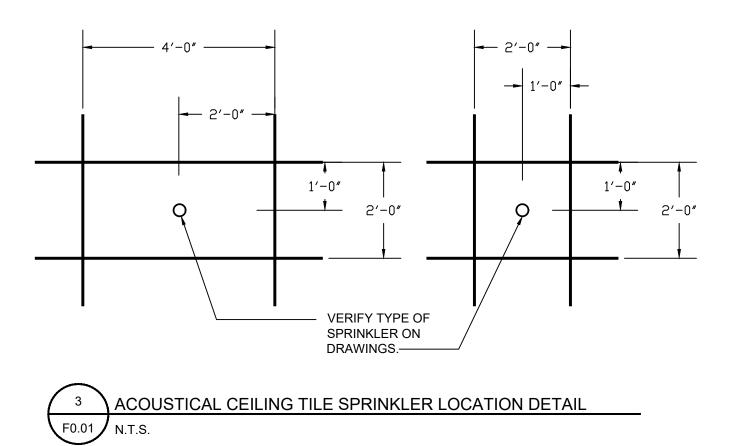


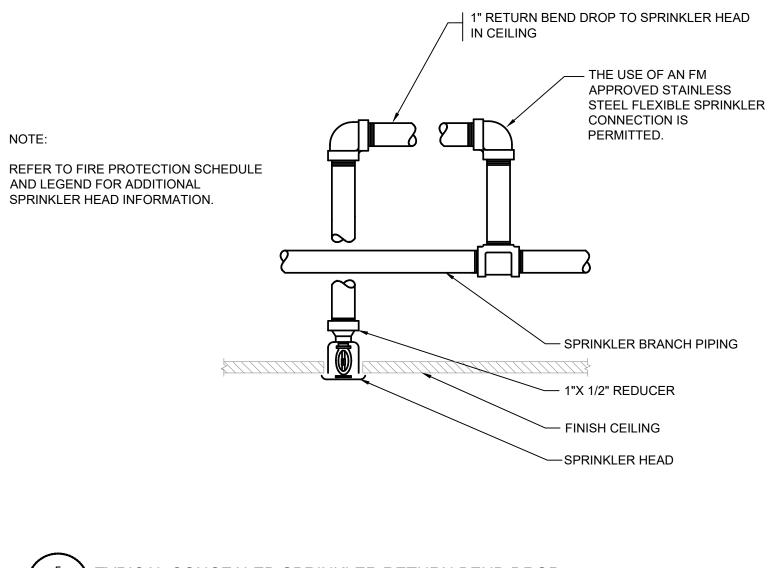
WALL	THROUGH	PENETRANT	PIPE	ANNULA	R SPACE	
ASSEMBLY RATING HR	TYPE +	MAX DIAM IN.	COVERING THKNS IN.	MIN IN.	MAX IN.	- T RATING HR
1	А	4	1	0	1-1/2	1/2
1	B or C	2	1 or 1-1/2	0	1-1/2	1/2
1	А	4	1-1/2	0	1-1/2	1
1	А	12	2	0	1-7/8	3/4
1	B or C	6	2	0	1-7/8	1
2	А	4	1	0	1-1/2	1
2	B or C	4	1 or 1-1/2	0	1-1/2	1
2	B or C	6	2	0	1-7/8	1
2	А	4	1-1/2	0	1-1/2	1-3/4
2	А	12	2	0	1-7/8	1-1/2
2	B or C	6	2	0	1-7/8	1

+INDICATES PENETRANT TYPE AS ITEMIZED IN ITEM 2.

- 1. WALL ASSEMBLY THE 1 OR 2 HR FIRE-RATED GYPSUM BOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES: A. STUDS — WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. LUMBER SPACED 16 IN. OC. STEEL STUDS TO BE MIN 2-1/2 IN. WIDE AND SPACED MAX 24 IN. OC. B. GYPSUM BOARD* — 5/8 IN. THICK, 4 FT WIDE, WITH SQUARE OR TAPERED EDGES. THE GYPSUM BOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN. MAX DIAM OF OPENING IS 18-5/8 IN. THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS
- INSTALLED. 2. THROUGH PENETRANTS — ONE METALLIC PIPE OR TUBING TO BE CENTERED WITHIN THE FIRESTOP SYSTEM. PIPE OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR TUBING MAY BE USED: A. STEEL PIPE — NOM 12 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE. C. COPPER TUBING — NOM 6 IN. DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
- B. IRON PIPE NOM 12 IN. DIAM (OR SMALLER) CAST OR DUCTILE IRON PIPE. D. COPPER PIPE — NOM 6 IN. DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE. 3. PIPE COVERING* — NOM 1, 1-1/2 OR 2 IN. THICK HOLLOW CYLINDRICAL HEAVY DENSITY (MIN 3.5 PCF) GLASS FIBER UNITS JACKETED ON THE OUTSIDE WITH AN ALL SERVICE JACKET. LONGITUDINAL JOINTS SEALED WITH METAL FASTENERS OR FACTORY-APPLIED SELF-SEALING LAP TAPE. TRANSVERSE JOINTS SECURED WITH METAL FASTENERS OR WITH BUTT TAPE SUPPLIED WITH THE PRODUCT. 3A. PIPE COVERING* — (NOT SHOWN) — AS AN ALTERNATE TO ITEM 3, MAX 2 IN. THICK CYLINDRICAL CALCIUM SILICATE (MIN 14 PCF) UNITS SIZED TO THE OUTSIDE DIAM OF THE PIPE OR TUBE MAY BE USED. PIPE INSULATION SECURED WITH STAINLESS STEEL BANDS OR MIN 8 AWG STAINLESS STEEL WIRE SPACED MAX 12 IN. OC. WHEN THE ALTERNATE PIPE COVERING IS USED, THE T RATING SHALL BE DETERMINED FROM THE TABLE ABOVE.
- 4. FILL, VOID OR CAVITY MATERIAL* SEALANT (HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC FS-ONE SEALANT) MIN 5/8 IN. THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTH
- ON BOTH SURFACES OF WALL. 5. 1/2" BEAD OF SEALANT WHERE PIPING IS TIGHT TO WALL.
- *BEARING THE UL CLASSIFICATION MARK

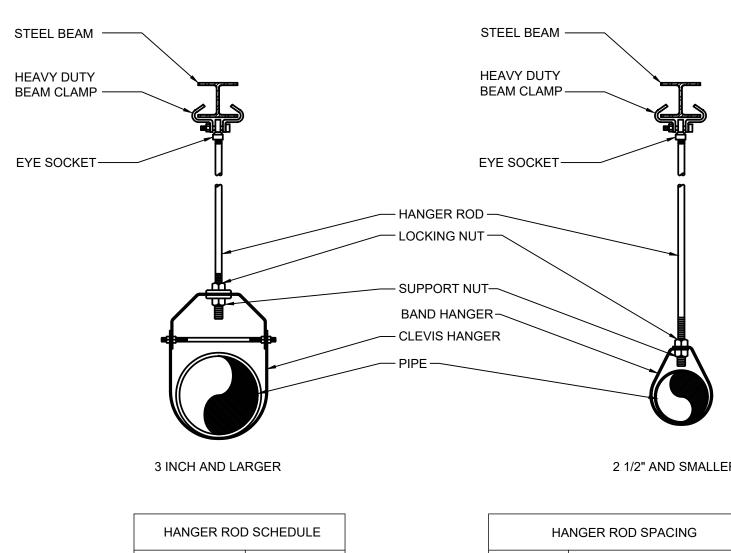
PIPE PENETRATION DETAIL - DRYWALL FP0.01 NOT TO SCALE



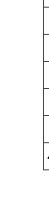


⁵ TYPICAL CONCEALED SPRINKLER RETURN BEND DROP P0.01 NOT TO SCALE

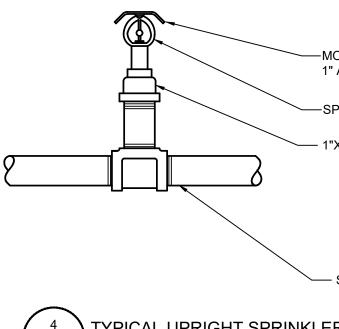
SPRINKL	SPRINKLER SCHEDULE													
SYMBOL	TYPE	SPRINKLER MODEL #	SIN	K FACTOR	ORIFICE	TEMP RATING	PRESSURE RATING	BULB OR LINK	SPRINKLER FINISH	ESCUTCHEON TYPE AND FINISH				
۲	UPRIGHT	TYCO	TY3531	5.6	1/2"	155°F	175	QUICK RESPONSE BULB	BRASS					
0	CONCEALED	TYCO	TY3531	5.6	1/2"	165°F	175	QUICK RESPONSE BULB	BRASS	FLAT - PROVIDE CUSTOM COLORS				
ODP	RECESSED DRY PENDENT	TYCO	TY3235	5.6	1/2"	165°F	175	QUICK RESPONSE BULB	BRASS	FLAT - WHITE				













SURFACES OF WALL . AT THE POINT CONTACT LOCATION BETWEEN PIPE COVERING AND GYPSUM BOARD, A MIN 1/2 IN. DIAM BEAD OF FILL MATERIAL SHALL BE APPLIED AT THE PIPE COVERING/GYPSUM BOARD INTERFACE

2 1/2" AND SMALLER

HANGER ROD SPACING										
PIPE SIZE	MAX. ALLOWABLE SPACING									
1"	8'									
1 1/4"	10'									
1 1/2"	10'									
2" THRU 3"	12'									
4" THRU 10"	15'									

1" AND 12" FROM DECK ABOVE

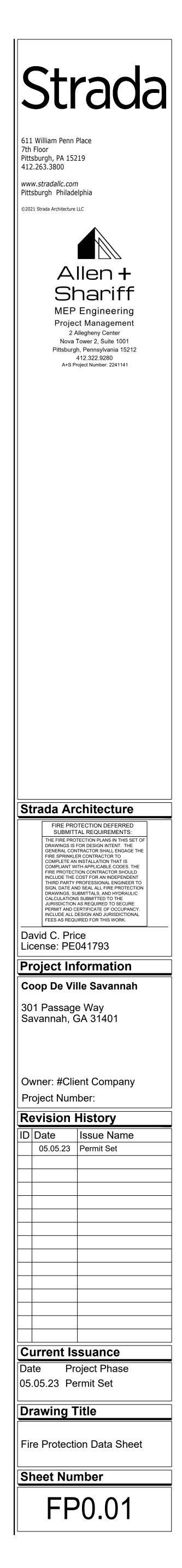
—SPRINKLER HEAD

— 1"X 1/2" REDUCER

- SPRINKLER BRANCH PIPING

	FIR	E PROTECTION SCHEDULE AND LEGEND
SYMBOL	ABRV.	DESCRIPTION
<u>سر</u>		PIPE TURNED UP
<b>ج</b>		PIPE TURNED DOWN
ᢄ᠆ᡐ᠆ᡝ		PIPE TEE UP
⊱⊖∽⊀		PIPE TEE DOWN
۲−−−−٦		CAPPED PIPE
<u> </u>		PIPE BREAK
0		CONCEALED PENDENT SPRINKLER
۲		UPRIGHT SPRINKLER
O _{DP}		CONCEALED DRY PENDENT
O _{DS}		DRY SPRINKLER
⊖ _{EX}		EXISTING SPRINKLER TO REMAIN
O _{RX}		EXISTING SPRINKLER TO BE REMOVED
×1		CHECK VALVE
L L L	FHV	FIRE HOSE VALVE
۶ ۴		FLOW SWITCH
<del>ب</del> ص		TAMPER SWITCH
۶. ۲.		PRESSURE SWITCH
<del>به</del>	PG	PRESSURE GAUGE
⊱क्रिन ह		OS&Y VALVE
ъ.		OS&Y VALVE WITH TAMPER SWITCH
<b>۶ ۶</b>	F	FIRE PROTECTION PIPING
\$ DF\$	DF	DRY FIRE PROTECTION PIPING
∽D	D	FIRE PROTECTION DRAIN PIPING
<b>۶۰۰۰</b> SP <b> ۲</b>	SP	SPRINKLER PIPING
۶ EXF۶	EXF	EXISTING FIRE PROTECTION PIPING
<b>\$</b> RXF <b>\$</b>	RXF	REMOVE EXISTING FIRE PROTECTION PIPING
NOTE: SOME SY	MBOLS N	IAY NOT BE USED ON DRAWINGS.

NOTE: SOME SYMBOLS MAY NOT BE USED ON DRAWINGS.



## GENERAL INFORMATION

### A. GENERAL

- 1. CONFORM TO GENERAL AND SPECIAL CONDITIONS OF CONTRACT.
- 2. CHECK OTHER PLANS AND SPECIFICATIONS AND FULLY COORDINATE WITH OTHER TRADES, OWNER AND ARCHITECT REQUIREMENTS.
- 3. VISIT SITE, CHECK FACILITIES AND CONDITIONS MAKE NECESSARY OBSERVATIONS, MEASUREMENTS, NOTE CONDITIONS UNDER WHICH WORK IS TO BE PERFORMED, AND TAKE ITEMS INTO CONSIDERATION IN BID.
- 4. SYSTEMS SHALL BE COMPLETE AND WORKABLE IN RESPECTS, AND PLACED IN OPERATION.
- 5. CONTRACTOR SHALL PROVIDE FOR HIS OWN CLEAN-UP, REMOVAL AND LEGAL DISPOSAL OF RUBBISH DAILY. CONTRACTOR SHALL PROTECT THEIR WORK AND EXISTING OR ADJACENT PROPERTY AGAINST WEATHER, TO MAINTAIN THEIR WORK, MATERIALS, APPARATUS AND FIXTURES FREE FROM INJURY OR DAMAGE. ANY WORK DAMAGED BY FAILURE TO PROVIDE PROTECTION REQUIRED. SHALL BE REMOVED AND REPLACED WITH NEW WORK AT THE CONTRACTOR'S EXPENSE.
- 6. ARRANGE FOR AND OBTAIN OWNER'S AND INSURANCE REPRESENTATIVE'S PERMISSION FOR ANY SERVICE SHUTDOWNS. 7. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, SEQUENCES OF
- CONSTRUCTION AND THE SAFETY OF WORKMEN. 8. PIPING, CONTROLS, ETC., SHALL NOT BE INSTALLED, OR ROUTED ABOVE, ELECTRICAL PANELS AND EQUIPMENT OR
- THROUGH ELEVATOR MACHINE ROOMS.
- 9. THE CONTRACTOR SHALL COORDINATE AND OBTAIN A WRITTEN LISTING OF ELECTRICAL CHARACTERISTICS OF FIRE PROTECTION EQUIPMENT FROM ELECTRICAL CONTRACTOR PRIOR TO ORDERING OF EQUIPMENT. ADDITIONAL COMPENSATION WILL NOT BE MADE FOR LACK OF CONTRACTOR COORDINATION OF EQUIPMENT ELECTRICAL CHARACTERISTICS.
- 10. DURING THE BUILDING CONSTRUCTION SOME EXISTING INSTALLATION MAY BE EXPOSED THAT WILL HAVE TO BE CHANGED. ALTERED. REROUTED AND/OR ABANDONED. ANY SUCH WORK WHICH COMES UNDER THE JURISDICTION OF THIS CONTRACTOR SHALL BE DONE BY THIS CONTRACTOR WITHOUT ADDITIONAL COST TO THE OWNER.
- 11. WORK RELATED TO THE EXISTING BUILDING SHALL BE COORDINATED TO MINIMIZE INTERFERENCE OR INTERRUPTION OF NORMAL BUILDING USE BY OWNER. REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR PHASING REQUIREMENTS.
- 12. THE CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING CONDITIONS THAT MAY AFFECT THE BID. ADDITIONAL COMPENSATION WILL NOT BE PROVIDED FOR FAILURE TO REVIEW EXISTING CONDITIONS PRIOR TO BIDDING.
- B. CODES, PERMITS, STANDARDS AND REGULATIONS
- 1. CONFORM TO APPLICABLE CODES (LOCAL, STATE, NATIONAL CODES, NFPA, OSHA, ETC.), GOVERNMENT REGULATIONS, UTILITY COMPANY REQUIREMENTS, AND APPLICABLE STANDARDS.
- 2. OBTAIN PERMITS AND PAY FEES. ARRANGE FOR ALL REQUIRED TESTS, INSPECTIONS AND APPROVALS. PROVIDE COPIES OF INSPECTIONS AND APPROVALS TO THE A/E.
- C. RELATED WORK SPECIFIED ELSEWHERE
- 1. PORARY FIRE PROTECTION. 2. POURED-IN-PLACE CONCRETE
- 3. FINISH PAINTING.
- 4. ELECTRIC POWER WIRING
- D. DRAWINGS
- 1. THE SYSTEMS SHOWN ON THE DRAWINGS ARE DIAGRAMMATIC. CONFIRM DIMENSIONS BY FIELD MEASUREMENT. 2. THE EXACT LOCATIONS FOR APPARATUS, FIXTURES, EQUIPMENT AND PIPING WHICH IS NOT COVERED BY DRAWINGS, SHALL BE OBTAINED FROM THE ARCHITECT OR HIS REPRESENTATIVE IN THE FIELD, AND THE WORK SHALL BE LAID OUT ACCORDINGLY
- 3. DRAWINGS AND SPECIFICATIONS ARE INTENDED TO SUPPLEMENT ONE ANOTHER. ANY MATERIALS OR LABOR CALLED FOR IN ONE BUT NOT THE OTHER SHALL BE PROVIDED.
- . DEMOLITION AND REMOVAL
- 1. DISCONNECT, DISASSEMBLE, CAP, PLUG AND REMOVE PIPING, AND EQUIPMENT INDICATED ON THE DRAWINGS, AND AS REQUIRED FOR THE PROJECT.
- 2. ANY EQUIPMENT DESIGNATED BY OWNER TO BE SALVAGED SHALL BE PROTECTED AND DELIVERED TO THE OWNER'S STORAGE. 3. DEMOLITION TO BE DONE IN A MANNER NOT TO DAMAGE ADJACENT WORK AND NOT AFFECT THE OPERATION OF
- SYSTEMS TO REMAIN IN USE. ANY ITEM TO REMAIN THAT IS DAMAGED BY THE CONTRACTOR OR THAT REQUIRES DAMAGE DUE TO THE ABSOLUTE NECESSITY FOR DEMOLITION REQUIREMENTS SHALL BE REPLACED AND/OR REPAIRED AT HIS EXPENSE.
- 4. OPENINGS ON PIPING THAT REMAIN SHALL BE CAPPED AND PROPERLY SECURED.
- 5. EXAMINE AREAS AND CONDITIONS UNDER WHICH DEMOLITION WORK SHALL BE PERFORMED. CONTRACTOR SHALL COORDINATE WORK WITH OTHER DEMOLITION WORK.
- 6. REMOVE SUPPORTS, HANGERS, AND ACCESSORIES FROM EQUIPMENT AND MATERIAL INDICATED TO BE REMOVED. BASE EQUIPMENT, MATERIALS AND SUBSTITUTIONS
- 1. EQUIPMENT AND MATERIALS SHALL BE NEW, FREE OF DEFECTS AND U.L. LISTED AND F.M. APPROVED IF APPROPRIATE. 2. BASE BID MANUFACTURERS ARE INCLUDED IN SPECIFICATIONS OR LISTED IN SCHEDULE ON DRAWINGS. ANY OTHER
- MANUFACTURER'S ARE CONSIDERED A SUBSTITUTION.
- 3. THE NAME, OR MAKE OF ANY ARTICLE, DEVICE, MATERIAL, FORM OF CONSTRUCTION, FIXTURE, ETC., STATED IN THIS SPECIFICATION, SHALL BE KNOWN AS A "STANDARD".
- 4. PROPOSALS SHALL BE BASED ON "STANDARDS" SPECIFIED.
- 5. THE EQUIPMENT SCHEDULES ON DRAWINGS INDICATE MANUFACTURERS EQUIPMENT MODEL NUMBERS UPON WHICH DESIGN HAS BEEN BASED. THE USE OF OTHER MANUFACTURERS EQUIPMENT THAT IS LISTED AS ACCEPTABLE ALTERNATES THAT REQUIRES STRUCTURAL CHANGES, CHANGES IN ROOF OPENINGS, CHANGE OF PIPE SIZES & BUILDING CONFIGURATION, ARCHITECTURAL CHANGES, ETC., SHALL BE THE CONTRACTOR'S RESPONSIBILITY. ADDITIONAL COSTS OF SUCH CHANGES SHALL BE PAID BY THE CONTRACTOR SUBMITTING THE ALTERNATES.
- 6. SUBSTITUTIONS ARE SUBJECT TO THE APPROVAL OF THE OWNER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO EVALUATE AND CERTIFY WITH DOCUMENTATION THAT THE SUBSTITUTION IS EQUIVALENT TO THE BASE SPECIFICATIONS.
- 7. IF SUBSTITUTIONS ARE APPROVED, NOTIFY OTHER CONTRACTORS, SUBCONTRACTORS OR TRADES AFFECTED BY SUBSTITUTION AND FULLY COORDINATE. ANY COSTS RESULTING FROM SUBSTITUTION, WHETHER BY CONTRACTOR OR OTHERS, SHALL BE RESPONSIBILITY OF, AND PAID FOR BY SUBSTITUTING CONTRACTOR. APPROVED SHOP DRAWINGS DOES NOT ABSOLVE THIS CONTRACTOR FROM THIS RESPONSIBILITY.
- 8. EQUIPMENT SHALL BE INSTALLED IN FULL ACCORDANCE WITH THE MANUFACTURER'S DATA AND INSTALLATION INSTRUCTIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CHECK AND CONFORM TO THESE REQUIREMENTS.
- G. CHECK, TEST, START, ADJUST, BALANCE AND INSTRUCTIONS 1. AFTER INSTALLATION CHECK EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS, AND REQUIREMENTS OF THE SPECIFICATIONS.
- 2. PIPING SHALL BE TESTED AND FREE OF LEAKS. MAKE REPAIRS NEEDED FOR A LEAK FREE SYSTEM.
- 3. CONCEALED OR INSULATED WORK SHALL REMAIN UNCOVERED UNTIL REQUIRED INSPECTIONS, AND TESTS HAVE BEEN COMPLETED. IF CONSTRUCTION SCHEDULE REQUIRES IT, ARRANGE FOR TESTS ON PARTS OF SYSTEM AS REQUIRED.
- 4. INSTRUCT OWNER IN OPERATION OF SYSTEMS AND SUBMIT OPERATING AND MAINTENANCE MANUAL ON EQUIPMENT AND SYSTEMS AS REQUIRED BY THE SPECIFICATIONS. PROVIDE A MINIMUM OF 2 HOURS OF INSTRUCTION TO OWNER'S REPRESENTATIVE.
- H. CUTTING, PATCHING AND DRILLING
- 1. CUTTING AND PATCHING OF THE BUILDING CONSTRUCTION REQUIRED FOR THIS WORK SHALL BE BY THIS CONTRACTOR. CUTTING SHALL BE IN A NEAT AND WORKMANLIKE MANNER.
- 2. NEATLY SAW CUT RECTANGULAR OPENINGS, SET SLEEVE THROUGH OPENING, AND FINISH PATCH OR PROVIDE TRIM FLANGE AROUND OPENING.
- 3. CORE DRILL AND SLEEVE ROUND OPENINGS.
- 4. DO NOT CUT ANY STRUCTURAL COMPONENTS WITHOUT ARCHITECT'S/ENGINEER'S APPROVAL
- 5. PATCH AND FINISH TO MATCH ADJACENT AREAS THAT HAVE BEEN CUT, DAMAGED OR MODIFIED AS A RESULT OF THE INSTALLATION OF THE MECHANICAL OR ELECTRICAL EQUIPMENT. FIRE STOP PENETRATIONS OF FIRE RATED CONSTRUCTION IN A CODE APPROVED MANNER, AND MAINTAIN FIRE RATING OF ASSEMBLY.
- 6. CONTRACTORS SHALL CONFIRM WITH OWNER/ARCHITECT, PRIOR TO BID, TIMES AVAILABLE FOR NOISE PRODUCING WORK SUCH AS CUTTING AND CORE DRILLING OF FLOORS, WALLS, ETC., AS WELL AS TIMES FOR WORK WHICH REQUIRE ACCESS INTO ADJOINING TENANT SPACES. INCLUDE PREMIUM TIME IN BID.
- WARRANTY
- 1. FULLY WARRANT MATERIALS, EQUIPMENT AND WORKMANSHIP FOR ONE (1) YEAR FROM DATE OF ACCEPTANCE. 2. PROVIDE MANUFACTURER'S WARRANTIES TO OWNER, INCLUDING EXTENDED WARRANTIES.
- 3. REPAIR OR REPLACE WITHOUT CHARGE TO THE OWNER ITEMS FOUND DEFECTIVE DURING THE WARRANTY PERIOD. IN THE CASE OF REPLACEMENT OR REPAIR DUE TO FAILURE WITHIN THE WARRANTY PERIOD, THE WARRANTY ON THAT PORTION OF THE WORK SHALL BE EXTENDED FOR A MINIMUM PERIOD OF ONE (1) YEAR FROM THE DATE OF SUCH
- REPLACEMENT OR REPAIR. J. SHOP DRAWING SUBMITTALS
- 1. SUBMIT SHOP DRAWINGS FOR FIRE PROTECTION SYSTEMS AND EQUIPMENT WITH ADEQUATE DETAILS AND SCALES TO CLEARLY SHOW CONSTRUCTION. INDICATE THE OPERATING CHARACTERISTICS FOR EACH REQUIRED ITEM. CLEARLY IDENTIFY EACH ITEM ON THE SUBMITTAL AS TO MARK, LOCATION AND USE, USING SAME IDENTIFICATION AS PROVIDED ON DESIGN DRAWINGS. SUBMITTALS WITH MULTIPLE ITEMS MUST BE MARKED FOR PROPOSED ITEM.

- LOCATIONS.
- INSTALLATION.
- 6. REFER TO VARIOUS SECTIONS FOR LISTING OF SHOP DRAWINGS REQUIRED ON THIS PROJECT.

- K. RECORD DRAWINGS

- CONDITION, AS A PERMANENT RECORD OF THE INSTALLATION.

## FIRE PROTECTION SPRINKLER SYSTEM

- A. SCOPE

- LAYOUT, AND NEW SYSTEMS.
- HYDRAULIC CALCULATIONS.
- REQUIREMENTS.

## B. DESIGN BASIS

- a. LIGHT-HAZARD OCCUPANCY: 0.10 GPM OVER 1500-SQ. FT. AREA.
- b. STORAGE AREAS: 130 SQ. FT.
- c. EXTRA-HAZARD OCCUPANCIES: 500 GPM (31.5 L/S) FOR 90 TO 120 MINUTES.

- D. PIPING
- a. INSIDE BUILDING:
- FITTINGS; AND THREADED JOINTS.

### F. SPRINKLERS

b. VICTAULIC CO.

c. TYCO

EQUAL.

2. FIRE PROTECTION DRAWINGS SHALL BE FULLY DIMENSIONED BASED ON FIELD VERIFIED BUILDING CLEARANCES AND ARCHITECTURAL CEILING LAYOUTS. INDICATE STRUCTURAL, LIGHTING, DUCTWORK AND PIPING AT ALL CRITICAL

3. CONTRACTOR SHALL REVIEW AND INDICATE HIS APPROVAL OF EACH SHOP DRAWING PRIOR TO SUBMITTAL FOR REVIEW. DO NOT START WORK OR FABRICATION UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED BY THE ENGINEER AND RETURNED TO THE CONTRACTOR.

### 4. SUBMITTALS SHALL BE REVIEWED ONLY FOR GENERAL COMPLIANCE WITH THE CONTRACT DOCUMENTS AND NOT FOR DIMENSIONS OR QUANTITIES. THE SUBMITTAL REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR PURCHASE OF ANY ITEM IN FULL COMPLIANCE WITH THE CONTRACT DOCUMENTS OR ITS COMPLETE AND PROPER

5. WHERE SUBMITTALS VARY FROM THE CONTRACT REQUIREMENTS, THE CONTRACTOR SHALL CLEARLY INDICATE ON SUBMITTAL OR ACCOMPANYING DOCUMENTS THE NATURE AND REASON FOR VARIATIONS.

7. EACH MANUFACTURER OR HIS REPRESENTATIVE SHALL CHECK THE APPLICATION OF HIS EQUIPMENT AND CERTIFY AT TIME OF SHOP DRAWING SUBMITTAL THAT EQUIPMENT HAS BEEN PROPERLY SELECTED AND CAN BE INSTALLED, SERVICED AND MAINTAINED WHERE INDICATED ON DRAWINGS. ADVISE ENGINEER IN WRITING WITH SUBMITTAL DRAWINGS OF ANY POTENTIAL PROBLEMS. THE MANUFACTURER SHALL BE RESPONSIBLE FOR ANY CHANGES THAT MIGHT BE NECESSARY BECAUSE OF PHYSICAL CHARACTERISTICS OF EQUIPMENT THAT HAVE NOT BEEN CALLED TO THE ENGINEER'S ATTENTION AT THE TIME OF SUBMITTAL.

8. FIRE PROTECTION SUBMITTAL SHALL BE SUBMITTED AS A COMPLETE PACKAGE CONSISTING OF PRODUCT CUT SHEETS, DRAWING AND CALCULATIONS. INCOMPLETE PACKAGE WILL BE REJECTED.

1. EACH CONTRACTOR OR SUBCONTRACTOR SHALL KEEP ONE (1) COMPLETE SET OF THE CONTRACT WORKING DRAWINGS ON THE JOB SITE, THE CONTRACTOR SHALL REGULARLY RECORD ANY DEVIATIONS, AND/OR CHANGES FROM CONTRACT DRAWINGS MADE DURING CONSTRUCTION.

2. THESE DRAWINGS SHALL RECORD THE LOCATION OF EQUIPMENT, PIPING, ELECTRIC SERVICE, SEWERS, WASTES, VENTS, DUCTS, CONDUIT AND OTHER PIPING, BY MEASURED DIMENSIONS TO EACH SUCH ITEM FROM READILY IDENTIFIABLE AND ACCESSIBLE WALLS OR CORNERS OF THE BUILDING. PLANS ALSO SHALL SHOW INVERT ELEVATION OF SANITARY, AND/OR STORM SEWERS AND TOP ELEVATION OF OTHER BELOW-GRADE LINES.

3. RECORD DRAWINGS SHALL BE KEPT CLEAN AND UNDAMAGED AND SHALL NOT BE USED FOR ANY PURPOSE OTHER THAN RECORDING DEVIATIONS FROM WORKING DRAWINGS AND EXACT LOCATIONS OF CONCEALED WORK. 4. AFTER THE PROJECT IS COMPLETED, THESE SETS OF DRAWINGS SHALL BE DELIVERED TO THE ARCHITECT IN GOOD

1. FURNISH LABOR, MATERIALS AND EQUIPMENT AS REQUIRED TO INSTALL COMPLETE FIRE PROTECTION SYSTEMS FOR PROJECT. SPRINKLER SYSTEM DESIGN AND HYDRAULIC CALCULATIONS SHALL BE PROVIDED WITH THIRD PARTY PROFESSIONAL ENGINEERS STAMP.

2. SPRINKLER WORK FOR PROJECT ESSENTIALLY CONSISTS OF, BUT NOT LIMITED TO, THE FOLLOWING: a. MODIFY EXISTING WET PIPE SPRINKLER SYSTEM AS REQUIRED TO CONFORM TO NEW CEILING AND/OR WALL

b. PREPARE SUBMITTAL DRAWINGS AND HYDRAULIC CALCULATIONS AS REQUIRED FOR APPROVAL BY OWNER'S INSURANCE COMPANY, BUILDING DEPARTMENT, LOCAL AUTHORITY HAVING JURISDICTION AND NFPA REQUIREMENTS. COMPLY WITH NFPA-13 REQUIREMENTS FOR PREPARATION OF DRAWINGS AND CALCULATIONS. PROVIDE REGISTERED PROFESSIONAL ENGINEERS STAMP, SIGNATURE, AND DATE ON SHOP DRAWINGS AND

c. FLUSH AND CONDUCT PRESSURE TEST OF COMPLETED SYSTEM IN ACCORDANCE WITH NFPA AND AUTHORITIES HAVING JURISDICTION. DELIVER ALL CERTIFICATES TO OWNER.

d. OTHER ITEMS INDICATED ON DRAWINGS OR REQUIRED FOR COMPLETE INSTALLATION AND TO SATISFY ALL CODE

g. PIPING SHALL NOT BE INSTALLED AT LOCATIONS SUBJECT TO FREEZING, UNLESS PROVIDED AS DRY PIPE SYSTEM, OR ANTI-FREEZE SYSTEM. PROVIDE FIRE WATCH.

1. DESIGN BASIS FOR SYSTEM SHALL BE PER NFPA 13. LIFE SAFETY CODE 101 IN ACCORDANCE WITH CODE AND LOCAL AUTHORITY HAVING JURISDICTION. SYSTEM SHALL BE A HYDRAULICALLY DESIGNED.

2. PIPE SIZES INDICATED ON DRAWING ARE APPROXIMATE AND SHALL BE VERIFIED BY CONTRACTORS HYDRAULIC DESIGN. 3. STANDARD-PRESSURE PIPING SYSTEM COMPONENT: LISTED FOR 175-PSIG MAXIMUM WORKING PRESSURE.

4. SPRINKLER SYSTEM DESIGN SHALL BE APPROVED BY AUTHORITIES HAVING JURISDICTION, AND OWNER'S INSURANCE UNDERWRITER. PRIOR TO START OF CONSTRUCTION. 5. PROVIDE MARGIN OF SAFETY FOR AVAILABLE WATER FLOW AND PRESSURE AND 10 PERCENT.

6. SPRINKLER OCCUPANCY HAZARD CLASSIFICATIONS: a. BUILDING SERVICE AREAS: ORDINARY HAZARD, GROUP 1 b. ELECTRICAL EQUIPMENT ROOMS: ORDINARY HAZARD, GROUP 1 c. GENERAL STORAGE AREAS: ORDINARY HAZARD, GROUP 1. d. MECHANICAL EQUIPMENT ROOMS: ORDINARY HAZARD, GROUP 1 e. OFFICE AND PUBLIC AREAS: LIGHT HAZARD.

f. RESTAURANT SERVICE AREAS: ORDINARY HAZARD, GROUP 1 7. MINIMUM DENSITY FOR AUTOMATIC-SPRINKLER PIPING DESIGN:

### b. ORDINARY-HAZARD, GROUP 1 OCCUPANCY: 0.15 GPM OVER 1500-SQ. FT. AREA. c. ORDINARY-HAZARD, GROUP 2 OCCUPANCY: 0.20 GPM OVER 1500-SQ. FT. AREA. d. EXTRA-HAZARD, GROUP 1 OCCUPANCY: 0.30 GPM OVER 2500-SQ. FT. AREA. e. EXTRA-HAZARD, GROUP 2 OCCUPANCY: 0.40 GPM OVER 2500-SQ. FT. AREA. f. SPECIAL OCCUPANCY HAZARD: AS DETERMINED BY AUTHORITIES HAVING JURISDICTION. g. DRY SYSTEM: INCREASE SYSTEM AREA OF OPERATION BY 30% WITHOUT REVISING THE DENSITY.

### 8. MAXIMUM PROTECTION AREA PER SPRINKLER: a. OFFICE AND PUBLIC SPACES: 225 SQ. FT. (20.9 SQ. M)

c. MECHANICAL EQUIPMENT ROOMS: 130 SQ. FT. d. ELECTRICAL EQUIPMENT ROOMS: 130 SQ. FT.

e. OTHER AREAS: ACCORDING TO NFPA 13 RECOMMENDATIONS UNLESS OTHERWISE INDICATED.

9. TOTAL COMBINED HOSE-STREAM DEMAND REQUIREMENT: ACCORDING TO NFPA 13 UNLESS OTHERWISE INDICATED: a. LIGHT-HAZARD OCCUPANCIES: 100 GPM (6.3 L/S) FOR 30 MINUTES. b. ORDINARY-HAZARD OCCUPANCIES: 250 GPM (15.75 L/S) FOR 60 TO 90 MINUTES.

## C. DRAWINGS AND CALCULATIONS

1. CONTRACTOR SHALL PREPARE SUBMITTAL DRAWING AND HYDRAULIC CALCULATIONS FOR SPACE IN ACCORDANCE WITH OWNER'S INSURANCE COMPANY AND BUILDING DEPARTMENT REQUIREMENTS. DRAWINGS AND CALCULATIONS SHALL BE PERFORMED BY A REGISTERED PROFESSIONAL ENGINEER. PROVIDE PROFESSIONAL ENGINEERS STAMP, SIGNATURE, AND DATE ON DRAWINGS AND HYDRAULIC CALCULATIONS.

2. CONTRACTOR SHALL OBTAIN FLOW TEST DATA ON CITY WATER MAIN AND SUBMIT DATA WITH CALCULATIONS. PERFORM FLOW TEST IF DATA IS OLDER THAN ONE YEAR.

3. CONTRACTOR SHALL BE STATE AND LOCAL CERTIFIED.

1. PIPING SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 13, 14 AND 24 REQUIREMENTS.

2. FIRE PROTECTION PIPING SHALL BE AS FOLLOWS:

- 2 INCH AND SMALLER: THREADED-END, SCHEDULE 40 STEEL PIPE; CAST- OR MALLEABLE-IRON THREADED

- 2 1/2 INCH AND LARGER: GROOVED-END, SCHEDULE 10 STEEL PIPE; GROOVED-END FITTINGS; GROOVED-END-PIPE COUPLINGS; AND GROOVED JOINTS.

b. CONTRACTOR SHALL ARRANGE FOR SHUTDOWN OF EXISTING SYSTEM WITH LANDLORD, OWNER MAINTENANCE AND FIRE ALARM PERSONNEL, AND INSURANCE UNDERWRITER. PROVIDE FIRE WATCH WHILE SYSTEM IS SHUT DOWN. c. FLUSH PIPING UPON COMPLETION OF PROJECT AND TEST PER NFPA 13.

1. SPRINKLERS SHALL BE AS SCHEDULED ON DRAWINGS

2. SPRINKLERS SHALL MATCH EXISTING BASE BUILDING STANDARDS.

3. BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE THE PRODUCT INDICATED IN SPECIFICATION OR A COMPARABLE PRODUCT BY ONE OF THE FOLLOWING MANUFACTURERS: a. VIKING CORPORATION

4. INSTALL HIGHER TEMPERATURE SPRINKLER HEADS AS REQUIRED BY CODE OR APPLICATION.

G. HANGERS AND SUPPORTS 1. HANGERS FOR BLACK OR GALVANIZED STEEL PIPE SHALL BE MANUFACTURED BY CADDY HANGER CO., MODEL NO. 100, OR APPROVED EQUAL.

2. HANGERS FOR COPPER TUBING SHALL BE MANUFACTURED BY CADDY HANGER CO., MODEL NO. 102-A, OR APPROVED

3. TRAPEZE HANGERS OF A TYPE APPROVED BY THE ENGINEER MAY BE USED WHERE PIPES ARE DESIGNED TO RUN PARALLEL AND AT THE SAME ELEVATION.

4. STRAP HANGERS SHALL NOT BE PERMITTED.

- 5. CONTRACTOR SHALL PROVIDE RISER CLAMPS FOR VERTICAL PIPING AT EACH LEVEL. RISER CLAPS SHALL BE MICHIGAN HANGER CO., MODEL NO. 510 FOR STEEL PIPING AND MODEL NO. 511 FOR COPPER TUBING OR APPROVED EQUAL. USE "SHORT-END" RISER CLAMPS WHERE SPACE IS LIMITED.
- 6. IN CONCRETE, MICHIGAN HANGER CO., MODEL NO. 355 INSERTS, OR APPROVED EQUAL. INSERTS SHALL PERMIT ADJUSTMENT FROM 3/4 INCH THROUGH 1-1/4 INCH. IN METAL DECKS, CONTRACTOR SHALL PROVIDE REDHEAD SDI INSERTS, OR APPROVED EQUAL. POWDER PROPELLED INSERTS WILL BE PERMITTED IN NEW CONSTRUCTION WHERE TYPE AND LOCATION ARE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
- 7. CONTRACTOR SHALL PROVIDE SIDE BEAM CLAMPS FOR SUPPORTING PIPING FROM STRUCTURAL STEEL MEMBERS.
- 8. WHERE OTHER MEANS OF SUPPORT PIPING ARE REQUIRED OR DESIRED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE ENGINEER'S APPROVAL PRIOR TO INSTALLING THOSE SUPPORTS.

9. HANGER SHALL BE PROVIDED AT EACH CHANGE OF DIRECTION.

HANGERS AND SUPPORTS SHALL BE SPACED AT INTERVALS WHICH WILL PREVENT SAGGING AND 10. REDUCE STRAIN ON VALVES AND SPECIALTIES. HANGER SPACING SHALL BE NO GREATER AND ROD SIZE SHALL BE NO SMALLER THAN THAT SHOWN IN THE FOLLOWING TABLE. HANGERS SHALL ALLOW FOR EXPANSION AND CONTRACTION. HANGERS AND SUPPORTS MUST COMPLY WITH NFPA-13 REQUIREMENTS.

ROD SIZE

FERROUS PIPING AND COP	PPER TUBING:
DIAMETER OF PIPE	MAXIMUM SPACING

UP TO 1" 1-1/4" TO 1-1/2" 2" THRU 3" 4" AND 5"	8 FT. 10 FT 12 FT 15 FT	
6" AND LARGER	15 FT	

- RISER CLAMPS SHALL BE INSTALLED ABOVE THE FLOOR AT EACH LEVEL. RISER CLAMPS MAY BE 11. SUSPENDED BELOW FLOOR LEVEL, WITH HANGER RODS AND INSERTS, WHERE THE INSTALLATION OF ESCUTCHEON PLATES IS REQUIRED.
- J. VALVES 1. BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE THE PRODUCT INDICATED IN SPECIFICATION OR A COMPARABLE PRODUCT BY ONE OF THE FOLLOWING MANUFACTURERS: a. VIKING CORPORATION b. VICTAULIC CO.

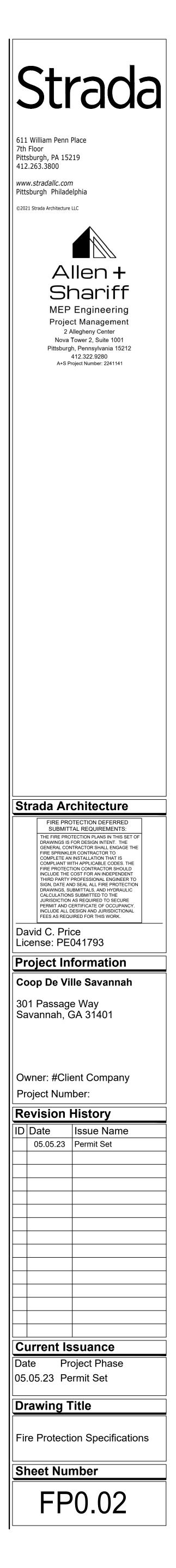
c. NIBCO d. APOLLO

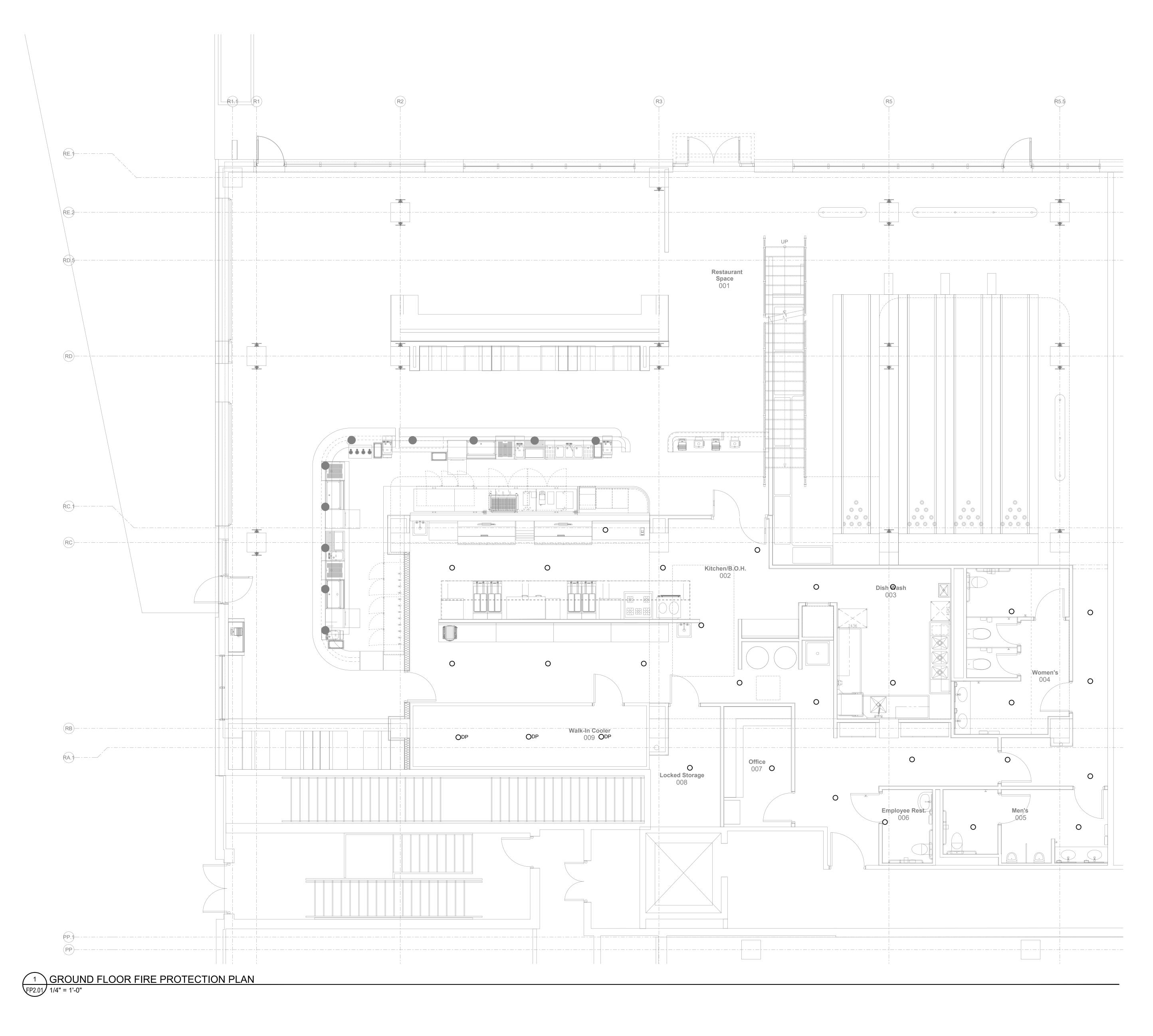
2. INSTALL VALVES AND TRIM AS REQUIRED BY NFPA 13 AND 24, "UL" LISTED AND "FM" APPROVED. 3. SHUT-OFF VALVES SHALL BE FITTED WITH TAMPER SWITCHES BY FIRE PROTECTION CONTRACTOR AND WIRED BY ELECTRICAL CONTRACTOR. COORDINATE LOCATIONS WITH ELECTRICAL CONTRACTOR.

- 4. BALL VALVES: a. 2-INCHES AND SMALLER: SHALL BE RATED FOR A MINIMUM OF 400 PSI WOG, VALVE BODY CONSTRUCTED OF BRONZE, 2-PIECE BODY, STANDARD PORT, WITH TEFLON SEATS AND SEALS, AND BLOW-OUT PROOF STEMS. VALVES SHALL HAVE LOCKABLE HANDLES AND SHALL BE UL LISTED AND FM APPROVED. THEY SHALL HAVE THREADED ENDS FOR USE IN STEEL PIPING. BALL VALVES SHALL BE VICTAULIC SERIES 722. VALVES SHALL BE PROVIDED WITH TAMPERPROOF SWITCHES.
- 7. BUTTERFLY VALVES: a. 2-INCHES TO 8-INCHES: SHALL BE RATED FOR A MINIMUM OF 300 PSI FIRE PROTECTION SERVICE, FACTORY COATED DUCTILE IRON BODY WITH GROOVED ENDS AND NICKEL COATED DUCTILE IRON DISC WITH NITRILE SEATS. VALVES SHALL BE UL LISTED AND FM APPROVED. PROVIDE VALVE WITH FACTORY MOUNTED ACTUATOR WITH INDICATOR FLAGS AND SUPERVISORY SWITCH. VALVES SHALL BE VICTAULIC SERIES 705W. VALVES SHALL BE PROVIDED WITH TAMPERPROOF SWITCHES.
- 8. OS&Y GATE VALVES WITH TAMPER SWITCH: a. 2 1/2-INCHES TO 12-INCHES: SHALL BE RATED FOR A MINIMUM OF 250 PSI FIRE PROTECTION SERVICE, FACTORY COATED DUCTILE IRON BODY WITH GROOVED ENDS AND EPDM COATED CAST IRON DISC. VALVES SHALL SEAL IN OPEN POSITION. VALVES SHALL BE UL LISTED AND FM APPROVED. PROVIDE VALVE WITH STEM MOUNTED SUPERVISORY SWITCH FROM POTTER ROEMER MODEL 6220. VALVES SHALL BE VICTAULIC SERIES 771H
- 9. CHECK VALVES: a. 2-INCHES AND LARGER: SHALL BE RATED FOR A MINIMUM OF 250 PSI FIRE PROTECTION SERVICE, FACTORY COATED DUCTILE IRON BODY WITH GROOVED ENDS AND ELASTOMER-COATED DUCTILE IRON DISC. VALVES SHALL BE INSTALLED HORIZONTAL AND VERTICAL POSITIONS. VALVES SHALL BE UL LISTED AND FM APPROVED. VALVES SHALL BE VICTAULIC VALVE SERIES 717.
- 10. PROVIDE VALVE TAGS AND VALVE CHART PER ASME A13.1 SCHEME FOR THE IDENTIFICATION OF PIPING SYSTEMS. PROVIDE BUILDING PLAN SHOWING LOCATIONS OF VALVES. L. PIPE IDENTIFICATION
- 1. CONTRACTOR SHALL PROVIDE IDENTIFICATION LABELS, TAGS, ETC., FOR FIRE PROTECTION PIPING AS INDICATED ON THE DRAWINGS AND AS SPECIFIED HEREIN.
- 2. PRESSURE SENSITIVE PIPE MARKERS SHALL BE MANUFACTURED BY THE BRADY CO., OR APPROVED EQUAL. PIPE MARKERS SHALL BE MANUFACTURER'S STANDARD PRODUCT. M. FIRESTOPPING
- 1. SERVICES THAT PASS THRU FIRE OR SMOKE RATED PARTITIONS, WALLS, FLOORS, SHALL BE FIRESTOPPED. FIRE STOPPING SYSTEM RATING SHALL MATCH PARTITION RATING. FIRE STOPPING SYSTEM SHALL MEET THE REQUIREMENTS OF BUILDING CODE.
- 2. FIRESTOPING AND/OR SMOKE STOPPING MATERIAL AND INSTALLATION SHALL BE AS MANUFACTURED BY HILTI OR APPROVED EQUAL.

END OF FIRE PROTECTION SPECIFICATIONS

BEAM CLAMPS SHALL BE MANUFACTURED BY MICHIGAN HANGER CO., MODEL 300 OR APPROVED EQUAL.

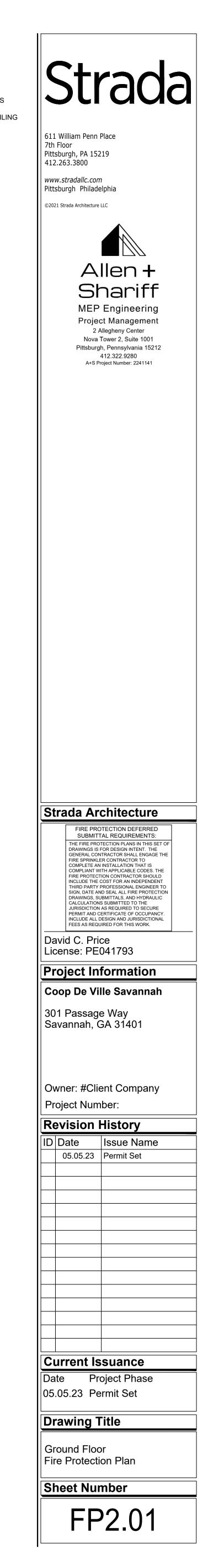


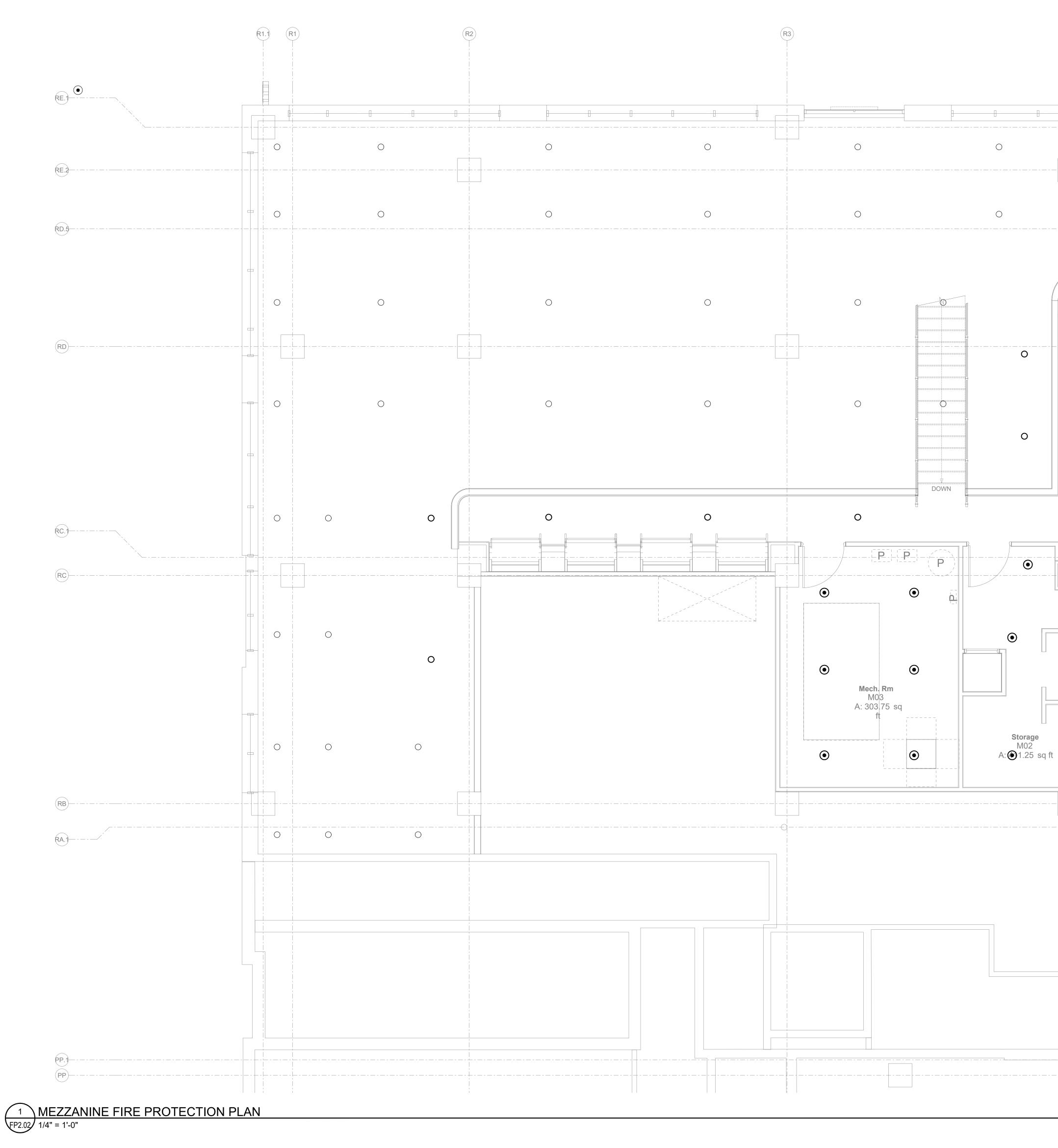


FIRE PROTECTION GENERAL NOTES:

 COORDINATE DRAINING AND FILLING OF SPRINKLER SYSTEMS WITH OWNER'S MAINTENANCE AND FIRE ALARM PERSONNEL.
 COORDINATE SPRINKLER LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS.

FIRE PROTECTION KEY NOTES: (#)





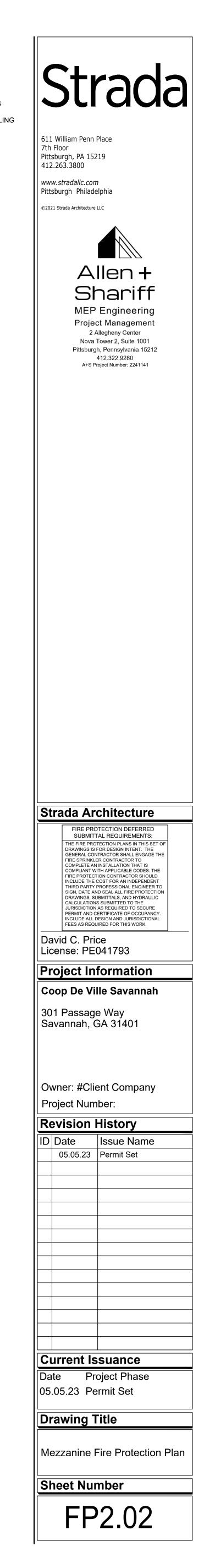
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FIRE PROTECTION GENERAL NOTES:

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 COORDINATE SPRINKLER LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS.

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FIRE PROTECTION KEY NOTES: (#)



## GENERAL MECHANICAL NOTES (ALL DRAWINGS):

- 1. MECHANICAL CONTRACTOR SHALL PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE HVAC SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED AND REQUIRED BY CODE.
- THE CONTRACT DOCUMENT DRAWINGS ARE DIAGRAMMATIC ONLY, AND ARE INTENDED TO CONVEY THE SCOPE AND GENERAL ARRANGEMENT OF WORK.
   ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR BY FIELD INSPECTION PRIOR TO BIDDING. ANY INTERFERENCES TO INSTALLATION SHALL BE NOTED AND THE CONTRACTOR SHALL INCLUDE IN HIS BID PRICE THE COST TO AVOID OR RELOCATE ALL ITEMS, INCLUDING ITEMS OF OTHER TRADES, THAT INTERFERE. ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. ALL OFFSETS, RISES, TRANSITIONS AND DROPS IN DUCTS AND PIPING AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO
- ADDITIONAL COST TO THE OWNER.
  4. VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURERS' CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT TRANSITIONS OR PIPE ADAPTERS TO
- FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DIMENSIONS BEFORE FABRICATION.
  5. PROVIDE ACCESS IN WALLS & CEILINGS TO ACCESS ALL EQUIPMENT, VALVES,
- CONTROL DEVICES, VOLUME DAMPERS, AND FIRE/SMOKE DAMPERS.6. FOLLOW MANUFACTURE'S RECOMMENDATIONS FOR INSTALLATION OF EQUIPMENT. ALSO REFER TO TYPICAL DETAILS FOR INSTALLATION OF
- EQUIPMENT. 7. ALL MATERIALS FURNISHED, AND ALL WORK PERFORMED BY THE MECHANICAL CONTRACTOR SHALL BE IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS, INCLUDING BUT NOT LIMITED TO THE LATEST APPLICABLE
- EDITIONS OF NFPA, IEEE, OSHA, SMACNA, INTERNATIONAL MECHANICAL CODE, INTERNATIONAL BUILDING CODE, AND ANY STATE, COUNTY, AND LOCAL CODES.
  8. ALL EQUIPMENT, DUCTWORK, ETC., SHALL BE SUPPORTED SUFFICIENTLY AND ANY ADDITIONAL SUPPORT SHALL BE PROVIDED AS REQUIRED TO PROVIDE VIBRATION FREE AND SAFE INSTALLATION. ALL MISCELLANEOUS STEEL REQUIRED AND/OR AS SHOWN IN DETAILS FOR DUCTWORK, AND EQUIPMENT (UNLESS OTHERWISE NOTED) SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR. SUPPORT ALL DUCTWORK, PIPING AND
- EQUIPMENT MOUNTED ABOVE THE CEILING DIRECTLY FROM THE STRUCTURE.
  ALL ATTACHMENTS TO BEAMS, TRUSSES, OR JOIST SHALL BE MADE AT PANEL
  POINTS WITH BEAM CLAMPS MEETING MSS STANDARDS.
  9. ALL CONTROL WIRE AND CONDUIT SHALL COMPLY WITH NEC AND ELECTRICAL
  SPECIFICATIONS FOR THIS PROJECT.

### DUCTWORK GENERAL NOTES (ALL DRAWINGS):

- ALL DUCTWORK INDICATED IS SCHEMATIC AND SHOW ONLY RELATIVE POSITIONS. PROVIDE OFFSETS, RISES, TRANSITIONS AND ELBOWS AS NEEDED TO INSTALL PROPERLY.
- 2. PROVIDE ACCESS DOORS IN DUCTWORK FOR OPERATION, ADJUSTMENT, AND MAINTENANCE OF ALL HVAC DEVICES, FANS, DAMPERS, (FIRE, SMOKE, BALANCING) COILS, AND TERMINAL EQUIPMENT.
- BALANCING) COILS, AND TERMINAL EQUIPMENT.
   LOCATIONS OF TERMINAL DEVICES, AIR OUTLETS AND INLETS ARE APPROXIMATE. LOCATE PER THE ARCHITECTURAL DRAWINGS AND TO AVOID OTHER TRADE'S WORK. COORDINATE LOCATIONS WITH OTHER TRADES. CONSULT ARCHITECT/ENGINEER FOR CLARIFICATION IF CONFLICTS OCCUR.
   DUCT DIMENSIONS SHOWN ARE CLEAR INSIDE FACE-TO-FACE DIMENSIONS AND
- DOET DIMENSIONS SHOWN ARE CLEAR INSIDE FACE-TO-FACE DIMENSIONS AND DO NOT INCLUDE DUCT LINER WHERE SPECIFIED. INCREASE DIMENSIONS OF LINED DUCTWORK TO PROVIDE FREE INSIDE AREA EQUAL DIMENSIONS SHOWN. REFER TO THE SPECIFICATIONS FOR LOCATION OF LINED DUCTWORK.
   FINAL CONNECTIONS FROM HIGH VELOCITY MAIN DUCTS TO AIR TERMINAL UNITS SHALL BE MADE WITH FLEXIBLE DUCTWORK NOT EXCEEDING 3 FEET IN LENGTH.
- CONNECTIONS BETWEEN LOW VELOCITY DUCTWORK AND/OR TERMINAL UNITS TO AIR INLETS AND OUTLETS SHALL BE MADE WITH FLEXIBLE DUCTWORK NOT EXCEEDING 6 FEET IN LENGTH. LONGER DUCT RUN OUTS SHALL BE CONSTRUCTED OF HARD DUCT OF THE SAME MATERIAL SPECIFIED FOR THE SYSTEM SERVED AND INSULATED AS SPECIFIED FOR THAT SYSTEM. FLEXIBLE DUCTWORK SHALL BE OF THE PRESSURE CLASS AND FACTORY INSULATED AS SPECIFIED FOR THE SYSTEM WHERE INSTALLED.
   6. FLEXIBLE DUCTWORK SHALL BE INSTALLED IN ACCORDANCE WITH THE
- MANUFACTURER'S INSTRUCTIONS WITHOUT ANY SAGS, SHARP TURNS OR KINKS. AT THE MINIMUM, THE FLEXIBLE DUCTWORK SHALL BE FASTENED TO THE HARD DUCT BY A NYLON STRAP SECURED BY SHEETMETAL SCREWS TO PREVENT SLIPPING OFF FROM COLLAR.
- 7. PROVIDE VOLUME DAMPERS AT EACH AIR OUTLET, AIR INLET AND TERMINAL DEVICE AND AT EACH BRANCH TAKE-OFF CONNECTION FROM THE MAIN.

### MECHANICAL PIPING GENERAL NOTES (ALL DRAWINGS):

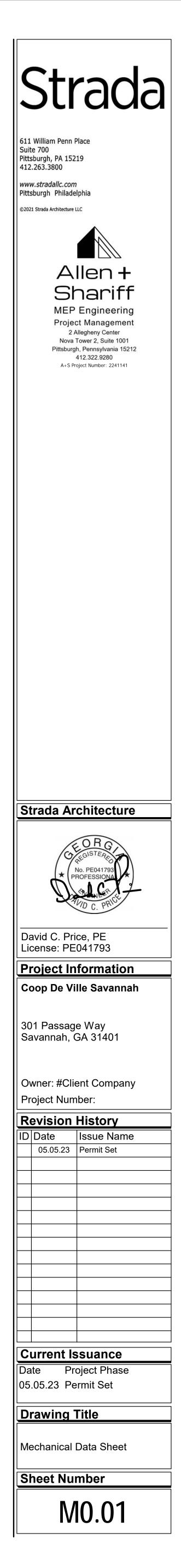
- ALL PIPING SHOWN HAS BEEN DRAWN SCHEMATICALLY FOR CLARITY AND SHOW ONLY RELATIVE POSITIONS. PROVIDE OFFSETS AND ELBOWS AS NEEDED TO INSTALL PROPERLY AND TO AVOID INTERFERENCES.
   ALL NEW OR REPLACED HYDRONIC PIPING SHALL BE INSTALLED SO THAT IT CAN BE COMPLETELY VENTED AT HIGH POINTS AND DRAINED AT LOW POINTS. PROVIDE AIR VENTS AT HIGH POINTS, TYPE PER SPECIFICATIONS. PROVIDE 1/2" BALL VALVES WITH HOSE END CONNECTIONS AND CAPS AT LOW POINT. ALL
- WATER MAINS SHALL BE INSTALLED LEVEL, UNLESS OTHERWISE NOTES.
  PROVIDE SERVICE VALVES AT EACH BRANCH CONNECTION FROM MAINS AND AT EACH TERMINAL DEVICE OR EQUIPMENT CONNECTION.
  CONTRACTOR SHALL PROVIDE NEW VALVES ON EXISTING PIPING WHERE THE PIPES ARE TO BE REMOVED SO THAT THE SYSTEM DOES NOT HAVE TO BE DRAINED WHILE REMOVING EXISTING UNITS, INSTALLING NEW UNITS AND

MAKING CONNECTIONS TO NEW EQUIPMENT.

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→       HFD       HORIZONTAL FIRE DAMPER (FLOOR)         →       HFD       HORIZONTAL FIRE DAMPER (FLOOR)         →       HSD       HORIZONTAL SMOKE DAMPER (WALL)         →       HSD       HORIZONTAL SMOKE DAMPER (FLOOR)         →       HSD       HORIZONTAL SMOKE DAMPER (FLOOR)         →       FD/SD       COMBINATION VERTICAL FIRE & SMOKE DAMPER         →       HFD/SD       COMBINATION VERTICAL FIRE & SMOKE DAMPER         →       HFD/SD       COMBINATION HORIZONTAL FIRE & SMOKE DAMPER         →       RD       CEILING RADIATION FIRE DAMPER         DD       DUCT SMOKE DETECTOR       GV         ①       THERMOSTAT         ①       THERMOSTAT         ①       HUMIDISTAT         ③P       STATIC PRESSURE SENSOR         ③P       STATIC PRESSURE SENSOR         ④       →       CIRCUIT SETTER (BALANCING VALVE)	
Image: Stratic Pressure sensor       Image: Stratic Pressure sensor         Image: Stratic P	
→       HSD       HORIZONTAL SMOKE DAMPER (FLOOR)         →       FD/SD       COMBINATION VERTICAL FIRE & SMOKE DAMPER         →       HFD/SD       COMBINATION HORIZONTAL FIRE & SMOKE DAMPER         →       HFD/SD       COMBINATION HORIZONTAL FIRE & SMOKE DAMPER         →       RD       CEILING RADIATION FIRE DAMPER         →       RD       CEILING RADIATION         ①       DD       DUCT SMOKE DETECTOR       GBV         ③       HUMIDISTAT       CV       CHECK VALVE         →       NUMIDISTAT       ZWAY CONTROL VALVE         ⑤       STATIC PRESSURE SENSOR       XWAY CONTROL VALVE         ○       CARBON DIOXIDE SENSOR       XWAY CONTROL VALV	
Image: Construct of the second of the se	
Image: static pressure sensor       Image: static pressure sensor         Image: static pressure sensor       Image:	
Image: Construction of the construc	
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Image: Way control value       Image: Way control value         Image: Way control value	
SP       STATIC PRESSURE SENSOR         CO       CARBON DIOXIDE SENSOR         CO       CARBON DIOXIDE SENSOR	
(SP)       STATIC PRESSURE SENSOR       3-WAY CONTROL VALVE         (O)       CARBON DIOXIDE SENSOR	
CO) CARBON MONOXIDE SENSOR STRAINER (W/ BALL VALVE AND CAP)	
Image: TAG #     EQUIPMENT UNIT DESIGNATION       Image: Backflow preventer	
TAG CFM       DIFFUSER, REGISTER & GRILLE UNIT DESIGNATION W/ CFM       PRESSURE REGULATING VALVE	
UNDER CUT DOOR	
→ LOUVERED DOOR TRIPLE DUTY VALVE WITH MEASURING CO	CONNECTIONS
CONNECTION POINT, NEW TO EXISTING	
D     DISCONNECTION POINT WITH CAP	
1     DRAWING KEYNOTE      AUTOMATIC AIR VENT	
1     DEMOLITION DRAWING KEYNOTE     Image: Model bid	
Image: Arrow of the second	
→→     RA or EA     RETURN OR EXHAUST AIR     →→     PIPE GUIDE	
SA or OA SUPPLY OR OUTSIDE AIR	

	MECHANICAL ABBREVIATIONS
ABRV.	DESCRIPTION
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
MBH	1000 - BRITISH THERMAL UNITS
KW	1000-WATT (1 KW = 3,412 BTUH)
SENS.	SENSIBLE
LAT.	LATENT
E.A.T.	ENTERING AIR TEMPERATURE
L.A.T.	LEAVING AIR TEMPERATURE
E.W.T.	ENTERING WATER TEMPERATURE
L.W.T.	LEAVING WATER TEMPERATURE
DB/WB	DRY BULB / WET BULB
IN. W.G.	INCHES WATER GAUGE (AIR)
FT. W.G.	FEET WATER GAUGE (HYDRONIC)
E.S.P.	EXTERNAL STATIC PRESSURE
T.S.P.	TOTAL STATIC PRESSURE
TG	TRANSFER GRILLE
TR	TOP REGISTER
(E)	EXISTING
R/R	REMOVE EXISTING ITEM & RELOCATE TO NEW LOCATION
UNO	UNLESS NOTED OTHERWISE
NTS	NOT TO SCALE
NIC	NOT IN CONTRACT
Ø OR	PHASE
Ø	DIAMETER
AFF	ABOVE FINISHED FLOOR
ELEV.	ELEVATION FROM DATUM
NOTES:	

1. NOT ALL SYMBOLS AND ABBREVIATIONS ARE IN USE FOR THIS PROJECT.



### MECHANICAL SPECIFICATIONS

MECHANICAL GENERAL CONDITIONS (230010)

### A. GENERAL

- 1. CONFORM TO ALL GENERAL AND SPECIAL CONDITIONS OF CONTRACT AS SPECIFIED BY ARCHITECT AND/OR OWNER.
- 2. PRODUCTS AND INSTALLATION SHALL COMPLY WITH ALL APPLICABLE LAWS, CODES, GOVERNMENT REGULATIONS, UTILITY COMPANY REQUIREMENTS, ETC. OF ALL AUTHORITIES HAVING JURISDICTION. WORK SHALL COMPLY WITH THE FOLLOWING CODES, STANDARDS AND ORGANIZATIONS: INTERNATIONAL MECHANICAL CODE (IMC), INTERNATIONAL PLUMBING CODE (IPC), INTERNATIONAL ENERGY CODE, NATIONAL ELECTRIC CODE, NFPA, UNDERWRITERS LABORATORY (UL), IRI, FM, SMACNA "HVAC DUCT CONSTRUCTION STANDARDS" GUIDELINES, DETAILS, & MODEL SPECIFICATION, ASHRAE. WHERE CONFLICTS EXIST BETWEEN CODES, STANDARDS OR THIS SPECIFICATION THE HIGHER REQUIREMENT SHALL APPLY. DEVIATIONS FROM THE CONTRACT DOCUMENTS REQUIRED BY THE ABOVE AUTHORITIES SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. OBTAIN PERMITS AND PAY ALL FEES. ARRANGE FOR ALL REQUIRED INSPECTIONS AND APPROVALS. CONFIRM ALL UTILITY COMPANY REQUIREMENTS AND CONNECTION POINTS IN FIELD, PRIOR TO STARTING WORK.
- 3. ALL SPECIFICATIONS AND DRAWINGS, I.E., ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL ARE COMPLIMENTARY AND MUST BE USED IN COMBINATION TO OBTAIN COMPLETE CONSTRUCTION INFORMATION. ANY INFORMATION CONFLICTS WITHIN THE SPECIFICATIONS AND DRAWINGS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION. DRAWINGS ARE DIAGRAMMATIC. CONFIRM ALL DIMENSIONS BY FIELD MEASUREMENT. THE EXACT LOCATIONS FOR APPARATUS, FIXTURES, EQUIPMENT AND PIPING WHICH IS NOT COVERED BY DRAWINGS, SHALL BE OBTAINED FROM THE ARCHITECT OR HIS REPRESENTATIVE IN THE FIELD, AND THE WORK SHALL BE LAID OUT ACCORDINGLY.
- 4. VISIT SITE, CHECK FACILITIES AND CONDITIONS MAKE ALL NECESSARY OBSERVATIONS, MEASUREMENTS, NOTE CONDITIONS UNDER WHICH WORK IS TO BE PERFORMED, AND TAKE ALL ITEMS INTO CONSIDERATION IN BID.
- 5. EACH CONTRACTOR SHALL PROVIDE FOR HIS OWN CLEAN-UP, REMOVAL AND LEGAL DISPOSAL OF ALL RUBBISH DAILY. CONTRACTOR SHALL PROTECT THEIR WORK AND EXISTING OR ADJACENT PROPERTY AGAINST WEATHER. TO MAINTAIN THEIR WORK, MATERIALS, APPARATUS AND FIXTURES FREE FROM INJURY OR DAMAGE. ANY WORK DAMAGED BY FAILURE TO PROVIDE PROTECTION REQUIRED, SHALL BE REMOVED AND REPLACED WITH NEW WORK AT THE CONTRACTOR'S EXPENSE.
- 6. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, SEQUENCES OF CONSTRUCTION AND THE SAFETY OF WORKMEN.
- 7. NO PIPING, DUCTWORK, CONTROLS, ETC., SHALL BE INSTALLED OR ROUTED ABOVE ELECTRICAL PANELS AND EQUIPMENT OR THROUGH ELEVATOR ROOMS.
- 8. THE CONTRACTOR SHALL COORDINATE AND OBTAIN A WRITTEN LISTING OF ELECTRICAL CHARACTERISTICS OF ALL MECHANICAL EQUIPMENT FROM ELECTRICAL CONTRACTOR PRIOR TO ORDERING OF EQUIPMENT. NO ADDITIONAL PAYMENT WILL BE MADE FOR LACK OF CONTRACTOR COORDINATION OF ELECTRICAL CHARACTERISTICS.
- 9. DURING THE BUILDING CONSTRUCTION SOME EXISTING INSTALLATION MAY BE EXPOSED THAT WILL HAVE TO BE CHANGED, ALTERED, REROUTED AND/OR ABANDONED. ANY SUCH WORK WHICH COMES UNDER THE JURISDICTION OF THIS CONTRACTOR SHALL BE DONE BY THIS CONTRACTOR WITHOUT EXTRA COST TO THE OWNER, AS THOUGH FULLY DETAILED ON PLANS AND/OR DESCRIBED IN THE SPECIFICATIONS.
- 10. WORK RELATED TO THE EXISTING BUILDING SHALL BE COORDINATED TO MINIMIZE INTERFERENCE OR INTERRUPTION OF NORMAL BUILDING USE BY OWNER. REFER TO ARCHITECTURAL PLANS FOR PHASING REQUIREMENTS.
- 11. IN CASES OF DOUBT AS TO THE WORK INTENDED, OR IN THE EVENT OF NEED FOR EXPLANATION THEREOF, THE CONTRACTOR SHALL REQUEST SUPPLEMENTARY INSTRUCTIONS FROM THE ENGINEER. NO CHANGES ARE TO BE MADE TO THE WORK OF THIS CONTRACT WITHOUT PRIOR KNOWLEDGE AND APPROVAL OF THE ENGINEER. THE CONTRACTOR SHALL HOLD THE OWNER AND ITS CONSULTANTS HARMLESS AGAINST ALL CLAIMS AND JUDGMENTS ARISING OUT OF THE CONTRACTORS PERFORMANCE OF THE WORK OF THIS CONTRACT. THE CONTRACTOR SHALL NOT PROCEED WITH ANY WORK, WHICH HE EXPECTS ADDITIONAL COMPENSATION BEYOND THE CONTRACT AMOUNT, WITHOUT WRITTEN AUTHORIZATION FROM THE APPROPRIATE AUTHORITY. FAILURE TO OBTAIN SUCH AUTHORIZATION SHALL INVALIDATE ANY CLAIM FOR EXTRA COMPENSATION.
- 12. IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO INSTALL THE HEATING, VENTILATION AND AIR CONDITIONING SYSTEM SO AS TO INSURE QUIET OPERATION. NO VIBRATION OR SOUND SHALL BE TRANSMITTED TO THE BUILDING. STRUCTURE OR OCCUPIED AREAS. THE DECISION OF THE ENGINEER AS TO THE QUIETNESS OF THE SYSTEM AND EQUIPMENT SHALL BE FINAL. IT SHALL BE THIS CONTRACTORS RESPONSIBILITY TO CORRECT OR REPLACE ANY NOISY SYSTEM OR EQUIPMENT AS REQUIRED
- 13. OBTAIN PERMITS AND PAY ALL FEES. ARRANGE FOR ALL REQUIRED INSPECTIONS AND APPROVALS

### B. DEMOLITION

- 1. DISCONNECT, DISASSEMBLE, CAP, PLUG AND REMOVE ALL MEP ELEMENTS (PIPING, DUCTS, ELECTRICAL DEVICES, WIRING, CONDUIT, EQUIPMENT, HANGERS, SUPPORTS, ETC) INDICATED ON THE DRAWINGS OR NOT OTHERWISE REQUIRED FOR COMPLETED PRODUCT. NO MEP ELEMENTS ARE TO BE ABANDONED IN PLACE UNLESS SPECIFICALLY NOTED. NOT ALL ITEMS TO BE REMOVED ARE INDICATED ON DRAWING.
- 2. ALL OPENINGS ON PIPING AND DUCTS THAT REMAIN SHALL BE CAPPED AND PROPERLY SECURED. WIRING SHALL BE DISCONNECTED AT CIRCUIT BREAKERS AND REMOVED AND BREAKERS MARKED "SPARE." REMOVE AND RECLAIM ANY REFRIGERANT IN EXISTING SYSTEMS PRIOR TO DEMOLITION OF ANY EQUIPMENT ACCORDING TO FEDERAL REQUIREMENT.
- 3. ANY EQUIPMENT DESIGNATED BY OWNER TO BE SALVAGED SHALL BE PROTECTED AND DELIVERED TO AN OWNER DESIGNATED AREA ON SITE.
- 4. ALL ASBESTOS REMOVAL (IF REQUIRED) WILL BE HANDLED BY THE OWNER AND IS NOT A PART OF THIS WORK. IF MATERIALS SUSPECTED OF CONTAINING HAZARDOUS MATERIALS ARE ENCOUNTERED, DO NOT DISTURB; NOTIFY ARCHITECT AND OWNER IMMEDIATELY.
- C. BASIS OF DESIGN AND SUBSTITUTIONS
- 1. WHEREVER THE WORDS "APPROVED BY", "APPROVED EQUAL", "AS DIRECTED" OR SIMILAR PHRASES ARE USED IN THE FOLLOWING SPECIFICATIONS, THEY SHALL BE UNDERSTOOD TO REFER TO THE OWNER AS THE APPROVING AGENCY. THE NAME OR MAKE OF ANY EQUIPMENT OR MATERIALS NAMED IN THE SPECIFICATION (WHETHER OR NOT THE WORDS "OR APPROVED EQUAL" ARE USED) SHALL BE KNOWN AS THE "STANDARD".
- 2. THESE SPECIFICATIONS ESTABLISH QUALITY STANDARDS OF MATERIALS AND EQUIPMENT TO BE PROVIDED. SPECIFIC ITEMS ARE IDENTIFIED BY MANUFACTURER, TRADE NAME OR CATALOG DESIGNATION. THE CONTRACTOR SHALL SUBMIT THE BASE BID PRICE BASED UPON STANDARD SPECIFIED EQUIPMENT DESCRIBED HEREIN AND AS DETAILED ON DRAWINGS AND ASSOCIATED CONTRACT DOCUMENTS. THE CONTRACTOR MAY SUBMIT INFORMATION ON MATERIALS AND MANUFACTURERS (OTHER THAN THOSE LISTED) FOR REVIEW BY THE OWNER, ARCHITECT, AND ENGINEER NO LATER THAN TEN (10) DAYS BEFORE BIDS ARE SUBMITTED. IN ADDITION, SAMPLES OF THE PROPOSED EQUIPMENT MAY BE REQUIRED TO BE SUBMITTED TO THE ENGINEER FOR REVIEW NO LATER THAN TEN (10) DAYS BEFORE BIDS ARE SUBMITTED. MANUFACTURERS OF PRODUCTS ACCEPTED BY THE OWNER, ARCHITECT, AND ENGINEER WILL BE LISTED IN AN ADDENDUM TO THE SPECIFICATIONS AS AN ACCEPTABLE SUBSTITUTION. EQUIPMENT ACCEPTED AS DETAILED BELOW SHALL BE SHOWN AS A SEPARATE ADD OR DEDUCT PRICE TO BE FACTORED INTO THE BASE PRICE BY THE ARCHITECT AND OWNER IF ACCEPTED.
- 3. SHOULD THE CONTRACTOR PROPOSE TO FURNISH MATERIALS AND EQUIPMENT OTHER THAN THOSE SPECIFIED OR APPROVED BY ADDENDUM, SUBMIT A WRITTEN REQUEST FOR SUBSTITUTION TO THE OWNER, ARCHITECT AND ENGINEER AT BID OPENING. THE REQUEST SHALL BE AN ALTERNATE TO THE ORIGINAL BID; BE ACCOMPANIED WITH COMPLETE DESCRIPTIVE (MANUFACTURER, BRAND NAME, CATALOG NUMBER, ETC.) AND TECHNICAL DATA FOR ALL ITEMS. FAILURE BY THIS CONTRACTOR TO SUBMIT THE REQUISITE DOCUMENTATION DETAILED ABOVE SHALL BE UNDERSTOOD BY THE OWNER. ARCHITECT, AND ENGINEER TO INDICATE THAT SUBSTITUTE EQUIPMENT WILL NOT BE PRESENTED BY THE CONTRACTOR FOR CONSIDERATION. SUCH SUBSTITUTIONS WILL NOT BE CONSIDERED AFTER THE BID OPENING DATE AND DELAY OF THE PROJECT WILL NOT BE PERMITTED FOR FURTHER INSPECTION AND EVALUATION AFTER THIS DATE.
- 4. WHERE SUCH SUBSTITUTIONS ALTER THE DESIGN OR SPACE REQUIREMENTS INDICATED ON THE DRAWINGS, INCLUDE ALL ITEMS OF COST FOR THE REVISED DESIGN AND CONSTRUCTION INCLUDING COST OF ALL ALLIED TRADES INVOLVED.
- 5. ACCEPTANCE OR REJECTION OF THE PROPOSED SUBSTITUTIONS SHALL BE SUBJECT TO APPROVAL OF THE OWNER, ARCHITECT, AND ENGINEER. IF REQUESTED, THE CONTRACTOR SHALL SUBMIT (AT THEIR COST) INSPECTION SAMPLES OF BOTH THE SPECIFIED AND PROPOSED SUBSTITUTE ITEMS.
- 6. IN ALL CASES WHERE SUBSTITUTIONS ARE PERMITTED, THE CONTRACTOR SHALL BEAR ANY EXTRA COST OF EVALUATING THE QUALITY OF THE MATERIAL AND EQUIPMENT TO BE PROVIDED.
- 7. ALL EQUIPMENT AND MATERIALS SHALL BE NEW, FREE OF DEFECTS AND U.L. LABELED.
- D. CUTTING, PATCHING AND DRILLING
- 1. ALL CUTTING AND PATCHING OF THE BUILDING CONSTRUCTION REQUIRED FOR THIS WORK SHALL BE BY THIS CONTRACTOR UNLESS SHOWN ON ARCHITECTURAL DRAWINGS AND CONFIRMED AS TO SIZE AND LOCATION PRIOR TO NEW CONSTRUCTION. CUTTING SHALL BE IN A NEAT AND WORKMANLIKE MANNER. NEATLY SAW CUT ALL RECTANGULAR OPENINGS, SET SLEEVE THROUGH OPENING, AND FINISH PATCH OR PROVIDE TRIM FLANGE AROUND OPENING. CORE DRILL AND SLEEVE ALL ROUND OPENINGS. DO NOT CUT ANY STRUCTURAL COMPONENTS WITHOUT ARCHITECT'S APPROVAL.
- 2. PATCH AND FINISH TO MATCH ADJACENT AREAS THAT HAVE BEEN CUT, DAMAGED OR MODIFIED AS A RESULT OF THE INSTALLATION OF THE MECHANICAL OR ELECTRICAL EQUIPMENT. FIRE STOP ALL PENETRATIONS OF FIRE RATED CONSTRUCTION IN A CODE APPROVED MANNER.
- 3. ALL CONTRACTORS SHALL CONFIRM WITH OWNER. PRIOR TO BID. TIMES AVAILABLE FOR NOISE PRODUCING WORK SUCH AS CUTTING AND CORE DRILLING OF FLOORS, WALLS, ETC., AS WELL AS TIMES FOR WORK WHICH REQUIRE ACCESS INTO ADJOINING TENANT SPACES. INCLUDE ANY PREMIUM TIME IN BID.
- 4. EXACT LOCATION OF ROOFTOP EQUIPMENT SHALL BE APPROVED BY OWNER'S STRUCTURAL ENGINEER.
- 5. INFORMATION REGARDING REQUIRED PIPE OPENINGS IN WALLS, FLOORS, CHASES, ETC., AND CONCRETE EQUIPMENT PADS OR FOUNDATIONS SHALL BE GIVEN TO THE GENERAL CONTRACTOR BY THIS CONTRACTOR PRIOR TO THE CONSTRUCTION PERIOD. IF THIS CONTRACTOR FAILS TO COMPLY WITH THIS REQUEST, OR IF INCORRECT INFORMATION IS GIVEN, THE NECESSARY CUTTING AND PATCHING WILL BE PERFORMED BY THE GENERAL CONTRACTOR, AT THIS CONTRACTOR'S EXPENSE.
- E. WARRANTY
- 1. FULLY WARRANT ALL MATERIALS, EQUIPMENT AND WORKMANSHIP FOR ONE (1) YEAR FROM DATE OF ACCEPTANCE.EXTEND ALL MANUFACTURER'S WARRANTIES TO OWNER, INCLUDING ALL EXTENDED WARRANTIES ON HVAC EQUIPMENT.
- 2. REPAIR OR REPLACE WITHOUT CHARGE TO THE OWNER ALL ITEMS FOUND DEFECTIVE DURING THE WARRANTY PERIOD. IN THE CASE OF REPLACEMENT OR REPAIR DUE TO FAILURE WITHIN THE WARRANTY PERIOD, THE WARRANTY ON THAT PORTION OF THE WORK SHALL BE EXTENDED FOR A MINIMUM PERIOD OF ONE (1) YEAR FROM THE DATE OF SUCH REPLACEMENT OR REPAIR.

- F. SHOP DRAWING SUBMITTALS
- ALL CRITICAL LOCATIONS.
- INSTALLATION.

THE CONTRACTOR.

- THE TIME OF SUBMITTAL.
- G. RECORD DRAWINGS MADE DURING CONSTRUCTION.

- H. FIRESTOPPING

APPROVED EQUAL.

- ACCESS DOORS & PANELS FIRE-RATED CONSTRUCTION.

- J. PAINTING CONTRACTOR.
- K. TEMPORARY HEAT
  - WITHIN THE BUILDING.

HYDRONIC PIPING (232113)

- APOLLO, LEGEND VALVE, VICTAULIC, OR WATTS.

- CARRYING CASE.
- BASKET. WITH TAPPED BLOWOFF PLUG. RATING: 150-PSIG WORKING PRESSURE.

### 1. SUBMIT SHOP DRAWINGS FOR MECHANICAL EQUIPMENT, FIRE PROTECTION SYSTEMS, DUCTWORK, AND PLUMBING FIXTURES AND EQUIPMENT WITH ADEQUATE DETAILS AND SCALES TO CLEARLY SHOW CONSTRUCTION. INDICATE THE OPERATING CHARACTERISTICS FOR EACH REQUIRED ITEM. CLEARLY IDENTIFY EACH ITEM ON THE SUBMITTAL AS TO MARK. LOCATION AND USE, USING SAME IDENTIFICATION AS PROVIDED ON DESIGN DRAWINGS.

2. DUCTWORK AND FIRE PROTECTION DRAWINGS SHALL BE FULLY DIMENSIONED BASED ON FIELD VERIFIED BUILDING CLEARANCES AND ARCHITECTURAL CEILING LAYOUTS, AND INDICATE STRUCTURAL, LIGHTING, DUCTWORK AND PIPING AT

3. CONTRACTOR SHALL REVIEW AND INDICATE HIS APPROVAL OF EACH SHOP DRAWING PRIOR TO SUBMITTAL FOR REVIEW. DO NOT START WORK OR FABRICATION UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED BY THE ENGINEER AND RETURNED TO

4. SUBMITTALS WILL BE REVIEWED ONLY FOR GENERAL COMPLIANCE WITH THE CONTRACT DOCUMENTS AND NOT FOR DIMENSIONS OR QUANTITIES. THE SUBMITTAL REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR PURCHASE OF ANY ITEM IN FULL COMPLIANCE WITH THE CONTRACT DOCUMENTS OR ITS COMPLETE AND PROPER

5. WHERE SUBMITTALS VARY FROM THE CONTRACT REQUIREMENTS, THE CONTRACTOR SHALL CLEARLY INDICATE ON SUBMITTAL OR ACCOMPANYING DOCUMENTS THE NATURE AND REASON FOR VARIATIONS.

6. REFER TO VARIOUS SECTIONS FOR LISTING OF SHOP DRAWINGS REQUIRED ON THIS PROJECT.

7. EACH MANUFACTURER OR HIS REPRESENTATIVE MUST CHECK THE APPLICATION OF HIS EQUIPMENT AND CERTIFY AT TIME OF SHOP DRAWING SUBMITTAL THAT EQUIPMENT HAS BEEN PROPERLY APPLIED AND CAN BE INSTALLED, SERVICED AND MAINTAINED WHERE INDICATED ON DRAWINGS. ADVISE ENGINEER IN WRITING WITH SUBMITTAL DRAWINGS OF ANY POTENTIAL PROBLEMS. THE MANUFACTURER SHALL BE RESPONSIBLE FOR ANY CHANGES THAT MIGHT BE NECESSARY BECAUSE OF PHYSICAL CHARACTERISTICS OF EQUIPMENT THAT HAVE NOT BEEN CALLED TO THE ENGINEER'S ATTENTION AT

1. EACH CONTRACTOR OR SUBCONTRACTOR SHALL KEEP ONE (1) COMPLETE SET OF THE CONTRACT WORKING DRAWINGS ON THE JOB SITE ON WHICH HE SHALL REGULARLY RECORD ANY DEVIATIONS OR CHANGES FROM SUCH CONTRACT DRAWINGS

2. THESE DRAWINGS SHALL RECORD THE LOCATION OF ALL CONCEALED EQUIPMENT, PIPING, ELECTRIC SERVICE, SEWERS, WASTES, VENTS, DUCTS, CONDUIT AND OTHER PIPING, BY MEASURED DIMENSIONS TO EACH SUCH ITEM FROM READILY IDENTIFIABLE AND ACCESSIBLE WALLS OR CORNERS OF THE BUILDING. PLANS ALSO SHALL SHOW INVERT ELEVATION OF SEWERS AND TOP ELEVATION OF ALL OTHER BELOW-GRADE LINES.

3. RECORD DRAWINGS SHALL BE KEPT CLEAN AND UNDAMAGED AND SHALL NOT BE USED FOR ANY PURPOSE OTHER THAN RECORDING DEVIATIONS FROM WORKING DRAWINGS AND EXACT LOCATIONS OF CONCEALED WORK.

4. AFTER THE PROJECT IS COMPLETED, THESE SETS OF DRAWINGS SHALL BE DELIVERED TO THE ARCHITECT IN GOOD CONDITION, AS A PERMANENT RECORD OF THE INSTALLATION AS ACTUALLY CONSTRUCTED.

1. ALL SERVICES THAT PASS THRU FIRE OR SMOKE RATED PARTITIONS, WALLS, FLOORS, SHALL BE FIRESTOPPED. FIRE STOPPING RATING SHALL MATCH PARTITION RATING. ALL FIRE STOPPING SYSTEM SHALL MEET THE REQUIREMENTS OF

2. ALL FIRESTOPPING AND/OR SMOKE STOPPING MATERIAL AND INSTALLATION SHALL BE AS MANUFACTURED BY HILTI OR

ASTM E 814, UL 1479, AND BE FACTORY MUTUAL APPROVED.

1. ACCESS DOORS SHALL BE PROVIDED IN WALLS AND CEILINGS WHERE REQUIRED TO PERMIT PROPER ACCESS TO VALVES AND ANY OTHER SUCH DEVICES WHICH REQUIRE MAINTENANCE OR SERVICE. DOORS PLACED IN WALLS, PARTITIONS OR OTHER FIRE-RATED CONSTRUCTION SHALL HAVE A LABEL SIGNIFYING THAT THE DOOR HAS THE SAME FIRE RATING AS THE

2. THIS CONTRACTOR SHALL FURNISH ACCESS PANELS TO THE GENERAL CONTRACTOR FOR INSTALLATION.

3. ACCESS PANELS SHALL BE CONSTRUCTED OF 14 GAUGE STEEL, WITH 16 GAUGE STEEL FRAMES. DOORS SHALL FINISH FLUSH WITH THE SURROUNDING SURFACE. FRAMES SHALL HAVE 3 INCH WIDE EXPANDED METAL FOR PLASTERED SURFACES AND PLAIN FLANGED TYPE FRAME FOR TILE, MASONRY OR GYPSUM BOARD SURFACES. DOORS AND FRAMES SHALL BE FURNISHED PRIME COATED. DOORS INSTALLED IN CERAMIC TILE OR OTHER NON-PAINTED SURFACES SHALL BE STAINLESS STEEL. HINGES SHALL BE CONCEALED SPRING TYPE, TO ALLOW DOORS TO BE OPENED 175 DEGREES. LOCKS SHALL BE FLUSH SCREWDRIVER TYPE WITH STEEL CAMS. ACCESS PANELS SHALL BE 16 INCHES BY 16 INCHES OR LARGER AS MAY BE REQUIRED FOR PROPER ACCESS TO THE DEVICE BEING SERVED.

4. ACCESS PANELS ARE NOT REQUIRED IN COMPLETELY ACCESSIBLE LIFT OUT TILE CEILINGS. CONTRACTOR SHALL REVIEW THE ROOM FINISH SCHEDULE ON THE ARCHITECTURAL DRAWINGS IN ORDER TO VERIFY THE NEED FOR ACCESS PANEL

1. IN FINISHED SPACES, PAINTING OF ALL MECHANICAL EQUIPMENT, APPARATUS, AND PIPING SHALL BE DONE BY THE PAINTING TRADE UNDER THE GENERAL CONTRACTOR SPECIFICATION, EXCEPT WHERE SPECIFIED TO BE DONE BY THE MECHANICAL

1. THE COSTS OF TEMPORARY HEAT, INCLUDING UTILITY COSTS, SHALL BE AT THE EXPENSE OF THE HEATING TRADE (MECHANICAL CONTRACTOR). THE HEATING TRADE SHALL PROVIDE THE MEANS OF TEMPORARY HEAT. EXISTING HEATING EQUIPMENT AND SYSTEMS MAY NOT BE USED DURING CONSTRUCTION AS THE SYSTEMS SERVE OTHER OCCUPIED SPACES

2. THE PERMANENT MECHANICAL SYSTEM SHALL NOT BE USED UNDER ANY EXCEPTIONS TO PROVIDE TEMPORARY HEATING, VENTILATING, EXHAUST OR AIR CONDITIONING UNTIL THE BUILDING IS CLEAN, WITHOUT ANY DUST OR DEBRIS THAT CAN ENTER THE MECHANICAL SYSTEM AND IS READY FOR OCCUPANCY. COVERING THE RETURN/EXHAUST AIR INLETS WITH FILTER MEDIA IS NOT AN ACCEPTABLE ALTERNATIVE TO HAVING AN ENCLOSED, DUST-FREE ENVIRONMENT FOR THE SYSTEMS TO OPERATE IN. IN NO EVENT SHALL THE MECHANICAL CONTRACTOR'S ONE YEAR WARRANTY BE SHORTENED BY THE USE OF PERMANENT EQUIPMENT FOR TEMPORARY HEAT.

1. PIPE AND FITTINGS -- HYDRONIC PIPING 2" AND SMALLER SHALL BE:

1.1. 1) TYPE "L" HARD COPPER TUBING ASTM B 88-832 WITH SWEATED JOINTS PER ASTM B 16.22 USING 95/5 OR ANTIMONY SOLDER OR "PRESS-FIT" MECHANICAL JOINTING. ALL FITTINGS SHALL BE MADE FROM WROUGHT COPPER. 1.2. 2) SCHEDULE 40 STEEL PIPING WITH VICTAULIC PLAIN END QUICKVIC SD (R) FITTINGS. FITTINGS SHALL BE MADE FROM DUCTILE IRON. PROVIDE SCREWED UNIONS OR GROOVED FITTINGS AT FINAL CONNECTIONS TO EQUIPMENT TO ALLOW DISCONNECTION FOR REPAIR OR SERVICING.

2. PIPING 2 -1/2" AND LARGER SHALL BESCHEDULE 40, WELDED BLACK STEEL (ASTM A53) WITH BLACK WROUGHT STEEL, BUTT WELDING TYPE (ASTM B16.9) FITTINGS, OR SCHEDULE 40 GROOVED BLACK STEEL (ASTM A53) WITH GROOVED FITTINGS MADE BY VICTAULIC, OR APPROVED EQUAL, MAY BE USED.

3. GROOVED JOINTS QUALITY ASSURANCE: GROOVED JOINTS SHALL BE VISUALLY VERIFIABLE TO ENSURE PROPER INSTALL PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. IF WRITTEN MANUFACTURER'S INSTRUCTIONS REQUIRE A VERIFIED TORQUE RATHER THAN A VISUAL VERIFICATION, A TORQUE LOG OF EVERY COUPLING SHALL BE PROVIDED FOR APPROVAL TO THE ENGINEER AND OWNER TO VERIFY PROPER INSTALL.

4. BALL VALVES --- UP TO 2": BRONZE TWO PIECE BODY, STAINLESS STEEL BALL, TEFLON SEATS AND BLOW-OUT PROOF STUFFING BOX RING, LEVER HANDLE, AND BALANCING STOPS, UNION SOLDER ENDS. ACCEPTABLE MANUFACTURERS:

5. BUTTERFLY VALVES -- BUTTERFLY VALVES SHALL BE BRAY MODEL 31 OR EQUAL WITH DUCTILE IRON LUG STYLE BODY, OR VICTAULIC WITH GROOVED CONNECTIONS, BRONZE DISC, 416 STAINLESS STEEL SHAFT, BRONZE BEARINGS, "EPDM" RUBBER SEAT, LEVER HANDLE OPERATORS AND SHALL BE RATED AT 175 POUNDS CWP. VALVES SHALL PROVIDE DEAD TIGHT SHUTOFF CAPABILITY IN EITHER DIRECTION UP TO 150 PSI WHEN THE DOWNSTREAM FLANGES ARE REMOVED.

6. VENT AND DRAIN VALVES -- ALL WATER PIPING SYSTEMS SHALL BE INSTALLED IN SUCH A MANNER THAT THEY CAN BE COMPLETELY VENTED AND DRAINED. UNLESS OTHERWISE NOTED, PROVIDE AT ALL HIGH POINTS WHERE AIR CAN COLLECT 1/4" BRASS COMPRESSION VENT COCKS, AND AT ALL LOW POINTS ½" BALL VALVES WITH HOSE BIB ENDS AND CAPS.

7. PRESSURE/TEMPERATURE PLUGS -- PROVIDE SISCO OR PETERSON 1/4 INCH NPT FITTING OF SOLID BRASS, FOR 1/8" O.D. PROBE. VALVE CORE SHALL BE NEOPRENE FOR TEMPERATURE TO 200 F, AND RATED FOR ZERO LEAKAGE FROM VACUUM TO 1,000 PSIG. PROVIDE TEST KIT CONSISTING OF TWO PRESSURE GAGES WITH PROBES AND 2 DIAL THERMOMETERS WITH

8. STRAINERS -- Y-PATTERN, BODY: ASTM A 126, CLASS B CAST IRON, WITH BOLTED OR SCREWED COVER AND BOTTOM DRAIN CONNECTION. END CONNECTIONS: THREADED ENDS FOR STRAINERS NPS 2 AND SMALLER; FLANGED ENDS FOR STRAINERS NPS 2-1/2 AND LARGER. STRAINER SCREEN: STAINLESS-STEEL, 20-MESH STRAINER, OR PERFORATED STAINLESS-STEEL

9. BALANCING VALVES -- PROVIDE VICTAULIC MULTI-TURN BALANCING VALVES WHERE SHOWN IN PIPING DETAILS ON THE DRAWINGS. VALVES SHALL BE OF BRONZE CONSTRUCTION (1/2" TO 2" SIZES) WITH EPDM SEATS/SEALS. VALVES SHALL HAVE DIFFERENTIAL PRESSURE READOUT PORTS, CONCEALED LOCKABLE MEMORY STOP, CALIBRATED NAMEPLATE AND DRAIN PORT. EACH VALVE SHALL HAVE POSITIVE SHUTOFF AND SHALL BE CONSTRUCTED FOR 300 PSIG RATED PRESSURE.

10. AUTOMATIC BALANCING VALVES -- PROVIDE VICTAULIC AUTOMATIC BALANCING VALVES, OR APPROVED EQUAL, WHERE SHOWN IN PIPING DETAILS ON DRAWINGS. VALVES SHALL HAVE BRASS BODIES AND CHANGEABLE FLOW CARTRIDGES.

11. PROVIDE VALVES AND UNIONS WHERE NEEDED TO PERMIT DISCONNECTIONS OF EACH PIECE OF EQUIPMENT FOR REPAIRS. MAKE CONNECTIONS TO EQUIPMENT WITH SHUT-OFF VALVES ON SUPPLY AND BALANCE VALVES ON RETURNS. INSTALL UNIONS IN PIPES 2" AND SMALLER, ADJACENT TO EACH VALVE, AT FINAL CONNECTIONS EACH PIECE OF EQUIPMENT, AND ELSEWHERE AS INDICATED. UNIONS ARE NOT REQUIRED ON FLANGED DEVICES.

12. CONNECTIONS BETWEEN DISSIMILAR PIPING MATERIALS SHALL BE MADE WITH SUITABLE DIELECTRIC INSULATING UNIONS. ISOLATE COPPER PIPING FROM DISSIMILAR METALS, SUCH AS METAL STUDS AND VENT PIPING.

- 13. CLOSED SYSTEM WATER TREATMENT -- FILL SYSTEM WITH WATER AND LOW FOAM DETERGENT TO REMOVE DIRT AND SCALE, CIRCULATE UNTIL SYSTEM IS CLEAN AND FLUSH UNTIL WATER IS CLEAR AND REFILL WITH CLEAN WATER . ADD CORROSION AND RUST INHIBITORS. CHECK PH AND ADD CHEMICALS TO ADJUST PH PER MANUFACTURER'S INSTRUCTIONS. PROVIDE CHEMICAL POT FEEDER AND PIPE ACROSS SYSTEM. PROVIDE CHEMICAL TO TREAT SYSTEM FOR ONE YEAR. RECHECK AFTER ONE YEAR AND ADD CHEMICAL AS NEEDED FOR PROPER CHEMICAL TREATMENT.
- 14. PROVIDE CONDENSATE DRAIN FOR ALL COOLING COILS. ALL CONDENSATE DRAINS SHALL BE TRAPPED PER THE COOLING COIL TRAP DETAIL OR MANUFACTURERS RECOMMENDATIONS, WHICH EVER IS MORE STRINGENT/DEEPER. PROVIDE CLEANOUT.
- 15. CONDENSATE DRAIN PIPING IN RETURN AIR RATED PLENUMS SHALL BE TYPE L COPPER WITH 1/2" FIBERGLASS INSULATION (MIN. R-VALUE = 3). SCHEDULE 40 PVC WITHOUT INSULATION MAY BE USED IN ALL OTHER LOCATIONS.
- 16. WHERE DAMAGE TO ANY BUILDING COMPONENT COULD OCCUR AS A RESULT OF OVERFLOW OR STOPPAGE OF THE PRIMARY CONDENSATE DRAIN SYSTEM, PROVIDE UL 508 WATER-LEVEL DETECTION DEVICE IN THE PRIMARY DRAIN PAN, OVERFLOW OUTLET OR IN A SECONDARY DRAIN PAN PER IMC REQUIREMENTS. COOLING SYSTEM SHALL DISABLE UPON DETECTION OF WATER AND GENERATE A BAS ALARM(IF APPLICABLE).

REFRIGERANT PIPING (232300)

- 1. INSTALL REFRIGERANT PIPING BETWEEN CONDENSING UNIT AND DX COIL. PIPING SHALL BE REFRIGERANT GRADE TYPE "L" OR ACR COPPER WITH BRAZED JOINTS. PIPE PER MANUFACTURER'S PIPING DIAGRAMS AND RECOMMENDATIONS.
- 3. AFTER COMPLETION, PRESSURE TEST PIPING, PURGE AND EVACUATE SYSTEM TWICE AND CHARGE SYSTEM WITH REFRIGERANT AND OIL.

2. ISOLATE PIPING FROM STRUCTURE WITH ONE (1) INCH INSULATION BETWEEN ALL PIPING AND SUPPORT POINTS.

- 4. INSTALL PIPING IN AS SHORT AND DIRECT ARRANGEMENT AS POSSIBLE TO MINIMIZE PRESSURE DROP. PROVIDE OIL TRAP AS RECOMMENDED BY THE EQUIPMENT MANUFACTURER.
- 5. INSTALL UNIONS TO ALLOW REMOVAL OF SOLENOID VALVES, PRESSURE REDUCING VALVES, EXPANSION VALVES, AND AT CONNECTIONS TO COMPRESSORS AND EVAPORATORS.
- 6. FILL THE PIPE AND FITTINGS DURING BRAZING, WITH NITROGEN TO PREVENT FORMATION OF SCALE.

## PIPE WALL SEALS (230517)

- 1. WALL PIPE SEALS WITH RUBBER LINKS SHALL BE THUNDERLINE LINK SEAL, OR APPROVED EQUAL. WALL PIPE SEALS WITH INORGANIC MATERIAL LINKS THE PENETRATIONS OF FIRE RATED WALLS SHALL BE THUNDERLINE PYRO-PAC, OR APPROVED EQUAL.
- 2. SEALS SHALL BE MODULAR MECHANICAL TYPE CONSISTING OF INTERLOCKING SYNTHETIC RUBBER OR INORGANIC MATERIAL LINKS SHAPED TO CONTINUOUSLY FILL THE ANNULAR SPACE BETWEEN THE PIPE AND WALL OPENING. LINKS SHALL BE LOOSELY ASSEMBLED WITH BOLTS TO FORM A CONTINUOUS BELT AROUND THE PIPE. A PRESSURE PLATE SHALL BE PROVIDED UNDER THE BOLT HEAD AND NUT OF EACH LINK. SEALS SHALL BE CONSTRUCTED TO PROVIDE ELECTRICAL INSULATION BETWEEN THE PIPE AND SLEEVE, THUS REDUCING CHANCES OF CATHODIC REACTION BETWEEN THESE TWO MEMBERS
- 3. AFTER THE SEAL ASSEMBLY IS POSITIONED IN THE SLEEVE, THE TIGHTENING OF THE BOLTS SHALL CAUSE THE SEALING ELEMENTS TO EXPAND AND PROVIDE AN ABSOLUTELY WATER-TIGHT SEAL BETWEEN THE PIPE AND SLEEVE.
- 4. SLEEVES SHALL BE MANUFACTURED FROM HEAVY-WALL, WELDED OR SEAMLESS STEEL PIPE. A FULL CIRCLE CONTINUOUSLY WELDED WATER STOP PLATE SHALL BE PROVIDED TO ASSURE POSITIVE WATER SEALING OF THE SLEEVE. SLEEVE SHALL BE PROTECTED BY A COATING OF ENRICHED RED PRIMER.

## **DUCTWORK (233113)**

- 1. FABRICATE AND ERECT ALL DUCTWORK TO ASHRAE AND SMACNA STANDARDS FROM G90 GALVANIZED STEEL. COMPLY WITH NFPA BULLETIN 90A REQUIREMENTS.
- 2. SUPPLY DUCTWORK UPSTREAM OF TERMINAL UNITS AND WITHIN 15' OF ANY AHU FAN OUTLET SHALL HAVE A SMACNA 3" STATIC PRESSURE RATING WITH SEAL CLASS A SEAMS AND JOINTS.
- 3. GENERAL SUPPLY AND RETURN DUCTWORK HAVE A SMACNA 2" STATIC PRESSURE RATING WITH SEAL CLASS B SEAMS AND JOINTS.
- 4. OUTDOOR AIR INTAKE DUCTWORK SHALL HAVE A SMACNA 2" STATIC PRESSURE RATING WITH SEAL CLASS A SEAMS AND JOINTS.
- 5. ALL EXPOSED ROUND AND OVAL DUCTWORK IN SHALL HAVE SPIRAL LOCKSEAM CONSTRUCTION.
- 6. ALL RECTANGULAR TRANSFER DUCTWORK SHALL HAVE 1" THICK ACOUSTICAL LINER. LINER SHALL BE FLEXIBLE AND CONSTRUCTED OF GLASS FIBERS BONDED WITH A THERMOSETTING RESIN. THE SURFACE OF THE LINER SHALL HAVE AN ANTIMICROBIAL EROSION RESISTANCE COATING TESTED BY NRTL AND REGISTERED BY THE EPA FOR USE IN HVAC SYSTEMS. MINIMUM R-VALUE SHALL BE 4.2.
- 7. GENERAL EXHAUST DUCTWORK UNDER 45' IN LENGTH SHALL HAVE A SMACNA 1" STATIC PRESSURE RATING WITH SEAL CLASS B SEAM AND JOINTS. EXHAUST DUCTWORK OVER 45' IN LENGTH SHALL HAVE A SMACNA 2" STATIC PRESSURE RATING WITH SEAL CLASS A SEAM AND JOINTS.
- 8. TYPE 1 KITCHEN HOOD EXHAUST SHALL BE 18 GA WELDED 304 STAINLESS STEEL OR 16 GA CARBON STEEL.CONSTRUCT PER NFPA 96 STANDARDS FOR KITCHEN EXHAUST. ALL WELDED CONSTRUCTION WITH CLEAN-OUT DOORS AT EACH CHANGE IN DIRECTION. WHERE LOCATED WITHIN 3" OF LIMITED-COMBUSTIBLE MATERIAL AND 18" OF COMBUSTIBLE MATERIALS (DEFINDED BY NFPA), WRAP EXTERIOR WITH 2 HOUR FIRE RATED INSULATION INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH MANUFACTURE'S WRITTEN INSTRUCTIONS, AS SHOWN ON THE APPROVED SHOP DRAWINGS. BASIS OF DESIGN SHALL BE 3M™ FIRE BARRIER DUCT WRAP 615+ CONSISTING OF A HIGH-TEMPERATURE FIBROUS THERMAL INSULATION BLANKET ENCAPSULATED IN A FIBERGLASS-REINFORCED ALUMINIZED POLYESTER FOIL.
- 9. TYPE 2 KITCHEN HOOD EXHAUST SHALL BE 304 STAINLESS STEEL AND HAVE A SMACNA 2" STATIC PRESSURE RATING WITH SEAL CLASS A SEAMS AND JOINTS. CONSTRUCT PER NFPA 96 STANDARDS FOR KITCHEN EXHAUST. PROVIDE WATERPROOF JOINTS FOR DISHWASHER EXHAUST. MAKE DISHWASHER EXHAUST WITH THREE SIDED DUCT WITH LONGITUDINAL JOINTS LOCATED ON TOP. SLOPE DUCT TO DRAIN WATER BACK TO DISHWASHER. SEAL JOINTS WATER TIGHT WITH WATERPROOF MASTIC.
- 10. EXTERIOR DUCTWORK(ALL DUCTWORK EXPOSED TO AMBIENT CONDITIONS) SHALL BE 2" THICK RIGID PHENOLIC, MINIMUM R-10 INSULATION VALUE, NOT EXCEEDING 25 FLAME SPREAD AND 50 SMOKE DEVELOPED RATINGS, WITH FACTORY-APPLIED WEATHERPROOF JACKETING DESIGNED FOR EXTERIOR INSTALLATION. SUPPORT AND INSTALLATION SHALL BE PER MANUFACTURER'S RECOMMENDATIONS, UTILIZING SUPPORT SYSTEM THAT FULLY ENCLOSES THE DUCT. REINFORCE DUCT AS NECESSARY PER SMACNA HVAC PHENOLIC DUCT CONSTRUCTION STANDARDS. ACCEPTABLE MANUFACTURERS ARE AQC INDUSTRIES' Q-DUCT AND THERMADUCT.
- 11. ALL FLEXIBLE DUCTWORK SHALL BEAR THE UL 181 LABEL (CLASS 1 AIR DUCT) AND SHALL BE FACTORY INSULATED (1-1/2 ", 0.6 LB., FIBERGLASS) ATCO UPC #076 I OR EQUAL. FLEXIBLE DUCTWORK SHALL COMPLY W/ NFPA 90A, AND NFPA 90B. ALL FLEXIBLE DUCTWORK CONNECTED TO DIFFUSERS SHALL NOT BE LESS THAN THE NECK SIZE OF THE DIFFUSER. MINIMUM FLEXIBLE DUCT BEND RADIUS OF CURVATURE SHALL BE 3 DUCT DIAMETERS, MAXIMUM LENGTH SHALL BE 6'-0", NO MORE THAN THE EQUIVALENT OF TWO (2) 90 DEGREE BENDS WILL BE ACCEPTABLE. FLEXIBLE DUCTS SHALL BE INDEPENDENTLY SUPPORTED FROM THE STRUCTURE AND CONNECTED WITH PLASTIC DRAW BANDS TIGHTENED WITH MANUFACTURER'S TOOL. FLEXIBLE DUCTS ARE NOT PERMITTED IN ROOMS WITHOUT CEILINGS.
- 12. INCLUDE ALL ACOUSTIC, DOUBLE RADIUS AIRFOIL SHAPED PERFORATED ALUMINUM TURNING VANES, MANUAL DAMPERS, FLEXIBLE CONNECTORS, GRILLES AND DIFFUSERS, ACOUSTIC LINING, AND OTHER SHEET METAL ACCESSORIES FOR THE PROJECT. VOLUME DAMPERS TO BE OF OPPOSED BLADE TYPE CONSTRUCTED IN ACCORDANCE WITH "SMACNA" STANDARDS.
- 13. ALL BRANCH CONNECTION FITTINGS IN RECTANGULAR DUCTWORK SHALL BE 45 DEGREE TRANSITION TYPE, CONICAL FITTINGS OR SPIN-IN FITTINGS. BUTT FITTINGS ARE NOT ACCEPTABLE.
- 14. PROVIDE FIRE DAMPERS WITH ACCESS DOORS AT ALL FIRE RATED WALLS, PARTITIONS AND CEILINGS. DAMPERS SHALL HAVE RATING EQUIVALENT TO BARRIER. DAMPER SHALL BE THE DYNAMIC TYPE AND SHALL BE ABLE TO CLOSE AGAINST AN AIRSTREAM. DAMPERS SHALL MEET ALL NFPA AND IBC REQUIREMENTS.
- 15. PROVIDE SMOKE DAMPERS WITH ACCESS DOORS AT ALL SMOKE BARRIERS/PARTITIONS. UNIT SHALL INCORPORATE BLADE END SWITCHES (OPEN AND CLOSED), AND OUTSIDE THE DUCT MOUNTED UL LISTED MOTOR. PROVIDE MANUFACTURER'S STANDARD U.L. LISTED OPEN- CLOSE - RESET SWITCH AND POSITION PILOT LIGHTS IN UNIT MOUNTED ENCLOSURE. ENCLOSURE TO BE CAPABLE OF BEING REMOVED FOR REMOTE MOUNTING TO ENSURE VISIBILITY AFTER SYSTEM INSTALLATION.
- 16. PROVIDE COMBINATION FIRE/SMOKE DAMPERS AT ALL FIRE/SMOKE RATED SHAFT AND WALL LOCATIONS. EACH COMBINATION FIRE SMOKE DAMPERSHALL HAVE 16 GA. GALVANIZED BLADES STRENGTHENED WITH GROOVES MEETING REQUIREMENTS OF UL STANDARD 555 & 555S AND HAVE AN 1-1/2 HOUR RATING. BASIS OF DESIGN SHALL BE GREENHECK MODEL FSD 200 SERIES. DAMPERS SHALL BE EQUIPPED STANDARD WITH AN ELECTRIC HEAT-RESPONSIVE DEVICE THAT PERFORMS THE SAME FUNCTION AS A FUSIBLE LINK TO CLOSE DAMPER AT 350 °F. PROVIDE POSITION INDICATING SWITCHES TO MEET REQUIREMENTS OF SMOKE PURGE CONTROL AND/OR BUILDING MANAGEMENT SYSTEM CONTROLS. THE DAMPER OPERATION AND CONSTRUCTION SHALL MEET UL REQUIREMENTS.
- 17. PROVIDE CURBS FOR ALL ROOF OPENINGS FOR DUCTS, FLUES, PIPING AND EQUIPMENT. CURBS SHALL BE FURNISHED AS ACCESSORIES TO THE EQUIPMENT OR 8" HIGH PATE OR EQUAL EQUIPMENT SUPPORTS SPANNING STRUCTURE AND FLASHED INTO ROOFING. ALL CUTTING, FLASHING, AND PATCHING OF ROOF SHALL BE BY OWNER'S ROOFING CONTRACTOR AND PAID FOR BY MECHANICAL CONTRACTOR.

18. PROVIDE BIG FOOT H FRAME SETS SUPPORT SYSTEM OR SIMILAR FOR ALL ROOFTOP DUCTWORK. SPACING SHALL BE PER SMACNA GUIDELINES.

- DUCTWORK EXTERNAL INSULATION & PIPE INSULATION (230713, 230719)
- 1. INSULATE DUCTWORK AS DESCRIBED IN DUCTWORK INSULATION SCHEDULE. FIBERGLASS DUCT WRAP SHALL BE FULLY SECURED TO DUCT. LAP AND TAPE SEAMS AND SECURE TIGHTLY TO THE DUCTS WITH WIRE OR STICK PINS.

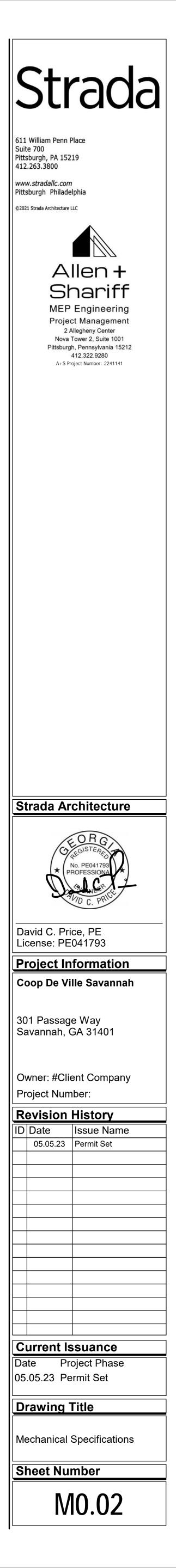
- 2.1. MAKE-UP AIR DUCTWORK OPERATING AT SURROUNDING AMBIENT CONDITIONS 2.2. RETURN AND EXHAUST AIR DUCTWORK LOCATED WITHIN THE BUILDING ENVELOPE. (DOES NOT INCLUDE BUILDING
- SHAFTS.) 2.3. TRANSFER AIR DUCTWORK (ACOUSTICALLY LINE DUCT, CLEAR INSIDE DIMENSIONS SHOWN ON PLANS) 2.4. EXPOSED SUPPLY DUCTWORK LOCATED IN CONDITIONED SPACE. (DOES NOT INCLUDE RETURN AIR PLENUM)
- 2.5. PHENOLIC DUCTWORK
- 3. INTERNAL DUCT INSULATION -- DUCTWORK INDICATED TO HAVE INTERNAL INSULATION SHALL BE INTERNALLY COVERED WITH 1" THICK FIBERGLASS INSULATION MANUFACTURED FROM A ROTARY PROCESS WITH A NON-WOVEN HYDROPHOBIC FACING. FOR DUCTWORK LOCATED OUTDOORS USE INSULATION AS ABOVE THAT IS 2" THICK. INSULATION SHALL HAVE AN "R" RATING OF 4.2 FOR 1" THICK INSULATION AND R-8 FOR 2" THICK INSULATION. INSULATION SHALL HAVE FLAME/SMOKE RATING OF 25/50. INSULATION SHALL WITHSTAND DUCT VELOCITIES OF 4000 FPM MINIMUM. DUCT SIZES SHOWN ON DRAWINGS ARE CLEAR INTERNAL DIMENSIONS. WHERE LINER IS USED, INCREASE OUTSIDE DIMENSIONS OF DUCT TO MAINTAIN INTERNAL DIMENSIONS. INSTALL LINER PER SMACNA OR NAIMA STANDARDS.
- 4. HYDRONIC PIPING TO BE INSULATED AS DESCRIBED IN PIPING INSULATION SCHEDULE. PROVIDE SECTIONAL GLASS FIBER PIPE INSULATION HAVING FACTORY APPLIED WHITE "ALL SERVICE" JACKET. LONGITUDINAL FLAPS SHALL BE SELF-SEALING TYPE ADDITIONALLY SECURED WITH NONFERROUS FLARE DOOR STAPLES SPACED 6" ON CENTERS. END JOINTS SHALL BE CLOSED WITH 4" WIDE SELF-SEALING TAPE STAPLED IN PLACE. ALL FITTINGS TOBE FINISHED WITH PRE MOLDED ONE-PIECE ZESTON TYPE PVC COVERS WITH FIBERGLASS INSULATION INSIDE. SEAL ALL VISIBLE RAW FIBERGLASS WITH BENJAMIN FOSTER #3036 WHITE MASTIC.
- 5. INSULATE REFRIGERANT PIPING LINES AS DESCRIBED IN PIPING INSULATION SCHEDULE WITH ELASTOMERIC FOAM INSULATION WITH SELF-SEALING SEAM. ARMACELL - AP ARMAFLEX SS INSULATION. PAINT CLOSED CELL INSULATION OUTDOORS WITH TWO COATS OF UV RESISTANT PAINT PER MANUFACTURER'S RECOMMENDATIONS. USE PRE-MOLDED COVERS OVER FITTINGS. VALVES. ELBOWS AND CONTROL DEVICES SEALED VAPOR TIGHT.
- 6. INSULATION SHALL BE OMITTED FROM HOT SYSTEM VALVE BODIES STRAINERS AND UNIONS. SYSTEMS OPERATING BELOW AMBIENT TEMPERATURE SHALL HAVE ALL VALVE BODIES AND PIPING SPECIALTIES FULLY INSULATED. ALL VALVE BODIES, STRAINERS, UNIONS, PUMP CASING, WATER SEPARATORS, ETC. IN COLD PIPING SHALL BE COVERED SAME AS PIPING SYSTEM. PIPE HANGERS ON INSULATED PIPE SHALL BE OUTSIDE OF THE INSULATION, SIZED ACCORDINGLY AND WITH SADDLE INSERT SUFFICIENT TO PROTECT INSULATION FROM CRUSHING.
- 7. ALL INSULATION TO BE APPLIED IN FULL ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. ALL INSULATION SHALL COMPLY WITH 25/50 FLAME AND SMOKE HAZARD RATINGS PER ASTM E-84, NFPA 255 AND UL 723.
- 8. PROVIDE REMOVABLE INSULATION SECTIONS TO COVER PARTS OF EQUIPMENT WHICH MUST BE OPENED PERIODICALLY FOR MAINTENANCE; INCLUDE METAL VESSEL COVERS, FASTENERS, FLANGES, CHILLED WATER PUMPS, FRAMES AND ACCESSORIES.
- 9. REPLACE DAMAGED INSULATION WHICH CANNOT BE REPAIRED SATISFACTORILY, INCLUDING UNITS WITH VAPOR BARRIER DAMAGE AND MOISTURE SATURATED UNITS.
- 10. CONDENSATE DRAIN PIPING IN RETURN AIR RATED PLENUMS SHALL BE TYPE L COPPER WITH 1/2" FIBERGLASS INSULATION (MIN. R-VALUE = 3). SCHEDULE 40 PVC WITHOUT INSULATION MAY BE USED IN ALL OTHER LOCATIONS.

HANGERS AND SUPPORTS (230529)

- 1. SUPPORT ALL PIPING FROM STRUCTURE WITH UL LISTED HANGERS AND SUPPORTS SUITABLE FOR THE INTENDED INSTALLATION. DESIGN, SELECTION, SPACING, AND APPLICATION OF HANGERS AND SUPPORTS SHALL COMPLY WITH ANSI B31.1 AND MSS SP-69. HANGERS SHALL BE MANUFACTURED BY PENTAIR., OR APPROVED EQUAL. BLACK OR GALVANIZED STEEL PIPE = MODEL NO. 100, CAST IRON PIPE = MODEL NO. 400, COPPER TUBING = MODEL NO. 102-A.
- 2. CONTRACTOR SHALL PROVIDE INSULATION HANGER WITH PROTECTIVE SHIELDS, SUCH AS PENTAIR, MODEL NO. 125, OR APPROVED EQUAL FOR ALL INSULATED PIPING.
- 3. CONTRACTOR SHALL PROVIDE RISER CLAMPS FOR VERTICAL PIPING AT EACH LEVEL. RISER CLAPS SHALL BE PENTAIR MODEL NO. 510 FOR STEEL PIPING AND MODEL NO. 511 FOR COPPER TUBING OR APPROVED EQUAL. USE "SHORT-END" RISER CLAMPS WHERE SPACE IS LIMITED.
- 4. CONTRACTOR SHALL PROVIDE SIDE BEAM CLAMPS FOR SUPPORTING PIPING FROM STRUCTURAL STEEL MEMBERS. BEAM CLAMPS SHALL BE MANUFACTURED BY PENTAIR, MODEL 300 OR APPROVED EQUAL.
- 5. WHERE OTHER MEANS OF SUPPORT PIPING ARE REQUIRED OR DESIRED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE ENGINEER'S APPROVAL PRIOR TO INSTALLING THOSE SUPPORTS.
- 6. HANGERS AND SUPPORTS SHALL BE SPACED AT INTERVALS WHICH WILL PREVENT SAGGING AND REDUCE STRAIN ON VALVES AND SPECIALTIES. HANGER SPACING SHALL BE NO GREATER AND ROD SIZE SHALL BE NO SMALLER THAN THAT SHOWN IN THE FOLLOWING TABLE. HANGERS SHALL ALLOW FOR EXPANSION AND CONTRACTION. HANGER SHALL BE PROVIDED AT EACH CHANGE OF DIRECTION.
- 7. RISER CLAMPS SHALL BE INSTALLED ABOVE THE FLOOR AT EACH LEVEL. RISER CLAMPS MAY BE SUSPENDED BELOW FLOOR LEVEL, WITH HANGER RODS AND INSERTS, WHERE THE INSTALLATION OF ESCUTCHEON PLATES IS REQUIRED.
- EQUIPMENT (235000)
- 1. MAKE ALL FINAL EQUIPMENT CONNECTIONS AND PROVIDE THE NECESSARY ADAPTORS, FITTINGS, VALVES, DEVICES, ETC. FOR A COMPLETE AND OPERABLE SYSTEM. PROVIDE COMPLETE WITH BASES, ISOLATORS, SUPPORTS AND OTHER REQUIRED ACCESSORIES.
- 2. EQUIPMENT SHALL BE INSTALLED IN FULL ACCORDANCE WITH THE MANUFACTURER'S DATA AND INSTALLATION INSTRUCTIONS, INCLUDING CLEARANCES; LUBRICATE AND ADJUST AS REQUIRED. IT IS THIS CONTRACTOR'S RESPONSIBILITY TO CHECK AND CONFORM TO THESE REQUIREMENTS PRIOR TO STARTING WORK. FURNISH AND INSTALL CLEAN SET OF FILTERS PRIOR TO BALANCING.
- 3. THE CONTRACTOR SHALL COORDINATE ELECTRICAL CHARACTERISTICS OF ALL MECHANICAL EQUIPMENT PRIOR TO ORDERING OF EQUIPMENT. COORDINATE REQUIREMENT FOR PROVISION OF MOTOR STARTERS, DISCONNECTS, CONTACTORS, CONTROL WIRING, ETC. AS REQUIRED FOR PROPER FUNCTIONING SYSTEM WITH ELECTRICAL CONTRACTOR. NO ADDITIONAL PAYMENT WILL BE MADE FOR LACK OF CONTRACTOR COORDINATION OF ELECTRICAL CHARACTERISTICS.
- 4. ALL FLOOR MOUNTED EQUIPMENT SHALL BE INSTALLED ON CONCRETE HOUSEKEEPING PADS. MINIMUM PAD THICKNESS SHALL BE NOMINAL 4". PAD SHALL EXTEND BEYOND THE EQUIPMENT A MINIMUM OF 4" ON EACH SIDE. CONCRETE PADS SHALL BE PROVIDED BY THIS CONTRACTOR. IT SHALL BE THE RESPONSIBILITY OF THE THIS CONTRACTOR TO COORDINATE THE SIZE AND LOCATION OF THE CONCRETE HOUSEKEEPING PADS WITH THE GENERAL CONTRACTOR.
- 5. ALL EQUIPMENT SHALL BE MOUNTED ON VIBRATION ISOLATORS TO PREVENT THE TRANSMISSION OF VIBRATION AND MECHANICALLY TRANSMITTED SOUND TO THE BUILDING STRUCTURE.
- 6. ISOLATION EQUIPMENT SHALL BE THE PRODUCT OF A SINGLE MANUFACTURER, AND SHALL BE DESIGNED SPECIFICALLY FOR THE APPLICATION REQUIRED. THIS INCLUDES, BUT IS NOT LIMITED TO, PIPING DUCTWORK, PUMPS, COMPRESSORS. VIBRATION ISOLATORS SHALL BE RATED FOR THE WEIGHT AND SPACING REQUIRED FOR THE EQUIPMENT REQUIRING ISOLATION.
- 7. PROVIDE CURBS FOR ALL ROOF OPENINGS FOR DUCTS, FLUES, PIPING AND EQUIPMENT. CURBS SHALL BE FURNISHED AS ACCESSORIES TO THE EQUIPMENT OR 8" HIGH PATE OR EQUAL EQUIPMENT SUPPORTS SPANNING STRUCTURE AND FLASHED INTO ROOFING. ALL CUTTING, FLASHING, AND PATCHING OF ROOF SHALL BE BY OWNER'S ROOFING CONTRACTOR AND PAID FOR BY MECHANICAL CONTRACTOR.

<u>CONTROLS (230910</u>

- 1. PROVIDE COMPLETE TEMPERATURE CONTROLS FOR ALL HVAC SYSTEMS. PROVIDE NEW CONTROL DEVICES INCLUDING DAMPER OPERATORS, TEMPERATURE SENSORS, STAGING RELAYS AND OTHER REQUIRED DEVICES TO PROVIDE A COMPLETE OPERATIONAL SYSTEM PER THE FOLLOWING OPERATING SEQUENCE. MOUNT ALL CONTROLS FURNISHED AS ACCESSORIES TO EQUIPMENT AND PROVIDE ALL CONTROL WIRING REQUIRED FOR PROPER OPERATION WHERE NOT SPECIFICALLY SHOWN ON ELECTRICAL PLANS. ALL WIRING SHALL BE IN CONDUIT OR PER N.E.C. AND LOCAL CODE REQUIREMENTS. STANDARD MOUNTING HEIGHT TO TOP OF THERMOSTAT IS 48" ABOVE FINISHED FLOOR OR AS INDICATED ON THE ARCHITECTURAL DRAWINGS. DO NOT INSTALL THERMOSTATS NEAR DIMMER SWITCHES. WIRING OF ALL MOTORIZED OPERATORS AND THERMOSTATS (REGARDLESS OF VOLTAGE) ARE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR.
- 2. THE CONTRACTOR SHALL FURNISH AND INSTALL A COMPLETE, WEB-BASED, NATIVE BACNET-INTEGRATED BUILDING AUTOMATION SYSTEM (BAS) INCLUDING ALL NECESSARY HARDWARE, ALL OPERATING AND APPLICATIONS SOFTWARE NECESSARY TO PERFORM THE HVAC CONTROL SEQUENCES OF OPERATION AS CALLED FOR IN THIS SPECIFICATION OR AS SHOWN ON THE DRAWINGS. BAS CONTRACTOR SHALL FURNISH AND INSTALL ALL RELATED SOFTWARE AND HVAC-DDC CONTROLS AS SPECIFIED WITHIN THIS SPECIFICATION. IT SHALL BE THE RESPONSIBILITY OF THE BAS CONTRACTOR TO COORDINATE THIS WORK WITH THE GENERAL CONTRACTOR, MECHANICAL CONTRACTOR, AND THE ELECTRICAL CONTRACTOR AS IT RELATES TO THE INSTALLATION AND WIRING OF ALL RELATED HVAC SYSTEMS.
- 3. IT SHALL BE THE RESPONSIBILITY OF THE BAS CONTRACTOR TO PROVIDE ALL THE REQUIRED LABOR AND PROGRAMMING TO SEAMLESSLY INTEGRATE THE NEW BAS BACNET SYSTEM AND ITS DDC POINTS, GRAPHICS, ALARMS, ETC. INTO AN EXISTING BAS IF PRESENT.
- 4. THE CONTROLS CONTRACTOR SHALL WARRANT THE SYSTEM FOR 24 MONTHS AFTER SUBSTANTIAL COMPLETION. DURING THE WARRANTY PERIOD, THE BUILDING SYSTEM CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NECESSARY REVISIONS TO THE SOFTWARE AS REQUIRED TO PROVIDE A COMPLETE AND WORKABLE SYSTEM CONSISTENT WITH THE LETTER AND INTENT OF THE SEQUENCE OF OPERATION SECTION OF THE SPECIFICATION.
- 5. THE FOLLOWING ARE THE APPROVED BAS MANUFACTURERS:
- 5. THE FOLLOWING ARE THE APPROVED BAS MANUFACTURERS:
- AUTOMATED LOGIC, INC.
- CARRIER CONTROLS - DISTECH CONTROLS
- HONEYWELL CONTROLS
- JOHNSON CONTROLS - KMC CONTROLS
- SIEMENS CONTROLS
- TRANE CONTROLS - OR PRE-APPROVED EQUAL



	CONTROL SYSTEM SHALL BE PROGRAMMED WITH THE FOLLOWING SEQUENCES AND FEATURES: OCCUPIED MODE:	6. OVERLOAD AND SHORT CI a. HEATER ELEMENTS SHA
6.1.	1. OCCUPIED HEATING SET POINT: 70°F (ADJ.)	PROVIDED FOR MOTOR
6.1.		DISCONNECT SWITCHES (2
6.2. 6.2.	UNOCCUPIED MODE: 1. UNOCCUPIED HEATING SET POINT: 65°F (ADJ.)	DISCONNECT SWITCHES (2
6.2.	2. UNOCCUPIED COOLING SET POINT: 80°F (ADJ.) <u>AHU:</u> THE AIR HANDLER UNIT SHALL HAVE A MICROPROCESSOR-BASED CONTROLLER WHICH SHALL MONITOR AND CONTROL THE AHU UNIT AS DIRECTED BY THE BUILDING AUTOMATION SYSTEM (BAS). THE AHU CONTROL PANEL SHALL HAVE A HUMAN INTERFACE PANEL WITH A 2-LINE BY 40-CHARACTER CLEAR LANGUAGE (ENGLISH, SPANISH, FRENCH) LCD DISPLAY AND A 16 BUTTON KEYPAD FOR MONITORING, SETTING, EDITING, AND CONTROLLING THE BAS SHALL PERFORM THE FOLLOWING AHU CONTROL STRATEGIES, PROVIDE THE POINTS LISTED ON THE POINTS LIST AND	1. THIS CONTRACTOR SHALL EQUIPMENT FURNISHED U SWITCH FOR ALL MOTORS MEANS. FUSIBLE DISCONN (SUCH AS CONDENSING UI SOLID NEUTRAL FOR 4 WIF INSTALLATION OF ALL DISC
	PROVIDE THE SPECIFIED MONITORING AND DIAGNOSTICS. THE CONTROLLER SHALL OPERATE ALL DAMPERS, FANS, HEATING, AND COOLING FUNCTIONS FOR THE AHU.	2. ALL SAFETY SWITCHES SH
6.3.		FUSIBLE SWITCHES SHALL 200,000 AMPERE RMS SYM W-S-865. 3. PROVIDE HEAVY-DUTY TYF
6.3.		ON THE DRAWINGS OR AS SWITCHES SHALL BE NEM PROOF USE. DISCONNECT
6.3.	OPERATION TO OCCUPIED OPERATION, MORNING WARM-UP MODE SHALL BE ACTIVATED BASED ON TIMING ESTABLISHED BY THE OPTIMIZED START TIMER. MORNING WARM-UP AND OPTIMIZED START ARE CONSIDERED	APPROVED EQUAL. 4. SWITCHES SHALL INCORPO
6.3.4	PART OF THE UNOCCUPIED MODE UNTIL THE SCHEDULED OCCUPIED TIME. 4. <u>SUPPLY AIR PRESSURE CONTROL</u> WHENEVER THE AHU SUPPLY FAN IS OPERATING THE BAS SHALL POLL THE VAV BOXES FOR THEIR DAMPER POSITIONS EVERY FIVE MINUTES. THE SUPPLY AIR PRESSURE SETPOINT SHALL BE RESET SUCH THAT NO BOX IS MORE THAN 95% OPEN. IF ONE OR MORE BOXES ARE AT OR ABOVE 95% OPEN, THEN THE SUPPLY AIR PRESSURE SETPOINT SHALL BE RAISED BY 0.10" (INCHES OF WATER COLUMN). IF THE POLL	INTEGRAL PART OF THE BO UNAUTHORIZED OPENING DOOR OPEN. CURRENT C/ SILVER-TUNGSTEN TYPE S
	REVEALS THAT NO BOX IS ABOVE 50% OPEN THEN THE SUPPLY AIR PRESSURE SETPOINT SHALL BE LOWERED BY 0.10". THE GOAL IS TO KEEP THE SUPPLY AIR PRESSURE AS LOW AS POSSIBLE THAT KEEPS THE BOXES SATISFIED AND MINIMIZE FAN ENERGY COSTS. DEFAULT SUPPLY AIR PRESSURE SETPOINT IS 1.2" (ADJ.). THE SUPPLY FAN	5. FUSE CLIPS SHALL BE POS
6.0.	VFD SHALL VARY THE FAN SPEED TO MAINTAIN THE SUPPLY AIR PRESSURE SETPOINT BASED ON THE STATIC PRESSURE SENSOR LOCATED IN THE SUPPLY AIR DUCT. THE BAS SHALL ALSO MONITOR THE STATUS OF THE SUPPLY AIR SENSOR AND DISPLAY THE PRESSURE READING ON THE STATUS SCREEN.	6. THE ELECTRICAL CONTRA CONTRACTOR FURNISHED CONTROL WIRING TO ALL SWITCHES OF CONTRACTO
6.3.	RETURN AIR ENTHALPY TO DETERMINE IF ECONOMIZER OPERATION IS AVAILABLE BASED ON DIFFERENTIAL ENTHALPY. THE RELEVANT SENSORS FOR THE RETURN AIR AND OUTDOOR AIR SHALL BE PROVIDED BY THE CONTROLS CONTRACTOR AND SHALL BE VISIBLE IN THE BAS SCREEN(S). IF ENABLED, THE AHU SHALL CONTROL	VARIABLE FREQUENCY DR
	THE OA DAMPER POSITION TO MIX THE AIR TO DELIVER THE DISCHARGE AIR AT THE DISCHARGE SETPOINT TEMPERATURE AND SHALL CONTROL THE RELIEF AIR MOTORIZED DAMPER TO DISCHARGE ANY EXCESS AIR OUT OF THE SPACE. THE CONTROL SYSTEM SHALL MONITOR THE DAMPER POSITION AND THE OTHER SENSORS THAT ARE INTEGRATED INTO ECONOMIZER OPERATION. THE AHU SHALL OPERATE IN ECONOMIZER MODE ANYTIME ANY GARAGE DOOR IS OPEN FOR MORE THAN 3 MINUTES. DOOR SWITCHES WILL NEED TO BE MONITORED AT ALL TIMES.	1. PROVIDE VARIABLE FREQ OF DESIGN IS ABB MODEL 3R FOR OUTDOOR USE. V USING PULSE WIDTH MOD VARIABLE VOLTAGE AND F
6.3.	UNOCCUPIED HEATING AND COOLING SETPOINTS. IF THE UNOCCUPIED SETPOINTS ARE EXCEEDED, THE UNIT SHALL CYCLE THE SUPPLY FAN TO HEAT OR COOL UNTIL THE ZONE TEMPERATURE IS WITHIN THE UNOCCUPIED	2. VFD SHALL MAINTAIN A MI
6.3.	SETPOINTS. THE OUTDOOR AIR (OA) DAMPER SHALL BE CLOSED DURING UNOCCUPIED MODE. OCCUPIED OPERATION - WHEN THE UNIT IS CONTROLLED TO THE OCCUPIED MODE, ALL UNIT FUNCTIONS SHALL BE ENABLED. VAV UNITS SHALL OPERATE IN SUPPLY AIR TEMPERATURE CONTROL MODE. THE UNIT SHALL DEFAULT TO THIS MODE IN THE EVENT THAT COMMUNICATIONS WITH THE BAS ARE LOST.	VFD'S LESS THAN 75 HP. N OF SPEED AND LOAD FOR RATING OF 110% FOR LOW AS STANDARD. THE CURR
6.3.	3. <u>SUPPLY TEMPERATURE RESET</u> : THE CONTROL SYSTEM SHALL MONITOR ALL DAMPER POSITIONS THAT ARE CONNECTED TO A PARTICULAR UNIT'S SUPPLY FAN. THE SUPPLY AIR TEMPERATURE SHALL BE RESET HIGHER IF THE RETURN AIR RELATIVE HUMIDITY IS BELOW 40% AND NONE OF THE VAV DAMPER POSITIONS ARE OPEN 95% OR GREATER. DESIGN SETPOINT: 55°F (ALSO MINIMUM SETPOINT). MAXIMUM SETPOINT 60°F.	3. COMMUNICATION CAPABIL BACNET/IP. MODBUS/TCP / NEEDED IS THAT WHICH W
	VAV BOXES:	4. VFD SHALL HAVE A COOLI
6.4.	1. OCCUPIED MODE: WHENTHE SPACE TEMPERATURE RISES ABOVE THE OCCUPIED COOLING SETPOINT, THE CONTROLLER SHALL MODULATE THE VAV BOX DAMPER FROM MINIMUM TO MAXIMUM POSITION TO MAINTAIN THE OCCUPIED COOLING SETPOINT. WHEN THE SPACE TEMPERATURE IS BELOW THE OCCUPIED COOLING SETPOINT, THE CONTROLLER WILL MODULATE THE VAV BOX DAMPER TO MINIMUM POSITIONAND MODULATE THE REHEAT VALVE TO ADD HEAT INTO THE AIRFLOW.	5. VFD SHALL INCLUDE THE F VOLTAGE, INPUT LINE SUP STALLED, MOTOR OVER TE
6.4.:	AND UNOCCUPIED COOLING SETPOINT, THE CONTROLLER WILL REMAIN IN THE UNOCCUPIED MODE AND COMMAND THE VAV BOX DAMPER CLOSED. IF THE SPACE TEMPERATURE FALLS BELOW THE UNOCCUPIED HEATING SETPOINT OR RISES ABOVE THE UNOCCUPIED COOLING SETPOINT, THE CONTROLLER WILL START THE VAV BOX AND SEND A RUN REQUEST TO THE AIR HANDLING UNIT SERVING THE VAV BOX. THE CONTROLLER WILL PROVIDE HEATING OR COOLING, AS REQUIRED, TO MAINTAIN THE UNOCCUPIED SETPOINTS ONCE THE SPACE TEMPERATURE RETURNS	DURING POWER-UP, STAR 6. WARRANTY SHALL BE TWE START-UP BY AN AUTHORI
	WITHIN THE UNOCCUPIED HEATING SETPOINT AND THE UNOCCUPIED COOLING SETPOINT WITH A 3°F (ADJ.) DEADBAND, THE CONTROLLER WILL RETURN TO THE UNOCCUPIED MODE AND CANCEL THE RUN REQUEST TO THE AIR HANDLING UNIT SERVING THE VAV BOX	<u>CHECK, TEST, START, ADJI</u>
	<u>HEATING BOILER</u> : WHENEVER A CALL FOR HEATING OR REHEAT HEATING EXISTS, THE BOILER SYSTEM SHALL BE ENABLED TO DELIVER HOT WATER TO THE SYSTEM.	1. AFTER INSTALLATION, CHI INSTRUCTIONS.
6.5.	DIFFERENTIAL PRESSURE ON THE HOT WATER LOOP.  DEFAULT SETPOINT: 15 psi (ADJ.)  (ADJUST SETPOINT TO SUIT FURTHEST HW DEVICE AT TESTING AND BALANCING.)	2. ALL PIPING SHALL BE TEST
6.5.	2. IF THE LOOP SUPPLY TEMPERATURE IS BELOW THE SETPOINT, THEN THE BOILER SHALL MODULATE ITS FIRING RATE TO HEAT THE LOOP SUPPLY TEMPERATURE AND THE HEATING LOAD AT A CONSTANT LEAVING WATER TEMPERATURE WITHIN A REASONABLY WIDE TEMPERATURE RANGE (125°F TO 145°F). THE PRIMARY HOT WATER PUMP SHALL BE MODULATED BY THE BOILER DIRECTLY.	3. CONCEALED OR INSULATE CONSTRUCTION SCHEDUL
6.6.	KITCHEN HOOD EXHAUST FANS SHALL BE STARTED AND STOPPED BY A SINGLE TOGGLE SWITCH LOCATED AT THE	4. BALANCE ALL SYSTEMS, C AND MAKE ALL NECESSAR
	BIGGER HOOD. THE MAKEUP AIR UNIT OPERATION SHALL BE INTERLOCKED WITH THE EXHAUST FAN OPERATION. ANYTIME THE KITCHEN HOOD EXHAUST FAN IS ON THE MAKEUP AIR UNIT SHALL BE ON.	5. AFTER INSTALLATION AND SYSTEMS. BALANCING SH
6.7.	DISHWASHER EXHAUST FAN SHALL BE STARTED AUTOMATICALLY WHEN DISHWASHER IS ON AND SHALL REMAIN ON FOR 20 MINUTES AFTER THE DISHWASHER IS OFF. VAV-02 SHALL BE INTERLOCKED WITH THE DISHWASHER EXHAUST FAN OPERATION. ANYTIME THE DISHWASHER EXHAUST FAN IS ON THE DAMPER OF VAV-02 SHALL BE FULLY OPENED.	6. ADJUST AND BALANCE THE BALANCING SHALL BE DOM

FAN OPERATION. ANYTIME THE DISHWASHER EXHAUST FAN IS ON THE DAMPER OF VAV-02 SHALL BE FULLY OPENED. USE HOT WATER REHEAT COIL IN VAV-02 TO PREVENT SPACE OVER COOLING.

6.8. THE RESTROOM EXHAUST FAN SHALL OPERATE CONTINUOUSLY DURING SCHEDULED OCCUPIED PERIODS.

### **IDENTIFICATION (230593)**

1. CONTRACTOR SHALL PROVIDE IDENTIFICATION LABELS, TAGS, ETC. AS INDICATED ON THE DRAWINGS AND AS SPECIFIED HEREIN. THE IDENTIFICATION SHALL BE IN ACCORDANCE WITH ANSI STANDARD A13.1. PRESSURE SENSITIVE MARKERS SHALL BE MANUFACTURED BY THE BRADY CO., OR APPROVED EQUAL. MARKERS SHALL BE MANUFACTURER'S STANDARD PRODUCT. PRESSURE SENSITIVE PIPE MARKERS SHALL BE MANUFACTURED BY THE BRADY CO., OR APPROVED EQUAL. PIPE MARKERS SHALL BE MANUFACTURER'S STANDARD PRODUCT.

### MOTOR CONTROLLERS (230513)

- 1. UNLESS OTHERWISE INDICATED, EVERY MOTOR NOT SPECIFIED TO BE PROVIDED WITH A CONTROLLER AT THE FACTORY SHALL BE PROVIDED WITH A CONTROLLER AS SPECIFIED HEREIN. CONTROLLERS SHALL BE FURNISHED BY THIS CONTRACTOR. INSTALLATION OF ALL CONTROLLERS SHALL BE BY THE ELECTRICAL CONTRACTOR.
- 2. MOTOR CONTROLLERS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF NEMA STANDARD IC-1, INDUSTRIAL CONTROL AND BE HEAVY DUTY CONSTRUCTION. CONTROLLER SIZES SHALL BE VERIFIED TO BE COMPATIBLE WITH HORSEPOWER OF THE MOTOR. CONTROLLERS SHALL BE MANUFACTURED BY ALLEN-BRADLEY CO., GENERAL ELECTRIC, CUTLER-HAMMER OR APPROVED EQUAL.
- 3. MANUAL MOTOR STARTERS: a. SWITCHES SHALL BE TUMBLER-SWITCH STYLE. THE MANUAL MOTOR STARTERS SHALL PROVIDE OVERLOAD PROTECTION WHICH CLOSELY FOLLOWS THE MOTOR LOAD. MANUAL MOTOR STARTERS FOR OUTDOOR USE SHALL BE NEMA TYPE 4X, INDOOR USE SHALL BE NEMA TYPE 1, EXPLOSION PROOF USE SHALL BE NEMA TYPE 7.
- 4. MAGNETIC MOTOR CONTROLLERS:
- a. MAGNETIC MOTOR CONTROLLERS SHALL BE PROVIDED AS INDICATED. THEY SHALL NOT BE SMALLER THAN NEMA SIZE 1. b. NON-REVERSING MAGNETIC CONTROLLER SHALL BE UTILIZED TO START FULL VOLTAGE, NON-REVERSING, AC SINGLE SPEED MOTORS. THE CONTROLLERS SHALL BE SIZED FOR THE LOAD UNLESS OTHERWISE INDICATED. c. REVERSING MAGNETIC CONTROLLER SHALL BE UTILIZED TO START FULL VOLTAGE REVERSING, AC SINGLE SPEED
- MOTORS. THE CONTROLLER SHALL BE SIZED FOR THE LOAD UNLESS OTHERWISE INDICATED. LOCATION OF REVERSING MAGNETIC CONTROLLERS IS INDICATED ON THE DRAWINGS.
- d. WHERE MULTI-SPEED MOTORS ARE SCHEDULED ON THE DRAWINGS, THE MOTOR CONTROLS SHALL BE COMPATIBLE WITH THE TYPE MOTOR SHOWN. e. OVERLOAD RELAYS SHALL BE SOLID STATE AND BE SUPPLIED IN EACH LEG. OVERLOAD RELAYS SHALL BE MATCHED TO
- LOAD AND SHALL BE ADJUSTABLE FROM 90% TO 110%. A SINGLE RESET BUTTON SHALL BE MOUNTED ON THE STARTER DOOR TO PERMIT EXTERNAL RESET. RELAYS SHALL BE CONVERTIBLE FROM MANUAL TO AUTOMATIC RESET BY A SIMPLE ADJUSTMENT. f. CONTROL TRANSFORMERS SHALL BE PROVIDED, WHERE REQUIRED. BOTH LEGS OF THE PRIMARY AND ONE LEG OF THE
- SECONDARY OF THE CONTROL TRANSFORMER SHALL BE PROTECTED BY NEMA CLASS J FUSES. THE OTHER LEG OF THE SECONDARY SHALL BE GROUNDED. CONTROL TRANSFORMER CAPACITY SHALL BE ADEQUATE TO OPERATE ALL CONTROL DEVICES IN THE CIRCUIT. CONTROL VOLTAGE SHALL BE 120V AC UNLESS OTHERWISE SPECIFIED. g. UNLESS OTHERWISE INDICATED, ALL MOTOR STARTERS SHALL BE PROVIDED WITH HAND-OFF-AUTOMATIC (H.O.A.) SWITCH
- IN THE DOOR. ENCLOSURES FOR MAGNETIC STARTERS SHALL BE NEMA TYPE 1 FOR INDOOR USE NEMA TYPE 4X FOR OUTDOOR USE AND NEMA TYPE 7 FOR EXPLOSION PROOF USE. h. MOTOR CONTROLLERS SHALL BE PROVIDED WITH ALL CONTROL DEVICES, INCLUDING AUXILIARY CONTACTS, REQUIRED
- 5. COMBINATION MOTOR CONTROLLERS:

FOR EQUIPMENT TO OPERATE AS SPECIFIED.

- a. COMBINATION MOTOR CONTROLLERS SHALL BE PROVIDED WITH MOLDED CASE MOTOR CIRCUIT PROTECTORS OR MOLDED CASE CIRCUIT BREAKERS AS INDICATED. MOTOR CIRCUIT PROTECTIVE DEVICES SHALL HAVE SHORT CIRCUIT CAPACITY AS REQUIRED. UNIT CONTROL CIRCUIT FUSING SHALL BE PROVIDED. THE MOTOR CIRCUIT PROTECTIVE DEVICE SHALL BE MOUNTED IN THE SAME ENCLOSURE AS THE MAGNETIC CONTROLLER AND SHALL BE OPERABLE BY HAND FROM OUTSIDE THE ENCLOSURE. THE HANDLE SHALL BE SO INTERLOCKED WITH THE DOOR THAT IT MUST BE RETURNED TO THE "OFF" POSITION BEFORE THE DOOR CAN BE OPENED, BUT A COIN-PROOF DEFEAT MECHANISM SHALL BE PROVIDED TO ALLOW AUTHORIZED PERSONNEL TO OPEN THE ENCLOSURE DOOR WITHOUT OPENING THE DISCONNECTING DEVICE. PROVISIONS FOR PADLOCKING THE DISCONNECT HANDLE IN THE "OFF" POSITION SHALL BE MADE. THE ENCLOSURE FOR COMBINATION STARTERS SHALL BE NEMA TYPE 1 FOR INDOOR USE AND NEMA TYPE 4X FOR OUTDOOR USE, AND NEMA TYPE 7 FOR EXPLOSION PROOF USE.
- b. MOTOR CIRCUIT PROTECTORS SHALL BE THE CONTINUOUSLY ADJUSTABLE, INSTANTANEOUS MAGNETIC TRIP TYPE CIRCUIT BREAKER AND SHALL BE SO CONSTRUCTED THAT ALL POLES OPEN, CLOSE AND TRIP SIMULTANEOUSLY.

- E SWITCH CONTACT.

### DJUST, BALANCE AND INSTRUCTIONS (230593)

- REPORT
- AND SYSTEMS.

### CIRCUIT PROTECTION:

SHALL BE PROVIDED FOR OVERLOAD PROTECTION. MOTOR CIRCUIT PROTECTOR SHALL BE OR SHORT CIRCUIT PROTECTION.

### <u>(230514)</u>

LL FURNISH ALL SAFETY DISCONNECT SWITCHES (FUSED AND NON-FUSED) REQUIRED FOR ) UNDER THIS CONTRACT. IN ADDITION, THIS CONTRACTOR SHALL FURNISH A SAFETY DISCONNECT RS AND EQUIPMENT WHICH DO NOT HAVE COMBINATION STARTERS OR INTEGRAL DISCONNECTING INNECT SWITCHES SHALL BE PROVIDED FOR ALL EQUIPMENT RATED FOR USE ONLY WITH FUSES UNITS, COMPRESSORS, ETC.). SUCH SWITCHES SHALL BE ONE, TWO OR THREE POLE TYPE, WITH VIRE SERVICE, AND SHALL HAVE THE PROPER CURRENT AND VOLTAGE RATING AS REQUIRED. ISCONNECT SWITCHES SHALL BE BY THE ELECTRICAL CONTRACTOR.

SHALL BE NEMA HEAVY DUTY TYPE AND SHALL CARRY THE UNDERWRITERS' LABORATORIES LABEL. ALL INCORPORATE CLASS "R" FUSE REJECTION FEATURE AND SHALL BE BRACED TO WITHSTAND YMMETRICAL FAULT CURRENT. SAFETY SWITCHES SHALL CONFORM TO FEDERAL SPECIFICATION

TYPE, SHEET ENCLOSED, SAFETY SWITCHES. THE TYPE, SIZE, AND RATING SHALL BE AS INDICATED AS REQUIRED BY THE MOTOR OR EQUIPMENT SERVED. THE ENCLOSURE FOR DISCONNECT EMA TYPE 1 FOR INDOOR USE, NEMA TYPE 4X FOR OUTDOOR USE AND NEMA TYPE 7 FOR EXPLOSION CTS SHALL BE MANUFACTURED BY ALLEN-BRADLEY, GENERAL ELECTRIC, CUTLER-HAMMER

RPORATE QUICK-MAKE, QUICK-BREAK OPERATING HANDLES. THE MECHANISM SHALL BE AN BOX, NOT THE COVER, AND SWITCHES SHALL HAVE A COVER INTERLOCK TO PREVENT IG OF THE SWITCH DOOR IN THE ON POSITION OR CLOSING OF THE SWITCH MECHANISM WITH THE CARRYING PARTS SHALL BE CONSTRUCTED OF HIGH-CONDUCTIVITY COPPER WITH

### OSITIVE PRESSURE TYPE REINFORCED FUSE CLIPS.

RACTOR SHALL FURNISH, INSTALL AND CONNECT ALL POWER WIRING TO ALL MECHANICAL ED EQUIPMENT. THE MECHANICAL CONTRACTOR SHALL FURNISH, INSTALL AND CONNECT ALL L FURNISHED EQUIPMENT, INCLUDING CONTROL DEVICES, STARTERS AND INTEGRAL DISCONNECT CTOR FURNISHED EQUIPMENT.

### DRIVES (230515)

EQUENCY DRIVES (VFD) AS SPECIFIED HEREIN AND AS SHOWN ON THE CONTRACT DRAWINGS. BASIS L ACH-550. THE ENCLOSURE FOR VFD SHALL BE NEMA TYPE 12 FOR INDOOR USE AND NEMA TYPE VFD SHALL PROVIDE MICROPROCESSOR-BASED CONTROL FOR THREE-PHASE INDUCTION MOTORS DDULATED (PWM) DESIGN, WHICH CONVERTS THE UTILITY INPUT VOLTAGE AND FREQUENCY TO A ) FREQUENCY OUTPUT VIA A TWO-STEP OPERATION. VFD SHALL HAVE AN EFFICIENCY AT FULL LOAD EDS 97%. THE EFFICIENCY SHALL EXCEED 90% AT 50% SPEED.

MINIMUM LINE SIDE DISPLACEMENT POWER FACTOR OF 0.96, REGARDLESS OF SPEED AND LOAD FOR . VFD SHALL MAINTAIN A MINIMUM LINE SIDE DISPLACEMENT POWER FACTOR OF .99, REGARDLESS OR MOTORS GREATER THAN 75 HP. THE VFD'S SHALL HAVE A ONE (1) MINUTE OVERLOAD CURRENT DW OVERLOAD APPLICATIONS. VFD SHALL HAVE AN INTEGRAL EMI/RFI FILTER AND CIRCUIT BREAKER RRENT WITHSTAND RATING OF THE OPEN VFD SHALL BE 65,000 AIC.

BILITY OPTIONS SHALL INCLUDE MODBUS RTU, JOHNSON CONTROLS METASYS N2, BACNET MSTP, P AND EXPANSION CARD COMMUNICATIONS SHALL INCLUDE LONWORKS. THE EXACT PROTOCOL I WILL COMMUNICATE WITH THE BAS COMMUNICATION SYSTEM PROVIDED.

LING FAN(S) THAT IS FIELD REPLACEABLE.

E FOLLOWING PROTECTIVE FEATURES: OVERCURRENT, OVERVOLTAGE, SYSTEM FAULT, UNDER UPERVISION, OUTPUT PHASE SUPERVISION, UNDER TEMPERATURE, OVER TEMPERATURE, MOTOR TEMPERATURE AND MOTOR UNDER LOAD. VFD SHALL PROVIDE GROUND FAULT PROTECTION ARTING, AND RUNNING.

VENTY-FOUR (24) MONTHS FROM CERTIFIED START-UP DATE. THIS WARRANTY DURATION INCLUDES DRIZED SERVICE REPRESENTATIVE AND PARTS, LABOR AND TRAVEL TIME.

CHECK ALL EQUIPMENT, AND PERFORM START UP IN ACCORDANCE WITH THE MANUFACTURER'S

### STED AND FREE OF LEAKS.

TED WORK SHALL REMAIN UNCOVERED UNTIL REQUIRED TESTS HAVE BEEN COMPLETED, BUT IF ULE REQUIRES IT, ARRANGE FOR PRIOR TESTS ON PARTS OF SYSTEM AS APPROVED BY THE TENANT.

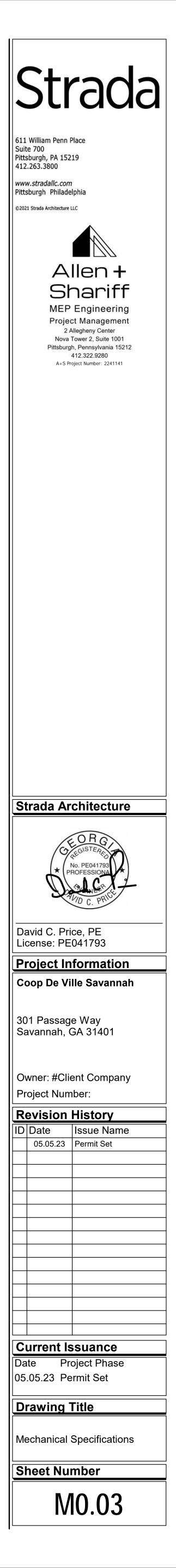
CALIBRATE CONTROLS, CHECK FOR PROPER OPERATION AND SEQUENCE UNDER ALL CONDITIONS ARY ADJUSTMENTS.

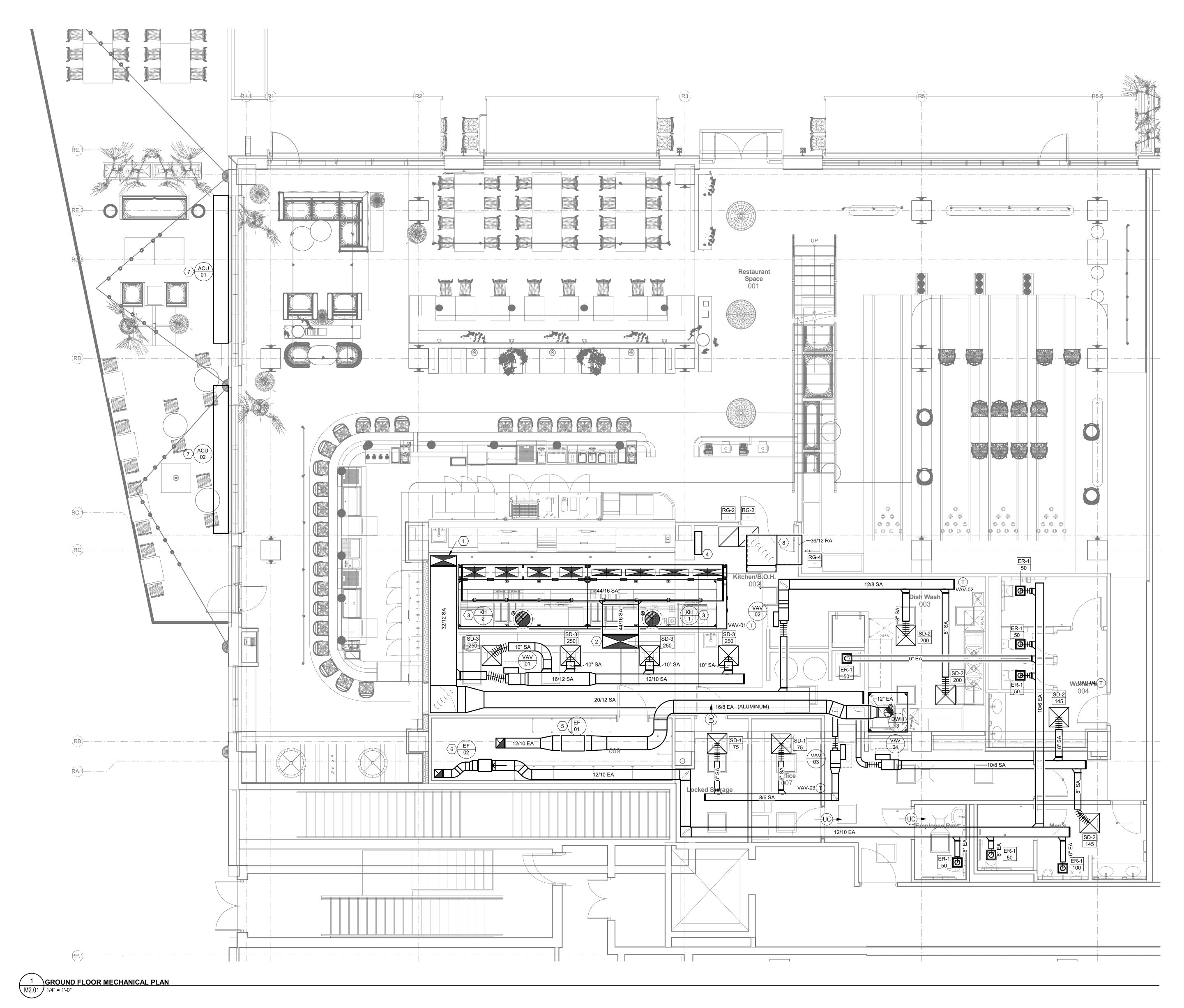
ND EQUIPMENT IS PLACED IN OPERATION, HVAC CONTRACTOR IS RESPONSIBLE FOR BALANCING SHALL BE PERFORMED BY AN INDEPENDENT AABC CERTIFIED CONTRACTOR.

THE AIR SYSTEMS BEFORE HYDRONIC, STEAM, AND REFRIGERANT SYSTEMS. TESTING AND BALANCING SHALL BE DONE IN ACCORDANCE WITH THE MOST RECENT AABC NATIONAL STANDARDS FOR TOTAL SYSTEM BALANCE. GPM'S SHALL BE BALANCED WITHIN 10% OF DESIGN. AFTER ALL AIR SYSTEMS ARE INSTALLED, EACH SUPPLY AIR OUTLET SHALL BE AIR BALANCED TO WITHIN 10% OF THE CFM SHOWN WITH AIR PATTERNS SET AS INDICATED ON DRAWINGS (OR WITHIN 10 CFM WHEN BELOW 100 CFM). FAN RPMS AND ZONE DAMPERS SHALL BE ADJUSTED AND SHEAVES SHALL BE REPLACED AS REQUIRED TO ACHIEVE AIR BALANCE. ALL ZONES OR PORTIONS THEREOF SERVING OTHER SPACES AND WHICH MAY BE AFFECTED BY THE PROJECT SHALL BE TRAVERSED PRIOR TO CONSTRUCTION. THE FINAL AIR BALANCE SHALL RESTORE THESE AIR QUANTITIES. BEFORE AND AFTER AIR QUANTITIES SHALL BE LISTED IN THE AIR BALANCE

7. START UP AND PLACE ALL SYSTEMS IN OPERATION AND TAG ALL SWITCHES AND CONTROLS WITH PERMANENT LABELS.

8. INSTRUCT OWNER IN OPERATION OF SYSTEMS AND SUBMIT OPERATING AND MAINTENANCE MANUAL ON ALL EQUIPMENT

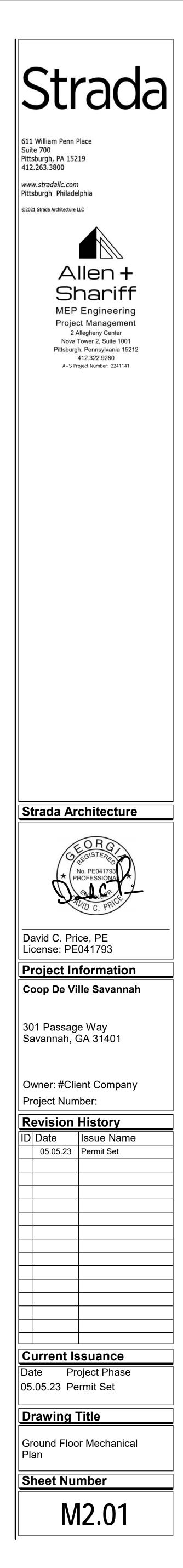


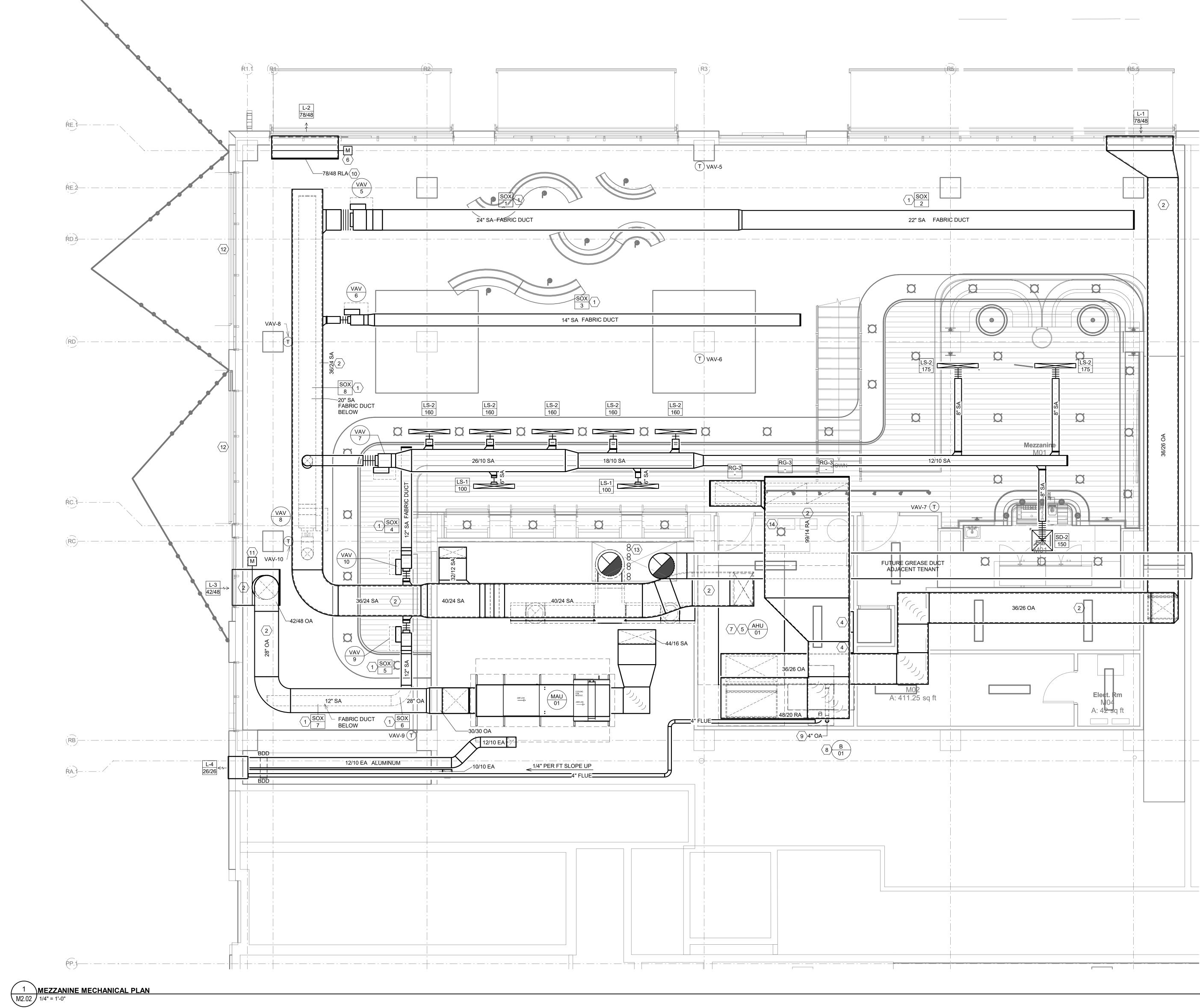


- 1. ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED PER THE MANUFACTURER RECOMMENDATION. MAINTAIN ALL REQUIRED SERVICE CLEARANCE PER
- INSTALLATION MANUAL AND LOCAL CODES.
  2. MECHANICAL CONTRACTOR SHALL COORDINATE DUCT ROUTING AND ELEVATION
- WITH EXISTING CONDITIONS PRIOR TO DUCT FABRICATION. 3. MECHANICAL CONTRACTOR SHALL COORDINATE WITH ALL OTHER DISCIPLINES PRIOR TO INSTALLATION OF ANY MECHANICAL EQUIPMENT AND DUCTWORK.
- MECHANICAL CONTRACTOR SHALL COORDINATE LOUVER SIZES AND FINAL LOCATION WITH GC. ALL LOUVERS TO BE INSTALLED WITHIN THE UPPER TRANSOM
- WINDOW.
  ALL GRD RUN-OUTS SHALL HAVE VOLUME CONTROL DAMPERS LOCATED IN EASILY
- ACCESSIBLE LOCATION. 6. ALL MECHANICAL EQUIPMENT CONCEALED ABOVE HARD CEILING SHALL HAVE ACCESS PANEL TO ALLOW FOR FUTURE SERVICE AND MAINTENANCE.

MECHANICAL KEY NOTES: (#)

- 32/12 SUPPLY AIR DUCT UP TO BE CONNECTED TO AHU-01 MAIN DUCTWORK. SEE DUCT CONTINUATION ON THE MEZZANINE MECHANICAL PLAN.
   44/16 MAKE-UP AIR DUCT UP TO MAU-01 ABOVE THE CEILING. SEE DUCT
- CONTINUATION ON THE MEZZANINE MECHANICAL PLAN.
   KITCHEN HOODS SHALL BE INSTALLED PER MANUFACTURER RECOMMENDATION. USE CAPTIVEAIRE DOUBLE WALL GREASE DUCT TO CONNECT KITCHEN HOODS TO EXHAUST GREASE EXHAUST FAN ON THE ROOF. PROVIDE DUCT CLEAN-OUTS AT EVERY CHANGE OF DIRECTION (INSTALLATION OF CLEAN-OUTS ON BOTTOM OF
- DUCT SHALL NOT BE PERMITTED). GREASE DUCT SHALL BE SLOPED DOWN AT 1/4" PER FT TOWARDS THE KITCHEN HOOD.
  4. CAPTIVEAIRE CONTROL PANEL FOR KITCHEN HOODS. MAINTAIN ALL REQUIRED SERVICE CLEARANCES PER MANUFACTURER RECOMMENDATION.
  5. USE ALUMINUM DUCTWORK FOR EF-01 SYSTEM. PROVIDE BACKDRAFT DAMPER IN
- THE DUCT CLOSE TO EXTERIOR WALL.
  EF-02 SHALL RUN CONTINUOUSLY DURING THE OCCUPIED PERIOD.
  AIR CURTAINS SHALL BE RATED FOR OUTDOOR USE. PROTECTION OF MOTORS AND ELECTRICAL COMPONENTS SHALL BE PROVIDED AS REQUIRED BY THE
- MANUFACTURER AND LOCAL CODES. COORDINATE SIZE, ELEVATION, AND MOUNTING TYPE WITH WALL OPENINGS AND BUILDING STRUCTURE. MOUNTING
- HEIGHT SHALL BE FOR INSECT CONTROL. 8. TRANSFER DUCT SHALL BE ACOUSTICALLY LINED WITH 1" LINEAR.





1. ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED PER THE MANUFACTURER RECOMMENDATION. MAINTAIN ALL REQUIRED SERVICE CLEARANCE PER

3. MECHANICAL CONTRACTOR SHALL COORDINATE WITH ALL OTHER DISCIPLINES

PRIOR TO INSTALLATION OF ANY MECHANICAL EQUIPMENT AND DUCTWORK. 4. MECHANICAL CONTRACTOR SHALL COORDINATE LOUVER SIZES AND FINAL

5. ALL GRD RUN-OUTS SHALL HAVE VOLUME CONTROL DAMPERS LOCATED IN EASILY

1. MECHANICAL CONTRACTOR SHALL COORDINATE THE DISCHARGE ANGLE OF ALL SA NOZZLES WITH DUCT ELEVATION TO INSURE THAT THE REQUIRED AIR FLOW

DUCTWORK SIZES SHOWN ON THE PLAN ARE CLEAR INTERNAL SIZES. ACCOUNT

MECHANICAL ROOM. COORDINATE POWER SUPPLY WITH E.C. AND LOCATION WITH

3. EXPOSED PORTION OF THIS DUCT RUN SHALL BE INTERNALLY INSULATED WITH 1"

4. CONTROL BOXES FOR VAVs AND AHU-01 TO BE MOUNTED ON THE WALL OF THE

6. PROVIDE MOTORIZED DAMPERS IN THE RELIEF DUCT. TIE TO AHU CONTROL FOR

7. ROUTE CONDENSATE DRAIN PIPING TO THE NEAREST FLOOR DRAIN OR MOP SINK.

8. HEATING BOILER SERVING THE HOT WATER COIL IN THE AHU. PROVIDE ALL

9. BOILER COMBUSTION AIR PIPE TO BE CONNECTED TO OA MAIN DUCT.

OPEN. PROVIDE DOOR SENSOR AND TIE IT TO THE AHU CONTROL.

(L-4). SIZE AND MAXIMUM LENGTH SHALL BE PER MANUFACTURER

10. OPEN ENDED RELIEF DUCT WITH INSECT SCREEN END CAP.

SEPARATION RECOMMENDED BY THE MANUFACTURER.

REQUIRED APPURTENANCE, ACCESSORIES, FITTING AND CONTROLS FOR A

11. MOTORIZED DAMPER SHALL BE TIED TO THE MAU CONTROL AND SHALL BE FULLY

12. AHU-01 SHALL RUN IN FULL ECONOMIZER MODE ANYTIME A GARAGE DOOR IS

13. REFRIGERANT LINES RISERS TO CU-01,02,03 COORDINATE FINAL LOCATION AND ROUTING IN THE FIELD. DO NOT EXCEED MAXIMUM PIPING LENGTH AND VERTICAL

14. ROUTE FLUE AND INTAKE PIPES FOR THE WATER HEATERS TO EXHAUST LOUVER

2. ENTIRE DUCTWORK RUN SHALL BE INTERNALLY INSULATED USING 1" LINER.

FOR THE ADDED LINER THICKNESS DURING DUCT FABRICATION.

6. ALL MECHANICAL EQUIPMENT CONCEALED ABOVE HARD CEILING SHALL HAVE ACCESS PANEL TO ALLOW FOR FUTURE SERVICE AND MAINTENANCE.

LOCATION WITH GC. ALL LOUVERS TO BE INSTALLED WITHIN THE UPPER TRANSOM

WITH EXISTING CONDITIONS PRIOR TO DUCT FABRICATION.

WILL REACH THE BREATHING ZONE IN EACH SPACE.

5. AHU UNIT SHALL BE MOUNTED ON VIBRATION ISOLATORS.

NORMAL AND ECONOMIZER MODE OPERATION.

WINDOW.

LINER.

ACCESSIBLE LOCATION.

MECHANICAL KEY NOTES: (#)

CONTROL CONTRACTOR.

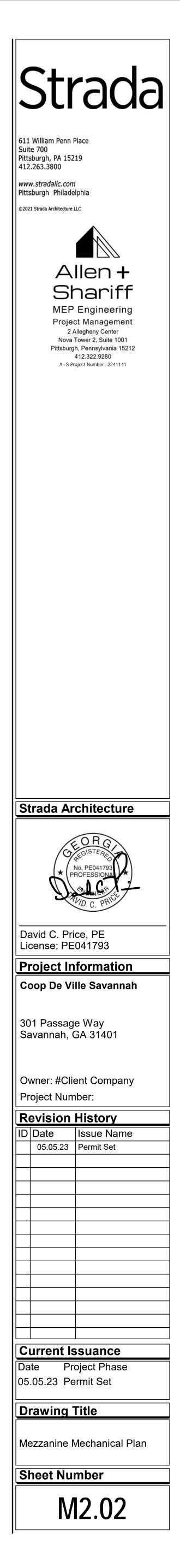
TERMINATE WITH AIR GAP.

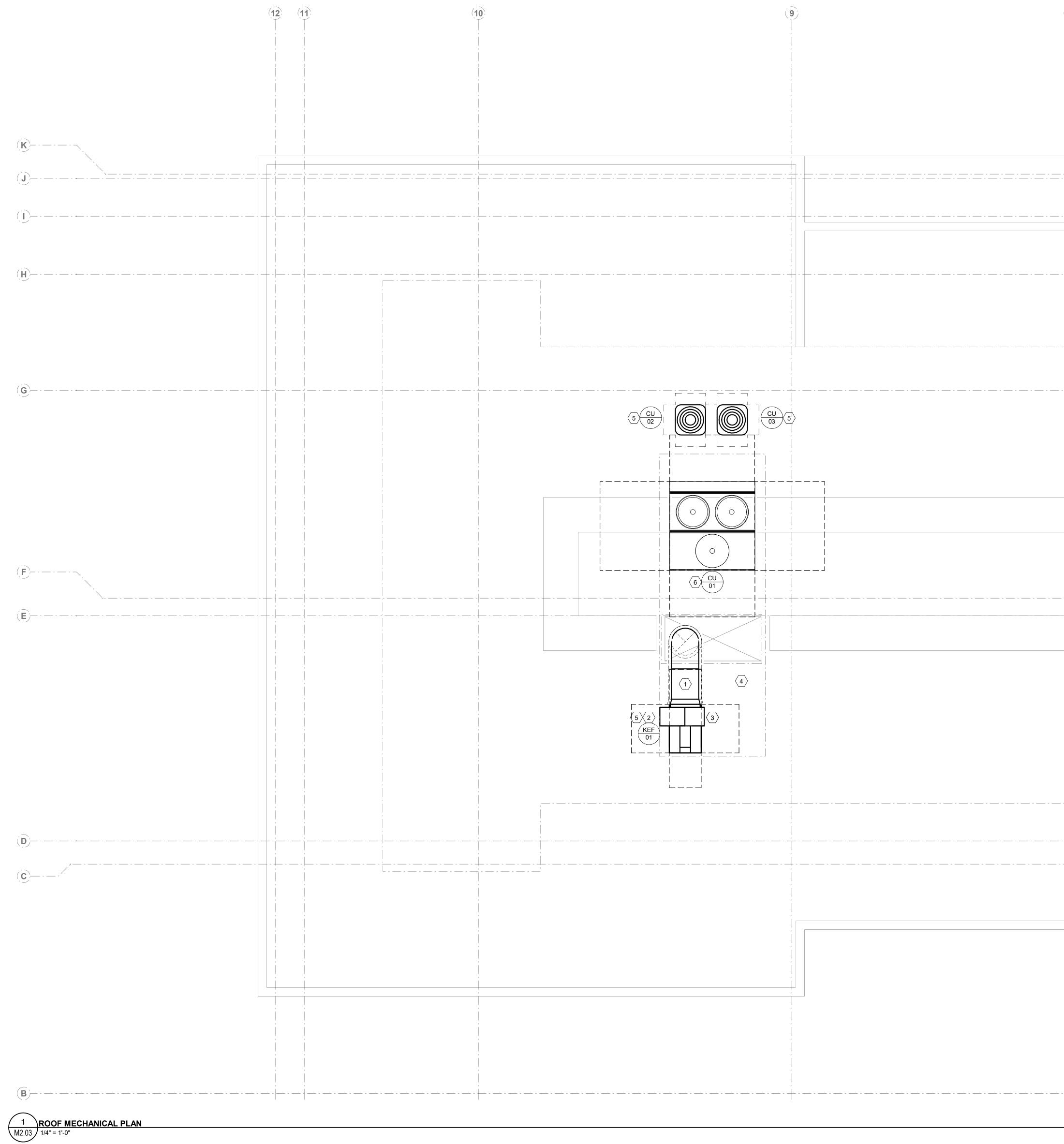
COMPLETE SYSTEM OPERATION.

OPEN PRIOR TO MAU STARTUP.

RECOMMENDATION.

- INSTALLATION MANUAL AND LOCAL CODES. 2. MECHANICAL CONTRACTOR SHALL COORDINATE DUCT ROUTING AND ELEVATION



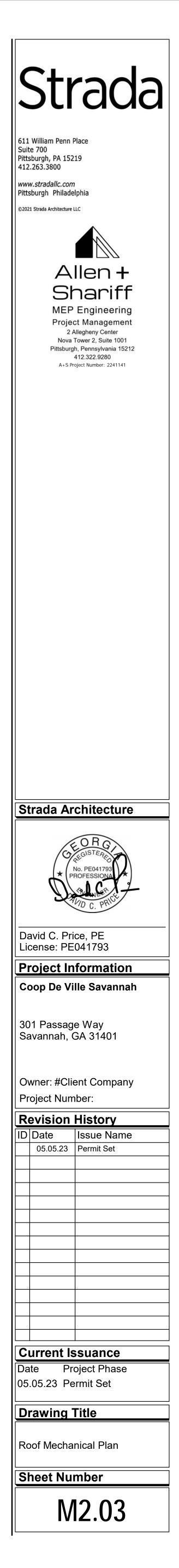


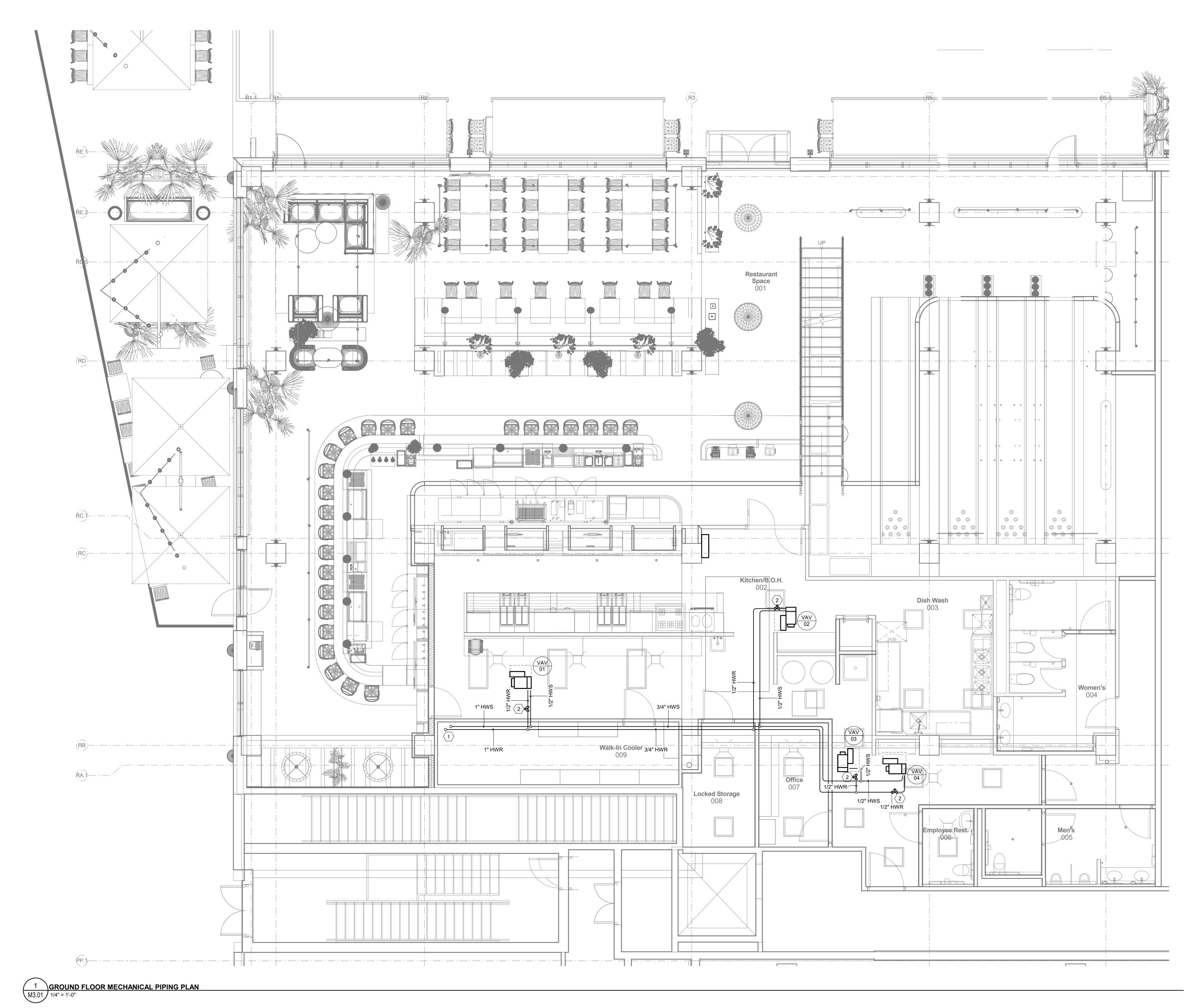
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- 1. ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED PER THE MANUFACTURER RECOMMENDATION. MAINTAIN ALL REQUIRED SERVICE CLEARANCE PER INSTALLATION MANUAL AND LOCAL CODES.
- 2. MECHANICAL CONTRACTOR SHALL COORDINATE DUCT ROUTING WITH EXISTING CONDITIONS PRIOR TO INSTALLATION.
- 3. MECHANICAL CONTRACTOR SHALL COORDINATE WITH ALL OTHER DISCIPLINES PRIOR TO INSTALLATION OF ANY MECHANICAL EQUIPMENT AND DUCTWORK.
- 4. COORDINATE WEIGHT AND FINAL LOCATION FOR ALL EQUIPMENT WITH STRUCTURAL ENGINEER TO EVALUATE THE CAPABILITY OF THE EXISTING THE STRUCTURE TO SUPPORT THE ADDED UNITS.

MECHANICAL KEY NOTES:  $\langle \# 
angle$ 

- 1. CAPTIVEAIRE DOUBLE WALL GREASE DUCT TO BE INSTALLED PER MANUFACTURE RECOMMENDATIONS. SLOPE DUCTWORK DOWN TOWARDS THE HOOD AT 1/4" PER FT. PROVIDE DUCT ACCESS DOORS AT EVERY CHANGE IN DIRECTION MORE THAT 45°
- 2. EXHAUST FAN DISCHARGE SHALL BE A MINIMUM OF 10 FT AWAY FROM ANY OUTSIDE AIR INTAKE INTO THE BUILDING.
- 3. EXHAUST FAN DISCHARGE POINT SHALL BE A MINIMUM OF 40" ABOVE ROOF SURFACE.
- 4. WHEN LOCATING KEF-01 MAKE SURE TO ALLOW ROOM FOR FUTURE EXHAUST FAN FROM ADJACENT TENANT.
- 5. PROVIDE 14" HIGH EQUIPMENT SUPPORT RAILS. 6. PROVIDE BIG FOOT SUPPORT SYSTEM.

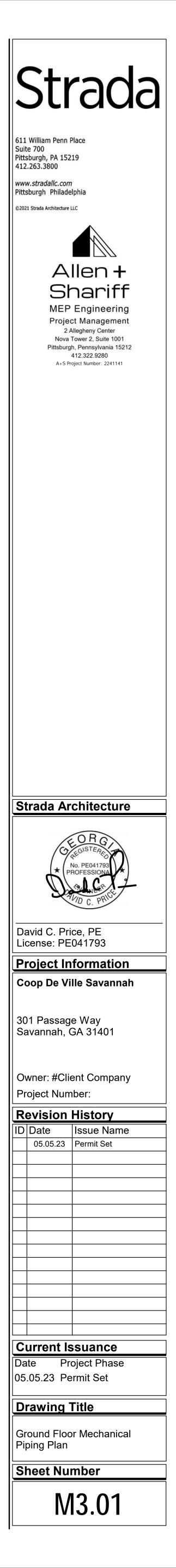


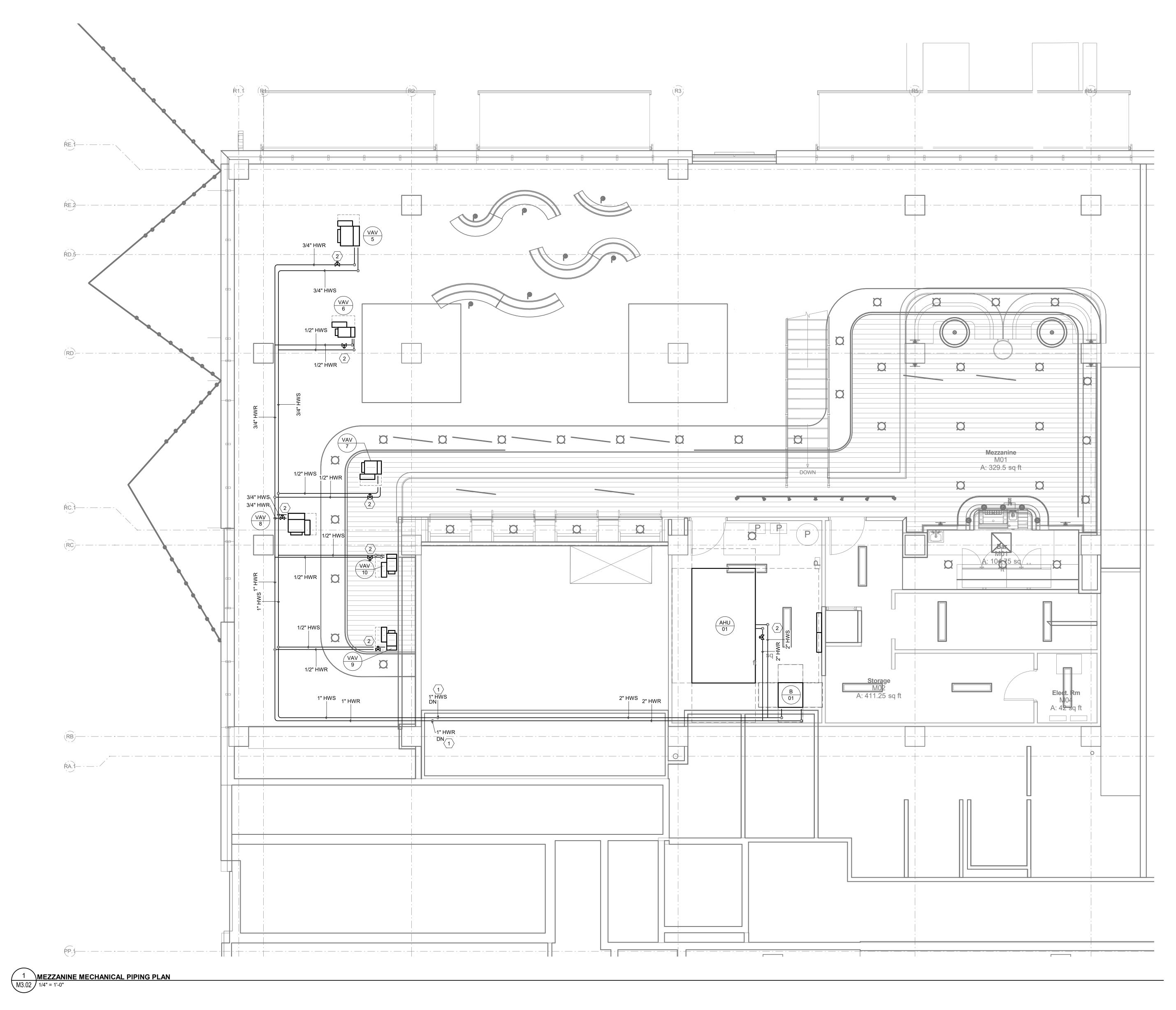


- 1. ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED PER THE MANUFACTURER RECOMMENDATION. MAINTAIN ALL REQUIRED SERVICE CLEARANCE PER INSTALLATION MANUAL AND LOCAL CODES.
- MECHANICAL CONTRACTOR SHALL COORDINATE DUCT ROUTING AND ELEVATION WITH EXISTING CONDITIONS PRIOR TO DUCT
- FABRICATION.
- MECHANICAL CONTRACTOR SHALL COORDINATE WITH ALL OTHER DISCIPLINES PRIOR TO INSTALLATION OF ANY MECHANICAL EQUIPMENT AND DUCTWORK.
   ALL MECHANICAL EQUIPMENT CONCEALED ABOVE HARD CEILING SHALL HAVE ACCESS PANEL TO ALLOW FOR FUTURE SERVICE AND MAINTENANCE
- MAINTENANCE.

MECHANICAL KEY NOTES: (#)

HWS & HWR PIPES DN FROM ABOVE. SEE M3.01 FOR PIPE CONTINUATION.
 PROVIDE 2-WAY MODULATING CONTROL VALVE WITH ACTUATOR.

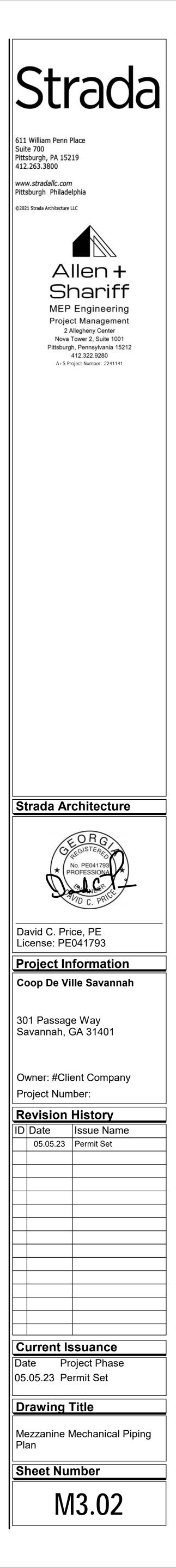


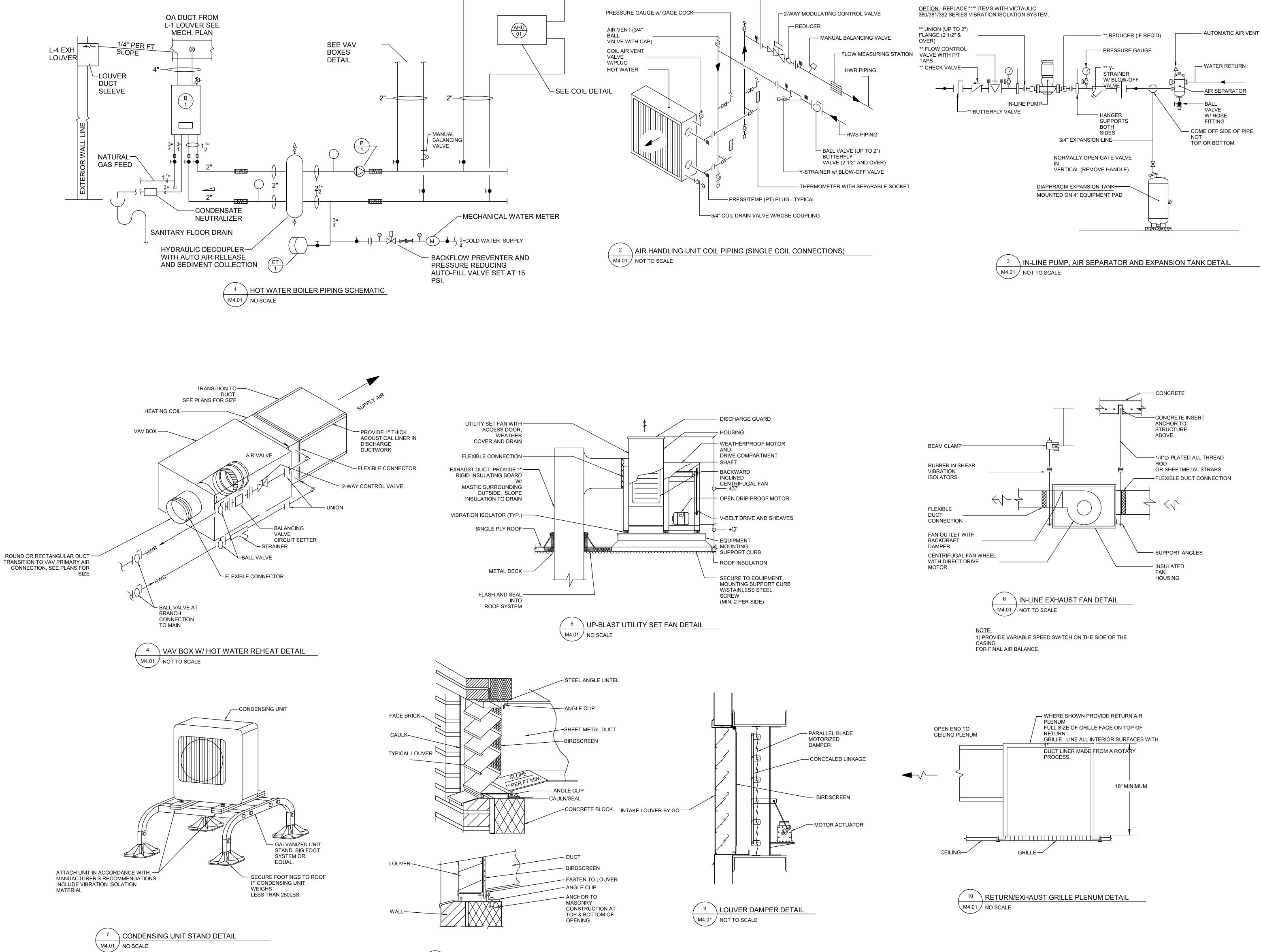


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- MAINTENANCE.

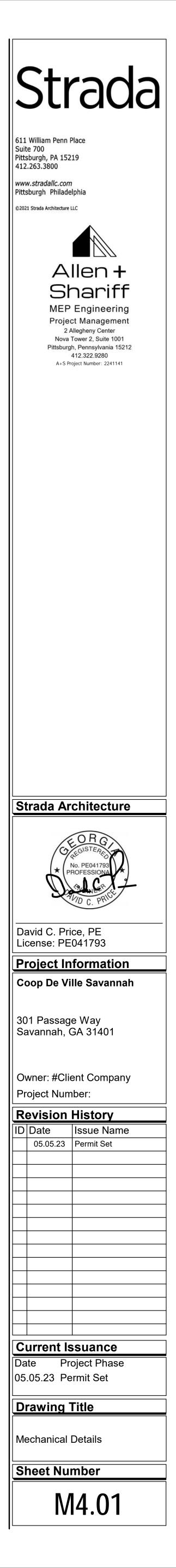
MECHANICAL KEY NOTES: (#)

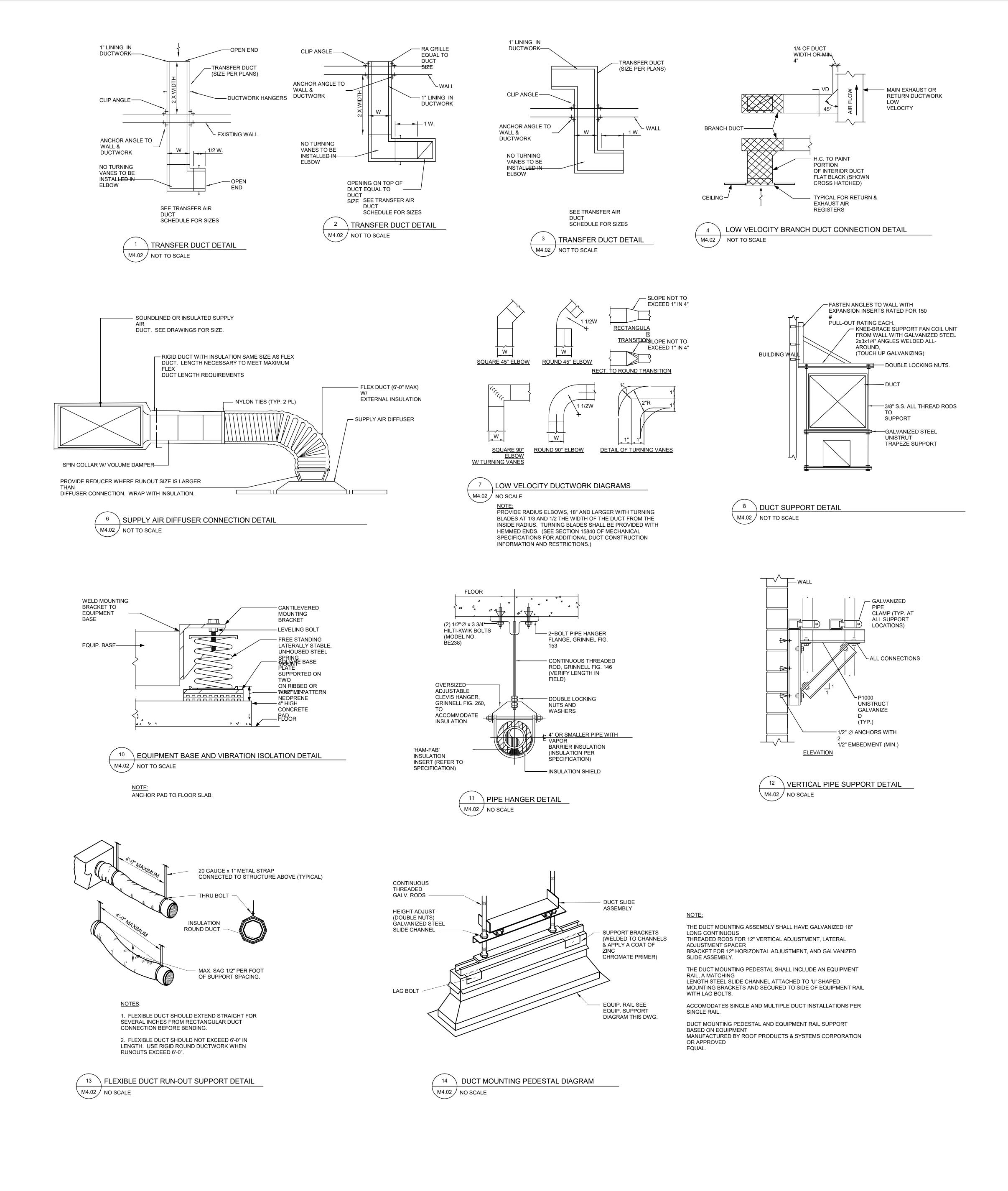
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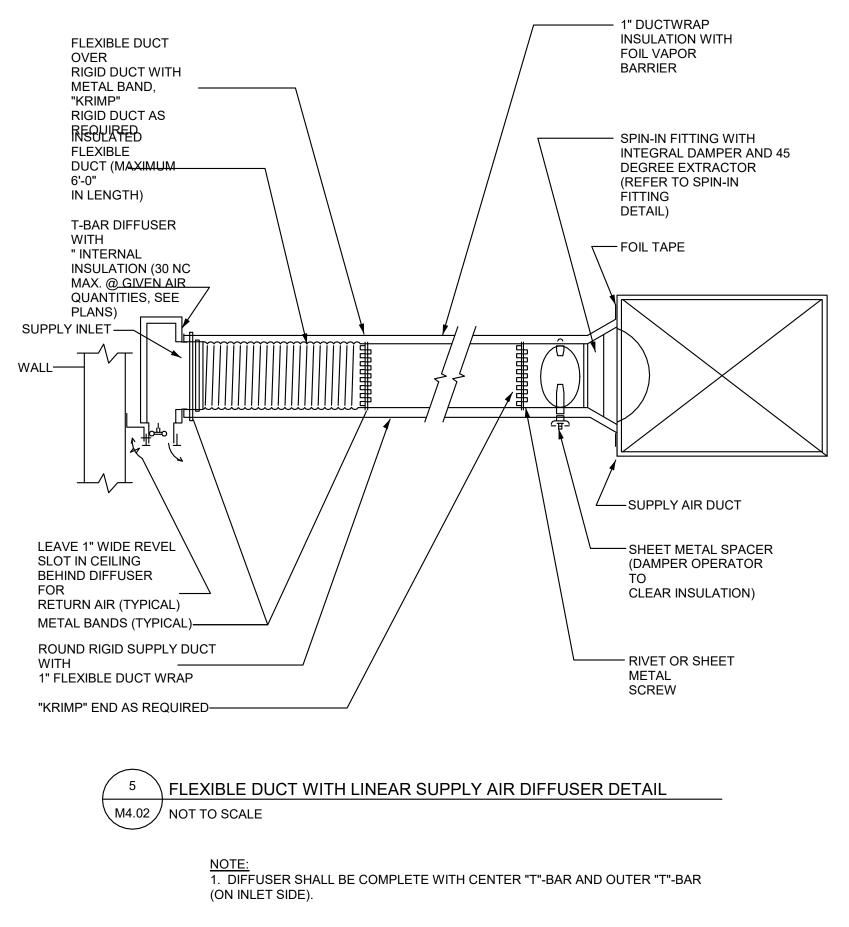


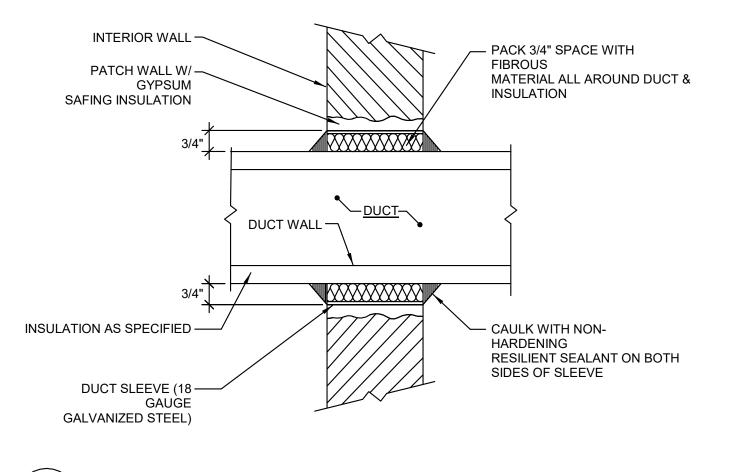


8 LOUVER IN WALL DIAGRAM M4.01 NO SCALE



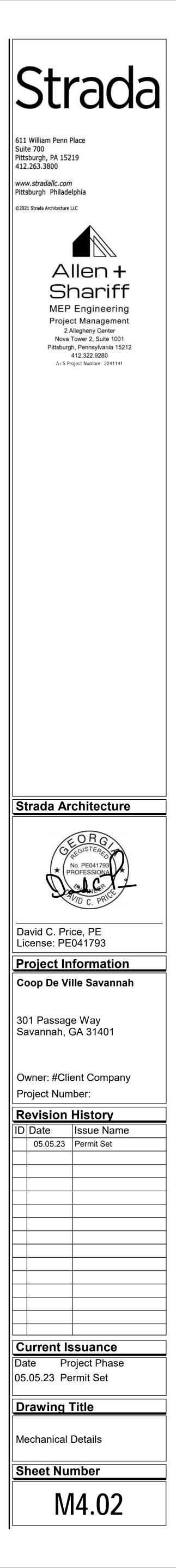






9 INSULATED DUCT AND DUCT SLEEVE THRU NON-RATED WALL DETAIL M4.02 NO SCALE

> NOTES: 1. FOR INSTALLATION IN 2 HOUR RATED FIRE WALL CONSTRUCTION, SEE FIRE DAMPER DIAGRAM. 2. FOR INFORMATION ON DUCT SLEEVES THRU RATED WALLS AND FLOORS SEE SPECIFICATIONS SECTION 15055. 3. 3/4" MIN. SPACE IS REQUIRED BETWEEN SLEEVE & DUCT INSULATION IN AREA WHERE DUCT IS SPECIFIED TO BE INSULATED. 4. ONLY 1 HOUR RATED SMOKE PARTITIONS & 2 HOUR RATED FIRE WALLS ARE INDICATED ON HEATING DRAWINGS. FOR ADDITIONAL RATED WALLS SEE ARCHITECTURAL DRAWINGS. 5. CONTRACTOR TO EXTEND FLOOR SLEEVES IN EQUIPMENT ROOMS & OVER HABITABLE SPACES 2 INCHES ABOVE FINISHED FLOOR.



AIR HA	R HANDLING UNIT SCHEDULE																													
UNIT DES.		SUPPL	Y FAN D	ATA					DX CO	OLING CC	NL						ŀ	HOT WAT	ER HEAT	ING COIL	-			ELECTF	RICAL D	<b>АТА</b>	WEIGHT LBS	BASIS OF	REMARKS	
DES.	CFM	MIN OA CFM	E.S.P. IN. WG	RPM	BHP	EA DB	EA WB	LA DB	LA WB	SENS. MBH	TOTAL MBH	NUMBER OF ROWS	COIL MODEL	TOTAL MBH	GPM	P.D. FT.WG	EWT	LWT	EAT	LAT	NUMBER OF COILS	NUMBER OF ROWS	COIL MODEL	VOLTS/PH	MCA	МОСР	LBS	DESIGN		
AHU-01	12000	2400	0.75	819	12.1	80°F	67°F	55°F	54.5°F	329	465	6	CARRIER 28NE	400	32.5	2.5	140°F	115°F	60°F	90°F	1	2	CARRIER 28NB	460V / 3PH	22.8	40	2131	CARRIER	39LA	SEE BELOW

REMARKS: 1. PROVIDE DISCONNECT.

2. PROVIDE FILTER SECTION WITH MERV-13 AIR FILTERS. 3. PROVIDE WITH MIXING BOX SECTION.

4. COORDINATE AIR INLET AND OUTLET LOCATION AND ACCESS DOORS PRIOR TO EQUIPMENT RELEASE. 5. PROVIDE WITH ONE SET OF EXTRA BELTS.

6. PROVIDE WITH SUPPLY FAN VFD AND NON FUSED DISCONNECT FOR VFD 7. RA DUCT MOUNTED SMOKE DETECTOR FURNISHED BY E.C. INSTALLED BY M.C. AND WIRED BY E.C.

AIR COC		AIR COOLED CONDENSING UNIT SCHEDULE														
UNIT SERVES SERVES COOLING EFF. EAT ELECTRICAL REFRIGERANT LINESET SOUND PRESS. V											WEIGHT	MANUF.	MODEL	REMARKS		
DES.	SERVES	NO. OF	TONS	EER	IEER		VOLTS / PH.	МСА	МОСР	SUCTION CKT A / CKT B	LIQUID CKT A / CKT B	DBA	WEIGHT			NEMANING
CU-01	AHU-01	36	40	11.5	16.8	95°F	460V / 3PH	82.4	100	1-5/8 / 1-5/8	5/8 / 5/8	88.7	2094	CARRIER	38APD0406	SEE BELOW

<u>NOTES:</u> 1. MCA - MINIMUM CIRCUIT AMPACITY, MOCP - MAXIMUM OVER-CURRENT PROTECTION.

2. PROVIDE NON-FUSED DISCONNECT 3. PROVIDE WITH LOW SOUND FAN & COMPRESSOR.

4. COORDINATE MAXIMUM REFRIGERANT LENGTH AND VERTICAL SEPARATION PRIOR TO EQUIPMENT RELEASE. 5. PROVIDE WITH DUAL CIRCUITS OPTION.

6. PROVIDE WITH E-COAT MICRO-CHANNEL HEAT EXCHANGER. 7. PROVIDE WITH SUCTION LINE DOUBLE RISERS FOR CIRCUIT A & B, CONSULT MANUFACTURER FOR PIPE SIZES AND INSTALLATION.

8. PROVIDE WITH DIGITAL SCROLL COMPRESSOR. 9. PROVIDE WITH LONG LINE LENGTH CHECK VALVES.

10. PROVIDE WITH VARIABLE SPEED CONDENSER FAN.

### 

BOILER S	SCHEDULE														
UNIT NO.	BOILER LOCATION	SERVING	BOILER TYPE	OPERATING PRESSURE (PSI)	FUEL	GAS INPUT (MBH)	GROSS OUTPUT (MBH)	GAS CONNECTION (IN)	WATER CONNECTION (IN)	MAX. FLOW RATE (GPM)	MAX. LWT / EWT (°F)	VOLTAGE / PHASE	FLUE/ INTAKE DIA (IN.)	BASIS OF DESIGN	REMARKS
B-1	MECHANICAL ROOM	AHU-01	CONDENSING	15	NG	399	379	3/4"	1 1/2"	32.5	140 / 115	120 / 1	4"	HTP - ELUD-399FBN	1,2,3, 4

REMARKS: 1. PROVIDE VENTING MATERIAL THAT MEETS THE MANUFACTURER'S GUIDELINES. 2. PROVIDE CONDENSATE NEUTRALIZER KIT.

3. PROVIDE DISCONNECT.

4. PROVIDE INTEGRAL BOILER PRIMARY CIRCULATOR ECM PUMPS. 5. SEE SECTION 232113 NOTE 13 ON SHEET M0.02.

КІТСН	EN HOOD SCHE	DULE																							
			MAX.			EXHAU	ST PLENUM			SU	PPLY PLENU	JM		HO CONFIG		FILTE	ER(S)				LIGHT(S)			НООД	
TAG	MAKE/MODEL	LENGTH	COOKING TEMP.	TYPE	TOTAL EXHAUST		RISER(S)		TOTAL SUPPLY		RISI	ER(S)		END TO END	ROW	TYPE	QTY.	HEIGHT	LENGTH	QTY.	TYPE	WIRE GAURD	FIRE SYSTEM PIPING	WEIGHT (LBS)	REMARKS
					CFM	DIA	NO./CFM EA.	S.P. IN. W.C.	CFM	WIDTH	LENGTH	NO./CFM SA.	S.P. IN. W.C.				Gri.					GREAT			
KH-1	CAPTIVEAIRE / 6024 ND-2-PSP-F	13'-1.5"	600°F	Ι	2950	18"	1 / 2950	0.905	2575	8"	36"	4 / 643	0.184	LEFT	ALONE	CAPTRATE SOLO FILTER	9	20"	16"	4	RECESSED ROUND	NO	YES	1213	1 THRU 9
KH-2	CAPTIVEAIRE / 6024 ND-2-PSP-F	13'-1.5"	600°F	I	3280	18"	1 / 3280	1.118	2625	12"	28"	4 / 656	0.164	RIGHT	ALONE	CAPTRATE SOLO FILTER	9	20"	16"	4	RECESSED ROUND	NO	YES	802	1 THRU 9
DWH-3	CAPTIVEAIRE / 4824 VHB-G	4'-0"	700°F	п	600	10"	1 / 600	0.09	NA	NA	NA	NA	NA	ALONE	ALONE	NA	NA	NA	NA	NA	NA	NA	NO	156	10

REMARKS: 1. PROVIDE A REMOTE ACTIVATION PULL STATION WITH PROTECTIVE COVER FOR MANUAL ACTIVATION.

2. PROVED RISER TEMPERATURE SENSOR. 3. PROVIDE WITH INTEGRAL UTILITY CABINET.

4. PROVIDE WITH PERFORATED SUPPLY PLENUM FOR MAKE-UP AIR. 5. HOOD SHALL BE FACTORY BUILT COMPLIANT WITH UL710 AND UL710B.

6. HOOD FILTERS SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL1046. 7. HOOD CONSTRUCTION SHALL BE 430 STAINLESS STEEL WHERE EXPOSED.

8. LIGHT FIXTURE SHALL BE UL LISTED. 9. PROVIDE DOUBLE WALL INSULATED FRONT.

10. PROVIDE ALL REQUIRED CONTROLS, HANGERS, AND ACCESSORIES FOR A COMPLETE AND FUNCTIONAL INSTALLATION. HOOD SHALL BE 100% STAINLESS STEEL AND SUITABLE FOR DISHWASHER APPLICATION.

### GAS FIRED MAKE-UP AIR UNIT SCHEDULE

											1								1							I	
						FAN						СО	OLING			HEA	TING			CO	NDENSER UNIT						
TAG	SERVES	TYPE	OUTSIDE AIR CFM	MIN CFM	E.S.P. IN W.G.	RPM	HP	VOLTS / PH.	МСА	МОСР	TOTAL CAPACITY MBH	SENSIBLE CAPACITY MBH	EAT DB / WB	LAT DB / WB	FUEL TYPE	MBH INPUT	MBH OUTPUT		CONDENSER TAG	TONNAGE	VOLTS / PH.	MCA	MOCP	SEER	WEIGHT (LBS)	BASIS OF DESIGN (MANUF. / MODEL)	REMARKS
MAU-01	KH-1 & KH-2	INDOOR UNIT HEATING	5200	3600	0.5	2043	5.0	460V / 3PH	8.5	15	120	71	93°F / 77°F	80.1°F /	NATURAL GAS	259.6	238.8	43°F	CU-02	5	460V / 3PH	10.6	15	14	1627	CAPTIVEAIRE / A2-D250-20D-MPU	SEE BELOW
		AND COOLING	5200	3000	0.0	2043	5.0	400073FTT	0.0		120		3317771	71.1°F	GAS	239.0	230.0		CU-03	5	460V / 3PH	10.6	15	14	1027	A2-0230-200-WIF 0	

NOTES: 1. SUSPEND UNIT FROM STRUCTURE ABOVE.

2. PROVIDE DISCONNECT SWITCH. 3. PROVIDE WITH SUPPLY SIDE DISCHARGE.

4. PROVIDE WITH SUPPLY MOTORIZED DAMPER. 5. PROVIDE WITH 7-DAYS PROGRAMMABLE THERMOSTAT

EXHAUS	ST FAN SCHEDULE											
				ESP IN	FAN	SONES	WT.	МОТ	FOR	BASIS OF	DESIGN	
TAG	SERVES	TYPE	CFM	W.C.	RPM	(INLET)	LB.S	HP (WATT)	VOLTS/ PH	MFG.	MODEL	REMARKS
KEF-01	KITCHEN HOOD	ROOF	6230	2.5	740	28.5	1329	10.0	460V / 3PH	CAPTIVEAIRE	USBI36DD-RM	1,3,4
EF-01	DISHWASHER HOOD	INLINE	600	0.5	1230	6.3	147	0.5	115V / 1PH	CAPTIVEAIRE	SIF11DD-SS	1,2
EF-02	RESTROOMS	INLINE	450	0.5	1687	8.5	50	1/10	115 / 1	GREENHECK	SP-90-VG	1,2

REMARKS: 1. PROVIDE DISCONNECT SWITCH

2. PROVIDE WITH BACK DRAFT DAMPER. 3. PROVIDE WITH 14" HIGH EQUIPMENT SUPPORTS. 4. PROVIDE WITH GREASE CUP.

PUMP	SCHEDULE																
										Ν	IOTOR		PUMF	P SIZE	Т		
TAG	SYSTEM	LOCATION	TYPE	DESIGN CAPACITY GPM	DESIGN HEAD FT.	PUMP EFF.	SOLUTION	FLUID TEMP. (°F)	WATTS	HP	RPM	VOLTS/PH/ HZ	SUCT. IN. DIA.	DISCH. IN. DIA.	MEIGH.	BASIS OF DESIGN MANUF./MODEL	REMARKS
P-1	BOILER	STORAGE RM	INLINE, ECM	32.5	20	60%	WATER	140	480	0.6	3300	120 / 1 / 60	1 1/2"	1 1/2"	28.LBS	TACO VR15M	ALL, SEE BELOW

REMARKS: 1. PROVIDE DISCONNECT SWITCH. 2. PROVIDE WITH ECM MOTOR.

3. PUMP SHALL BE SETUP FOR PRESSURE DIFFERENTIAL OPERATION WHEN ENABLED. PRESSURE SETPOINT SHALL BE ESTABLISHED AT BALANCING

					PRIMARY	AIR				H	EATING (	COIL DATA			N	IC		
TAG	SERVES	BASIS OF DESIGN MANUF. / MODEL #	DESIGN CFM	MIN. CFM	INLET MIN. S.P. IN. W.C.	DOWNSTREAM S.P. IN. W.C.	INLET DIA. (IN)	HEATING CFM	CAPACITY MBH	GPM	ROWS	EWT / LWT	EAT / LAT	MAX. WATER PD (FT.WG)	RAD.	DISCH.	ELECTRICAL VOLTS / PHASE	REMARK
VAV-01	KITCHEN 002	CARRIER / 35E	1000	300	1.0	0.25	10	430	16.54	1.35	2	140°F / 115°F	55°F / 91°F	0.36	18	16	CONTROL WIRE	SEE BELO
VAV-02	DISH WASH 003	CARRIER / 35E	400	165	1.0	0.25	8	275	10.73	0.84	2	140°F / 114°F	55°F / 91°F	0.27	20	17	CONTROL WIRE	SEE BELO
VAV-03	OFFICE 007	CARRIER / 35E	150	100	1.0	0.25	6	100	4.0	1.0	2	140°F / 119°F	55°F / 91°F	0.20	18	14	CONTROL WIRE	SEE BELO
VAV-04	RESTROOMS	CARRIER / 35E	290	110	1.0	0.25	6	220	8.6	0.84	2	140°F / 119°F	55°F / 91°F	0.2	19	15	CONTROL WIRE	SEE BELO
VAV-05	SEATING AREA	CARRIER / 35E	4435	1230	1.0	0.25	24x16	1230	48.4	2.5	2	140°F / 101°F	55°F / 91°F	0.44	34	29	CONTROL WIRE	SEE BELO
VAV-06	SEATING AREA	CARRIER / 35E	800	240	1.0	0.25	8	240	10.07	0.84	2	140°F / 115°F	55°F / 93°F	0.27	24	22	CONTROL WIRE	SEE BELO
VAV-07	MEZZANINE	CARRIER / 35E	1500	450	1.0	0.25	12	450	18.73	1.3	2	140°F / 110°F	55°F / 93°F	0.4	22	20	CONTROL WIRE	SEE BELO
VAV-08	SEATING AREA	CARRIER / 35E	2000	600	1.0	0.25	14	750	29.3	1.8	2	140°F / 107°F	55°F / 91°F	0.52	19	20	CONTROL WIRE	SEE BELO
VAV-09	SEATING AREA	CARRIER / 35E	800	240	1.0	0.25	8	240	10.07	0.84	2	140°F / 115°F	55°F / 93°F	0.27	24	22	CONTROL WIRE	SEE BELO
VAV-10	SEATING AREA	CARRIER / 35E	725	220	1.0	0.25	8	275	10.73	0.84	2	140°F / 114°F	55°F / 91°F	0.27	22	21	CONTROL WIRE	SEE BELO

1. SOUND BASED ON 1" INLET S.P. , CAP. 0.25" DOWNSTREAM.

2. PROVIDE WITH HANGER BRACKETS 3. PROVIDE WITH 1" FIBERGLASS LINER COMPLIANT WITH UL 181.

4. PROVIDE WITH ATTENUATOR.

5. PROVIDE WITH MODULATING CONTROL VALVE. 6. PROVIDE WITH DISCONNECT.

7. M.C. SHALL COORDINATE BOX HANDING AND LOCATION PRIOR TO EQUIPMENT RELEASE.

GRILL	.E, REGIS	STER & D	DIFFUS	SER SC	HEDUL	.E					
TAG	FACE SIZE (SLOT WIDTH)	# SLOTS/ BAR, GRID SPACE	DEFLECTION/ THROW	CONN. SIZE	MAX CFM	P.D. IN. W.C.	THROW @ 50 FPM	NC	BASIS OF DESIGN	MODEL	REMARKS
SD-1	24/24	N/A	4W	6"	110	0.025	5	-	TITUS	OMNI	SEE BELOW
SD-2	24/24	N/A	4W	8"	225	0.055	10	-	TITUS	OMNI	SEE BELOW
SD-3	24/24	N/A	4W	10"	375	0.082	13	15	TITUS	OMNI	SEE BELOW
LS-1	4FT 3/4" SLOT	2 SLOTS	-	6"	25 CFM∖FT	0.016	22 H	-	TITUS	ML-38	SEE BELOW
LS-2	4FT 3/4" SLOT	2 SLOTS	-	8"	37 CFM∖FT	0.037	14 V	-	TITUS	ML-38	SEE BELOW
RG-1	24/12	3/4"	35°	22/10	550	0.032	N/A	-	TITUS	350RL	SEE BELOW
RG-2	24/24	3/4"	35°	22/22	1370	0.032	N/A	-	TITUS	350RL	SEE BELOW
RG-3	48/24	3/4"	35°	46/22	4000	0.073	N/A	27	TITUS	350RL	SEE BELOW
RG-4	38/14	3/4"	35°	36/12	1650	0.073	N/A	23	TITUS	350RL	SEE BELOW
ER-1	10/10	3/4"	35°	8/8	185	0.051	N/A	-	TITUS	350RL	SEE BELOW
REMAR	KS:										

DIFFUSER NECK SIZE & RUNOUT LENGTH SCHEDULE MAX LENGTH CFM RANGE NECK SIZE

0 - 50	<b>4</b> "Ø	4'-0"
51 - 125	<b>6</b> "Ø	4'-0"
126 - 230	<b>8</b> "Ø	5-0"
231 - 420	10"Ø	5'-0"
421 - 650	12"Ø	6'-0"
651 - 900	14"Ø	6'-0"
NOTE: DIAMETER O CONNECTOR IS EQ PLANS AND SPECIF	UAL DIFFUSER NEO	CK SIZE. SEE

MODEL NUMBERS.

### TRANSFER AIR DUCT SCHEDULE DUCT SIZE CFM DESIGNATION RANGE $\langle T1 \rangle$ 0-200 8 x 8 $\langle T2 \rangle$ 10 x 10 201-400 $\langle T3 \rangle$ 14 x 10 401-600 $\langle T4 \rangle$ 14 x 14 601-900 $\langle T5 \rangle$ 18 x 14 901-1200 $\langle T6 \rangle$ 24 x 14 1201-1700 $\langle T7 \rangle$ 24 x 18 1701-2400 **(T8**) 2401-3000 28 x 18

<u>NOTES:</u> 1. SIZING BASED ON 0.05"/100 FT. P.D. ~ 700 FPM

2. REFER TO DETAIL FOR DUCT CONFIGURATION.

3. PROVIDE 1" THICK ACOUSTICAL LINER.

<u>REMARKS:</u> 1. MAXIMUM NOISE CRITERION < 30. 2. COORDINATE FINISH COLOR WITH ARCHITECT

3. SEE ARCHITECTURAL REFLECTED CEILING PLAN FOR CEILING TYPES. COORDINATE BORDER TYPES, FRAMES, AND MOUNTING METHODS WITH SURFACES AT EACH DIFFUSER, REGISTER, AND GRILLE LOCATION. 4. PROVIDE OPPOSED BLADE DAMPERS FOR DEVICES LOCATED ON DRYWALL WALLS OR CEILINGS IF

APPLICABLE. 5. PROVIDE LINEAR DIFFUSERS WITH INTERNALLY INSULATED PLENUM, VOLUME DAMPER & CABLE OPERATOR.

FABRIC D	UCT SCH	EDULE					
TAG	FLOW (CFM)	NOMINAL DIAMETER (IN.)	NOMINAL LENGTH (FT)	AIR NOZZLES LOCATION (IN DIRECTION OF AIR FLOW)	BASIS OF DESIGN	MODEL	REMARKES
SOX-1	1800	24"Ø	35'-0"	4 & 8 O'CLOCK	DURKEESOX	NANOSOX LS-L	ALL, SEE BELC
SOX-2	2635	22"Ø	38'-0"	4 & 8 O'CLOCK	DURKEESOX	NANOSOX LS-L	ALL, SEE BELC
SOX-3	800	14"Ø	42'-0"	4 & 8 O'CLOCK	DURKEESOX	NANOSOX LS-L	ALL, SEE BELC
SOX-4	725	12"Ø	10'-0"	8 & 6 O'CLOCK	DURKEESOX	NANOSOX LS-L	ALL, SEE BELC
SOX-5	100	12"Ø	3'-0"	6 O'CLOCK	DURKEESOX	NANOSOX LS-L	ALL, SEE BELC
SOX-6	-	12"Ø	1.5XD ELBOW	-	DURKEESOX	NANOSOX LS-L	ALL, SEE BELC
SOX-7	700	12"Ø	12'-0"	4 & 8 O'CLOCK	DURKEESOX	NANOSOX LS-L	ALL, SEE BELC
SOX-8	2000	20"Ø	30'-0"	8 O'CLOCK	DURKEESOX	NANOSOX LS-L	ALL, SEE BELC
NOTES							

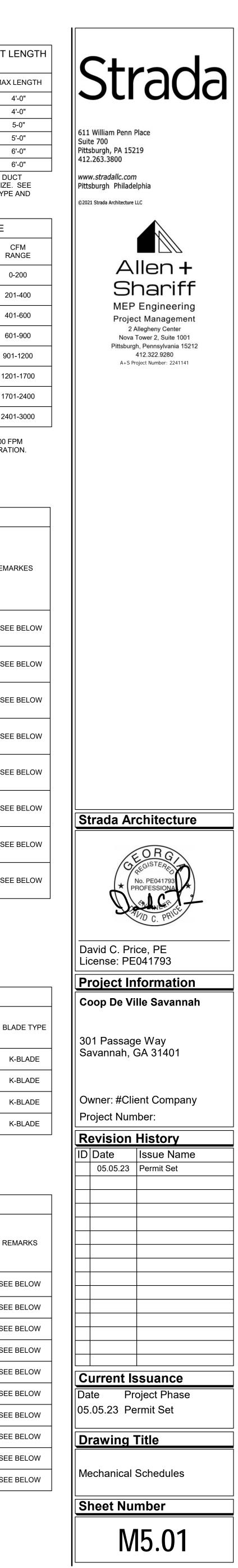
NOTES: 1. PROVIDE ANTI-STATIC FABRIC DUCT MATERIALS. 2. PROVIDE DUCT SOX WITH INTERNAL STIFFENERS.

3. PROVIDE ALL NECESSARY ELBOWS, REDUCERS, END CAPS & HANGERS. INSTALL PER MANUFACTURE RECOMMENDATIONS. 4. AIR NOZZLES LOCATION SHOWN ABOVE IS CHOSEN WHEN LOOKING IN DIRECTION OF AIR FLOW. 5. COLOR SHALL BE SELECTED BY ARCHITECT

HVAC LOU	JVERS										
TAG	GREENHECK MODEL #	AIR FLOW CFM	INTAKE OR EXH.		SIZE		FREE AREA	P.D. IN	MATERIAL	FRAME TYPE	BLADE TY
				W	Н	D	VEL. FPM	W.C.			
L-1	ESD-635	12000	INTAKE	78	48	6	782	0.09	ALUMINUM	CHANNEL, DRAINABLE HEAD	K-BLAD
L-2	ESD-635	12000	EXH.	78	48	6	782	0.09	ALUMINUM	CHANNEL, DRAINABLE HEAD	K-BLAD
L-3	ESD-635	5200	INTAKE	42	48	6	637	0.06	ALUMINUM	CHANNEL, DRAINABLE HEAD	K-BLAD
L-4	ESD-635	1050	INTAKE	26	26	6	487	0.03	ALUMINUM	CHANNEL, DRAINABLE HEAD	K-BLAD
NOTES:			•	•	•	•	-	•			-

1. PROVIDE BIRD SCREEN ON INSIDE FACE OF LOUVER. 2. ARCHITECT TO CHOOSE COLOR. 3. COORDINATE ROUGH OPENING WITH ARCHITECTURAL / STRUCTURAL

DRAWINGS.



EXPA	NSION TANK SYS	STEM								
UNIT DES.	LOCATION	SYSTEM SERVED	TYPE	ACCEPT. CAPACITY (GAL)	TANK VOLUME (GAL)	SYSTEM FILL PRESSURE (PSI)	VENT LINE SIZE TO TANK (IN)	BASIS OF DESIGN	MODEL	
ET-1	STORAGE RM	BOILER	BLADDER	23	23	15	1"	TACO	CA90-125	

REMARKS: 1. MOUNTED HORIZONTALLY. 2. PROVIDE WITH REPLACEABLE BLADDER. 3. PROVIDE SUPPORT RING AND ANCHOR CLIPS.

AIR AND	DIRT SEPARATO	OR SCHEDULE								
TAG	DESCRIPTION	SYSTEM SERVED	CONN. SIZE	FLOW	PRESS. DROP	DRY WEIGHT	DRAIN SIZE		IS OF SIGN	REMARKS
-			(IN)	(GPM)	(FT. HD.)	(LBS)	(IN)	MFG.	MODEL	
ADS-1	AIR DIRT SEPARATOR	BOILER	2.5	32.5	0.56	40	1	TACO	49025ADT-125	SEE BELOW
DEMARKO										

REMARKS: 1. WITH SOLIDS RECOVERY VESSEL AND INDICATOR PACKAGE. 2. HORIZONTAL ARRANGEMENT WITH STAND.

3. PROVIDE INTEGRAL FULL PORT FLOAT ACTUATED BRASS VENTING MECHANISM.

4. PROVIDE BLOWDOWN VALVE.
 5. PROVIDE REMOVABLE HEAD.

6. PROVIDE COALESCING TYPE SEPARATOR. CENTRIFUGAL TYPE NOT ACCEPTED.

AIR CUF	RTAIN SCH	HEDULE										
MARK	AIR VOLUME CFM	WIDTH (INCH)	Mounting Height Ft	VOLTAGE / PHASE	MCA	МОСР	MOTOR QTY	MOTOR H.P.	WEIGHT LBS	MANUFACTURER	MODEL	REMARKS
ACU-01	10042	(180")	11	460V/3PH	12.8	20	4	1	419	BERNER	IDC14-4180Z	1,2,3,4,5
ACU-02	10042	(180")	11	460V/3PH	12.8	20	4	1	419	BERNER	IDC14-4180Z	1,2,3,4,5

REMARKS: 1. PROVIDE WITH DISCONNECT SWITCH.

2. PROVIDE WITH MAGNETIC DOOR SWITCHES. 3. COLOR TO BE SELECTED BY ARCHITECT.

M.C. SHALL COORDINATE MOUNTING TYPE, UNIT ELEVATION AND INSTALLATION WITH GARAGE DOOR PRIOR TO EQUIPMENT RELEASE.
 PROVIDE AIR CURTAIN RATED FOR OUTDOOR USE. PROTECTION OF MOTORS AND ELECTRICAL COMPONENTS SHALL BE PROVIDED

AS REQUIRED BY THE MANUFACTURER AND LOCAL CODES. 6. PROVIDE SINGLE PHASE CONTROL PANEL AND 3 SPEED DIRECT DRIVE OPTION WITH DOOR SWITCH AND 24 VOLT CONTROL

THERMAL INSUL	ATION SCHEDULE								
SYSTEM	SYSTEM- LOCATION	OPERATING TEMPERATURE	MATERIAL	SMACNA CLASS					
				TYPE	THICKNESS IN.S	DENSITY LB/CU. FT.	INSTALLED "R" VALUE/ CONDUCTIVITY	JACKET	REMARKS
DUCT	SUPPLY AIR DUCT - INDOOR CONCEALED, ACCESSIBLE	40-120	MINERAL-FIBER	DUCT WRAP	2	0.75	4.0	FSK	1, 4
DUCT	SUPPLY AIR DUCT - INDOOR CONCEALED, INACCESSIBLE	40-120	MINERAL-FIBER	DUCT WRAP	2	0.75	4.0	FSK	2
DUCT	SUPPLY AIR DUCT - INDOOR EXPOSED	40-120	MINERAL-FIBER	LINER	1	1.5	4.0	NONE	1, 4
DUCT	SUPPLY, RETURN, RELIEF, EXHAUST DUCT - OUTDOORS AND UNCONDITIONED	40-120	MINERAL-FIBER	LINER OR (DUCT BOARD)	2	1.5 OR (0.75)	10.0	NONE OR (ALUMAGUARD)	4

<u>NOTES:</u> 1. CONCEALED, ACCESSIBLE LOCATIONS - ABOVE LAY-IN OR ACCESSIBLE CEILINGS, ACCESSIBLE MECHANICAL SHAFTS. 2. CONCEALED, INACCESSIBLE LOCATIONS - ABOVE HARD CEILINGS, (DRY WALL, PLASTER), MECHANICAL SHAFTS, BEHIND WALLS.

3. DO NOT INSULATE: - MAKE-UP AIR DUCTWORK OPERATING AT SURROUNDING AMBIENT CONDITIONS

- RETURN AND EXHAUST AIR DUCTWORK LOCATED INDOORS. - TRANSFER AIR DUCTWORK (ACOUSTICALLY LINE DUCT)

- EXPOSED SUPPLY DUCTWORK LOCATED IN CONDITIONED SPACE. (DOES NOT INCLUDE RETURN AIR PLENUM) 4. MULTIPLE INSULATION METHODS MAY BE USED TO ACHIEVE THE TOTAL REQUIRED R-VALUE.



**Project Information** Energy Code: Project Title: Location: Climate Zone: Project Type:

2018 IECC Coop De Ville Savannah Savannah, Georgia 2a New Construction

Construction Site: 301 Passage Way Savannah, GA 31401		er/Agent:	Designer/Contractor: Allen + Shariff Corporation				
	al Efficiency Package(s) Interior Lighting Controls						
Mechani	cal Systems List						
Quantity	System Type & Description						
1	<ul> <li>AHU-01 (Multiple-Zone):</li> <li>Heating: 1 each - Hydronic or Steam Coil, Hot Water, Capacity = 400 kBtu/h</li> <li>No minimum efficiency requirement applies</li> <li>Cooling: 1 each - Split System (CU-01), Capacity = 465 kBtu/h, Air-Cooled Condenser, Air Economizer</li> <li>Proposed Efficiency = 11.50 EER, Required Efficiency: 9.80 EER + 11.4 IEER</li> <li>Fan System: None</li> </ul>						
1	<ul> <li>MAU-01 (Single Zone):</li> <li>Heating: 1 each - Central Furnace, Gas, Capacity = 260 kBtu/h Proposed Efficiency = 92.00% Et, Required Efficiency: 80.00 % Et</li> <li>Cooling: 1 each - Split System, Capacity = 120 kBtu/h, Air-Cooled Condenser, Air Economizer Proposed Efficiency = 12.25 EER, Required Efficiency: 11.00 EER + 12.6 IEER</li> <li>Fan System: MAU-01 Compliance (Motor nameplate HP method) : Passes</li> </ul>						
	Fans: FAN 2 Supply, Multi-Zone VAV, 5200 CF	M, 5.0 motor nameplate	hp, 0.0 fan efficiency grade				
Mechani	cal Compliance Statement						
Compliand specificati designed requireme	e Statement: The proposed mechanications, and other calculations submitted v	vith this permit applic	in this document is consistent with the building plans, cation. The proposed mechanical systems have been 1.5.1 and to comply with any applicable mandatory 05 / 08 / 2023				
Name - Tit	le	Signature	Date				

Project Title: Coop De Ville Savannah

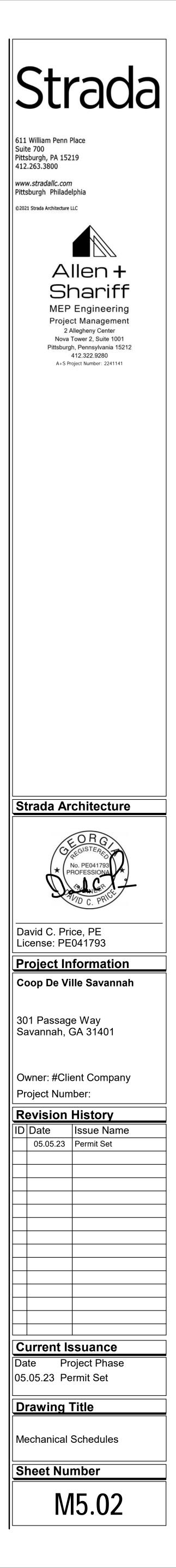
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SEE BELOW

	TOTAL AREA	OCCUPANCY CLASSIFICATION		OCCUPANCY	TOTAL #	REQUIRED VENTILATION RATE				TOTAL
SPACE IDENTIFICATION	(SQ FT)	CATEGORY	SUB-CATEGORY	DENSITY (#/1000 SQ FT)	OCCUPANTS	PEOPLE (CFM/PERSON)	AREA (CFM/SQ FT)	EFFECTIVENESS	TOTAL (CFM)	PROVIDED (CFM)
Seating Area	2746	Food and beverage service	Dining rooms	Per architect	105	7.5	0.18	0.8	1602	1621
Bowling	1286	Sports and amusement	Gym, stadium, arena (play area)	7	10	20	0.18	0.8	539	738
Mezzanine Seating Area	1013	Food and beverage service	Dining rooms	Per architect	19	7.5	0.18	0.8	406	420
Dish Wash 003	186	Food and beverage service	Dining rooms	Per architect	6	7.5	0.18	0.8	98	112
Kitchen	690	Food and beverage service	Kitchen (cooking)	20	14	7.5	0.12	0.8	235	280
Office 007	93	Offices	Office spaces	5	1	5	0.06	0.8	13	21
Locked Storage	82	Public spaces	Corridors	0	0	0	0.06	0.8	6	21

MECHANICAL EXHAU	IECHANICAL EXHAUST SCHEDULE									
		OCCUPANCY CLASSIFICATION				REQUIRED EXHAUST RATE				
SPACE IDENTIFICATION	TOTAL AREA (SQ FT)	CATEGORY	SUB-CATEGORY	TOTAL # FIXTURES	(CONTINUOUS /	AREA / FIXTURE BASED CALCULATION	FIXTURE (CFM/FIXTURE)	AREA (CFM/SQ FT)	TOTAL EXHAUST (CFM)	TOTAL PROVIDED (CFM)
Men's 005	129	Public spaces	Toilet rooms — public	3	CONTINUOUS	FIXTURE	50	0	150	150
Women's 004	189	Public spaces	Toilet rooms — public	3	CONTINUOUS	FIXTURE	50	0	150	150
Employee Rest. 006	40	Public spaces	Toilet rooms — public	1	CONTINUOUS	FIXTURE	50	0	50	50



PLUMBING LEGEND									
SYMBOL	ABRV.	DESCRIPTION	SYMBOL	ABRV.	DESCRIPTION				
— EX (X) —	EX	EXISTING PIPING TO REMAIN - (X) DESIGNATES SERVICE	$\bullet$		CONNECTION POINT, NEW TO EXISTING				
— RX (X) —	RX	EXISTING PIPING TO BE REMOVED - (X) DESIGNATES SERVICE			DISCONNECTION POINT				
		PIPING ROUTED BELOW GRADE / SLAB (LINE TYPE INDICATES SERVICE TYPE UNO)			DRAWING KEYNOTE				
	SAN	SANITARY PIPING	A		DEMOLITION DRAWING KEYNOTE				
—— GW ——	GW	GREASE WASTE PIPING (TO GREASE INTERCEPTOR)			REVISION NUMBER				
ow	OW	OIL WASTE PIPING			REVISION CLOUD				
ST	ST	STORM PIPING (PRIMARY)	———————————————————————————————————————		PIPE UP				
—OST—	OST	SECONDARY / OVERFLOW DRAIN PIPING			PIPE DOWN				
V	V	VENT PIPING	<u> </u>		PIPE TEE DOWN				
cw	CW	DOMESTIC COLD WATER PIPING			TOP PIPE CONNECTION				
—— HW ——	HW	DOMESTIC HOT WATER PIPING	Ę		BALL VALVE OR SHUTOFF VALVE IN RISE				
HWR	HWR	DOMESTIC HOT WATER RETURN PIPING	]		PIPE CAP				
DIS	DIS	DEIONIZED WATER SUPPLY PIPING			PIPE UNION				
	DIR	DEIONIZED WATER RETURN PIPING			FLANGED CONNECTION				
—— TP ——	TP	TRAP PRIMER PIPING			CONCENTRIC PIPE REDUCER				
G	G	GAS PIPING (NATURAL OR PROPANE)			ECCENTRIC PIPE REDUCER				
					FLOW ARROW				
			X		PIPE ANCHOR				

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NOTES:

PIPE GUIDE

BFV BUTTERFLY VALVE

PRV PRESSURE REDUCING VALVE

BFP BACK FLOW PREVENTER

PRESSURE RELIEF VALVE

AUTOMATIC FLOW CONTROL VALVE

CALIBRATED BALANCING VALVE

AUTOMATIC AIR VENT

MANUAL AIR VENT

PG PRESSURE GAUGE W/ SHUT-OFF

EXTERNAL WALL HYDRANT

FLOOR DRAIN WITH TRAP PRIMER

TS OS&Y VALVE WITH TAMPER SWITCH

1. NOT ALL SYMBOLS AND ABBREVIATIONS ARE IN USE FOR THIS PROJECT.

FLOOR SINK/RECEPTOR WITH HALF GRATE

T&P TEMPERATURE AND PRESSURE RELIEF VALVE

P/T PLUG

THERMOMETER

STRAINER

MV MIXING VALVE

FCO CLEAN OUT, FLOOR

FD FLOOR DRAIN

RD

ROOF DRAIN

PIPE TRAP

CO CLEAN OUT, EXPOSED

BV BALL VALVE

PV PLUG VALVE

GV GATE VALVE

GBV GLOBE VALVE

Strada 611 William Penn Place 7th Floor Pittsburgh, PA 15219 412.263.3800 *www.stradallc.com* Pittsburgh Philadelphia ©2021 Strada Architecture LLC  $\square$ Allen+ Shariff MEP Engineering Project Management 2 Allegheny Center Nova Tower 2, Suite 1001 Pittsburgh, Pennsylvania 15212 412.322.9280 A+S Project Number: 2241141 Strada Architecture NO. PEO41793 PROFESSIONAL WGINEER TUD C. PRICE David C. Price License: PE041793 Project Information Coop De Ville Savannah 301 Passage Way Savannah, GA 31401 Owner: #Client Company Project Number: **Revision History** ID Date Issue Name 05.05.23 Permit Set _____ Current Issuance Date Project Phase 05.05.23 Permit Set Drawing Title Plumbing Data Sheet Sheet Number P0.01

	NERAL INFORMATION	INTO ADJOINING TENANT SPACES. IN 8. INFORMATION REGARDING REQUIRED
A.		EQUIPMENT PADS OR FOUNDATIONS TO THE CONSTRUCTION PERIOD. IF T
	<ol> <li>CONFORM TO GENERAL AND SPECIAL CONDITIONS OF CONTRACT.</li> <li>SPECIFICATIONS ARE APPLICABLE TO CONTRACTORS AND/OR SUBCONTRACTORS.</li> </ol>	INFORMATION IS GIVEN, THE NECESS CONTRACTOR, AT THIS CONTRACTOR
	<ol> <li>THE ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING AND EQUIPMENT DRAWINGS AND SPECIFICATIONS ARE INCORPORATED INTO, AND BECOME A PART OF THIS DIVISION. THIS CONTRACTOR SHALL EXAMINE SUCH</li> </ol>	I. WARRANTY
	DRAWINGS AND SPECIFICATIONS AND BECOME A PART OF THIS DIVISION. THIS CONTRACTOR SHALL EXAMINE SUCH DRAWINGS AND SPECIFICATIONS AND BECOME THOROUGHLY FAMILIAR WITH THE PROVISIONS CONTAINED THEREIN. THE SUBMISSION OF THE BID SHALL INDICATE SUCH KNOWLEDGE.	<ol> <li>FULLY WARRANT MATERIALS, EQUIPM</li> <li>PROVIDE MANUFACTURER'S WARRAN</li> </ol>
	4. VISIT SITE, CHECK FACILITIES AND CONDITIONS.	3. REPAIR OR REPLACE WITHOUT CHAR IN THE CASE OF REPLACEMENT OR RI
	<ol> <li>SYSTEMS SHALL BE COMPLETE AND PLACED IN OPERATION.</li> <li>EACH CONTRACTOR SHALL PROVIDE FOR HIS OWN CLEAN-UP, REMOVAL AND LEGAL DISPOSAL OF RUBBISH DAILY.</li> </ol>	THAT PORTION OF THE WORK SHALL SUCH REPLACEMENT OR REPAIR.
	CONTRACTOR SHALL PROTECT THEIR WORK AND EXISTING OR ADJACENT PROPERTY AGAINST WEATHER, TO MAINTAIN THEIR WORK, MATERIALS, APPARATUS AND FIXTURES FREE FROM INJURY OR DAMAGE. ANY WORK DAMAGED BY FAILURE TO PROVIDE PROTECTION REQUIRED, SHALL BE REMOVED AND REPLACED WITH NEW WORK	J. SHOP DRAWING SUBMITTALS
	<ul> <li>AT THE CONTRACTOR'S EXPENSE.</li> <li>CONTRACTORS SHALL CONFIRM AND COMPLY WITH UTILITY COMPANY REQUIREMENTS, COORDINATE CONNECTION</li> </ul>	1. SUBMIT SHOP DRAWINGS WITH ADEQ OPERATING CHARACTERISTICS FOR E MARK, LOCATION AND USE, USING SA
	POINTS IN FIELD.	MULTIPLE ITEMS MUST BE MARKED FO
	<ol> <li>ARRANGE FOR AND OBTAIN OWNER'S AND INSURANCE REPRESENTATIVE'S PERMISSION FOR ANY SERVICE SHUTDOWNS.</li> </ol>	ARCHITECTURAL CEILING LAYOUTS.
	<ol> <li>THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, SEQUENCES OF CONSTRUCTION AND THE SAFETY OF WORKMEN.</li> </ol>	3. CONTRACTOR SHALL REVIEW AND IN REVIEW. DO NOT START WORK OR FA
	10. PIPING, CONTROLS, ETC., SHALL NOT BE INSTALLED, OR ROUTED ABOVE, ELECTRICAL PANELS AND EQUIPMENT OR THROUGH ELEVATOR MACHINE ROOMS.	THE ENGINEER AND RETURNED TO THE ENGINEER AND RETURNED TO THE 4. SUBMITTALS SHALL BE REVIEWED ON
	11. THE CONTRACTOR SHALL COORDINATE AND PROVIDE A WRITTEN LISTING OF ELECTRICAL CHARACTERISTICS OF PLUMBING EQUIPMENT TO ELECTRICAL CONTRACTOR PRIOR TO ORDERING OF EQUIPMENT. ADDITIONAL COMPENSATION WILL NOT BE MADE FOR LACK OF CONTRACTOR COORDINATION OF EQUIPMENT'S ELECTRICAL CHARACTERISTICS.	FOR DIMENSIONS OR QUANTITIES. TH RESPONSIBILITY FOR PURCHASE OF A COMPLETE AND PROPER INSTALLATIO 5. WHERE SUBMITTALS VARY FROM THE
	12. DURING THE BUILDING CONSTRUCTION SOME EXISTING INSTALLATION MAY BE EXPOSED THAT WILL HAVE TO BE CHANGED, ALTERED, REROUTED AND/OR ABANDONED. ANY SUCH WORK WHICH COMES UNDER THE JURISDICTION	SUBMITTAL OR ACCOMPANYING DOCI 6. REFER TO VARIOUS SECTIONS FOR LI
	OF THIS CONTRACTOR SHALL BE DONE BY THIS CONTRACTOR WITHOUT ADDITIONAL COST TO THE OWNER. 13. WORK RELATED TO THE EXISTING BUILDING SHALL BE COORDINATED TO MINIMIZE INTERFERENCE OR	7. EACH MANUFACTURER OR HIS REPRE
	INTERRUPTION OF NORMAL BUILDING USE BY OWNER. REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR PHASING REQUIREMENTS.	SERVICED AND MAINTAINED WHERE I DRAWINGS OF ANY POTENTIAL PROB
	14. THE CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING CONDITIONS THAT MAY AFFECT THE BID. ADDITIONAL COMPENSATION WILL NOT BE PROVIDED FOR FAILURE TO REVIEW EXISTING CONDITIONS PRIOR TO BIDDING.	MIGHT BE NECESSARY BECAUSE OF F THE ENGINEER'S ATTENTION AT THE
	CODES, PERMITS, STANDARDS AND REGULATIONS	K. RECORD DRAWINGS
	<ol> <li>CONFORM TO APPLICABLE CODES (LOCAL, STATE, NATIONAL CODES, NFPA, OSHA, ETC.), GOVERNMENT REGULATIONS, UTILITY COMPANY REQUIREMENTS, AND APPLICABLE STANDARDS.</li> </ol>	1. EACH CONTRACTOR OR SUBCONTRAD DRAWINGS ON THE JOB SITE. THE CO CONTRACT DRAWINGS MADE DURING
	<ol> <li>OBTAIN PERMITS AND PAY FEES. ARRANGE FOR REQUIRED TESTS, INSPECTIONS AND APPROVALS. PROVIDE COPIES OF INSPECTIONS, AND APPROVALS TO THE ARCHITECT-ENGINEER.</li> </ol>	2. THESE DRAWINGS SHALL RECORD TH WASTES, VENTS, DUCTS, CONDUIT AN
	RELATED WORK SPECIFIED ELSEWHERE	READILY IDENTIFIABLE AND ACCESSIN ELEVATION OF SANITARY AND/OR STO
	1. OPENINGS AND CHASES, WHEN SHOWN ON ARCHITECTURAL DRAWINGS.	3. RECORD DRAWINGS SHALL BE KEPT ( THAN RECORDING DEVIATIONS FROM
	2. TEMPORARY WATER SERVICE, SANITARY FACILITIES, FIRE PROTECTION AND HEATING DURING CONSTRUCTION.	4. AFTER THE PROJECT IS COMPLETED, CONDITION, AS A PERMANENT RECOF
	<ol> <li>POURED-IN-PLACE CONCRETE.</li> <li>FINISH PAINTING.</li> </ol>	PLUMBING SYSTEMS
	5. ELECTRIC POWER WIRING.	A. SCOPE
•	DRAWINGS	1. PROVIDE PLUMBING FIXTURES, EQUIF PROPER OPERATION.
	<ol> <li>THE SYSTEMS SHOWN ON DRAWINGS ARE DIAGRAMMATIC. CONFIRM DIMENSIONS BY FIELD MEASUREMENT.</li> <li>THE EXACT LOCATIONS FOR APPARATUS, FIXTURES, EQUIPMENT AND PIPING WHICH IS NOT COVERED BY</li> </ol>	2. PLUMBING SYSTEMS TO ESSENTIALLY a. ROOF DRAINS, RAIN CONDUCTORS
	DRAWINGS, SHALL BE OBTAINED FROM THE ARCHITECT OR HIS REPRESENTATIVE IN THE FIELD, AND THE WORK SHALL BE LAID OUT ACCORDINGLY.	STORM SEWERS TO FIVE (5) FEET
	3. DRAWINGS AND SPECIFICATIONS ARE INTENDED TO SUPPLEMENT ONE ANOTHER. ANY MATERIALS OR LABOR CALLED FOR IN ONE BUT NOT THE OTHER SHALL BE PROVIDED.	AS DEFINED BY CONTRACT DOCUM c. SANITARY WASTE AND VENT PIPIN
	DEMOLITION AND REMOVAL	CONTRACTOR SHALL MAKE THE CO EXISTING LINE SIZES, CONDITIONS
	<ol> <li>DISCONNECT, DISASSEMBLE, CAP, PLUG AND REMOVE PIPING, DUCTS AND EQUIPMENT INDICATED ON THE DRAWINGS, AND AS REQUIRED FOR THE PROJECT.</li> </ol>	VIDEO TAPE PIPING FOR PROPER ( TO THE ARCHITECT OR ENGINEER EXISTING SYSTEMS AS INDICATED
	<ol> <li>ANY EQUIPMENT DESIGNATED BY OWNER TO BE SALVAGED SHALL BE PROTECTED AND DELIVERED TO THE OWNER'S ON SITE.</li> </ol>	WORK THAT MUST BE ABANDONED DETERMINED BEFORE STARTING N
	3. DEMOLITION SHALL BE DONE IN A MANNER NOT TO DAMAGE ADJACENT WORK AND NOT AFFECT THE OPERATION OF SYSTEMS TO REMAIN IN USE. ANY ITEM TO REMAIN THAT IS DAMAGED BY THE CONTRACTOR OR THAT REQUIRES	d. DOMESTIC WATER EXTENDED FRC VAULT AND METER, BACKFLOW PR
	DAMAGE DUE TO THE ABSOLUTE NECESSITY FOR DEMOLITION REQUIREMENTS SHALL BE REPLACED AND/OR REPAIRED AT HIS EXPENSE.	e. PROVIDE DOMESTIC WATER FROM METER WITH REMOTE REGISTER A
	4. OPENINGS ON PIPING AND DUCTS THAT REMAIN SHALL BE CAPPED AND PROPERLY SECURED.	PIPE BACKFLOW DEVICE DRAIN TO ACCESSORIES REQUIRED FOR CO HAVING JURISDICTION.
	<ol> <li>ASBESTOS REMOVAL WILL BE HANDLED BY THE OWNER AND IS NOT A PART OF THIS WORK.</li> <li>EXAMINE AREAS AND CONDITIONS UNDER WHICH DEMOLITION WORK SHALL BE PERFORMED. CONTRACTOR SHALL</li> </ol>	f. EXTEND DOMESTIC WATER FROM AND INSTALL DOMESTIC WATER D
	<ul> <li>COORDINATE WORK WITH OTHER TRADES PERFORMING DEMOLITION WORK.</li> <li>7. REMOVE SUPPORTS, HANGERS, AND ACCESSORIES FROM EQUIPMENT AND MATERIAL INDICATED TO BE REMOVED.</li> </ul>	FITTINGS, VALVES, HANGERS, AND WATER METER AS REQUIRED. PRO
	BASE EQUIPMENT, MATERIALS AND SUBSTITUTIONS	g. EXTEND DOMESTIC WATER FROM I METER WITH REMOTE REGISTER A
	1. EQUIPMENT AND MATERIALS SHALL BE NEW, FREE OF DEFECTS AND U.L. LABELED.	PIPING TO FIXTURES AND EQUIPME ACCESSORIES REQUIRED FOR CO HAVING JURISDICTION.
	<ol> <li>BASE BID MANUFACTURERS ARE INCLUDED IN SPECIFICATIONS OR LISTED IN SCHEDULE ON DRAWINGS. OTHER MANUFACTURERS ARE CONSIDERED A SUBSTITUTION.</li> </ol>	h. DOMESTIC WATER EXTENDED FRO PRESSURE REDUCING VALVE AND
	<ol> <li>THE NAME OR MAKE OF ANY ARTICLE, DEVICE, MATERIAL, FORM OF CONSTRUCTION, FIXTURE, ETC., STATED IN THIS SPECIFICATION, SHALL BE KNOWN AS A "STANDARD".</li> </ol>	i. DOMESTIC WATER EXTENDED FRC FIXTURES.
	<ol> <li>PROPOSALS SHALL BE BASED ON "STANDARDS" SPECIFIED.</li> <li>THE EQUIPMENT SCHEDULES ON DRAWINGS INDICATE MANUFACTURERS EQUIPMENT MODEL NUMBERS UPON</li> </ol>	j. GAS SERVICE EXTENDED FROM FI
	WHICH DESIGN HAS BEEN BASED. THE USE OF OTHER MANUFACTURERS EQUIPMENT THAT IS LISTED AS ACCEPTABLE ALTERNATES THAT REQUIRES STRUCTURAL CHANGES, CHANGES IN ROOF OPENINGS, CHANGE OF	METER MANIFOLDS AND SETTINGk.GAS SERVICE EXTENDED FROM E>
	PIPE SIZES & BUILDING CONFIGURATION, ARCHITECTURAL CHANGES, ETC., SHALL BE THE CONTRACTOR'S RESPONSIBILITY. ADDITIONAL COSTS OF SUCH CHANGES SHALL BE PAID BY THE CONTRACTOR SUBMITTING THE ALTERNATE.	SO REQUIRED. I. PLUMBING FIXTURES, DRAINS AND
	6. SUBSTITUTIONS ARE SUBJECT TO THE APPROVAL OF THE OWNER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO EVALUATE AND CERTIFY WITH DOCUMENTATION THAT THE SUBSTITUTION IS EQUIVALENT TO	m. INSULATION OF PLUMBING PIPING.
	<ul> <li>THE BASE SPECIFICATIONS.</li> <li>7. IF SUBSTITUTIONS ARE APPROVED, NOTIFY OTHER CONTRACTORS, SUBCONTRACTORS OR TRADES AFFECTED BY</li> </ul>	
	SUBSTITUTION AND FULLY COORDINATE. ANY COSTS RESULTING FROM SUBSTITUTION, WHETHER BY CONTRACTOR OR OTHERS, SHALL BE RESPONSIBILITY OF, AND PAID FOR BY SUBSTITUTING CONTRACTOR. APPROVED SHOP	<ul> <li>o. A COMPLETE SYSTEM OF COMPRE</li> <li>p. OTHER ITEMS INDICATED ON DRAV</li> </ul>
	<ul> <li>DRAWINGS DOES NOT ABSOLVE THIS CONTRACTOR FROM THIS RESPONSIBILITY.</li> <li>8. EQUIPMENT SHALL BE INSTALLED IN FULL ACCORDANCE WITH THE MANUFACTURER'S DATA AND INSTALLATION</li> </ul>	B. EXCAVATION AND BACKFILL
	INSTRUCTIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CHECK AND CONFORM TO THESE REQUIREMENTS.	1. PERFORM EXCAVATION AND BACKFIL
-	CHECK, TEST, START, ADJUST, BALANCE AND INSTRUCTIONS	2. EXCAVATE TO DEPTH REQUIRED TO I SAND BEDDING TO GIVE UNIFORM BE AGGREGATE OUTSIDE BUILDING).
	<ol> <li>AFTER INSTALLATION, CHECK EQUIPMENT, AND PERFORM START UP IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS, AND REQUIREMENTS OF THE SPECIFICATIONS.</li> </ol>	3. BACKFILL WITH BEDDING MATERIAL T BALANCE OF BACKFILL IN GRASS ARE
	<ol> <li>PIPING SHALL BE TESTED AND FREE OF LEAKS. MAKE REPAIRS NEEDED FOR LEAK FREE SYSTEMS.</li> <li>CONCEALED OR INSULATED WORK SHALL REMAIN UNCOVERED UNTIL REQUIRED INSPECTIONS, AND TESTS HAVE</li> </ol>	GRADES, UNDER FLOORS SAND, AND IN MAXIMUM SIX (6) INCH LAYERS.
	BEEN COMPLETED. IF CONSTRUCTION SCHEDULE REQUIRES IT, ARRANGE FOR PRIOR TESTS ON PARTS OF SYSTEM AS APPROVED BY THE TENANT.	4. OTHER EXCAVATIONS SHALL BE BACH DIRT SHALL BE PROPERLY COMPACTI
	4. INSTRUCT OWNER IN OPERATION OF SYSTEMS AND SUBMIT OPERATING AND MAINTENANCE MANUAL ON EQUIPMENT AND SYSTEMS AS REQUIRED BY THE SPECIFICATION. PROVIDE A MINIMUM OF 16 HOURS INSTRUCTION TO OWNER'S REPRESENTATIVES	5. PATCH FLOOR TO MATCH EXISTING.
-	REPRESENTATIVES. CUTTING, PATCHING AND DRILLING	C. CONNECTIONS TO EQUIPMENT FU
	1. CUTTING AND PATCHING OF THE BUILDING CONSTRUCTION REQUIRED FOR THIS WORK SHALL BE BY THIS CONTRACTOR. CUTTING SHALL BE IN A NEAT AND WORKMANLIKE MANNER.	2. INCLUDE ACCESSORIES REQUIRED B
	2. NEATLY SAW CUT RECTANGULAR OPENINGS, SET SLEEVE THROUGH OPENING, AND FINISH PATCH OR PROVIDE TRIM	3. FULLY COORDINATE WITH KITCHEN E
	<ul><li>FLANGE AROUND OPENINGS.</li><li>3. NEATLY SAW CUT FLOORS FOR SEWER INSTALLATION AND PATCH FLOOR TO MATCH EXISTING, INCLUDING FLOOR</li></ul>	STARTING WORK. PROVIDE FINAL CO
	COVERING. PROVIDE IRON DOWEL RODS TO ANCHOR CONCRETE PATCH TO EXISTING CONCRETE FLOORS. RODS SHALL BE PLACED @ 12" ON CENTER FOR THE ENTIRE LENGTH OF PATCH.	1. PROVIDE SANITARY AND STORM SEW
	<ol> <li>CORE DRILL AND SLEEVE ROUND OPENINGS.</li> <li>DO NOT CUT ANY STRUCTURAL COMPONENTS WITHOUT ARCHITECT'S/ENGINEER'S APPROVAL.</li> </ol>	SPOUTS AND CLEANOUTS FOR PROJE DRAWINGS.
		2. SEWERS SHALL BE PITCHED A MINIMU 4" AND LARGER OR TO GRADES INDIC

6. PATCH AND FINISH TO MATCH ADJACENT AREAS THAT HAVE BEEN CUT, DAMAGED OR MODIFIED AS A RESULT OF THE INSTALLATION OF THE MECHANICAL OR ELECTRICAL EQUIPMENT. FIRE STOP PENETRATIONS OF FIRE RATED CONSTRUCTION IN A CODE APPROVED MANNER. MAINTAIN FIRE RATING OF ASSEMBLY. COORDINATE FIRE RATING ASSEMBLIES WITH ARCHITECT.

S SHALL CONFIRM WITH OWNER, PRIOR TO BID, TIMES AVAILABLE FOR NOISE PRODUCING WORK SUCH ND CORE DRILLING OF FLOORS, WALLS, ETC., AS WELL AS TIMES FOR WORK WHICH REQUIRE ACCESS IG TENANT SPACES. INCLUDE PREMIUM TIME IN BID.

REGARDING REQUIRED PIPE OPENINGS IN WALLS, FLOORS, CHASES, ETC., AND CONCRETE DS OR FOUNDATIONS SHALL BE GIVEN TO THE GENERAL CONTRACTOR BY THIS CONTRACTOR PRIOR RUCTION PERIOD. IF THIS CONTRACTOR FAILS TO COMPLY WITH THIS REQUEST, OR IF INCORRECT IS GIVEN, THE NECESSARY CUTTING AND PATCHING WILL BE PERFORMED BY THE GENERAL , AT THIS CONTRACTOR'S EXPENSE.

IT MATERIALS, EQUIPMENT AND WORKMANSHIP FOR ONE (1) YEAR FROM DATE OF ACCEPTANCE. JFACTURER'S WARRANTIES TO OWNER, INCLUDING AVAILABLE EXTENDED WARRANTIES.

PLACE WITHOUT CHARGE TO THE OWNER ITEMS FOUND DEFECTIVE DURING THE WARRANTY PERIOD. F REPLACEMENT OR REPAIR DUE TO FAILURE WITHIN THE WARRANTY PERIOD, THE WARRANTY ON OF THE WORK SHALL BE EXTENDED FOR A MINIMUM PERIOD OF ONE (1) YEAR FROM THE DATE OF EMENT OR REPAIR. **SUBMITTALS** 

DRAWINGS WITH ADEQUATE DETAILS AND SCALES TO CLEARLY SHOW CONSTRUCTION. INDICATE THE IARACTERISTICS FOR EACH REQUIRED ITEM. CLEARLY IDENTIFY EACH ITEM ON THE SUBMITTAL AS TO ON AND USE, USING SAME IDENTIFICATION AS PROVIDED ON DESIGN DRAWINGS, SUBMITTAL WITH IS MUST BE MARKED FOR PROPOSED ITEM OR SUBMITTAL WILL BE REJECTED.

WINGS SHALL BE FULLY DIMENSIONED BASED ON FIELD VERIFIED BUILDING CLEARANCES AND AL CEILING LAYOUTS. INDICATE STRUCTURAL, LIGHTING, DUCTWORK AND PIPING AT CRITICAL

SHALL REVIEW AND INDICATE HIS APPROVAL OF EACH SHOP DRAWING PRIOR TO SUBMITTAL FOR OT START WORK OR FABRICATION UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED BY AND RETURNED TO THE CONTRACTOR.

HALL BE REVIEWED ONLY FOR GENERAL COMPLIANCE WITH THE CONTRACT DOCUMENTS AND NOT NS OR QUANTITIES. THE SUBMITTAL REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF Y FOR PURCHASE OF ANY ITEM IN FULL COMPLIANCE WITH THE CONTRACT DOCUMENTS OR ITS PROPER INSTALLATION.

TTALS VARY FROM THE CONTRACT REQUIREMENTS, THE CONTRACTOR SHALL CLEARLY INDICATE ON ACCOMPANYING DOCUMENTS THE NATURE AND REASON FOR VARIATIONS. RIOUS SECTIONS FOR LISTING OF SHOP DRAWINGS REQUIRED ON THIS PROJECT.

CTURER OR HIS REPRESENTATIVE SHALL CHECK THE APPLICATION OF HIS EQUIPMENT AND CERTIFY OP DRAWING SUBMITTAL THAT EQUIPMENT HAS BEEN PROPERLY SELECTED AND CAN BE INSTALLED, MAINTAINED WHERE INDICATED ON DRAWINGS. ADVISE ENGINEER IN WRITING WITH SUBMITTAL ANY POTENTIAL PROBLEMS. THE MANUFACTURER SHALL BE RESPONSIBLE FOR ANY CHANGES THAT ESSARY BECAUSE OF PHYSICAL CHARACTERISTICS OF EQUIPMENT THAT HAVE NOT BEEN CALLED TO R'S ATTENTION AT THE TIME OF SUBMITTAL.

CTOR OR SUBCONTRACTOR SHALL KEEP ONE (1) COMPLETE SET OF THE CONTRACT WORKING THE JOB SITE. THE CONTRACTOR SHALL REGULARLY RECORD DEVIATIONS OR CHANGES FROM SUCH AWINGS MADE DURING CONSTRUCTION.

IGS SHALL RECORD THE LOCATION OF CONCEALED EQUIPMENT, PIPING, ELECTRIC SERVICE, SEWERS, S, DUCTS, CONDUIT AND OTHER PIPING, BY MEASURED DIMENSIONS TO EACH SUCH ITEM FROM IFIABLE AND ACCESSIBLE WALLS OR CORNERS OF THE BUILDING. PLANS ALSO SHALL SHOW INVERT SANITARY AND/OR STORM SEWERS AND TOP ELEVATION OF OTHER BELOW-GRADE LINES.

/INGS SHALL BE KEPT CLEAN AND UNDAMAGED AND SHALL NOT BE USED FOR ANY PURPOSE OTHER ING DEVIATIONS FROM WORKING DRAWINGS AND EXACT LOCATIONS OF CONCEALED WORK. OJECT IS COMPLETED, THESE SETS OF DRAWINGS SHALL BE DELIVERED TO THE ARCHITECT IN GOOD A PERMANENT RECORD OF THE INSTALLATION. EMS

IBING FIXTURES, EQUIPMENT AND MATERIAL INDICATED AND SHOWN ON DRAWINGS AND PLACE IN ATION.

TEMS TO ESSENTIALLY CONSIST OF BUT NOT LIMITED TO THE FOLLOWING NS. RAIN CONDUCTORS. HUBS FOR DOWN SPOUTS. CATCH BASINS. CLEANOUTS. MANHOLES AND IERS TO FIVE (5) FEET OUTSIDE BUILDING, OR AS DEFINED BY CONTRACT DOCUMENTS. ASTE AND VENT PIPING AND SANITARY SEWER EXTENDED TO FIVE (5) FEET OUTSIDE BUILDING, OR BY CONTRACT DOCUMENTS.

ASTE AND VENT PIPING AND SANITARY SEWER EXTENDED TO EXISTING BUILDING FACILITIES. OR SHALL MAKE THE CONNECTIONS TO THE EXISTING SERVICES AS INDICATED ON DRAWINGS. NE SIZES, CONDITIONS, INVERT ELEVATIONS, AND CAPACITIES SHALL BE VERIFIED, CLEAN, TEST, AND PIPING FOR PROPER OPERATION BEFORE FINAL CONNECTION FOR UTILITIES. IMMEDIATELY REPORT HITECT OR ENGINEER ANY INSTANCES WHERE CONNECTIONS CANNOT BE MADE BETWEEN NEW AND STEMS AS INDICATED ON PLANS. ADDITIONAL COMPENSATION WILL NOT BE GRANTED FOR NEW MUST BE ABANDONED AND REPLACED BECAUSE LOCATION AND ELEVATION OF EXISTING WAS NOT D BEFORE STARTING NEW WORK.

VATER EXTENDED FROM CITY MAIN AND DISTRIBUTION SYSTEM, INCLUDING TAP TO MAIN, METER METER, BACKFLOW PREVENTION DEVICE AS REQUIRED;

MESTIC WATER FROM CITY MAIN INTO BUILDING AS INDICATED ON DRAWINGS. INSTALL WATER I REMOTE REGISTER AND REDUCED PRESSURE BACKFLOW PREVENTION DEVICE INSIDE BUILDING. LOW DEVICE DRAIN TO FLOOR DRAIN. INCLUDE FITTINGS, VALVES, HANGERS, AND OTHER ES REQUIRED FOR COMPLETE INSTALLATION. PROVIDE INSTALLATION AS REQUIRED BY AUTHORITY ISDICTION.

MESTIC WATER FROM FIVE (5) FEET OUTSIDE BUILDING INTO BUILDING AS INDICATED ON DRAWINGS DOMESTIC WATER DISTRIBUTION PIPING TO FIXTURES AND EQUIPMENT REQUIRING SAME. INCLUDE ALVES, HANGERS, AND OTHER ACCESSORIES REQUIRED FOR COMPLETE INSTALLATION. PROVIDE ER AS REQUIRED. PROVIDE INSTALLATION AS REQUIRED BY AUTHORITY HAVING JURISDICTION. MESTIC WATER FROM EXISTING BUILDING FACILITIES AS INDICATED ON DRAWINGS. INSTALL WATER

I REMOTE REGISTER AS INDICATED ON DRAWINGS AND INSTALL DOMESTIC WATER DISTRIBUTION IXTURES AND EQUIPMENT REQUIRING SAME. INCLUDE FITTINGS, VALVES, HANGERS, AND OTHER ES REQUIRED FOR COMPLETE INSTALLATION. PROVIDE INSTALLATION AS REQUIRED BY AUTHORITY ISDICTION.

VATER EXTENDED FROM FIVE (5) FEET OUTSIDE BUILDING AND DISTRIBUTION SYSTEM, INCLUDING REDUCING VALVE AND BACKFLOW PREVENTION DEVICES AND UTILITY METER. VATER EXTENDED FROM EXISTING BUILDING FACILITIES AND DISTRIBUTION SYSTEM TO NEW

E EXTENDED FROM FIVE (5) FEET OUTSIDE THE BUILDING TO GAS USING EQUIPMENT, INCLUDING IFOLDS AND SETTING OF GAS METER.

E EXTENDED FROM EXISTING BUILDING FACILITIES TO GAS USING EQUIPMENT, AND SUB METERS IF

IXTURES, DRAINS AND EQUIPMENT WITH REQUIRED TRIM, CONTROLS AND ACCESSORIES.

OF PLUMBING PIPING.

E INTERCEPTOR TANK WITH REQUIRED ACCESSORIES, AND PIPING. E SYSTEM OF COMPRESSED AIR DISTRIBUTION AS SHOWN ON DRAWINGS.

IS INDICATED ON DRAWINGS OR REQUIRED FOR COMPLETE INSTALLATION.

AVATION AND BACKFILL REQUIRED FOR INSTALLATION OF PIPING.

DEPTH REQUIRED TO INSTALL PIPING AT REQUIRED LEVEL AND PITCH. PIPE SHALL BE INSTALLED ON TO GIVE UNIFORM BEARING ALONG LENGTH OF PIPE (SAND INSIDE BUILDING AND INTERLOCKING UTSIDE BUILDING).

### I BEDDING MATERIAL TO A MINIMUM OF TWELVE (12) INCHES ABOVE TOP OF PIPES AND COMPACT. ACKFILL IN GRASS AREAS SHALL BE CLEAN EARTH UP TO SIX (6) INCHES ABOVE SURROUNDING R FLOORS SAND, AND UNDER PAVING INTERLOCKING AGGREGATE. BACKFILL SHALL BE COMPACTED X (6) INCH LAYERS.

ATIONS SHALL BE BACKFILLED WITH CLEAN EARTH, EXCLUDING RUBBISH AND BOULDERS AND THE 

TO MATCH EXISTING. TO EQUIPMENT FURNISHED BY OTHERS

ED WATER AND/OR GAS CONNECTION FOR EQUIPMENT FURNISHED BY OTHER CONTRACTORS OR DE SANITARY DRAINAGE AND VENT CONNECTIONS FOR EQUIPMENT FURNISHED BY OTHERS.

SSORIES REQUIRED BY CODE, DRAWINGS, OR MANUFACTURER'S INSTRUCTIONS. NATE WITH KITCHEN EQUIPMENT SUPPLIER AND CONFIRM ROUGH-IN REQUIREMENTS PRIOR TO RK. PROVIDE FINAL CONNECTIONS TO EQUIPMENT.

FARY AND STORM SEWERS, RAIN CONDUCTORS, STACKS, VENTS, FLOOR DRAINS, HUBS FOR DOWN LEANOUTS FOR PROJECT AND EXTEND TO EXISTING BUILDING FACILITIES AS INDICATED ON THE

2. SEWERS SHALL BE PITCHED A MINIMUM OF 1/4" PER FOOT FOR SIZES 3" AND UNDER, AND 1/8" PER FOOT FOR SIZES

4" AND LARGER OR TO GRADES INDICATED ON DRAWINGS. 3. CHANGES IN DIRECTION AND BRANCH CONNECTIONS SHALL BE MADE WITH CODE APPROVED DRAINAGE FITTINGS COMPATIBLE WITH THE PIPING SYSTEM MATERIAL.

4. FIXTURES AND SANITARY DRAINS SHALL BE VENTED AS INDICATED ON DRAWINGS AND IN ACCORDANCE WITH CODE.

### VENTS ARE TO BE EXTENDED TO EXISTING BUILDING FACILITIES THROUGH ROOF AS INDICATED ON DRAWING AND FLASHED WITH 4 LB. LEAD WITH VENT FLASHING TOP TURNED DOWN TWO (2) INCHES MINIMUM INSIDE PIPE. COORDINATE WITH ROOFING CONTRACTOR.

5. PVC PIPING

- a. THIS PROJECT HAS A RETURN AIR PLENUM AND PVC SHALL NOT BE INSTALLED IN RETURN AIR PLENUMS, USE NO-HUB CAST IRON, DWV COPPER ASTM B306 PIPING, OR PRESS FIT STAINLESS STEEL. b. WHERE PVC PIPING IS USED, PROVIDE CODE APPROVED FIRE STOPPING MATERIAL AT FIRE RATED WALL
- PENETRATIONS.
- 6. SEWER AND VENT MATERIAL SHALL BE AS FOLLOWS: a. BELOW GRADE STORM AND SANITARY INSIDE BUILDING
- SERVICE WEIGHT CAST IRON PIPE ASTM A-74-82 WITH ASTM C-564-70 NEOPRENE COMPRESSION JOINTS. CAST IRON SOIL PIPE AND FITTINGS SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE (CISPI) AND BE LISTED BY NSF INTERNATIONAL. NO-HUB COUPLINGS
- HEAVY-DUTY, 4 BAND, SHIELDED FOR 4" AND SMALLER. HEAVY-DUTY, 6 BAND, SHIELDED FOR 5" AND LARGER. PVC-DWV PLASTIC ASTM D-1785 WITH ASTM D-2665 DWV SOLVENT WELD SOCKET FITTINGS.
- b. ABOVE GRADE RAIN CONDUCTORS, VENTS AND SANITARY -- NO-HUB CAST IRON PIPE CISPI 1-301-78. CAST IRON SOIL PIPE AND FITTINGS SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE (CISPI) AND BE LISTED BY NSF INTERNATIONAL. NO-HUB COUPLINGS HEAVY-DUTY, 4 BAND, SHIELDED FOR 4" AND SMALLER. HEAVY-DUTY, 6 BAND, SHIELDED FOR 5" AND LARGER.
- PVC-DWV PLASTIC ASTM D-1785 WITH ASTM D-2665 DWV SOLVENT WELD SOCKET FITTINGS. NOT FOR USE IN RETURN AIR PLENUM. - DWV COPPER ASTM B306. - FOR HIGH RISE TENANT SPACE: PIPING 2 INCH AND SMALLER SHALL BE DWV GRADE COPPER. - STAINLESS STEEL
- c. SITE STORM AND SANITARY SEWERS - UP TO 15" - PVC PLASTIC ASTM D-3034 SDR 35 WITH ASTM D-3212 GASKET JOINTS. - 18" AND OVER - REINFORCED CONCRETE PIPE (RCP) ASTM C 76-83 WITH ASTM C 443-79 RUBBER GASKET JOINTS.
- E. WATER PIPING
- 1. INCLUDE UNIONS, OR OTHER DISCONNECT MEANS, STOPS OR VALVES FOR ISOLATION OF FIXTURES AND EQUIPMENT. VALVES SHALL FULLY COMPATIBLE WITH PIPING FOR SERVICE INTENDED. AS MANUFACTURED BY APOLLO, NIBCO, CRANE OR OTHER APPROVED MANUFACTURER. INCLUDE HOSE OR DRAIN VALVES AT LOW POINTS WHERE FIXTURES CANNOT BE USED FOR DRAINAGE.
- 2. INSTALL SHOCK ABSORBERS AT EACH FIXTURE OR WHERE REQUIRED TO PREVENT WATER HAMMER.
- 3. HANGERS ON INSULATED PIPE SHALL BE OUTSIDE OF INSULATION, SIZED ACCORDINGLY AND WITH SUFFICIENT SADDLE TO PROTECT INSULATION.
- 4. WATER PIPING ABOVE GRADE SHALL BE -
- a. TYPE "L" HARD COPPER ASTM B 88-832 WITH WROUGHT COPPER FITTINGS ASTM B 16.22 1980 AND NON-LEAD OR ANTIMONY SOLDER JOINTS.
- b. TYPE "L" HARD COPPER ASTM B 88-832 WITH WROUGHT COPPER FITTINGS ASTM B 16.22 1980 AND PRESS-FIT JOINTS.
- c. PEX TUBING TYPE "A" (CROSS-LINKED POLYETHYLENE) MEETING SECTION 6.6 OF ASTM F876 AND USING "PROPEX" FITTINGS MEETING ASTM F1980, CSA B137.5, NSF/AMSI 14, AND NSF/ANSI 61. d. CPVC (CHLORINATED POLYVINYL CHLORIDE) - COPPER TUBE SIZE, (CTS.); ASTM D2846, ASTM F441, ASTM 442, CSA B137.6. FITTINGS SHALL COMPLY WITH ASTM D2846. ASTM F437. ASTM 438. ASTM F439. CSA B137.8. ASSE 1061.
- 5. WATER PIPING BELOW GRADE SHALL BE TYPE "K" SOFT COPPER WITHOUT JOINTS. VENT AND SANITIZE WATER PIPING WITH EQUIVALENT SOLUTION OF 50 PPM OF AVAILABLE
- CHLORINE UPON COMPLETION. COMPLY WITH PLUMBING CODE REQUIREMENTS FOR SANITIZATION. SUBMIT WRITTEN VERIFICATION OF PIPING SANITIZATION.
- WILL NOT BECOME EMBEDDED IN THE CONCRETE.
- 8. PIPING UNDER CONCRETE FLOOR SHALL BE TYPE "K" SOFT COPPER OR PEX TYPE A TUBING AND SHALL BE CONTINUOUS. SPLICES OR FITTINGS SHALL NOT BE PERMITTED.
- 9. EXTREME CAUTION MUST BE TAKEN SO THAT COPPER LINES AND INSULATION UNDER CONCRETE ARE NOT CRUSHED, CUT, SPLIT, RUPTURED OR DEFORMED DURING THE POURING OF THE FLOOR SLAB.
- F. GAS PIPING
- 1. EXTEND GAS PIPING FROM EXISTING MAIN, INCLUDING TAP TO MAIN, METER AND REGULATOR, AS INDICATED ON DRAWINGS AND CONNECT TO GAS USING EQUIPMENT.
- 1. EXTEND GAS PIPING FROM FIVE (5) FEET OUTSIDE BUILDING INTO BUILDING, INCLUDING METER SET AND REGULATOR, AS INDICATED ON DRAWINGS AND CONNECT TO GAS USING EQUIPMENT.
- 1. EXTEND GAS PIPING FROM EXISTING BUILDING FACILITIES AS INDICATED ON DRAWINGS AND CONNECT TO GAS USING EQUIPMENT. PROVIDE SUB METERS AS SHOWN ON CONSTRUCTION DOCUMENTS.
- 2. EQUIPMENT CONNECTIONS AT EACH UNIT SHALL INCLUDE GAS COCK, PRESSURE REGULATOR, UNION AND DIRT LEG.
- 3. CONSTRUCT CONCRETE BASE TO BELOW FROST LINE FOR METER INSTALLATION.
- 4. GAS PIPING SHALL CONFORM TO RECOMMENDED PRACTICE AND REGULATIONS OF THE LOCAL GAS CO. AND STATE OF _____ CODE.
- 5. GAS PIPING SHALL BE AS FOLLOWS: a. ABOVE-GRADE INSIDE OR OUTSIDE BUILDING, LOW PRESSURE - SCHEDULE 40 SEAMLESS BLACK STEEL PIPE, BEVELED ENDS. - 2" AND SMALLER - THREADED FITTINGS, WROUGHT IRON. - 2 1/2" AND LARGER - WELDED FITTINGS, BLACK STEEL.
- b. INSIDE BUILDING, REGULATED PRESSURE SCHEDULE 40 BLACK STEEL WITH WELDED BLACK STEEL FITTINGS.
- c. BELOW GRADE, LOW AND MEDIUM PRESSURE GAS SERVICE POLYETHYLENE PLASTIC ASTM D-2513 WITH STAB COUPLINGS OR FUSION WELD JOINTS.
- d. BELOW GRADE, HIGH PRESSURE SERVICE 60 PSI AND OVER SCHEDULE 40 BLACK STEEL COATED AND WRAPPED WITH WELDED BLACK STEEL FITTINGS. INSTALL CATHODIC PROTECTION ANODE ON SERVICE LINE.
- e. VALVES SHALL NOT BE LOCATED ABOVE ACCESSIBLE CEILING SPACES (SUBJECT TO THE APPROVAL OF THE AUTHORITY HAVING JURISDICTION), WHETHER OR NOT SUCH SPACES ARE USED AS A PLENUM.
- f. EXTERIOR EXPOSED BARE STEEL PIPE SHALL BE PAINTED WITH TWO (2) COATS RUST INHIBITIVE PAINT. PAINTING SHALL OCCUR AFTER PIPE INSTALLATION AND TESTING.
- g. WELDING SHALL BE PERFORMED BY STATE CERTIFIED WELDERS. PROVIDE WELDING CERTIFICATIONS TO A/E.
- h. MOUNT GAS PIPING ON ADJUSTABLE ROOF PIPE SUPPORTS ADHERED TO THE ROOF MEMBRANE. SEE DETAIL ON DRAWINGS. SUPPORTS SHALL BE MODEL #3-RAH-7AS MANUFACTURED BY MIRO INDUSTRIES OR APPROVED EQUAL
- G. COMPRESSED AIR SYSTEM
- 1. EXTEND COMPRESSED AIR PIPING FROM EXISTING MAIN, INCLUDING TAP TO MAIN, PRESSURE REGULATOR, AS INDICATED ON DRAWINGS AND CONNECT TO COMPRESSED AIR USING EQUIPMENT.
- EQUIPMENT.
- 1. PROVIDE COMPRESSED AIR SYSTEM INCLUDING COMPRESSOR, REGULATORS, PIPING, HANGERS, TERMINATIONS AND CONNECTIONS TO EQUIPMENT USING COMPRESSED AIR.
- 2. COMPRESSED AIR CONNECTIONS AT EQUIPMENT SHALL INCLUDE PRESSURE REGULATOR AND FLEXIBLE PIPE CONNECTIONS.
- 3. COMPRESSED AIR PIPING SHALL BE AS FOLLOWS:
- ABOVE-GRADE INSIDE OR OUTSIDE BUILDING, LOW PRESSURE - SCHEDULE 40 SEAMLESS BLACK STEEL PIPE, THREADED ENDS.
- a. ABOVE-GRADE INSIDE OR OUTSIDE BUILDING, LOW PRESSURE - SCHEDULE 5 STEEL PIPE WITH PRESSURE SEAL FITTINGS.
- a. ABOVE-GRADE INSIDE OR OUTSIDE BUILDING, LOW PRESSURE - COPPER TUBE TYPE K, TYPE L, TYPE M WITH WROUGHT COPPER FITTINGS.
- a. ABOVE-GRADE INSIDE OR OUTSIDE BUILDING, LOW PRESSURE BLUE ABS PIPE, WITH ABS MODIFIED RESIN, WITH SOCKET TYPE FITTINGS.
- b. VALVES SHALL NOT BE LOCATED ABOVE ACCESSIBLE CEILING SPACES (SUBJECT TO THE APPROVAL OF THE AUTHORITY HAVING JURISDICTION), WHETHER OR NOT SUCH SPACES ARE USED AS A PLENUM. H. FIXTURES AND EQUIPMENT
- 1. FURNISH FIXTURES AND EQUIPMENT INDICATED AND SCHEDULED ON DRAWINGS, COMPLETE WITH ACCESSORIES,
- CONTROLS AND INSTALLATION ITEMS REQUIRED. 2. INSTALL IN FULL ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND PLACE IN SATISFACTORY
- OPERATION.
- H. CLEANOUTS
- 1. CLEANOUTS SHALL BE INSTALLED FLUSH WITH FINISHED FLOOR OR WALLS WITH PLATED COVERS. 2. CLEANOUTS SHALL BE AS SCHEDULED ON DRAWINGS.
- I. FLOOR, CEILING AND WALL PLATES:
- 1. FIT PIPE PASSING THROUGH WALLS, FLOORS OR CEILINGS IN FINISHED ROOMS WITH STEEL OR BRASS

7. DOMESTIC HOT AND COLD WATER PIPING UNDER CONCRETE FLOOR TO BE COVERED WITH SAND SO THAT PIPING

1. EXTEND COMPRESSED AIR PIPING FROM EXISTING AIR COMPRESSOR, AND CONNECT TO COMPRESSED AIR USING

3. FIXTURES AND EQUIPMENT SHALL BE AS INDICATED ON THE PLUMBING FIXTURE SCHEDULE.

ESCUTCHEONS. WHERE SURFACE IS TO RECEIVE A PAINT FINISH ESCUTCHEONS SHALL BE PRIME PAINTED; OTHERWISE MAKE ESCUTCHEONS NICKEL OR CHROME PLATED. WHERE PIPING IS INSULATED, FIT ESCUTCHEONS OUTSIDE INSULATION.

J. INSULATION

- 1. INSULATE ABOVE-GRADE HOT AND COLD WATER PIPING, RAIN CONDUCTORS AND ROOF DRAIN SUMPS WITH ONE (1") INCH THICK MOLDED FIBERGLASS HAVING TYPE ASJ JACKET AND MANUFACTURED BY OWENS-CORNING FIBERGLASS COMPANY
- 2. INCLUDE INSULATION OF FITTINGS AND VALVES. KEEP VAPOR BARRIERS INTACT. APPLY TO MANUFACTURER'S RECOMMENDATIONS.
- 3. AT PIPE HANGERS, PROVIDE SOLID INSULATION COUPLING SYSTEM TO PREVENT INSULATION DAMAGE OR COMPRESSION. INSULATION COUPLINGS SHALL BE THE KLO-SHURE INSULATION COUPLING SYSTEM AS MANUFACTURED BY ANVIL-STRUT.
- 4. INSULATE BELOW-GRADE PIPING INSIDE BUILDING WITH 3/8" FOAMED PLASTIC INSULATION.
- 5. INSULATE EXPOSED WASTE AND SUPPLY PIPING UNDER LAVATORIES WITH THE LAV-SHIELD SAFETY COVERS AS PER "PLUMBEREX SPECIALTY PRODUCTS, INC." OR EQUAL. 6. REPAIR DAMAGED SECTIONS OF EXISTING PIPING INSULATION, BOTH PREVIOUSLY DAMAGED OR DAMAGED DURING THIS CONSTRUCTION PERIOD. USE INSULATION OF SAME THICKNESS AS SPECIFIED, INSTALL NEW JACKET LAPPING
- 7. EXISTING PVC PIPING IN PLENUM CEILINGS SHALL BE INSULATED TO MEET PLENUM RATINGS, WITH PRODUCT TYPICAL TO FYR-WRAP. INSTALL AS REQUIRED BY MANUFACTURER.

### K. HANGERS AND SUPPORTS

AND SEALED OVER EXISTING.

- 1. HANGERS FOR BLACK OR GALVANIZED STEEL PIPE SHALL BE MANUFACTURED BY MICHIGAN HANGER CO., MODEL NO. 100. OR APPROVED EQUAL. 2. HANGERS FOR CAST IRON PIPE SHALL BE MANUFACTURED BY MICHIGAN HANGER CO., MODEL NO. 400, OR
- APPROVED EQUAL.
- 3. HANGERS FOR COPPER TUBING SHALL BE MANUFACTURED BY MICHIGAN HANGER CO., MODEL NO. 102-A, OR APPROVED EQUAL.
- 4. TRAPEZE HANGERS OF A TYPE APPROVED BY THE ENGINEER. MAINTAIN PIPE INSULATION AT PIPE ANCHORS. PROVIDE INSULATION COUPLERS AS SPECIFIED ABOVE.
- 5. CONTRACTOR SHALL PROVIDE INSULATION HANGER WITH PROTECTIVE SHIELDS. SUCH AS MICHIGAN HANGER CO., MODEL NO. 103, OR APPROVED EQUAL. 5 INCH LONG SECTION OF 1/2 INCH THICK CALCIUM SILICATE SECTIONAL PIPE INSULATION WITH FACTORY LONGITUDINAL LAP SHALL BE PROVIDED AT HANGER POINTS. BUTT JOINTS SHALL BE SEALED WITH INSULATING CEMENT.
- 6. STRAP HANGERS SHALL NOT BE PERMITTED.
- 7. CONTRACTOR SHALL PROVIDE RISER CLAMPS FOR VERTICAL PIPING AT EACH LEVEL. RISER CLAPS SHALL BE MICHIGAN HANGER CO., MODEL NO. 510 FOR STEEL PIPING AND MODEL NO. 511 FOR COPPER TUBING OR APPROVED EQUAL. USE "SHORT-END" RISER CLAMPS WHERE SPACE IS LIMITED.
- 8. IN CONCRETE, MICHIGAN HANGER CO., MODEL NO. 355 INSERTS, OR APPROVED EQUAL. INSERTS SHALL PERMIT ADJUSTMENT FROM 3/4 INCH THROUGH 1-1/4 INCH. IN METAL DECKS, CONTRACTOR SHALL PROVIDE REDHEAD SDI INSERTS, OR APPROVED EQUAL. POWDER PROPELLED INSERTS WILL BE PERMITTED IN NEW CONSTRUCTION WHERE TYPE AND LOCATION ARE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
- 9. CONTRACTOR SHALL PROVIDE SIDE BEAM CLAMPS FOR SUPPORTING PIPING FROM STRUCTURAL STEEL MEMBERS. BEAM CLAMPS SHALL BE MANUFACTURED BY MICHIGAN HANGER CO., MODEL 300 OR APPROVED EQUAL. 10. WHERE OTHER MEANS OF SUPPORT PIPING ARE REQUIRED OR DESIRED, THE CONTRACTOR SHALL BE RESPONSIBLE
- FOR OBTAINING THE ENGINEER'S APPROVAL PRIOR TO INSTALLING THOSE SUPPORTS. 11. HANGER SHALL BE PROVIDED AT EACH CHANGE OF DIRECTION.
- 12. HANGERS AND SUPPORTS SHALL BE SPACED AT INTERVALS WHICH WILL PREVENT SAGGING AND REDUCE STRAIN ON VALVES AND SPECIALTIES. HANGER SPACING SHALL BE NO GREATER AND ROD SIZE SHALL BE NO SMALLER THAN THAT SHOWN IN THE FOLLOWING TABLE. HANGERS SHALL ALLOW FOR EXPANSION AND CONTRACTION. FERROUS PIPING AND COPPER TUBING:

DIAMETER OF PIPE	MAXIMUM SPACING	ROD SIZE
1/2" THRU 1-1/2" 2" THRU 3" 4" THRU 5" 6" AND LARGER	6 FT. 10 FT 12 FT 16 FT	3/8" 1/2" 5/8" 3/4"
CAST IRON PIPING:		
DIAMETER OF PIPE	MAXIMUM SPACING	ROD SIZE
1 1/2" THRU 3" 4" AND 5" 6" AND 8" 10" THRU 15" (TWO HANGERS)	EACH JOINT EACH JOINT EACH JOINT EACH JOINT	3/8" 1/2" 3/4" 3/4"

13. RISER CLAMPS SHALL BE INSTALLED ABOVE THE FLOOR AT EACH LEVEL. RISER CLAMPS MAY BE SUSPENDED BELOW FLOOR LEVEL, WITH HANGER RODS AND INSERTS, WHERE THE INSTALLATION OF ESCUTCHEON PLATES IS REQUIRED.

L. PIPE WALL SEALS

- 1. WALL PIPE SEALS WITH RUBBER LINKS SHALL BE THUNDERLINE LINK SEAL, OR APPROVED EQUAL. WALL PIPE SEALS WITH INORGANIC MATERIAL LINKS THE PENETRATIONS OF FIRE RATED WALLS SHALL BE THUNDERLINE PYRO-PAC, OR APPROVED EQUAL.
- 2. SEALS SHALL BE MODULAR MECHANICAL TYPE CONSISTING OF INTERLOCKING SYNTHETIC RUBBER OR INORGANIC MATERIAL LINKS SHAPED TO CONTINUOUSLY FILL THE ANNULAR SPACE BETWEEN THE PIPE AND WALL OPENING.
- 3. LINKS SHALL BE LOOSELY ASSEMBLED WITH BOLTS TO FORM A CONTINUOUS BELT AROUND THE PIPE. A PRESSURE PLATE SHALL BE PROVIDED UNDER THE BOLT HEAD AND NUT OF EACH LINK.
- 4. AFTER THE SEAL ASSEMBLY IS POSITIONED IN THE SLEEVE, THE TIGHTENING OF THE BOLTS SHALL CAUSE THE SEALING ELEMENTS TO EXPAND AND PROVIDE AN ABSOLUTELY WATER-TIGHT SEAL BETWEEN THE PIPE AND SI FFVF
- 5. SEALS SHALL BE CONSTRUCTED TO PROVIDE ELECTRICAL INSULATION BETWEEN THE PIPE AND SLEEVE, THUS REDUCING CHANCES OF CATHODIC REACTION BETWEEN THESE TWO MEMBERS.
- 6. SLEEVES SHALL BE MANUFACTURED FROM HEAVY-WALL, WELDED OR SEAMLESS STEEL PIPE. A FULL CIRCLE CONTINUOUSLY WELDED WATER STOP PLATE SHALL BE PROVIDED TO ASSURE POSITIVE WATER SEALING OF THE SLEEVE. SLEEVE SHALL BE PROTECTED BY A COATING OF ENRICHED RED PRIMER.
- M. VALVES
- 1. BALL VALVES 2-INCHES AND SMALLER SHALL BE 150 PSI SWP, 600 PSI WOG, BRONZE, 2-PIECE DESIGN, WITH PTFE TEFLON SEATS AND SEALS, AND BLOW-OUT PROOF STEMS MADE OF LEAD FREE BRONZE. VALVES SHALL HAVE THREADED ENDS FOR USE IN STEEL PIPING AND SOLDER OR PRESS-FIT ENDS FOR USE IN COPPER TUBING. BALL VALVES SHALL BE APOLLO 70LF-11/70LF-200-11, OR APPROVED EQUAL. PROVIDE THERMA-SEAL INSULATING TEE HANDLES FOR VALVES USED IN LINES WHICH ARE TO BE INSULATED.
- 2. BUTTERFLY VALVES SHALL BE LUG WAFER TYPE, SUITABLE FOR 150 PSI WOG AT TEMPERATURE RANGING FROM 25 DEGREES F THROUGH 230 DEGREES F.
- 3. BUTTERFLY VALVES SHALL HAVE FULLY REPLACEABLE SEATS MADE OF EPDM ELASTOMER. BUTTERFLY VALVES CLOSURE SHALL BE BUBBLE TIGHT.
- 4. BUTTERFLY VALVES SHALL HAVE CAST IRON OR SEMI-STEEL BODIES, ONE PIECE TYPE 416 STAINLESS STEEL STEMS, AND BRONZE DISCS. DISCS SHALL BE ANCHORED TO STEM WITH BRONZE DRIVE PINS. SEMI-STEEL DISCS WITH WELDED NICKEL EDGE MAY BE USED IN LIEU OF BRONZE DISCS.
- 5. PROVIDE 2 INCH EXTENSION NECKS ON VALVES INSTALLED IN INSULATED LINES.
- 6. LEVER TYPE HANDLE OPERATORS SHALL BE PROVIDED ON VALVES UP TO 4 INCHES IN SIZE. GEAR OPERATORS SHALL BE PROVIDED ON VALVES OVER 4 INCHES IN SIZE, AND ON VALVES REQUIRING CHAIN OPERATION. VALVES USED FOR BALANCING SHALL HAVE INFINITE POSITION LEVER OR GEAR OPERATORS WITH ADJUSTABLE, OPEN POSITION "MEMORY" STOP.
- 7. BUTTERFLY VALVES SHALL BE NIBCO LD-2000, ITT GRINNELL 8000 SERIES, OR APPROVED EQUAL.
- 8. GLOBE VALVES (3 INCH AND SMALLER) SHALL BE 150#. TEFLON DISC, UNION BONNET TYPE VALVES WITH THREADED OR SOLDER JOINT ENDS, GLOVE VALVES WITH THREADED ENDS SHALL BE HAMMOND, MODEL 1B413T, OR APPROVED EQUAL. GLOBE VALVES FOR INSTALLATION IN COPPER TUBING SHALL BE HAMMOND, MODEL 1B423, OR APPROVED EQUAL
- 9. CHECK VALVES (3 INCH AND SMALLER) SHALL BE 125# WITH REMOVABLE, REGRINDABLE DISCS AND THREADED OR SOLDER JOINT ENDS. CHECK VALVES TO BE INSTALLED IN HORIZONTAL LINES SHALL BE HAMMOND. MODEL 18940 OR APPROVED EQUAL, (SCREWED JOINTS) OR HAMMOND, MODEL IB941, OR APPROVED EQUAL (SOLDER JOINTS). CHECK VALVES TO BE INSTALLED IN VERTICAL PIPING SHALL BE HAMMOND, MODEL, IB939, OR APPROVED EQUAL. CONTRACTOR SHALL PROVIDE SWEAT-TO-THREAD ADAPTERS FOR SOLDER JOINT CONNECTIONS.
- 10. GATE VALVES FOR UNDERGROUND WATER SERVICE SHALL BE UL LISTED AND FM APPROVED, 175#, WWP, WITH CAST IRON BODIES BRONZE MOUNTED, NON-RISING STEMS, SOLID WEDGE DISCS, AND INDICATOR POST FLANGES. VALVES SHALL BE STOCKHAM VALVE MODEL, G-635, WITH CONVENTIONAL PACKING AND MECHANICAL JOINT ENDS.
- 11. PROVIDE VALVE TAGS AND VALVE CHART PER ASME A13.1 SCHEME FOR THE IDENTIFICATION OF PIPING SYSTEMS N. STRAINERS
- 1. Y-TYPE STRAINERS BRONZE 3" AND SMALLER
- a. STRAINER BODY TO BE ASTM B584 OR B62 BRONZE WITH THREADED OR SOLDER END CONNECTIONS AND .033 INCH PERFORATED TYPE 304 STAINLESS STEEL SCREEN OR 20 MESH TYPE 304 STAINLESS STEEL SCREEN ACCESSIBLE WITHOUT REMOVING THE STRAINER FROM THE LINE.
- 2. Y-TYPE STRAINERS IRON 3" AND SMALLER
- a. STRAINER BODY TO BE CLASS 250 THREADED, TAPPED SCREW-IN BONNET WITH PLUG AND STAINLESS STEEL SCREEN. BODY AND BONNET TO BE ASTM A126. SCREEN MUST BE ACCESSIBLE WITHOUT REMOVING THE STRAINER FROM THE LINE.
- 3. Y-TYPE STRAINERS IRON 2 1/2" AND LARGER

611 William Penn Place 7th Floor Pittsburgh, PA 15219 412.263.3800 www.stradallc.com Pittsburgh Philadelphia ©2021 Strada Architecture LLC Allen <del>I</del> Sharif MEP Engineering Project Management 2 Allegheny Center Nova Tower 2, Suite 1001 Pittsburgh, Pennsylvania 15212 412.322.9280 A+S Project Number: 2241141 Strada Architecture No. PE041793 David C. Price License: PE041793 Project Information Coop De Ville Savannah 301 Passage Way Savannah, GA 31401 Owner: #Client Company Project Number: **Revision History** ID|Date |Issue Name 05.05.23 |Permit Set Current Issuance Date Project Phase 05.05.23 Permit Set Drawing Title Plumbing Specifications Sheet Number P0.02

### a. STRAINER BODY TO BE CLASS 125 FLANGED, TAPPED BOLTED BONNET WITH PLUG AND STAINLESS STEEL SCREEN. BODY AND BONNET TO BE ASTM A126. SCREEN MUST BE ACCESSIBLE WITHOUT REMOVING THE STRAINER FROM THE LINE.

4. ACCEPTABLE MANUFACTURERS -

a. NIBCO b. APOLLO c. WATTS

O. PIPE IDENTIFICATION

- 1. CONTRACTOR SHALL PROVIDE IDENTIFICATION LABELS, TAGS, ETC., FOR PLUMBING AS INDICATED ON THE DRAWINGS AND AS SPECIFIED HEREIN.
- 2. THE IDENTIFICATION OF PLUMBING PIPING SHALL BE IN ACCORDANCE WITH ANSI STANDARD A13.1, EXCEPT AS HEREINAFTER SPECIFIED.
- 3. PRESSURE SENSITIVE PIPE MARKERS SHALL BE MANUFACTURED BY THE BRADY CO., OR APPROVED EQUAL. PIPE MARKERS SHALL BE MANUFACTURER'S STANDARD PRODUCT.
- P. VACUUM BREAKERS
- 1. VACUUM BREAKERS SHALL CONFORM TO THE REQUIREMENTS OF THE LOCAL CODE AND SHALL BE PROVIDED FOR HOSE BIBBS, WALL HYDRANTS, FLUSHOMETERS AND ANY FIXTURE OR EQUIPMENT HAVING DOMESTIC WATER SUPPLY.
- Q. ACCESS DOORS
  - ACCESS DOORS SHALL BE PROVIDED IN WALLS AND CEILINGS WHERE REQUIRED TO PERMIT PROPER ACCESS TO VALVES AND ANY OTHER SUCH DEVICES WHICH REQUIRE MAINTENANCE OR SERVICE. DOORS PLACED IN WALLS, PARTITIONS OR OTHER FIRE-RATED CONSTRUCTION SHALL HAVE A LABEL SIGNIFYING THAT THE DOOR HAS THE SAME FIRE RATING AS THE FIRE-RATED CONSTRUCTION.
  - 2. THIS CONTRACTOR SHALL FURNISH ACCESS PANELS TO THE GENERAL CONTRACTOR FOR INSTALLATION.
  - 3. ACCESS PANELS SHALL BE CONSTRUCTED OF 14 GAUGE STEEL, WITH 16 GAUGE STEEL FRAMES. DOORS SHALL FINISH FLUSH WITH THE SURROUNDING SURFACE. FRAMES SHALL HAVE 3 INCH WIDE EXPANDED METAL FOR PLASTERED SURFACES AND PLAIN FLANGED TYPE FRAME FOR TILE, MASONRY OR GYPSUM BOARD SURFACES. DOORS AND FRAMES SHALL BE FURNISHED PRIME COATED. DOORS INSTALLED IN CERAMIC TILE OR OTHER NON-PAINTED SURFACES SHALL BE STAINLESS STEEL.
  - 4. HINGES SHALL BE CONCEALED SPRING TYPE, TO ALLOW DOORS TO BE OPENED 175 DEGREES. LOCKS SHALL BE FLUSH SCREWDRIVER TYPE WITH STEEL CAMS.
  - 5. ACCESS PANELS SHALL BE 16 INCHES BY 16 INCHES OR LARGER AS MAY BE REQUIRED FOR PROPER ACCESS TO THE DEVICE BEING SERVED.
  - 6. ACCESS PANELS ARE NOT REQUIRED IN COMPLETELY ACCESSIBLE LIFT OUT TILE CEILINGS. PRIOR TO BIDDING CONTRACTOR SHALL REVIEW THE ROOM FINISH SCHEDULE ON THE ARCHITECTURAL DRAWINGS IN ORDER TO VERIFY THE NEED FOR ACCESS PANELS.
- R. CONCRETE HOUSEKEEPING PADS
- 1. EQUIPMENT SHALL BE INSTALLED ON CONCRETE HOUSEKEEPING PADS. MINIMUM PAD THICKNESS SHALL BE 6 INCHES. PAD SHALL EXTEND BEYOND THE EQUIPMENT A MINIMUM OF 4 INCHES ON EACH SIDE.
- 2. CONCRETE PADS SHALL BE PROVIDED BY THIS CONTRACTOR. IT SHALL BE THE RESPONSIBILITY OF THE THIS CONTRACTOR TO COORDINATE THE SIZE AND LOCATION OF THE CONCRETE HOUSEKEEPING PADS WITH THE GENERAL CONTRACTOR.
- S. MOTOR STARTERS
- UNLESS OTHERWISE INDICATED, EVERY MOTOR NOT SPECIFIED TO BE PROVIDED WITH A CONTROLLER AT THE FACTORY SHALL BE PROVIDED WITH A CONTROLLER AS SPECIFIED HEREIN. CONTROLLERS SHALL BE FURNISHED BY THIS CONTRACTOR. INSTALLATION OF CONTROLLERS SHALL BE BY THE ELECTRICAL CONTRACTOR.
- MOTOR CONTROLLERS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF NEMA STANDARD IC-1. INDUSTRIAL CONTROL AND BE HEAVY DUTY CONSTRUCTION. CONTROLLER SIZES SHALL BE VERIFIED TO BE COMPATIBLE WITH HORSEPOWER OF THE MOTOR. CONTROLLERS SHALL BE MANUFACTURED BY ALLEN-BRADLEY CO., GENERAL ELECTRIC, CUTLER-HAMMER OR APPROVED EQUAL
- 3. MANUAL MOTOR STARTERS

SIZE 1.

- a. SWITCHES SHALL BE TUMBLER-SWITCH STYLE. THE MANUAL MOTOR STARTERS SHALL PROVIDE OVERLOAD PROTECTION WHICH CLOSELY FOLLOWS THE MOTOR LOAD. MANUAL MOTOR STARTERS FOR OUTDOOR USE SHALL BE NEMA TYPE 4X, INDOOR USE SHALL BE NEMA TYPE 1, EXPLOSION PROOF USE SHALL BE NEMA TYPE 7.
- 4. MAGNETIC MOTOR CONTROLLERS a. MAGNETIC MOTOR CONTROLLERS SHALL BE PROVIDED AS INDICATED. THEY SHALL NOT BE SMALLER THAN NEMA
- b. NON-REVERSING MAGNETIC CONTROLLER SHALL BE UTILIZED TO START FULL VOLTAGE, NON-REVERSING, AC SINGLE SPEED MOTORS. THE CONTROLLERS SHALL BE SIZED FOR THE LOAD UNLESS OTHERWISE INDICATED.
- c. REVERSING MAGNETIC CONTROLLER SHALL BE UTILIZED TO START FULL VOLTAGE REVERSING, AC SINGLE SPEED MOTORS. THE CONTROLLER SHALL BE SIZED FOR THE LOAD UNLESS OTHERWISE INDICATED. LOCATION OF REVERSING MAGNETIC CONTROLLERS IS INDICATED ON THE DRAWINGS.
- d. WHERE MULTI-SPEED MOTORS ARE SCHEDULED ON THE DRAWINGS, THE MOTOR CONTROLS SHALL BE COMPATIBLE WITH THE TYPE MOTOR SHOWN.
- e. BI-METALLIC OVERLOAD RELAYS ARE PREFERRED. OVERLOAD RELAYS SHALL BE SUPPLIED IN EACH LEG. OVERLOAD RELAYS SHALL BE MATCHED TO LOAD AND SHALL BE ADJUSTABLE FROM 90% TO 110%. A SINGLE RESET BUTTON SHALL BE MOUNTED ON THE STARTER DOOR TO PERMIT EXTERNAL RESET. RELAYS SHALL BE CONVERTIBLE FROM MANUAL TO AUTOMATIC RESET BY A SIMPLE ADJUSTMENT.
- f. CONTROL TRANSFORMERS SHALL BE PROVIDED, WHERE REQUIRED. BOTH LEGS OF THE PRIMARY AND ONE LEG OF THE SECONDARY OF THE CONTROL TRANSFORMER SHALL BE PROTECTED BY NEMA CLASS J FUSES. THE OTHER LEG OF THE SECONDARY SHALL BE GROUNDED. CONTROL TRANSFORMER CAPACITY SHALL BE ADEQUATE TO OPERATE ALL CONTROL DEVICES IN THE CIRCUIT. CONTROL VOLTAGE SHALL BE 120V AC UNLESS OTHERWISE SPECIFIED.
- g. UNLESS OTHERWISE INDICATED, ALL MOTOR STARTERS SHALL BE PROVIDED WITH HAND-OFF-AUTOMATIC (H.O.A.) SWITCH IN THE DOOR. ENCLOSURES FOR MAGNETIC STARTERS SHALL BE NEMA TYPE 1 FOR INDOOR USE NEMA TYPE 4X FOR OUTDOOR USE AND NEMA TYPE 7 FOR EXPLOSION PROOF USE.
- h. MOTOR CONTROLLERS SHALL BE PROVIDED WITH ALL CONTROL DEVICES, INCLUDING AUXILIARY CONTACTS, REQUIRED FOR EQUIPMENT TO OPERATE AS SPECIFIED.
- 5. COMBINATION MOTOR CONTROLLERS a. COMBINATION MOTOR CONTROLLERS SHALL BE PROVIDED WITH MOLDED CASE MOTOR CIRCUIT PROTECTORS OR MOLDED CASE CIRCUIT BREAKERS AS INDICATED. MOTOR CIRCUIT PROTECTIVE DEVICES SHALL HAVE SHORT CIRCUIT CAPACITY AS REQUIRED. UNIT CONTROL CIRCUIT FUSING SHALL BE PROVIDED. THE MOTOR CIRCUIT PROTECTIVE DEVICE SHALL BE MOUNTED IN THE SAME ENCLOSURE AS THE MAGNETIC CONTROLLER AND SHALL BE OPERABLE BY HAND FROM OUTSIDE THE ENCLOSURE. THE HANDLE SHALL BE SO INTERLOCKED WITH THE DOOR THAT IT MUST BE RETURNED TO THE "OFF" POSITION BEFORE THE DOOR CAN BE OPENED, BUT A COIN-PROOF DEFEAT MECHANISM SHALL BE PROVIDED TO ALLOW AUTHORIZED PERSONNEL TO OPEN THE ENCLOSURE DOOR WITHOUT OPENING THE DISCONNECTING DEVICE. PROVISIONS FOR PADLOCKING THE DISCONNECT HANDLE IN THE "OFF" POSITION SHALL BE MADE. THE ENCLOSURE FOR COMBINATION STARTERS SHALL BE NEMA TYPE 1 FOR INDOOR USE AND NEMA TYPE 4X FOR OUTDOOR USE, AND NEMA TYPE 7 FOR EXPLOSION PROOF USE.
- b. MOTOR CIRCUIT PROTECTORS SHALL BE THE CONTINUOUSLY ADJUSTABLE, INSTANTANEOUS MAGNETIC TRIP TYPE CIRCUIT BREAKER AND SHALL BE SO CONSTRUCTED THAT ALL POLES OPEN, CLOSE AND TRIP SIMULTANEOUSLY.
- 6. OVERLOAD AND SHORT CIRCUIT PROTECTION
- a. HEATER ELEMENTS SHALL BE PROVIDED FOR OVERLOAD PROTECTION. MOTOR CIRCUIT PROTECTOR SHALL BE PROVIDED FOR MOTOR SHORT CIRCUIT PROTECTION.
- T. DISCONNECT SWITCHES
- 1. THIS CONTRACTOR SHALL FURNISH SAFETY DISCONNECT SWITCHES (FUSED AND NON-FUSED) REQUIRED FOR EQUIPMENT FURNISHED UNDER THIS CONTRACT. IN ADDITION, THIS CONTRACTOR SHALL FURNISH A SAFETY DISCONNECT SWITCH FOR MOTORS AND EQUIPMENT WHICH DO NOT HAVE COMBINATION STARTERS OR INTEGRAL DISCONNECTING MEANS. FUSIBLE DISCONNECT SWITCHES SHALL BE PROVIDED FOR EQUIPMENT RATED FOR USE ONLY WITH FUSES (SUCH AS CONDENSING UNITS, COMPRESSORS, ETC.). SUCH SWITCHES SHALL BE ONE, TWO OR THREE POLE TYPE, WITH SOLID NEUTRAL FOR 4 WIRE SERVICE, AND SHALL HAVE THE PROPER CURRENT AND VOLTAGE RATING AS REQUIRED. INSTALLATION OF DISCONNECT SWITCHES SHALL BE BY THE ELECTRICAL CONTRACTOR.
- 2. SAFETY SWITCHES SHALL BE NEMA HEAVY DUTY TYPE AND SHALL CARRY THE UNDERWRITERS' LABORATORIES LABEL. FUSIBLE SWITCHES SHALL INCORPORATE CLASS "R" FUSE REJECTION FEATURE AND SHALL BE BRACED TO WITHSTAND 200,000 AMPERE RMS SYMMETRICAL FAULT CURRENT. SAFETY SWITCHES SHALL CONFORM TO FEDERAL SPECIFICATION W-S-865.
- 3. PROVIDE HEAVY-DUTY TYPE, SHEET ENCLOSED, SAFETY SWITCHES. THE TYPE, SIZE, AND RATING SHALL BE AS INDICATED ON THE DRAWINGS OR AS REQUIRED BY THE MOTOR OR EQUIPMENT SERVED. THE ENCLOSURE FOR DISCONNECT SWITCHES SHALL BE NEMA TYPE 1 FOR INDOOR USE, NEMA TYPE 4X FOR OUTDOOR USE AND NEMA TYPE 7 FOR EXPLOSION PROOF USE. DISCONNECTS SHALL BE MANUFACTURED BY ALLEN-BRADLEY, GENERAL ELECTRIC, CUTLER-HAMMER APPROVED EQUAL.
- SWITCHES SHALL INCORPORATE QUICK-MAKE, QUICK-BREAK OPERATING HANDLES, THE MECHANISM SHALL BE AN INTEGRAL PART OF THE BOX, NOT THE COVER, AND SWITCHES SHALL HAVE A COVER INTERLOCK TO PREVENT UNAUTHORIZED OPENING OF THE SWITCH DOOR IN THE ON POSITION OR CLOSING OF THE SWITCH MECHANISM WITH THE DOOR OPEN. CURRENT CARRYING PARTS SHALL BE CONSTRUCTED OF HIGH-CONDUCTIVITY COPPER WITH SILVER-TUNGSTEN TYPE SWITCH CONTACT.
- 5. FUSE CLIPS SHALL BE POSITIVE PRESSURE TYPE REINFORCED FUSE CLIPS.
- U. VIBRATION ISOLATION
  - 1. EQUIPMENT SHALL BE MOUNTED ON VIBRATION ISOLATORS TO PREVENT THE TRANSMISSION OF VIBRATION AND MECHANICALLY TRANSMITTED SOUND TO THE BUILDING STRUCTURE.
  - 2. ISOLATION EQUIPMENT SHALL BE THE PRODUCT OF A SINGLE MANUFACTURER, AND SHALL BE DESIGNED SPECIFICALLY FOR THE APPLICATION REQUIRED. THIS INCLUDES, BUT IS NOT LIMITED TO, PIPING DUCTWORK, PUMPS, COMPRESSORS. VIBRATION ISOLATORS SHALL BE RATED FOR THE WEIGHT AND SPACING REQUIRED FOR THE EQUIPMENT REQUIRING ISOLATION.

- V. FIRESTOPPING
- W. WATER HEATERS

### 1. SERVICES THAT PASS THRU FIRE OR SMOKE RATED PARTITIONS, WALLS, FLOORS, SHALL BE FIRESTOPPED. FIRE STOPPING SYSTEM RATING SHALL MATCH PARTITION RATING. FIRE STOPPING SYSTEM SHALL MEET THE REQUIREMENTS OF ASTM E 814, UL 1479, AND BE FACTORY MUTUAL APPROVED.

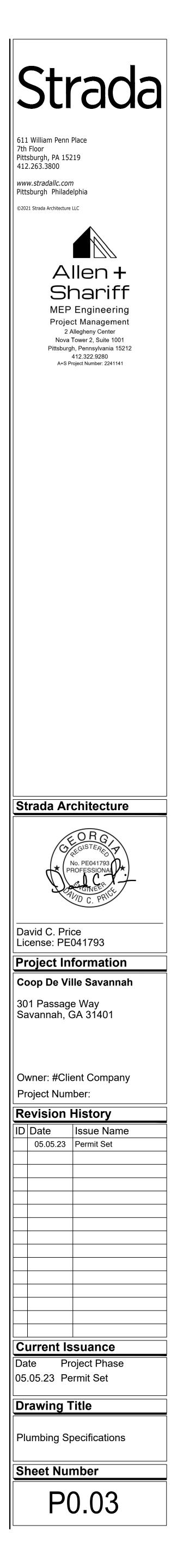
2. FIRESTOPING AND/OR SMOKE STOPPING MATERIAL AND INSTALLATION SHALL BE AS MANUFACTURED BY HILTI OR APPROVED EQUAL.

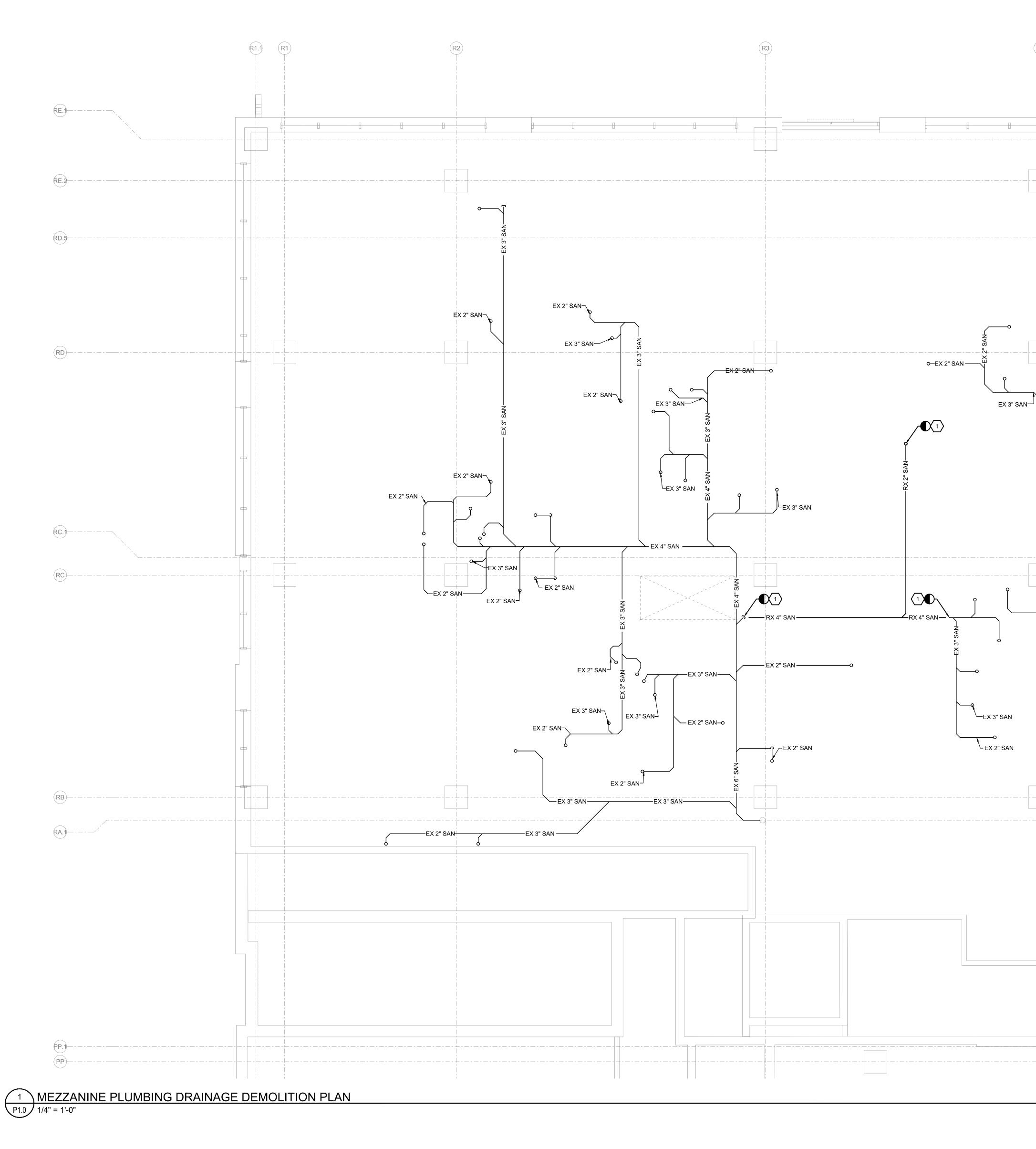
1. DOMESTIC WATER HEATERS MARKED WH ON THE DRAWINGS SHALL BE MANUFACTURED BY "LOCHINVAR", "STATE", OR "BRADFORD-WHITE". WATER HEATERS SHALL BE AS SPECIFIED ON THE WATER HEATER SCHEDULE OF THE DRAWINGS AND SHALL HAVE MINIMUM STORAGE CAPACITIES AND RECOVERY RATES NOTED. HEATERS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.

2. PROPERLY SUPPORT HEATER AND WATER. THE BASE SHALL BE COMPRISED OF A STEEL CHANNEL SYSTEM AS MANUFACTURED BY "UNISTRUT", OR ARCHITECT/ENGINEER APPROVED EQUIVALENT. THE SYSTEM SHALL BE "HOLD-RITE" #40-SWHP P-LATFORM. BASE SHALL BE EQUIPPED WITH A STEEL PLATE PLATFORM AND SHALL BE ANCHORED TO THE BUILDING CONSTRUCTION WITH POWDER ACTIVATED OR MECHANICAL TYPE FASTENERS ("HILTI" OR ARCHITECT APPROVED EQUIVALENT) WITH THREADED HANGER RODS. ANCHORING SYSTEM SHALL BE COMPATIBLE WITH TYPE OF BULIDING CONSTRUCTION. ANCHOR FASTENERS TO BUILDING CONSTRUCTION WITH PULL-OUT AND SHEAR CAPACITIES APPROPRIATE FOR THE SUSPENDED CEILING.

3. WATER HEATERS SHALL BE EQUIPPED WITH TEMPERATURE AND PRESSURE RELIEF VALVES AND STAINLESS STEEL DRIP PANS WITH MINIMUM 4" RAISED EDGES. CONTRACTOR SHALL PIPE THE DRAIN PANS AND THE T&P VALVES TO MOP BASINS AS INDICATED ON THE PLANS OR AS REQUIRED BY CODE.

END OF PLUMBING SPECIFICATIONS



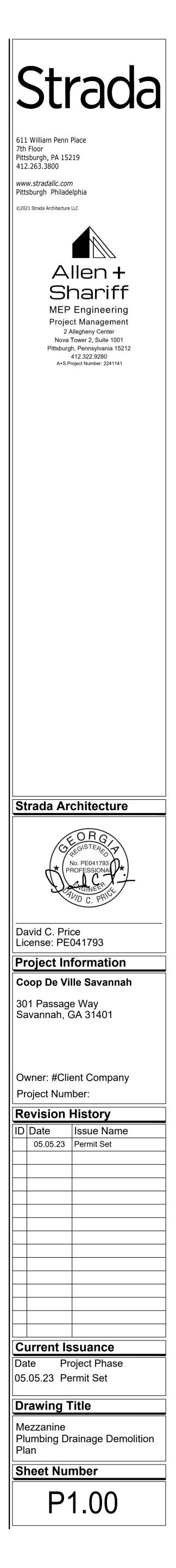


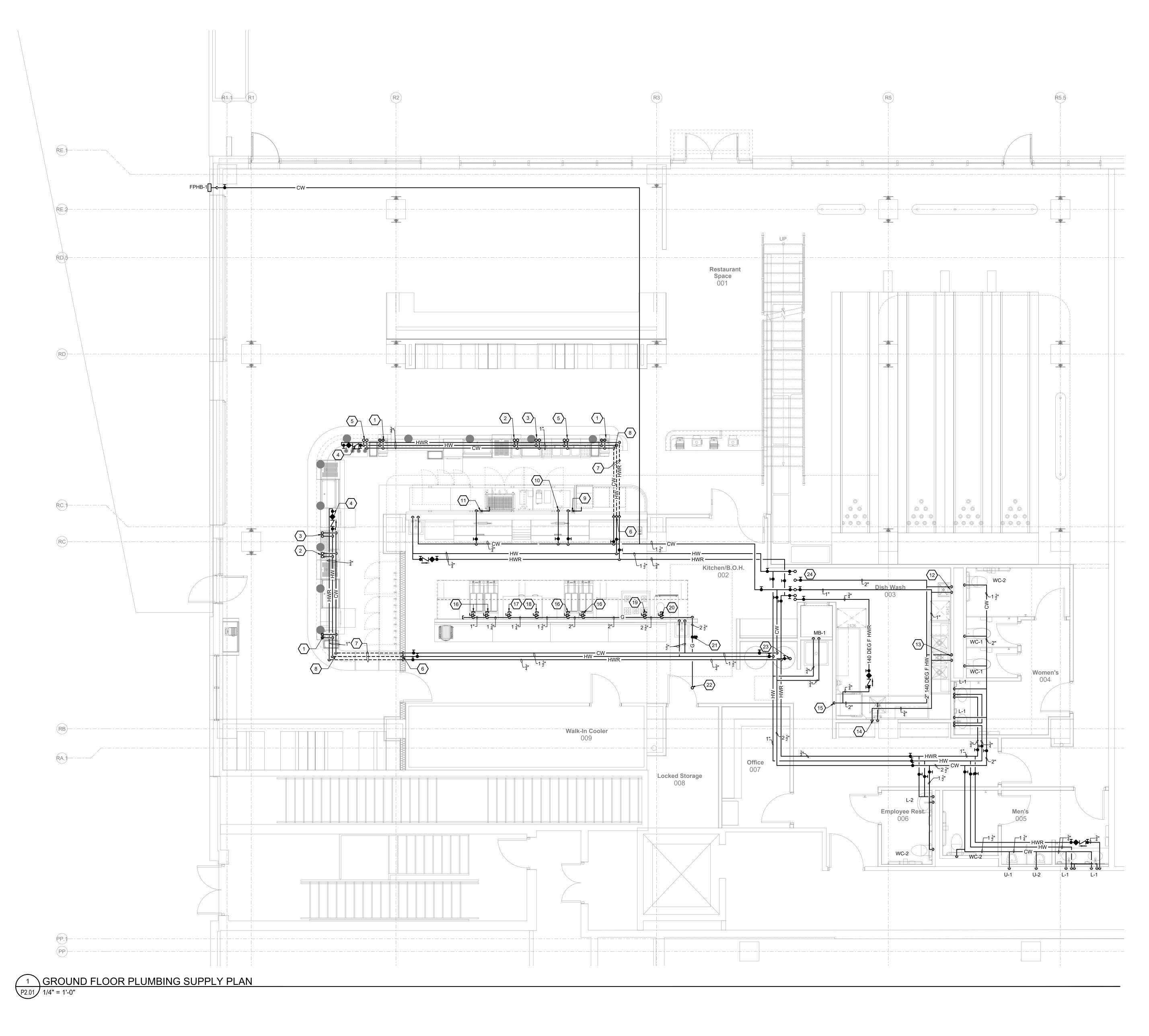
PLUMBING DRAINAGE GENERAL NOTES:

1. COORDINATE DRAINING AND FILLING OF SYSTEMS WITH THE OWNER'S MAINTENANCE PERSONNEL.

R5.5 —EX 3" SAN——  $- \circ$ —— EX 4" SAN— EX 3" SAN— —EX 4" ST—— /---- EX 2" SAN -------_____ . _ _ _ _ _ _ _ _ _ _ _ _ ______. EX 4" SAN EX 4" ST 

PLUMBING DRAINAGE KEY NOTES: (#) 1. REMOVE EXISTING SANITARY PIPING AND CAP FOR FUTURE CONNECTION.





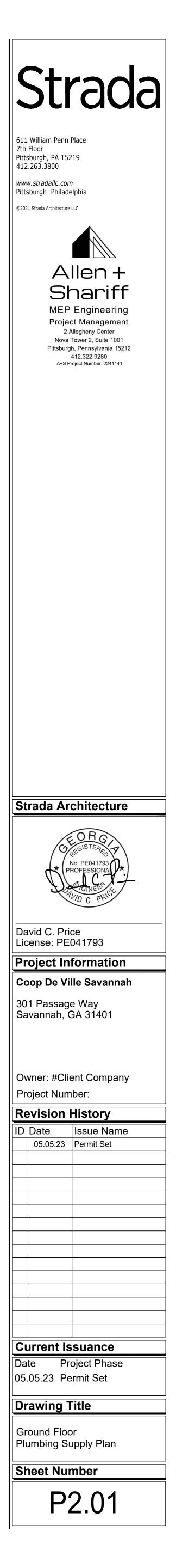
PLUMBING SUPPLY GENERAL NOTES:

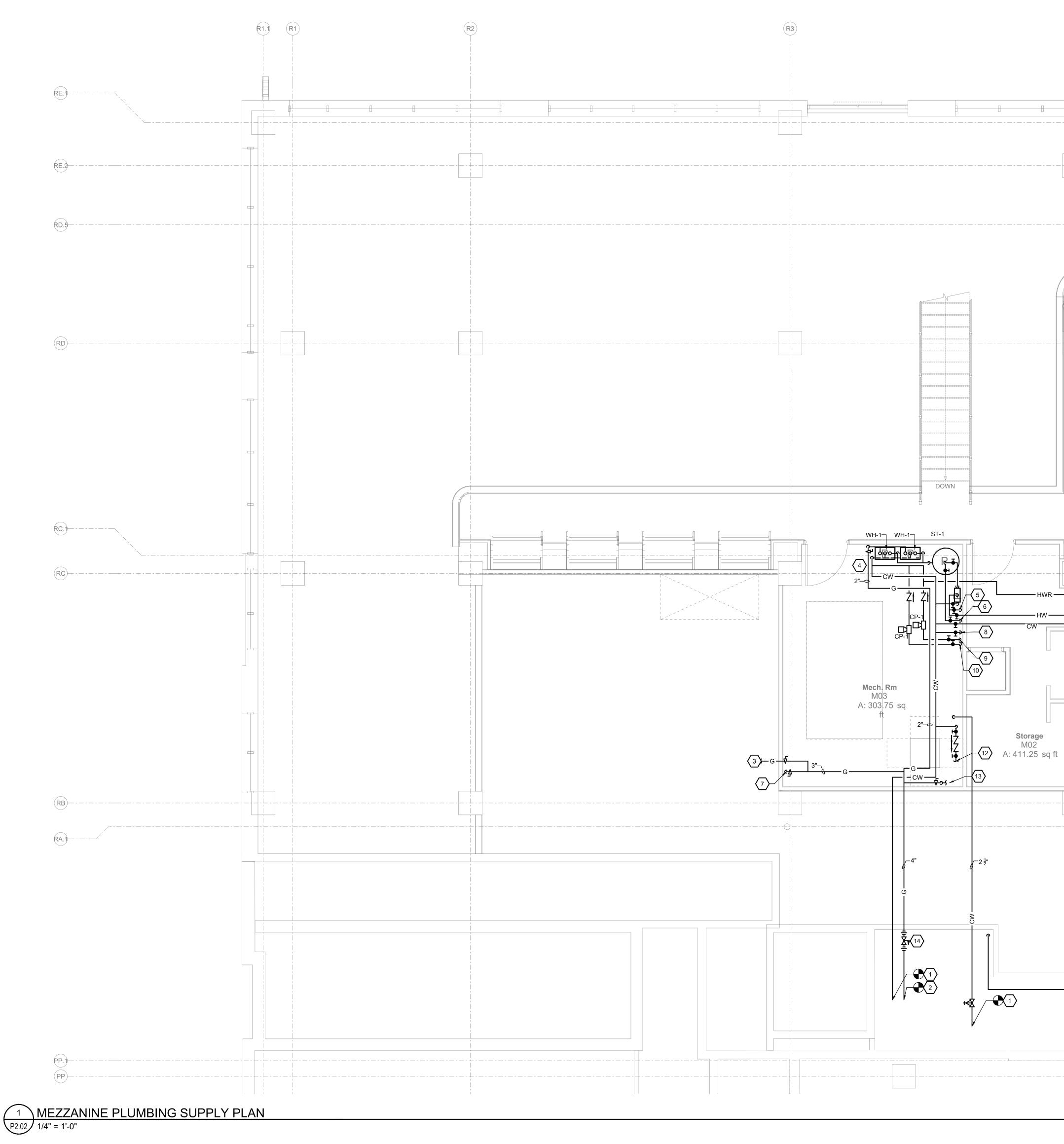
- 1. COORDINATE WORK WITH FOOD SERVICE EQUIPMENT, FSE,
- DRAWINGS AND EQUIPMENT SPECIFICATIONS. 2. PROVIDE FINAL WATER, VENT, AND SANITARY CONNECTIONS TO
- FOOD SERVICE EQUIPMENT, FSE. FSE SHALL BE PROVIDED BY THE KITCHEN EQUIPMENT CONTRACTOR.
- 3. COORDINATE SIZE AND LOCATION OF CONNECTIONS AS REQUIRED.

PLUMBING SUPPLY KEY NOTES:  $\langle \# \rangle$ 

- 1. PROVIDE  $\frac{1}{2}$ " COLD WATER AND  $\frac{1}{2}$ " HOT WATER CONNECTIONS TO FSE #1- UNDERBAR HAND SINK.
- PROVIDE ¹/₂" COLD WATER AND ¹/₂" HOT WATER CONNECTIONS TO FSE #3- UNDERBAR DUMP SINK.
- PROVIDE ³/₄" COLD WATER AND ³/₄" HOT WATER CONNECTIONS TO FSE #5- ROTARY GLASSWASHER. PROVIDE REDUCED PRESSURE
- BACKFLOW PREVENTER.PROVIDE HOT WATER RETURN BALANCING STATION CONSISTING OF
- CONTROL VALVES, CHECK VALVE AND BALANCING VALVE. 5. PROVIDE  $\frac{1}{2}$ " COLD WATER AND  $\frac{1}{2}$ " HOT WATER CONNECTIONS TO FSE
- #4 UNDERBAR 3-COMP SINK. 6. PROVIDE 1  $\frac{1}{2}$ " COLD WATER, 1 1/2" HOT WATER, AND  $\frac{3}{4}$ " HOT WATER
- PIPING DROP TO BELOW FLOOR TO SERVE BAR.
  PROVIDE 1¹/₂" COLD WATER, 1¹/₂" HOT WATER, AND ³/₄" HOT WATER
- PIPING BELOW FLOOR TO SERVE BAR.
- PROVIDE 1 ¹/₂" COLD WATER, 1 ¹/₂ HOT WATER, AND ³/₄" HOT WATER PIPING FROM BELOW FLOOR TO SERVE BAR.
   PROVIDE ¹/₂" COLD WATER PIPING TO FSE # 16.1 - UNDERCOUNTER ICE
- MACHINE WATER FILTER. PROVIDE CONNECTION TO FILTER AND EXTEND PIPING FROM FILTER TO UNDERCOUNTER ICE MACHINE. 10. PROVIDE  $\frac{1}{2}$ " COLD WATER PIPING TO FSE # 17 - COFFEE BREWER.
- 11. PROVIDE  $\frac{1}{2}$ " COLD WATER PIPING TO FSE # 22.1 ESPRESSO MACHINE WATER FILTER. PROVIDE CONNECTION TO FILTER AND EXTEND PIPING FROM FILTER TO ESPRESSO MACHINE.
- PROVIDE ¹/₂" COLD WATER AND ¹/₂" HOT WATER CONNECTIONS TO ADVANCE TABCO HANDSINK. TRIMARK ITEM #1.
   PROVIDE ³/₄" COLD WATER AND ³/₄" 140 DEGREE HOT WATER
- CONNECTIONS TO ADVANCE TABCO THREE COMPARTMENT SINK. TRIMARK ITEM #2.
- 14. PROVIDE  $\frac{3}{4}$ " COLD WATER AND  $\frac{3}{4}$ " 140 DEGREE HOT WATER CONNECTIONS TO ADVANCE TABCO ONE COMPARTMENT SINK. TRIMARK ITEM #3.
- PROVIDE 2" 140 DEGREE HOT WATER CONNECTION TO DISH WASHER BOOSTER HEATER. PROVIDE FINAL CONNECTION TO BOOSTER HEATER. BOOSTER HEATER SHALL BE PROVIDED BY KITCHEN
- EQUIPMENT CONTRACTOR. 16. PROVIDE ³/₄" GAS PIPING CONNECTION TO FSE #10 - FRYER. 17. PROVIDE 1" GAS PIPING CONNECTION TO FSE #14 - GRIDDLE. 18. PROVIDE 1" GAS PIPING CONNECTION TO FSE #13 - CHARBROILER.
- PROVIDE 1" GAS PIPING CONNECTION TO FSE # 17 RANGE.
   PROVIDE 1" GAS PIPING CONNECTION TO FSE #20 CONVECTION OVEN.
   PROVIDE ELECTRICALLY OPERATED GAS SOLENOID VALVE. PROVIDE
- 21. PROVIDE ELECTRICALLET OPERATED GAS SOLENOID VALVE. PROVIDE POWER AND CONTROL WIRE. PROVIDE INTERFACE WITH HOOD EXHAUST SYSTEM AND HOOD FIRE PROTECTION SYSTEM.
   22. PROVIDE 2¹/₂" GAS PIPING FROM ABOVE.
- 23. PROVIDE 2¹/₂" COLD WATER PIPING FROM ABOVE.
  24. PROVIDE 2" HOT WATER PIPING, 2" 140 DEGREE F. HOT WATER PIPING, 2" COLD WATER PIPING, ³/₄" HOT WATER RETURN PIPING, AND ³/₄" 140 DEGREE F. HOT WATER RETURN PIPING FROM ABOVE.

25.



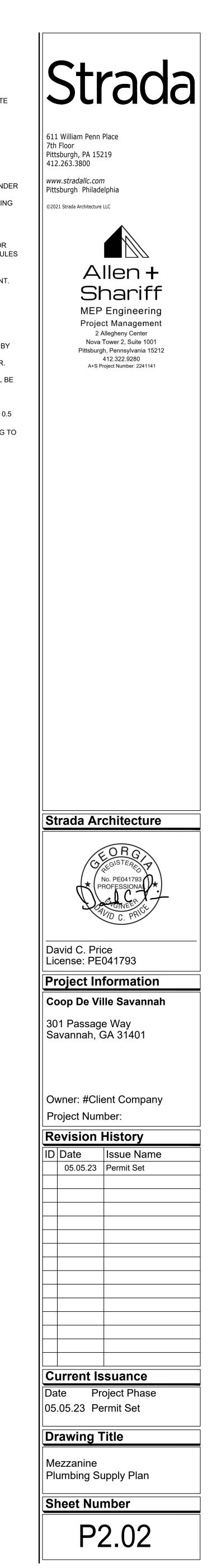


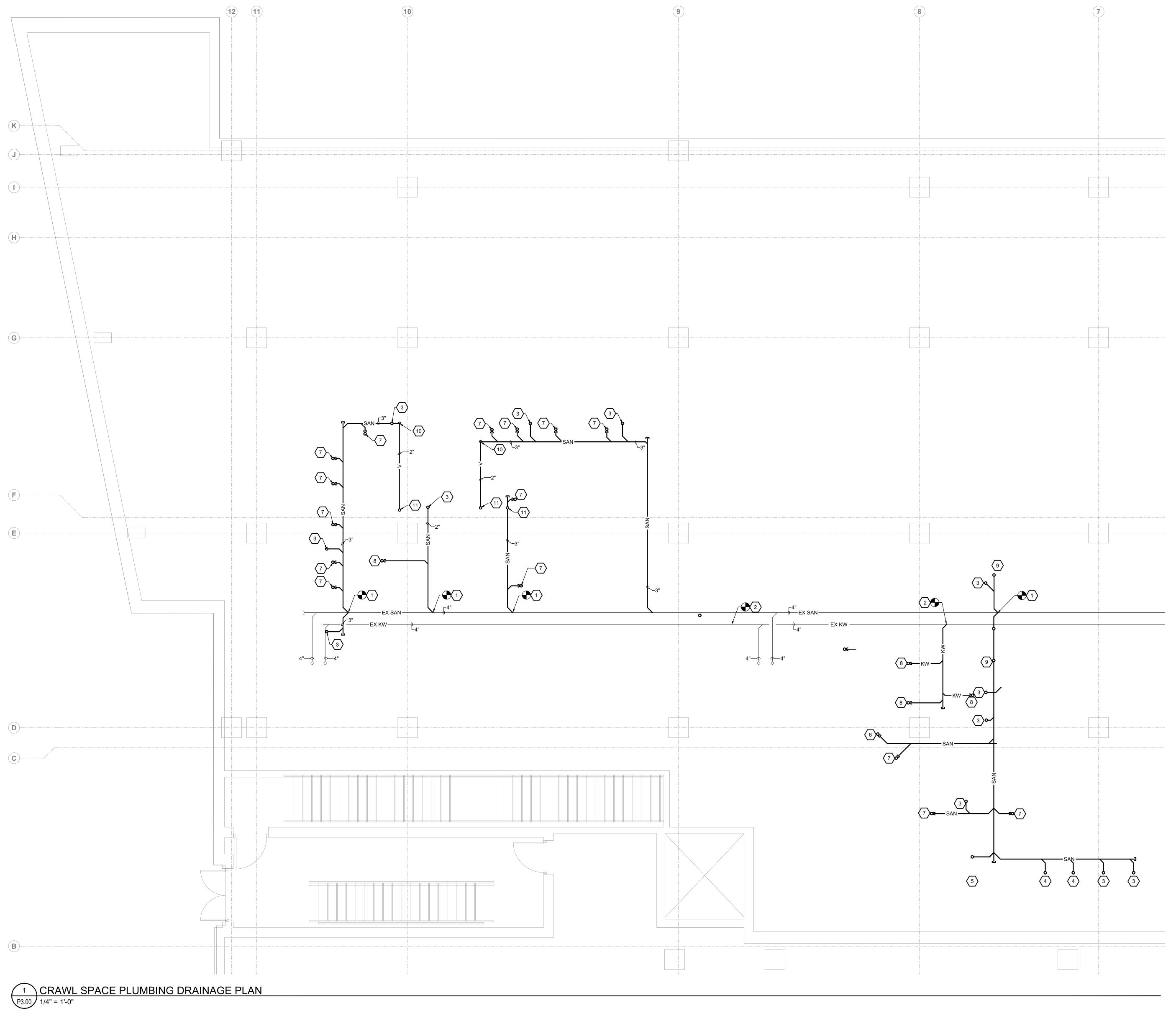
R5.5 _ |- __ -| __ - |__ -ZE ZE Mezzanine M01 A: 329.5 sq ft M01 A: 104.75 sq Elect. Rm M04 A: 42 sq ft ---- PLUMBING SUPPLY GENERAL NOTES:

1. COORDINATE CONNECTIONS TO WATER, GAS, SANITARY, AND GREASE WASTE PIPING WITH OWNER'S MAINTENANCE STAFF.

PLUMBING SUPPLY KEY NOTES: (#)

- 1. PROVIDE CONNECTION TO EXISTING DOMESTIC WATER PIPING PROVIDED UNDER BASE BUILDING CONSTRUCTION.
- PROVIDE CONNECTION EXISTING GAS PIPING PROVIDED UNDER BASE BUILDING CONSTRUCTION.
   PROVIDE 2" GAS PIPING TO MAKE-UP AIR UNIT. MAKE-UP AIR UNIT SHALL BE
- PROVIDED BY MECHANICAL CONTRACTOR. PROVIDE FINAL CONNECTION TO MAKE-UP AIR UNIT.
- DOMESTIC HOT WATER SYSTEM. REFER TO DETAIL #1 ON DRAWING P5.01 FOR ADDITIONAL WORK REQUIRED. REFER TO DRAWING P7.01 PLUMBING SCHEDULES FOR MAKE AND MODEL OF EQUIPMENT.
- 5. PROVIDE 2" DOMESTIC HOT WATER PIPING DOWN TO FIXTURES BELOW.
   6. PROVIDE ³/₄" 140 DEGREE F. HOT WATER PIPING DOWN TO KITCHEN EQUIPMENT.
   7. PROVIDE 2 ¹/₂" GAS PIPING DOWN TO KITCHEN EQUIPMENT.
- 8. PROVIDE 2" COLD WATER PIPING DOWN.
- 9. PROVIDE  $\frac{3}{4}$ " HOT WATER RETURN PIPING FROM BELOW. 10. PROVIDE  $\frac{3}{4}$ " 140 DEGREE HOT WATER RETURN PIPING FROM BELOW. 11. PROVIDE 3" VENT PIPING FROM BELOW.
- 12.PROVIDE 1 ¹/₂" COLD WATER SUPPLY FOR BOILER WATER MAKEUP. PROVIDE REDUCED PRESSURE BACKFLOW PREVENTER. BOILER SHALL BE PROVIDED BY MECHANICAL CONTRACTOR. PROVIDE FINAL CONNECTION TO BOILER. COORDINATE CONNECTION AND LOCATION WITH MECHANICAL CONTRACTOR. PIPE DRAIN TO FLOOR DRAIN.
- 13.PROVIDE 2" GAS PIPING SUPPLY FOR BOILER WATER MAKEUP. BOILER SHALL BE PROVIDED BY MECHANICAL CONTRACTOR. PROVIDE FINAL CONNECTION TO BOILER. COORDINATE CONNECTION AND LOCATION WITH MECHANICAL CONTRACTOR.
- 14. PROVIDE 4" GAS PRESSURE REGULATING VALVE TO REDUCE PRESSURE TO 0.5 PSI. PROVIDE RELIEF VALVE VENT DISCHARGE ABOVE ROOF.
- 15. PROVIDE 1" COLD WATER, 1" HOT WATER, AND  $\frac{3}{4}$ " HOT WATER RETURN PIPING TO BELOW THE FLOOR TO SERVE SINK S-1, FSE #1 UNDER BAR HANK SINK AND ROTARY DISHWASHER FSE #15.



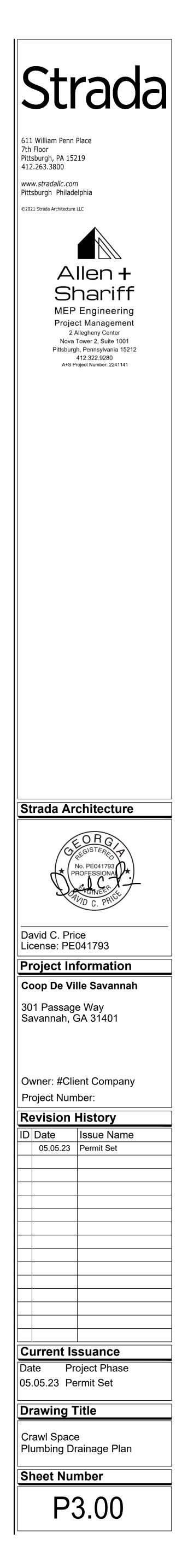


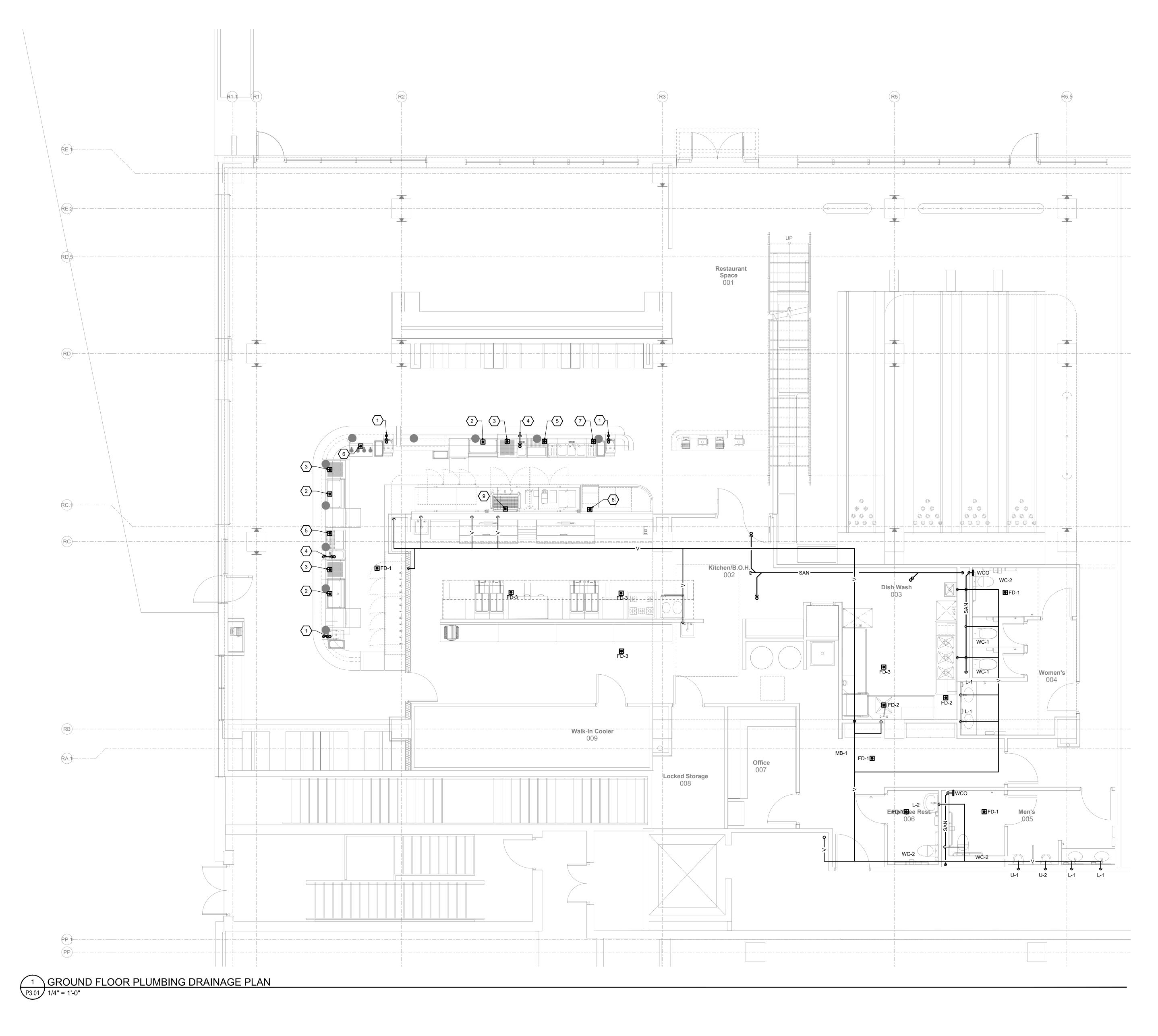
PLUMBING SUPPLY GENERAL NOTES:

- 1. COORDINATE CONNECTIONS TO WATER, GAS, SANITARY, AND GREASE WASTE PIPING WITH OWNER'S MAINTENANCE STAFF.
- 2. SANITARY PIPING SHALL BE PROVIDED WITH RAYCHEM HEAT TRACE AND
- INSULATION. 3. KITCHEN WASTE PIPING SHALL BE PROVIDED WITH RAYCHEM GREASE FLOW MAINTENANCE.

PLUMBING SUPPLY KEY NOTES: (#)

- 1. PROVIDE CONNECTION TO EXISTING 4" SANITARY PIPING. 2. PROVIDE CONNECTION TO EXISTING KITCHEN WASTE PIPING.
- 3. PROVIDE 2" SANITARY PIPING FROM LAV/SINK.
- 4. PROVIDE 2" SANITARY PIPING FROM URINAL.
- 5. PROVIDE 4" SANITARY FROM WATER CLOSET. 6. PROVIDE 3" SANITARY FROM MOP BASIN.
- 7. PROVIDE 3" SANITARY PIPING FROM FLOOR DRAIN.
- 8. PROVIDE 3" KITCHEN WASTE PIPING FROM FLOOR DRAIN.
- 9. PROVIDE 4" SANITARY PIPING FROM ABOVE.
- PROVIDE 2" ISLAND VENT PIPING.
   PROVIDE 2" VENT PIPING UP.



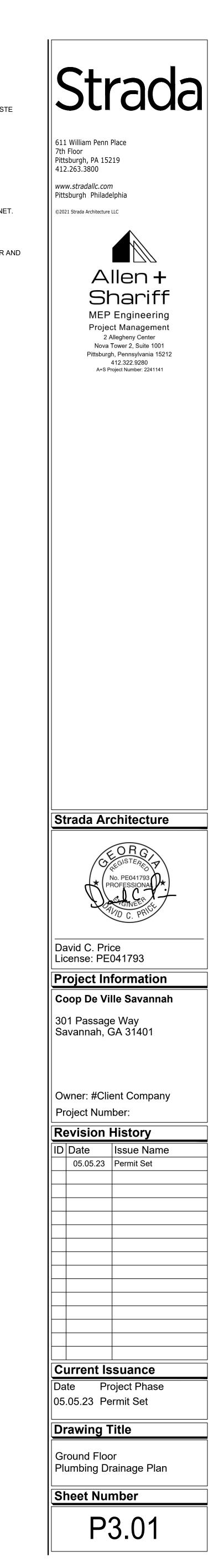


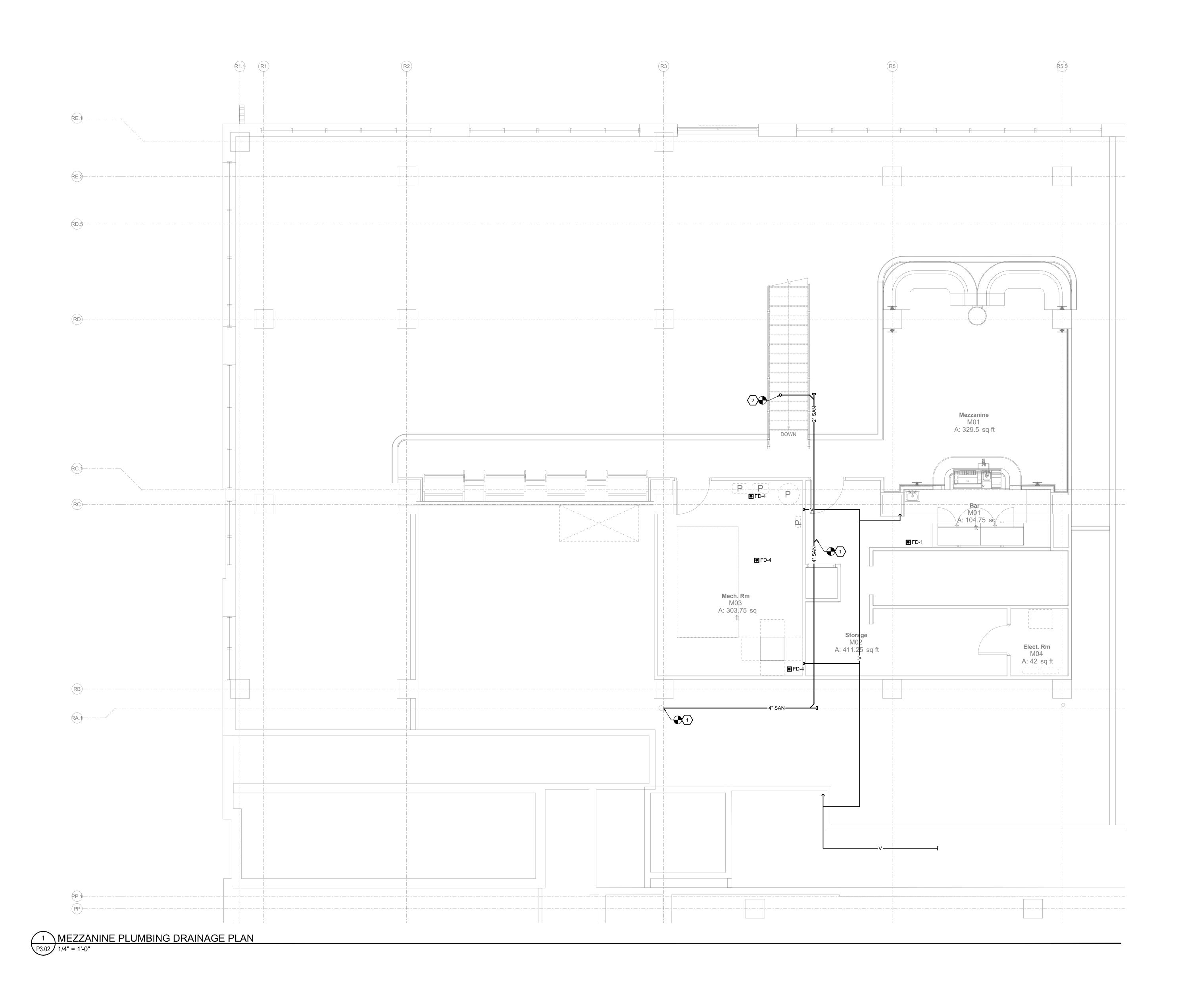
## PLUMBING SUPPLY GENERAL NOTES:

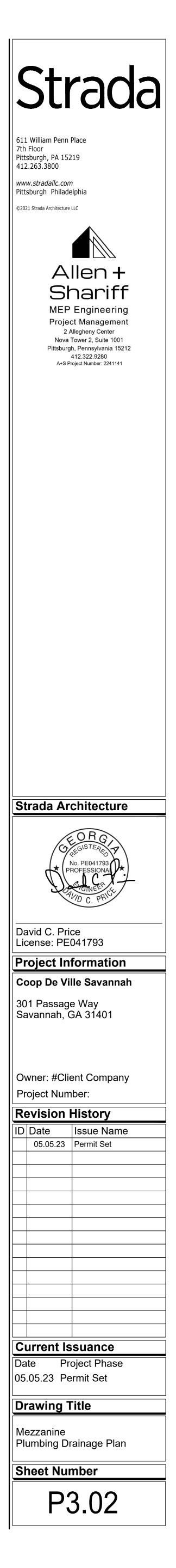
 COORDINATE CONNECTIONS TO WATER, GAS, SANITARY, AND GREASE WASTE PIPING WITH OWNER'S MAINTENANCE STAFF.

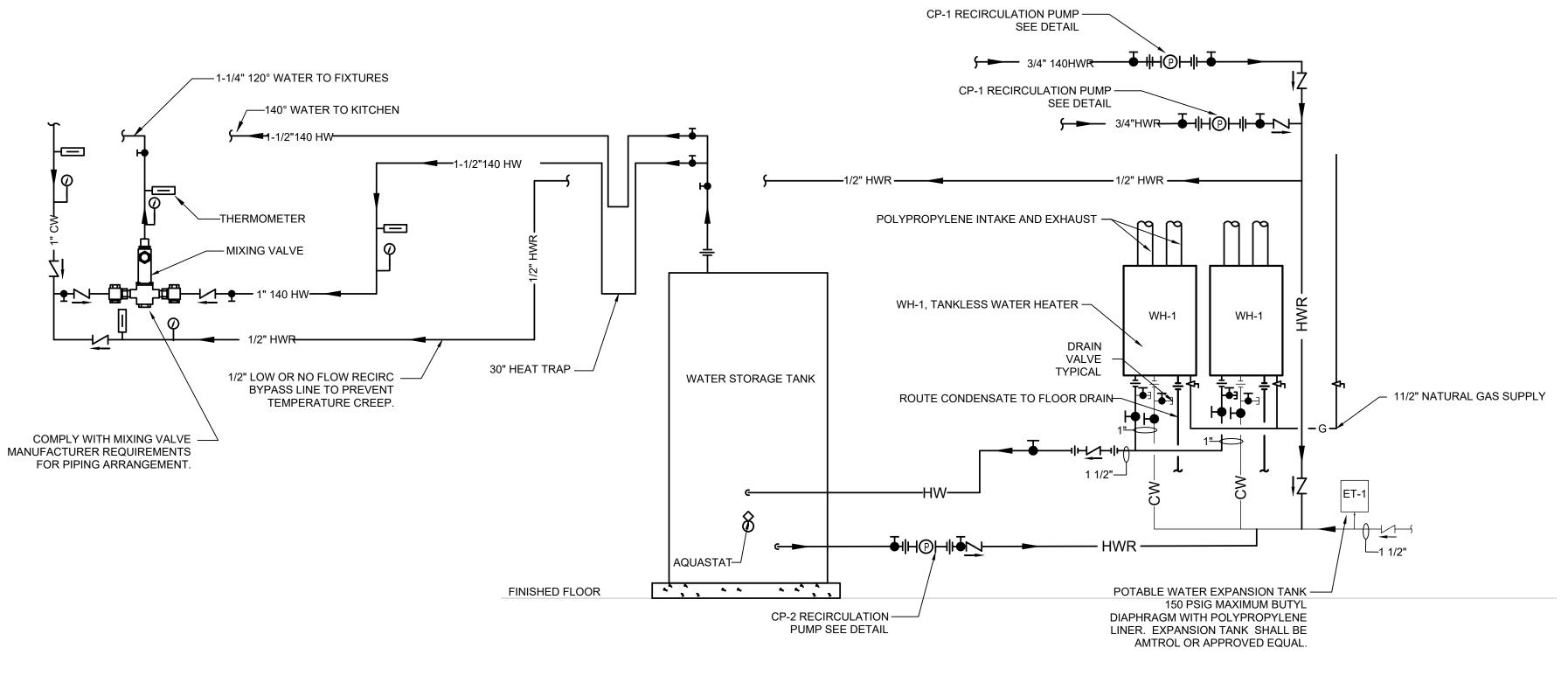
PLUMBING SUPPLY KEY NOTES:

1.	PROVIDE 2" SANITARY PIPING TO SERVE FSE #1 - UNDERBAR HAND SINK
2.	PROVIDE FLOOR DRAIN, FD-3, FOR FSE #8 - UNDERBAR ICE CHEST.
3.	PROVIDE FLOOR DRAIN, FD-3, FOR FSE #7 - GLASSRACK STORAGE CABINET
4.	PROVIDE 2" SANITARY PIPING TO SERVE FSE #3 - SINGLE DUMP SINK.
5.	PROVIDE FLOOR DRAIN, FD-3, FOR FSE #5 - UNDERBAR GLASSWASHER.
6.	PROVIDE FLOOR DRAIN, FD-3, FOR FSE #11 - HIGHBALL MACHINE.
7.	PROVIDE FLOOR DRAIN, FD-3, FOR FSE #4 - UNDERBAR 3-COMP SINK.
8.	PROVIDE FLOOR DRAIN, FD-3, FOR FSE #16 - UNDERCOUNTER ICE MAKER A
	FSE#17 - COFFEE BREWER
9.	PROVIDE FLOOR DRAIN, FD-3, FOR FSE #22 - ESPRESSO MACHINE.

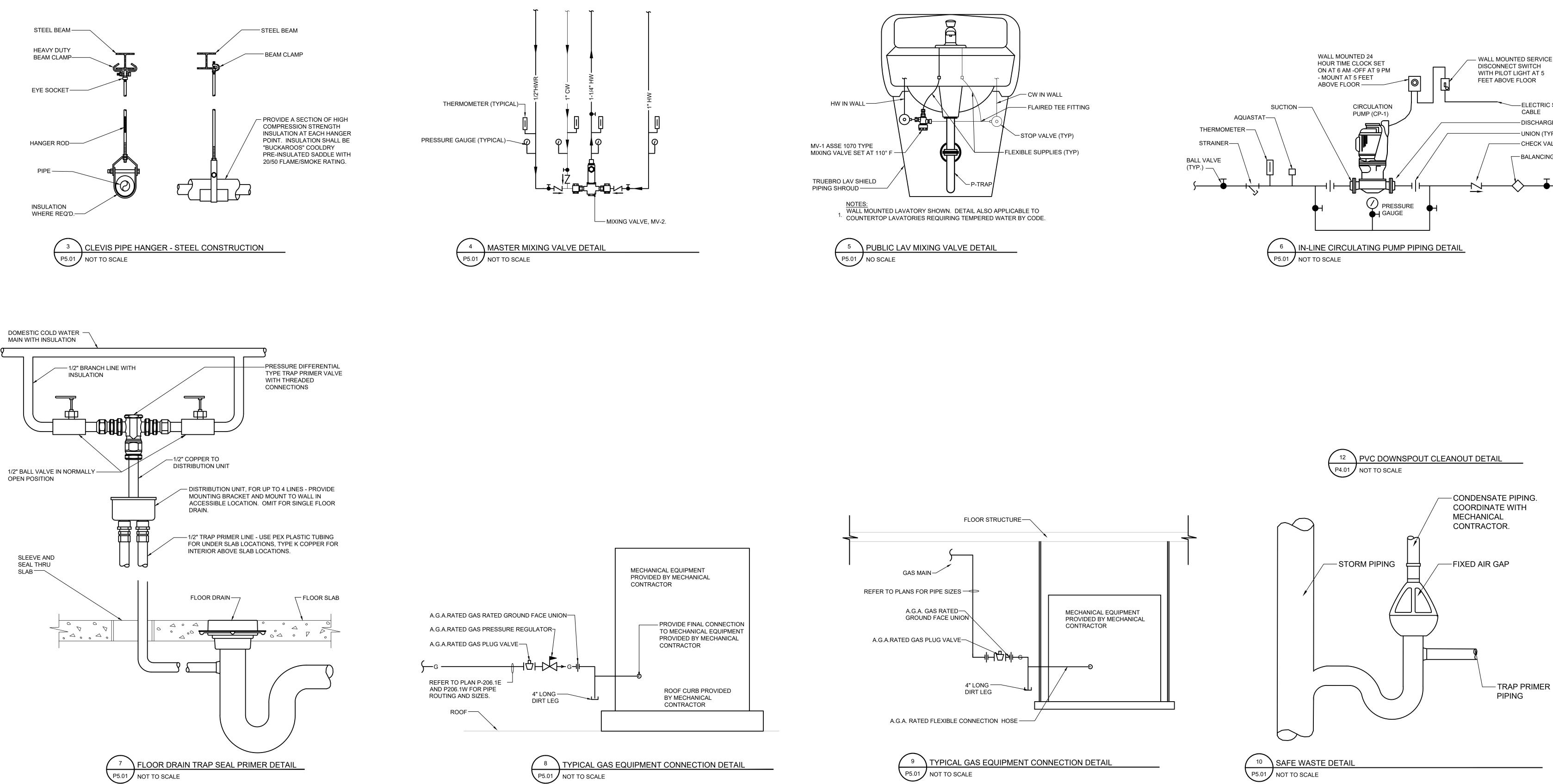


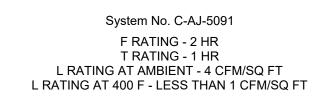


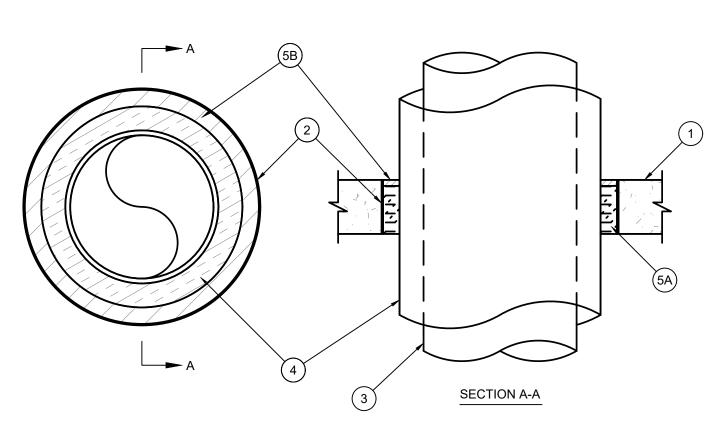




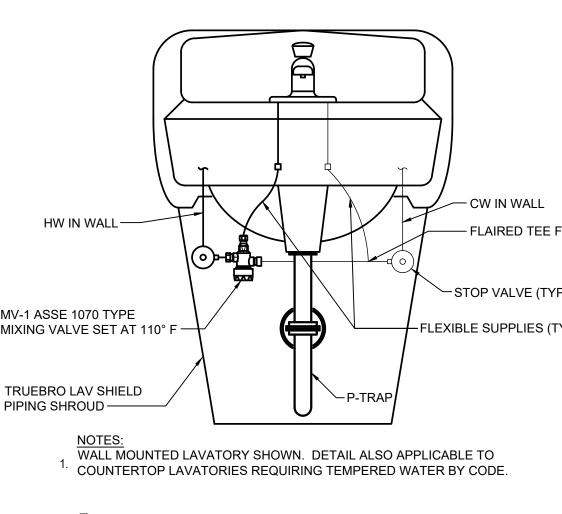
TANKLESS WATER HEATER WITH STORAGE PIPING DETAIL P5.01 / NOT TO SCALE

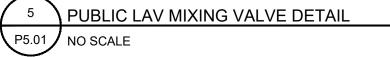








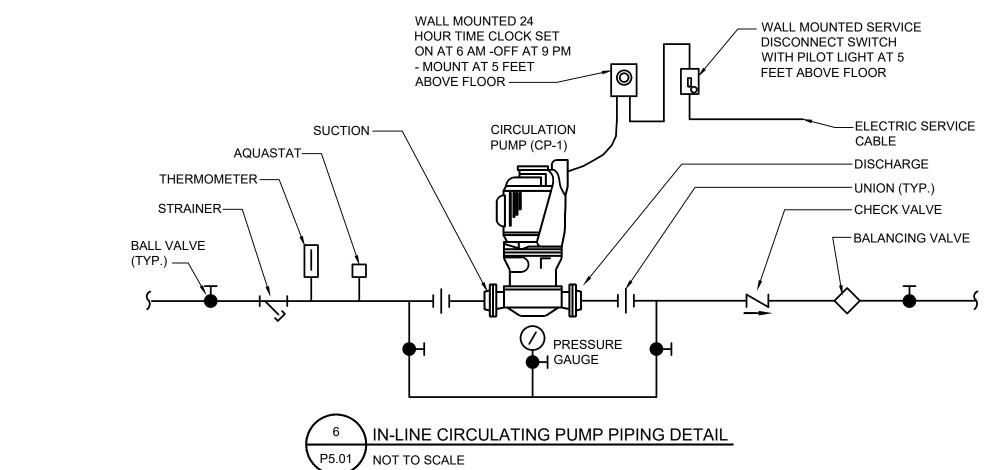


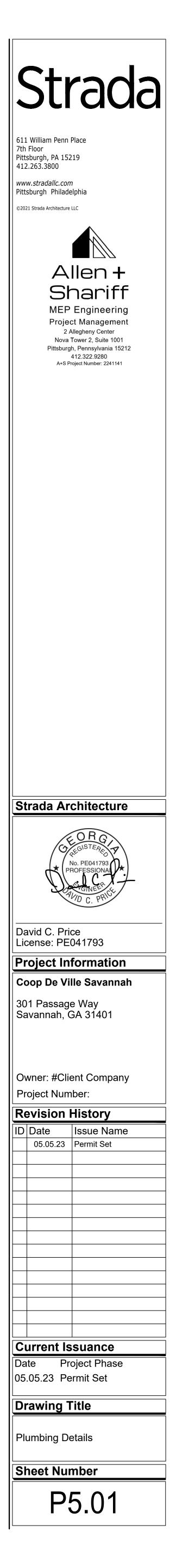


1. FLOOR OR WALL ASSEMBLY - MIN 4-1/2 IN. THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. MAX DIAM OF OPENING IS 19-1/2 IN. 2. METALLIC SLEEVE — NOM 20 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE. 3. THROUGH PENETRANTS — ONE METALLIC PIPE OR TUBING TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. PIPE OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR TUBING MAY BE USED: A. STEEL PIPE — NOM 12 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE. B. IRON PIPE — NOM 12 IN. DIAM (OR SMALLER) CAST OR DUCTILE IRON PIPE. C. COPPER PIPE - NOM 6 IN. DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE. D. COPPER TUBING - NOM 6 IN. DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING. 4. PIPE COVERING — NOM 2 IN. THICK HOLLOW CYLINDRICAL HEAVY DENSITY (MIN 3.5 PCF) GLASS FIBER UNITS JACKETED ON THE OUTSIDE WITH AN ALL-SERVICE JACKET. LONGITUDINAL JOINTS SEALED WITH METAL FASTENERS OR FACTORY-APPLIED, SELF-SEALING LAP TAPE. TRANSVERSE JOINTS SECURED WITH METAL FASTENERS OR WITH BUTT TAPE SUPPLIED WITH THE PRODUCT. THE ANNULAR SPACE BETWEEN THE INSULATED PIPE AND THE EDGE OF THE PERIPHERY OF THE OPENING SHALL BE MIN 1/2 IN. TO A MAX 2-1/4 IN. 4A. PIPE COVERING — (NOT SHOWN) — AS AN ALTERNATE TO ITEM 4, MAX 2 IN. THICK CYLINDRICAL CALCIUM SILICATE (MIN 14 PCF) UNITS SIZED TO THE OUTSIDE DIAM OF THE PIPE OR TUBE MAY BE USED. PIPE INSULATION SECURED WITH STAINLESS STEEL BANDS OR MIN 8 AWG STAINLESS STEEL WIRE SPACED MAX 12 IN. OC. THE ANNULAR SPACE SHALL BE MIN 1/2 IN. TO MAX 2-1/4 IN. 5. FIRESTOP SYSTEM — THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING: A. PACKING MATERIAL — MIN 4 IN. THICKNESS OF MIN 4 PCF MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.

B. FILL, VOID OR CAVITY MATERIAL* — SEALANT — MIN 1/2 IN. THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR OR WITH BOTH SURFACES OF WALL. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE SEALANT

*BEARING THE UL CLASSIFICATION MARK





SHOCK ARRESTOR SCHEDULE						
MARK	SFU's	CONN. SIZE	MODEL NO.			
SA - A	1 TO 11	1/2"	652-A			
SA - B	12 TO 32	3/4"	653-B			
SA - C	33 TO 60	1"	654-C			
SA - D	61 TO 113	1"	655-D			
SA - E	114 TO 154	1"	656-E			
SA - F	155 TO 330	1"	657-F			
MODEL NUMBERS BASED ON SIOUX CHIEF PISTON TYPE ARRESTORS						

BACKFLOW PREVENTER SCHEDULE						
MARK	DESCRIPTION	MANUFACTURER & LOCATION MODEL NUMBER		NOTES		
BP-1	DUAL CHECK VALVE ASSE-1015	WATTS LF007	EACH KITCHEN CW TAP			
BP-2	DUAL CHECK VALVE ASSE-1024	WATTS LF7	COFFEE MAKERS			
BP-3	DUAL CHECK VALVE ASSE-1032	WATTS SD-2	CARBONATED BEVERAGE MACHINES			
	A00E-100Z					

MIXIN	MIXING VALVE SCHEDULE								
MARK	DESCRIPTION	LOCATION	MANUFACTURER & MODEL NUMBER	OPTIONS/NOTES	LOAD RANGE				
MV-1	120 TO 110 DEGREE MIX FOR BATHROOM LAVATORY USE	UNDER LAVATORY	BRADLEY MODEL #S59-4000 W/ S45-2456	ASSE #1070; LOW TEMP CONTROL, WALL BRACKET	0.5 GPM				
MV-2	140 TO 120 DEGREE FROM WATER HEATER	WH-1, WH-2	BRADLEY MODEL #S59-2025-B-SE-W	BRACKET, SURFACE MOUNT ENAMEL WITH VIEW WINDOW	0.5 GPM 13GPM AT 15 PSI LOSS				

DOMESTIC WATER FILTER SCHEDULE						EXPANSION TANK SCHEDULE						
MARK	DESCRIPTION	MANUFACTURER & MODEL NO.	LOCATION	FLOW RATE	NOTES/ACCESSORIES	MARK	DESCRIPTION	MANUFACTURER & MODEL NUMBER (BASIS OF DESIGN)	LOCATION	TANK SIZE	ACCEPTANCE FACTOR	NOTES
DWF-1	HIGH CAPACITY DOMESTIC WATER FILTER	ECOLAB SINGLE HEAD 9320-2266 WITH ECO-T014S FILTER	MECH 07	7 GPM	PROVIDE PLYWOOD BACKING AS REQUIRED TO SECURELY MOUNT FILTER TO WALL.	ET-1 NOTES -	DOMESTIC WATER EXPANSION TANK	AMTROL ST-12C-DD	MECH ROOM 07	6.4 GALLONS	.50	1, 2, 3

	JLATION SCH							DRAIN	AND SPECIALITIE	S SCHEDULE	
				INSULATION THICKNESS PIPE SIZE				MARK	DESCRIPTION	MANUFACTURER & MODEL NUMBER	NOTES
SYSTEM OR	FLUID TEMPERATURE	INSULATION TYPE	PIPE MATERIAL					FD-1	FINISHED AREA FLOOR DRAIN	ZURN ZN-415-6B-P, WITH Z-1000	6" ROUND NICKLE BRONZE TOP, TRAP PRIMER
SERVICE	RANGE (DEG F)			1/2" TO 1"	1-1/2" TO 2"	2-1/2" TO 4"	5" TO 6"	FD-1	FINISHED AREA FLOOR DRAIN	DEEP SEAL TRAP, Z-1035 STABILIZER	CONNECTION, CLAMPING COLLAR
DOMESTIC HOT WATER	40 TO 140	MINERAL FIBER	COPPER	1"	1"	1"	1"	FD-2	KITCHEN FLOOR SINK	ZURN Z-1900-KC-P	12 X 12" SANI-FLOR RECEPTOR, CAST IRON WITH WITH ENAMEL COATING, CLAMP COLLAR, TRAP PRIMER CONNECTION
DOMESTIC HOT											
WATER RETURN	40 TO 140	MINERAL FIBER	COPPER	1"	1"	1"	1"	FD-3	KITCHEN FLOOR DRAIN	ZURN ZN1910-KC-P-25	8" X 8" SANI FLOOR FLOOR DRAIN, ANCHOR FLANGE, TRAP PRIMER CONNECTION, BUCKET
	35 TO 60	MINERAL FIBER	COPPER	1/2"	1/2"	4"	4."				
COLD WATER	35 10 60	MINERAL FIDER	COPPER	1/2	1/2		I		MECHANICAL ROOM FLOOR	ZURN Z-525-C-P, WITH Z-1036	ADJUSTABLE MEDIUM DUTY CAST IRON GRATE, CLAMP
								FD-4	DRAIN - MEDIUM DUTY	STABILIZER	COLLAR, TRAP PRIMER CONNECTION
								TP-1	TRAP PRIMER - PRESSURE DIFFERENTIAL TYPE	ZURN Z1022-DU2-DU4	PROVIDE MULTIPLE OUTLET DISTRIBUTION AS REQUIRED

RK	FIXTURE TYPE	CW	HW	WASTE	VENT	MANUFACTURER	MODEL NUMBER	FAUCET/FLUSH VALVE	ACCESSORIES	REMARKS
C-1	FLOOR MOUNTED TANK TYPE WATER CLOSET	1"		3"	2"	KOHLER	HIGHLINE CLASSIC COMFORT HEIGHT K-3492-SS	1.6 GPF	ELONGATED SEAT K-4731-CA-0, WAX RING,ETC	1, 2, 6
C-2	FLOOR MOUNTED TANK TYPE WATER CLOSET - ADA COMPLIANT	1"		3"	2"	KOHLER	HIGHLINE CLASSIC COMFORT HEIGHT K-3492-SS	1.6 GPF	ELONGATED SEAT K-4731-CA-0, WAX RING,ETC	1, 2, 3, 4, 6
U-1	URINAL - WALL HUNG - ADA COMPLIANT	3/4"		2"	1 1/2"	KOHLER	DEXTER K-5016-ET-0	KOHLER TRIPOINT 0.5 GPF BATTERY OPERATED- K-7537-CP	WALL HANGER, ETC	1, 2, 3, 6
L-1	SOLID SURFACE UNDERMOUNT LAVATORY - ADA COMPLIANT	1/2"	1/2"	1 1/2"	1 1/2"	KOHLER	CAXTON K-20000	SLOAN - EBF-85-4-BAT-BDT-CP-0.5GPM-MLM-I R-FCT	16 GA TRAP, GRID DRAIN, MV-1	1, 2, 6, 7
L-2	WALL MOUNTED LAVATORY - ADA COMPLIANT	1/2"	1/2"	1 1/2"	1 1/2"	SLOAN	SS-3003	SLOAN - EBF-85-4-BAT-BDT-CP-0.5GPM-MLM-I R-FCT	WALL HANGER,16 GA TRAP, GRID DRAIN, MV-1	1, 2, 5, 6, 7
MB-1	FLOOR MOUNTED MOP BASIN	3/4"	3/4"	3"	1 1/2"	MUSTEE	63M	63.600A SERVICE FAUCET	65.700 HOSE & HOLDER, 65.600 MOP HANGER, 63.403 BUMPER GUARDS, 67.2424 WALL GUARDS	1, 2, 6
PHB-1	FROST PROOF HOSE BIBB	3/4"				ZURN	Z1320XL	WALL HYDRANT		1, 2, 6

 SEE PLANS AND RISERS FOR VENT SIZES AND CONNECTIONS.
 FIXTURES SHALL BE ADA COMPLIANT. PROVIDED WITH ADA COMPLIANT ACCESSORIES. MOUNT ADA COMPLIANT. SEE ARCHITECTURAL PLAN FOR ELEVATIONS. 4. COORDINATE VALVE INSTALLATION WITH ADA GRAB BAR. VALVE SHALL BE LOCATED SO THAT GRAB BAR DOES NOT INTERFERE WITH USE OF VALVE. PROVIDE EXTENSION AS REQUIRED. 5. PROVIDE TRUEBRO LAV SHIELD OVER EXPOSED UNDER LAVATORY OR SINK SUPPLY AND WASTE PLUMBING. 6. REFER TO ARCHITECTURAL DRAWINGS FOR FIXTURE PLAN LOCATION DIMENSION REQUIREMENTS AND COORDINATE PLUMBING ROUGH-IN ACCORDINGLY. COORDINATE FINISHES WITH ARCHITECTURAL DRAWINGS. 7. PROVIDE MV-1 THERMOSTATIC MIXING VALVE.

GAS WATER H	HEATER SCHEDULE
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0,10,1				
MARK	DESCRIPTION	MANUFACTURER & MODEL NUMBER	LOCATION	MANUFACTURER & MODEL NUMBER
				LOCHINVAR

GAS-FIRED WATER HEATER WH-1 MECH./ELEC./STORAGE M02 GIT119 STORAGE CU MODEL SERIES TANK NOTES -

PROVIDE EXPANSION TANK. REFER TO EXPANSION TANK SCHEDULE ON THIS DRAWING.
 PROVIDE CIRCULATION PUMP. REFER TO CIRCULATION PUMP SCHEDULE ON THIS DRAWING.

RINNAI CU199eN

3. REFER TO DETAIL #1 ON P5.01 FOR ADDITIONAL INFORMATION.

DISCONNECTS BY PLUMBING CONTRACTOR, WIRED BY ELECTRICAL CONTRACTOR.
 PROVIDE TWO RINNAI HEATERS. REFER TO DETAIL #1 ON DRAWING P5.01 FOR ADDITIONAL WORK REQUIRED.

CLEANOUT SCHEDULE										
MARK	DESCRIPTION	OPTIONS								
FCO	FLOOR CLEANOUT	ZURN ZN-1400-BP-VP	FULL SIZE OF PIPE, VANDAL-PROOF, NICKEL-BRONZE TOP	-CF FOR CARPET -X FOR TILE						
WCO	WALL CLEANOUT	ZURN Z-1441-VP	STAINLESS STEEL ACCESS COVER, VANDAL-PROOF, FULL SIZE OF PIPE.							
СО	CLEANOUT FERRULE	ZURN Z-1440-BP	FULL SIZE OF PIPE							

PUMP	PUMP SCHEDULE									
MARK	DESCRIPTION	MANUFACTURER	MODEL NUMBER	LOCATION	FLOW RATE	HEAD PRESSURE	POWER	VOLTAGE	NOTES/ACCESSORIES	
CP-1	CIRCULATION PUMP	BELL & GOSSETT	NBF-22U	MECH 07	2 GPM	14 FEET	55 WATTS	120 VOLT, 1 PHASE	BRONZE CONSTRUCTION, 24 HR TIME CLOCK, CIRCUIT SETTER BALANCING VALVE, TC-1 TIMER KIT, PILOT LIGHT SWITCH	
CP-2	CIRCULATION PUMP	BELL & GOSSETT	NBF-45 SPEED 3	MECH 07	25 GPM	5 FEET	270 WATTS	120 VOLT, 1 PHASE	BRONZE CONSTRUCTION, 24 HR TIME CLOCK, CIRCUIT SETTER BALANCING VALVE, TC-1 TIMER KIT, PILOT LIGHT SWITCH	

 WORKING PRESSURE - 150 PSIG.
 MAXIMUM SYSTEM TEMPERATURE - 140 DEG F. 3. ACCEPTABLE MANUFACTURERS - WESSELS, WATTS, AMTROL

TANK VOLUME	FLOW RATE - GPM	GAS INPUT IN BTUH	VOLTAGE	EFFICIENCY	FLUE SIZE AND TYPE	NOTES
119 GALLONS	2 UNITS @ 11 GPM	199,000	115V AC	96.1%	6" POLYPROPYLENE	1, 2, 3, 4, 5

