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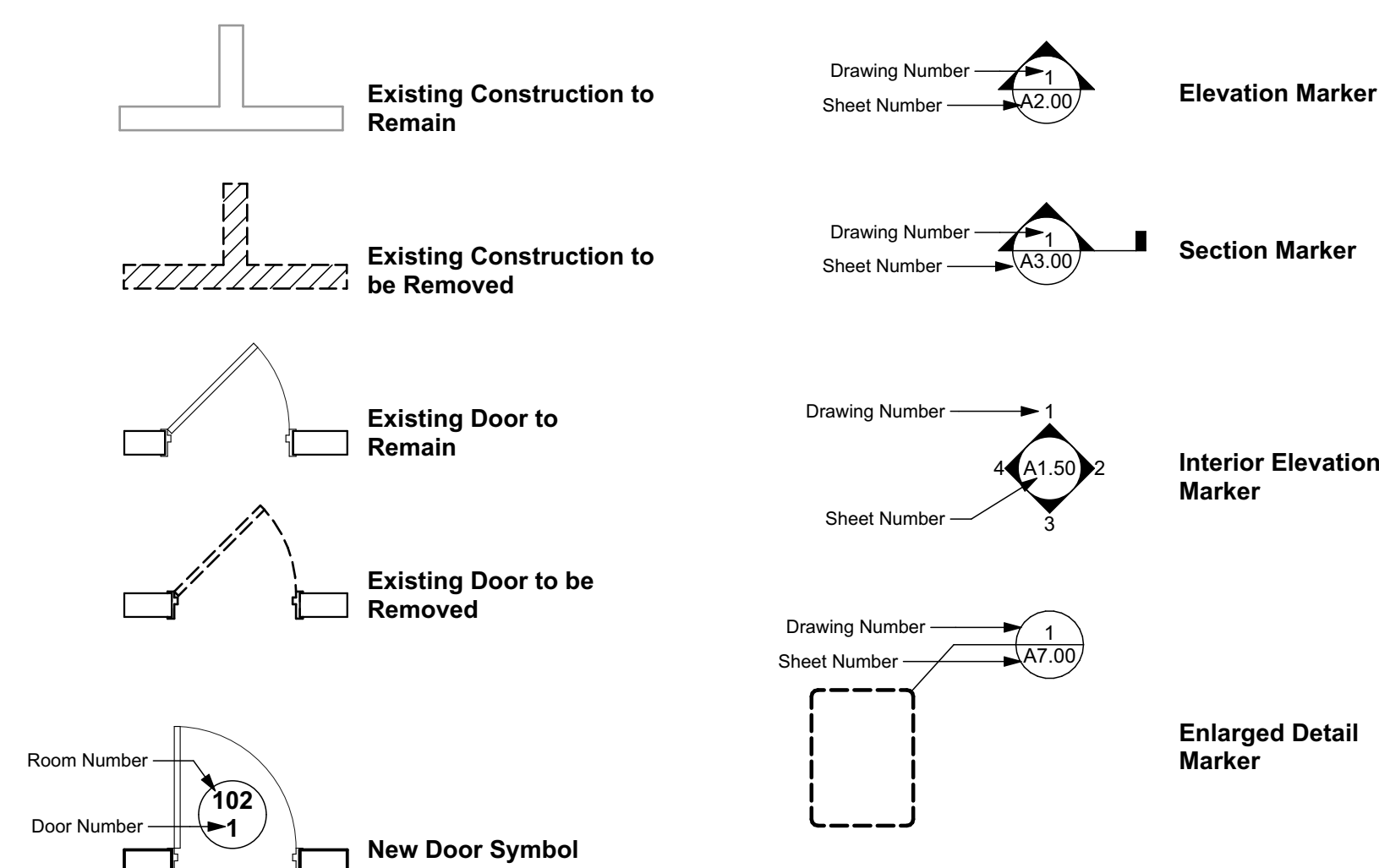
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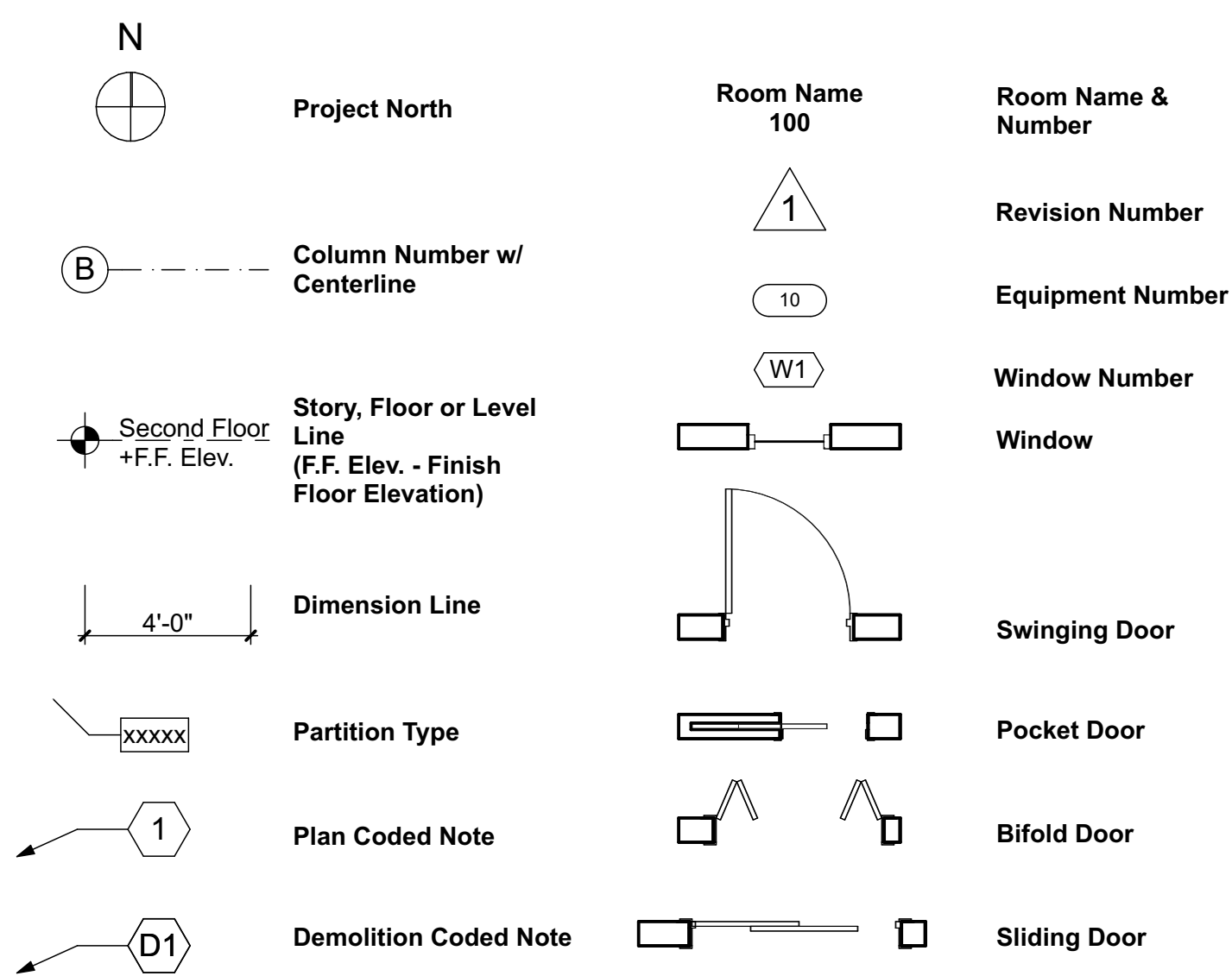
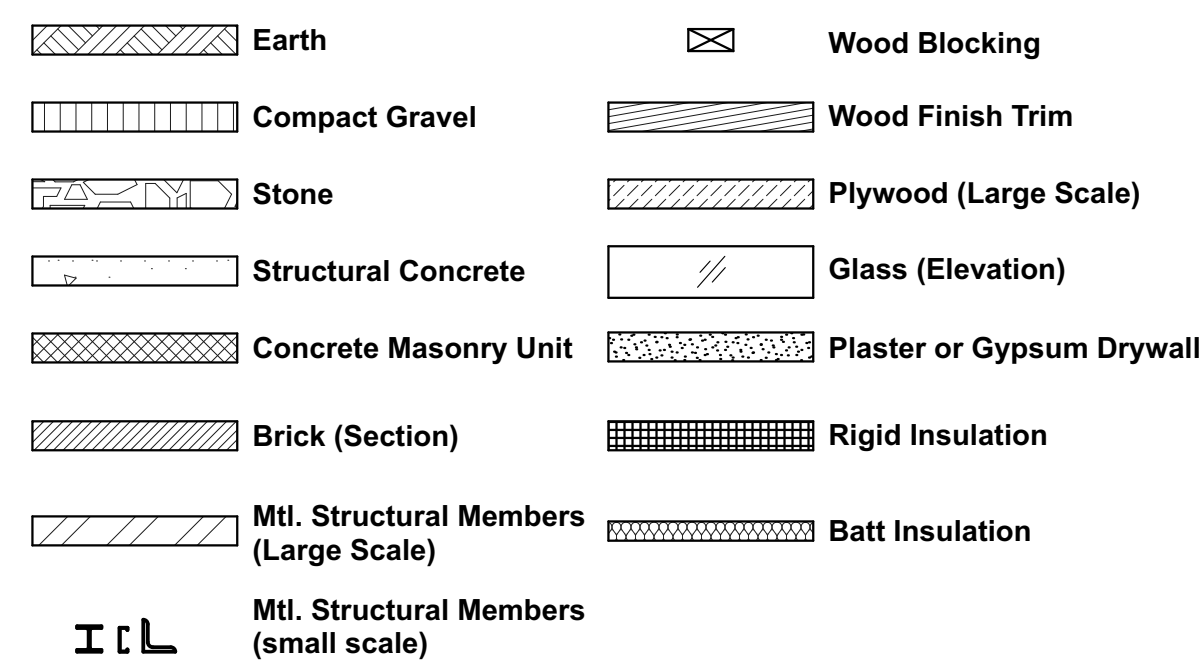
Abbreviations

@	At	i.d.	Inside Diameter
&	And	insul.	Insulation
ACT	Acoustic Ceiling Tile	int.	Interior
ADA	Americans with Disabilities Act	jan.	Janitor
adj	Adjacent / Adjustable	jt	Joint
AFF	Above Finish Floor	L	Length
afg	Above Finish Grade	lam.	Laminate(d)
alt	Alternate	lav.	Lavatory
alum	Aluminum	max.	Maximum
ap	Access Panel	m.c.	Mechanical Contractor
ASTM	American Society for Testing & Materials	mech.	Mechanical
C.J	Control Joint	min.	Minimum
CL	Center Line	manuf.	Manufacturer
clg.	Ceiling	m.o.	Masonry Opening
clr.	Clear	mtl.	Metal
CMU	Concrete Masonry Unit	N.I.C.	Not Included In Contract
C.O.	Clean Out	n.t.s.	Not To Scale
col.	Column	o.c.	On Center
conc.	Concrete	o.d.	Outside Diameter
cont.	Continuous	o.s.b.	Oriented Strand Board
ct	Ceramic Tile	p.c.	Plumbing Contractor
cy	Cubic Yard(s)	p.lam	Plastic Laminate
demo	Demolition	psi	Pounds per Square Inch
dia	Diameter	psf	Pounds per Square Foot
DN	Down	p.t.	Pressure Treated
dr	Door	ptd	Painted
dtt.	Detail	qt	Quarry Tile
dwgs.	Drawings	r	Riser or Radius
ea.	Each	RD	Roof Drain
e.c.	Electrical Contractor	rm	Room
EIFS	Ext. Insul. Finish System	req'd	Required
E.J	Expansion Joint	r.o.	Rough Opening
elev.	Elevation	SAFB	Sound Attenuation Fiberglass Blankets
elec.	Electric or Electrical	s.f.	Square Feet
EPDM	Ethylene Propylene Diene Monomer	sim.	Similar
eq.	Equal	spec(s)	Specification(s)
equiv.	Equivalent	sq.	Square
equip.	Equipment	sq. in.	Square Inches
etr	Existing to Remain	s.s.	Stainless Steel
exist	Existing	stl	Steel
exp	Expansion	struct.	Structural
ext	Exterior	s.y.	Square Yards
f.d.	Floor Drain	temp.	Temperature (or Temporary)
F.E	Fire Extinguisher	tt	Toilet
F.E.C.	Fire Extinguisher Cabinet	typ	Typical
fn	Finish or Finished	U.L.	Underwriters Laboratory
fl or fir	Floor	u.n.o.	Unless Noted Otherwise
f.r.p.	Fiber Reinforced Plastic	vct	Vinyl Composition Tile
ga.	Gauge	vert	Vertical
galv.	Galvanized	V.I.F.	Verify in Field
g.c.	General Contractor	w	Wide or Width
gl.	Glass or Glazing	w/	With
gwb	Gypsum Wall Board	wc	Water Closet
gyp	Gypsum	wd	Wood
h	Height	wwf	Welded Wire Fabric
h.d.p.	High Density Particle Board	wwm	Welded Wire Mesh
HM	Hollow Metal	y	Yard(s)
horiz.	Horizontal		
HVAC	Heating Ventilating and Air Conditioning		

Architectural Symbols



Materials



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Project Information

Coop De Ville Savannah
301 Passage Way Savannah, GA 31401

Owner: COOP DEVILLE SAVANNAH, LLC

Project Number: 22059

Revision History

ID	Date	Issue Name
01.13.23	01.13.23	Design Drawing Set
05.11.23	05.11.23	Permit Set

Current Issuance

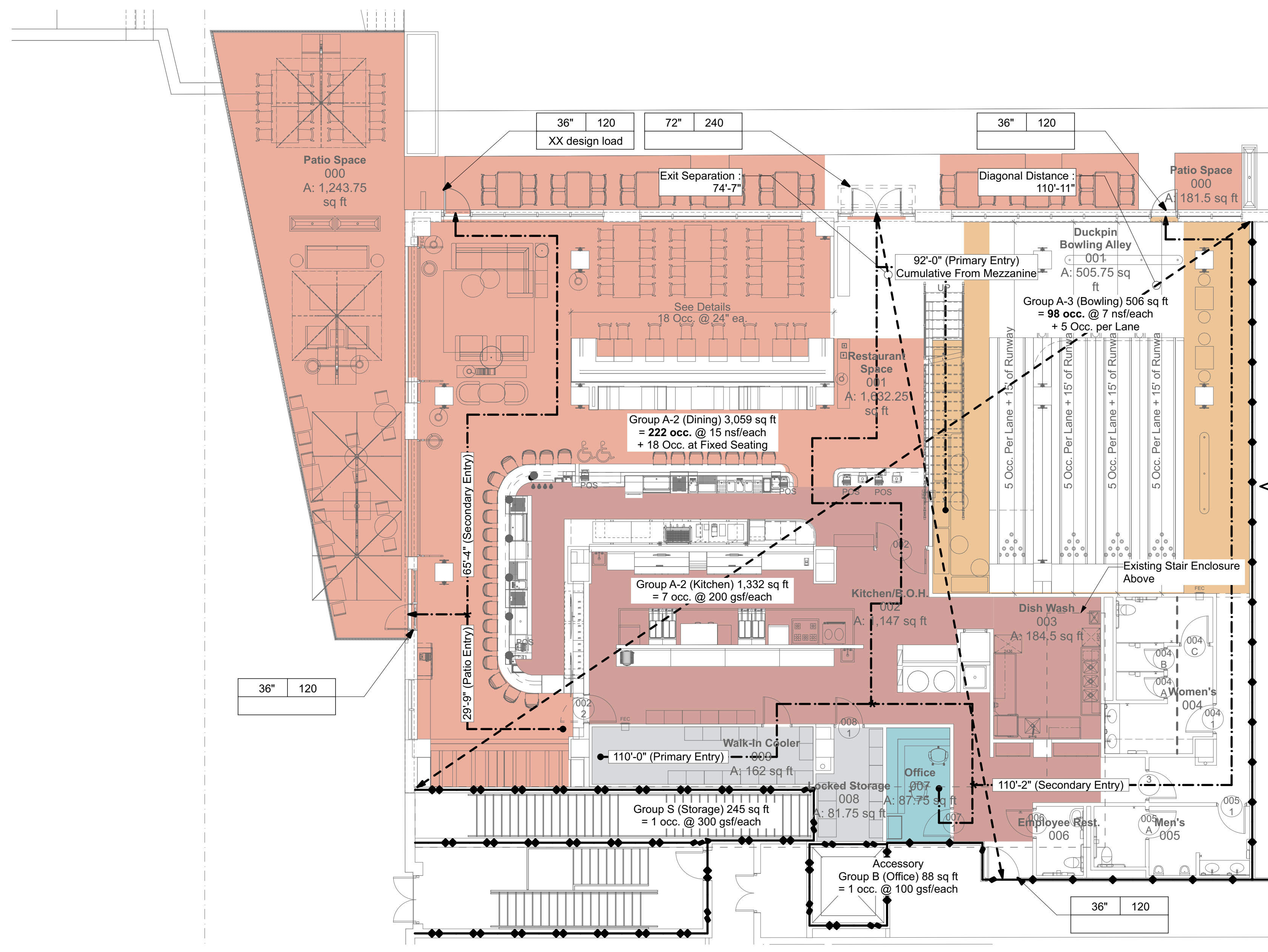
Date: 05.11.23
Project Phase: Permit Set

Drawing Title

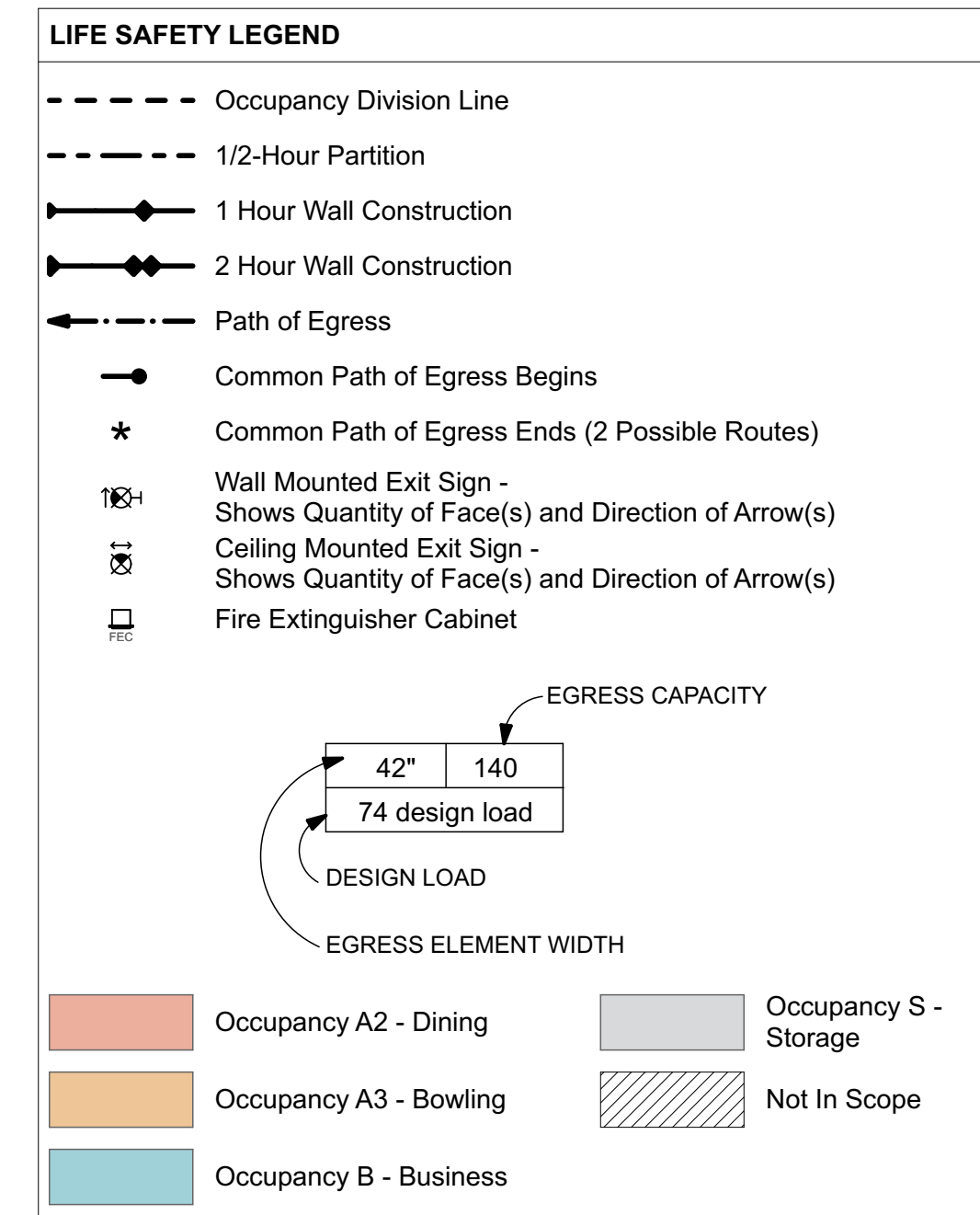
Drawing Index

Sheet Number

G1.01



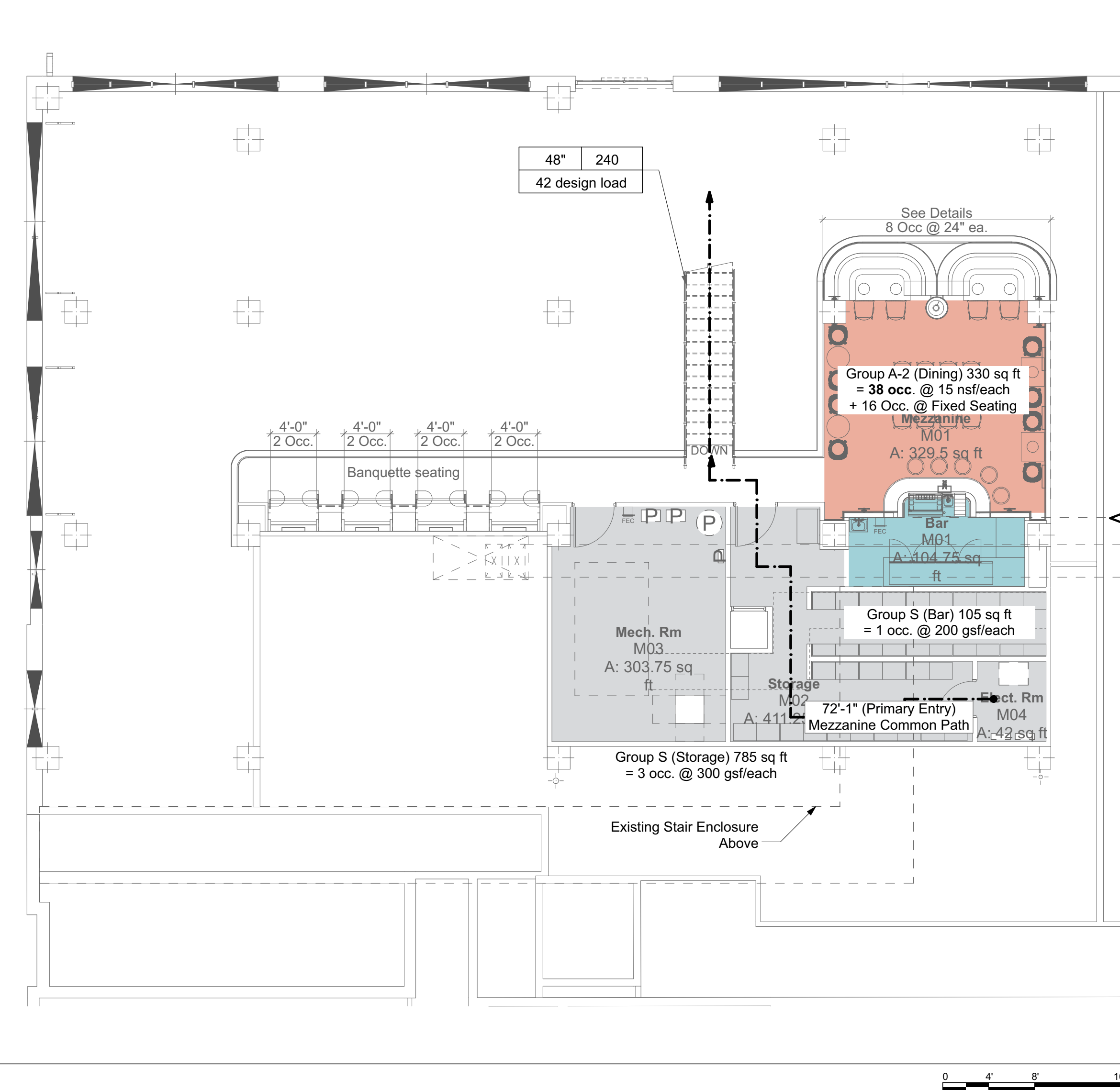
1 Life Safety Plan - Ground Floor
SCALE: 1/8" = 1'-0"



BUILDING CODE REVIEW			
CODES IN EFFECT	International Building Code 2018 (IBC), Georgia State Minimum Standard Building Code (GBC), Life Safety Code 2018 of Georgia (LSC), Georgia State Amendments to the International Building Code 2018 Edition (GSA), Title 38, Chapter 3 of the Official Code of Georgia Annotated (O.C.G.A.), The Rules and Regulations of the Georgia Safety Fire Commissioner, 2018 ADA STANDARDS		
CONSTRUCTION TYPE, OCCUPANCY & GENERAL RESTRICTIONS			
Item	Requirement	Code Section	Comments
Occupancy	A-2	GBC 2018 Section 303 LSC Chapter 12	Restaurant on ground level of Type IA floor of podium style building.
Construction Type	Type IA	GBC 2018 Table 601	Scope of work with Type IA floor of podium style building with (5) 3A floors above.
Allowable Height	Unlimited	GBC 2018 Table 504.3	Actual height: 20'-0"
Allowable Area	Unlimited	GBC 2018 Table 504.3	Actual area - 6,329 sqft. per Lease
FIRE RATINGS			
Item	Requirement	Code Section	Comments
Non-Bearing Exterior Walls	0 HR	GBC 2018 Table 601 LSC Table A5.2.1.2	
Columns	3 HR	GBC 2018 Table 601 LSC Table A5.2.1.2	At Ground floor level.
Beams, Girders, and Trusses	3 HR	GBC 2018 Table 601 LSC Table A5.2.1.2	At Ground floor level.
Floor Ceiling Assemblies	2 HR	GBC 2018 Table 601 LSC Table A5.2.1.2	Including secondary members, i.e. mezzanine structure.
Shaft & Elevator Enclosures	2 HR	GBC 2018 Table 601 LSC Table A5.2.1.2	
Exit Enclosures	2 HR	GBC 2018 Table 601 LSC Table A5.2.1.2	
Corridors	1 HR	GBC 2018 Table 601 LSC Table A5.2.1.2	
MEANS OF EGRESS			
Item	Requirement	Code Section	Comments
Occupant Load	-	LSCG 2018 Section 7.3.1	Refer to life safety plans.
Egress Width - Stairways	0.3' per occupant	LSCG 2018 Section 7.2.2	Refer to life safety plans.
Egress Width - Level Components and Ramps	0.2' per occupant	LSCG 2018 Section 7.2.3	Refer to the safety plans.
Egress Illumination	Asks accessways	LSCG 2018 Section 7.8	
Doors - width	min 32"	GBC 2018 Section 1010.1.1	
Doors - height	min 80"	GBC 2018 Section 1010.1.1	
Exit Signs	-	GBC 2018 Section 1013.1	Exit signs are not required in rooms or areas that require only one exit or exit access. Main entrance exit doors or gates that are obviously and clearly identified as exits need not have exit signs where approved by the building official.
Handrails	34" - 38"	GBC 2018 Section 1014	
Exit Access Doorways	-	GBC 2018 Table 1006.3.2	Refer to life safety plans.
Exit Access Recessed	-	GBC 2018 Section 1007.1	Refer to life safety plans.
Exit Access Travel Distance	250'	LSCG 2018 Section 12.2.8.2	With sprinkler system.
Corridors - width	44"	GBC 2018 Table 1002.2	
Corridors - clear length	20'	GBC 2018 Section 1002.4	
Stairs - minimum number	2	LSCG 2018 Section 36.2.4.4	For entire restaurant space. Max. occupant load less than 500.
ACCESSIBILITY			
Item	Requirement	Code Section	Comments
Accessible Route	-	2010 ADA Standards Section 402	Accessible route provided from main entrance to all dining areas within scope of work.
Accessible Entrances	-	2010 ADA Standards Section 404	Main entrance on accessible route is accessible.
Toilet Rooms	-	2010 ADA Standards Section 603 & 604	Public toilet rooms are accessible.
Drinking Fountains	-	2010 ADA Standards Section 902	To meet ADAAG standards, see G2.02.
Accessible Dining Surfaces	-	2010 ADA Standards Section 902	At least 5% of dining surface for seating and standing spaces shall be accessible and located on a level accessed by an accessible route. See life safety plan.
Signage	-	2010 ADA Standards	To meet ADAAG standards, see G2.02.
FIRE PROTECTION			
Item	Mark	Code Section	Comments
Sprinklers	Yes	GBC 2018 Chapter 7	Fully sprinklered, NFPA 13 from existing building.
Staircloses	Yes	GBC 2018 Chapter 7	Class 1 from existing building.
Portable fire extinguishers	See life safety plans.	GBC 2018 Section 906	Portable fire extinguishers will be installed as required by Section 906.1
Fire Alarm & Smoke Detection	Yes	GBC 2018 Chapter 7	Automatic from existing building.
MEZZANINE			
Item	Mark	Code Section	Comments
Area Limitation	Mezzanine	GBC 2018 505.2.1 exception 2	The aggregate area of mezzanines in buildings and structures of Type I or II construction shall not be greater than one-half of the floor area of the room in buildings and structures equipped with an approved automatic sprinkler system in accordance with section 903.1.1 and an approved emergency voice-alarm communication system in accordance with Section 907.2.2. Mezzanine + Mech. equipment platforms = 1,607 sqft. Floor area of room below (excluding patios) = 6,329 sqft. (1,607/6,329 = 25%)
Aggregate Areas of Mezzanine and Equipment Platforms	-	GBC 2018 505.3	Where a room contains both a mezzanine and an equipment platform, the aggregate area of the two raised floor levels shall not be greater than two-thirds of the floor area of that room or space in which they are located. The area of the mezzanine shall not exceed the area determined in accordance with Section 505.2.1 505.3 states "Equipment platforms shall not be a part of any mezzanine and such platforms and the walkways, stairways, elevators, hoists, ladders and ladders providing access to an equipment platform shall not serve as a part of the means of egress from the building." Mezzanine + Mech. equipment platforms = 1,607 sqft. Floor area of room below (excluding patios) = 6,329 sqft. (1,607/6,329 = 25%)
Maximum Occupant Load of Mezzanine	49	GBC 2018 Table 1006.2.1	For spaces with one Exit or Access Doorway. Actual mezzanine occupant load = 42 Occ.
Mezzanine Openness	-	GBC 2018 505.2.3	Mezzanine is open to story below. Aggregate of enclosed area must be less than 10 occupants. Actual occupant load of enclosed area = 3 Occ.
Common Path of Travel - Assembly	75'-0"	LSCG 2018 Section 12.2.5.1.2	Mezzanine common path of travel is not to exceed 75 ft. Actual distance = 72' - 11"
Accessible Route	Not required	ADA 2010 Section 206.2.5, Exception 1	In buildings or facilities not required to provide an accessible route between stories, an accessible route shall not be required to a mezzanine dining area where the mezzanine contains less than 20 percent of the total enclosed area for seating and dining and where the main floor and services are provided in the accessible area. Seating and dining area = 3,895 sqft. Mezzanine seating area = 330 sqft. (330/3,895 = 8%)

BUILDING OCCUPANTS						
CODES IN EFFECT	International Building Code 2018 (IBC), Georgia State Minimum Standard Building Code (GBC), Life Safety Code 2018 of Georgia (LSC), Georgia State Amendments to the International Building Code 2018 Edition (GSA), Official Code of Georgia Annotated (OCGA), 2010 ADA STANDARDS					
Floor	Use	SF	GSF or NSF	Multiplier	Multiplier Unit	Occupant Count
First Floor & Mezzanine	Assembly (Unconcentrated)	3389	NSF		15 NSF	225.9333333
	Kitchen (Commercial)	1332	GSF		200 GSF	6.66
	Business	193	GSF		100 GSF	1.93
	Storage/Stock/Shipping Areas	1030	GSF		300 GSF	3.433333333
Floor Total						271.9566667
FIXTURE COUNTS						
Georgia State Minimum Standard Plumbing Code - Table 403.1 (Same as IBC & IPC)						
Occupancy	Total Occupants	Water Closets		Lavatories		Drinking Fountains
A-2	268	1.8	1.8	0.7	0.7	0.5
B	2	0.0	0.0	0.0	0.0	0.0
Storage	4	0.0	0.0	0.0	0.0	0.004
Totals (added together and rounded up)		2	2	1	1	1

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



2 2. Mezzanine
SCALE: 1/8" = 1'-0"



ID	Date	Issue Name
01.13.23		Design Drawing Set
05.11.23		Permit Set

CONSTRUCTION LEGEND

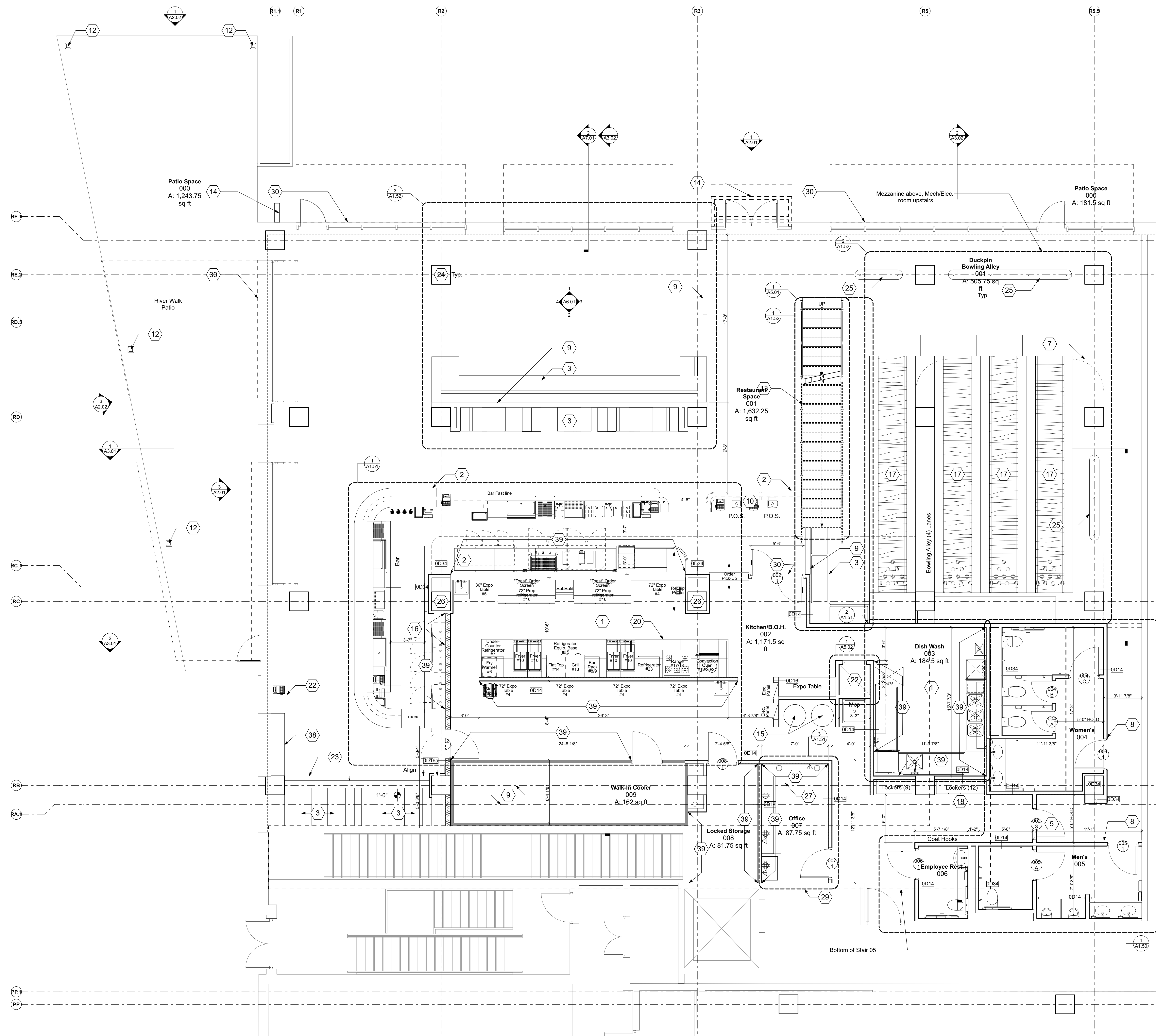
Not In Scope

GENERAL CONSTRUCTION NOTES

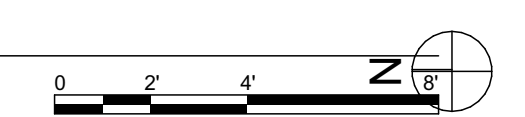
- It is the responsibility of the contractor to field verify all existing conditions and dimensions. Report discrepancies to the architect immediately.
- Coordinate all work with MEP drawings.
- All dimensions are measured to the finished wall surface, U.N.O.
- All dimensions marked "HOLD" shall be maintained 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".
- The hinge side of all door jams are to be located 6" from the adjacent wall, unless dimensioned otherwise.

CODED NOTES

- Food Service equipment by Owner.
- Custom casework with quartz countertop, height varies see details for more information.
- Custom casework, banquet/booth see details for more information.
- Existing grease shaft, cleanout to be coordinated with tenant and landlord.
- Metal lockers, B.O.D. "Paramount 3 Tier locker" by Global Industrial.
- Custom railing, see details.
- Mezzanine structure, see structural drawings
- Toilet room signage adjacent to each toilet room door, see signage details for more information.
- Low wall, see elevations.
- Provide power and data for P.O.S. system.
- 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 information.
- Oil management system, coordinate with food service.
- Custom millwork feature wall, see interior elevations. Provide blocking for TVs as required.
- Duckpin bowling lanes, see enlarged plan, details, and drawings from duck pin bowling consultant.
- (2) Levels of coat racks.
- Custom casework open to kitchen beyond.
- All exposed conduit to be rigid and painted.
- Grease shaft protection.
- Custom casework and P.O.S. station, see details for more information.
- Raised platform with two steps, see details for more information.
- Existing concrete column.
- Custom casework standing drink rail, see details for more information.
- Exposed columns in kitchen are to be furred out with gypsum board.
- Custom casework office countertop, see details for more information.
- Designated roof equipment area for tenant space. See MEP drawings.
- 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.
- Hook holding festoon lighting in mortar joint between bricks, see elevations.
- Air curtain supported by existing steel header, coordinate with structural and MEP.
- Ceiling mounted projector by Owner.
- Louver painted to match storefront, see mechanical drawings.
- Paint existing railing.
- New storefront window and framing to replace existing, see details.
- Custom countertop, see details.
- Provide plywood blocking to walls, 4'-0" AFF, typ.



1 Floor Plan - Ground Floor
A1.01 SCALE: 1/4" = 1'-0"



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Project Information

Coop De Ville Savannah
301 Passage Way Savannah, GA 31401

Owner: COOP DEVILLE SAVANNAH, LLC

Project Number: 22059

Revision History

ID	Date	Issue Name
01	01.13.23	Design Drawing Set
02	05.11.23	Permit Set

Current Issuance

Date	Project Phase
05.11.23	Permit Set

Drawing Title

Ground Floor Plan

Sheet Number

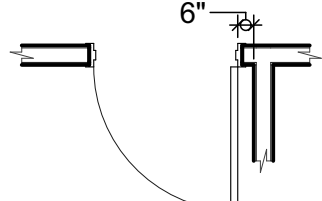
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CONSTRUCTION LEGEND

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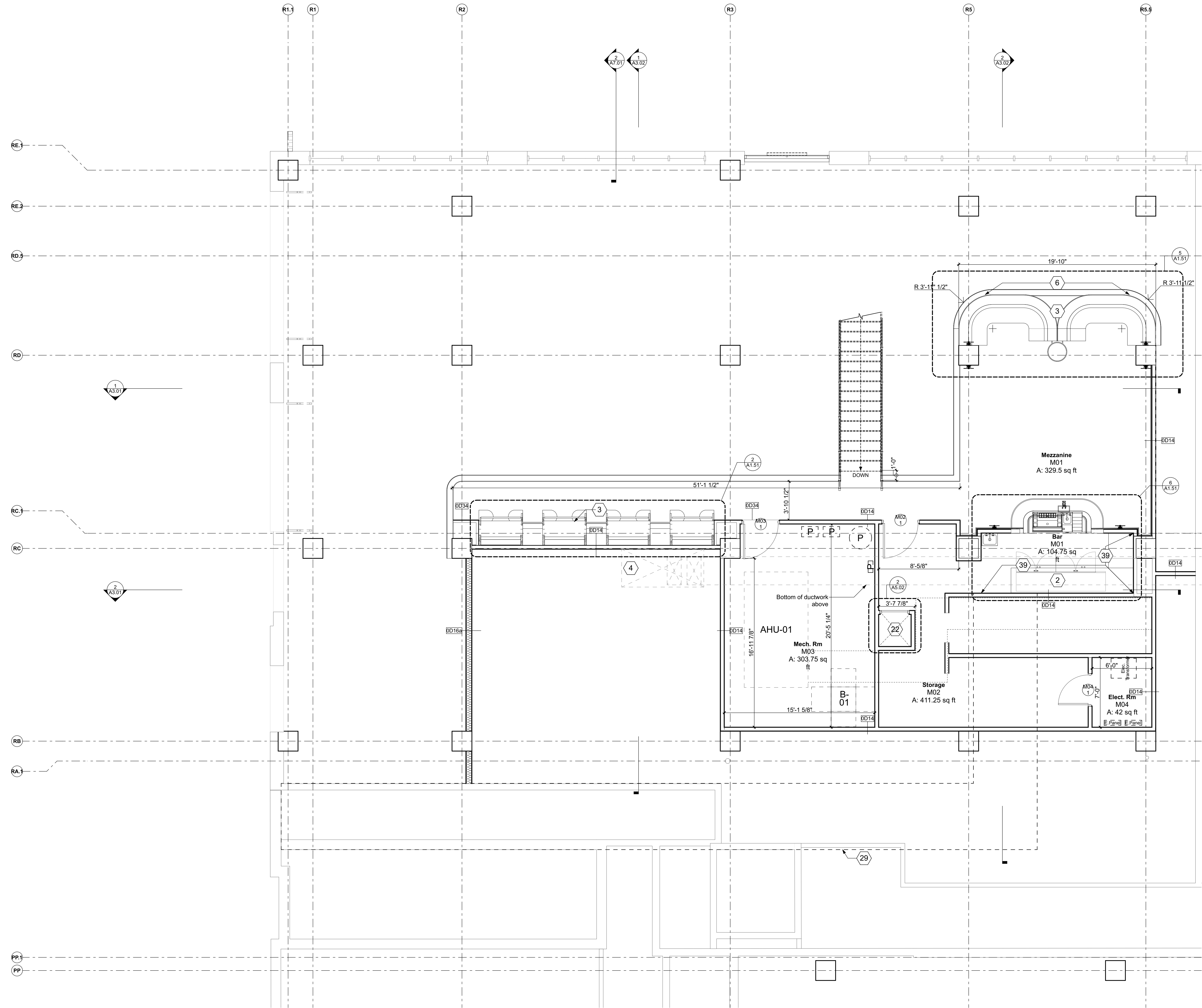
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Coop De Ville Savannah
301 Passage Way Savannah, GA 31401

Owner: COOP DEVILLE SAVANNAH, LLC
Project Number: 22059

Revision History

ID	Date	Issue Name
37	05.11.23	Permit Set
36	01.13.23	Design Drawing Set

Current Issuance

Date	Project Phase
05.11.23	Permit Set

Drawing Title

Mezzanine Floor Plan

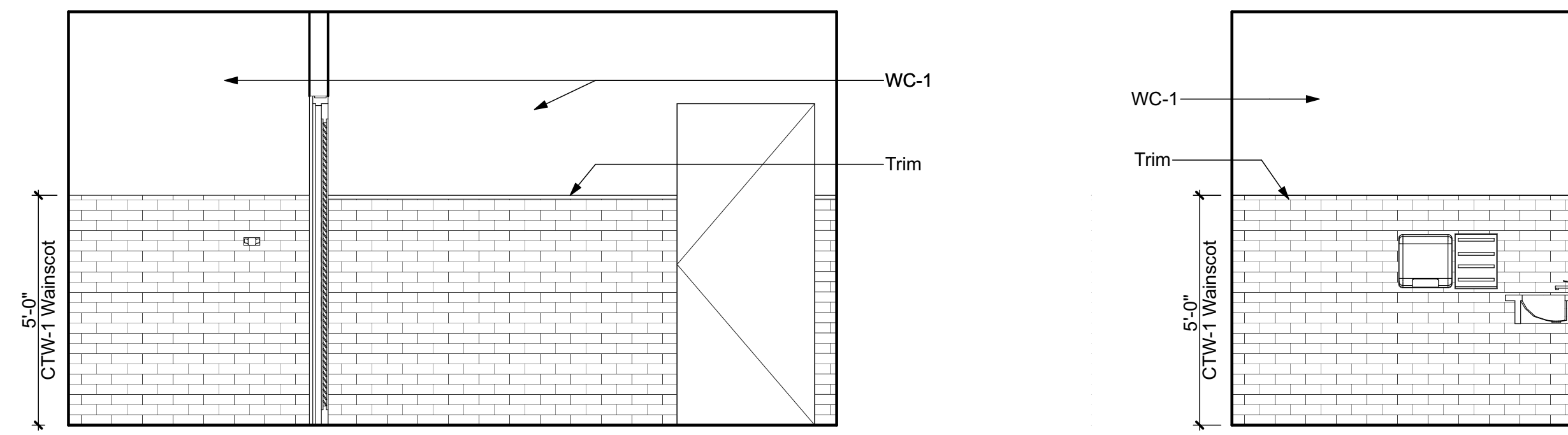
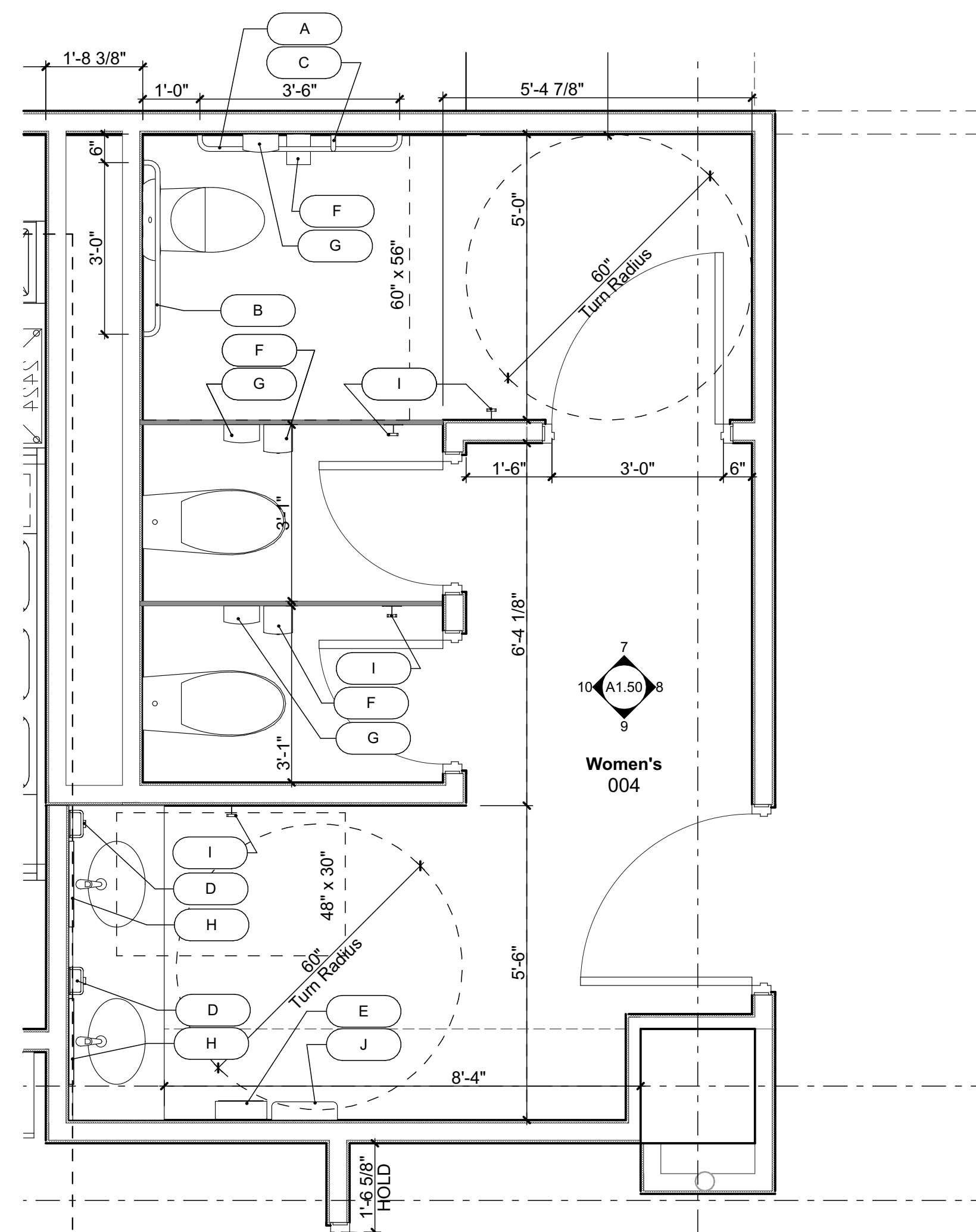
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A1.02

1 Floor Plan - Mezzanine
A1.02 SCALE: 1/4" = 1'-0"

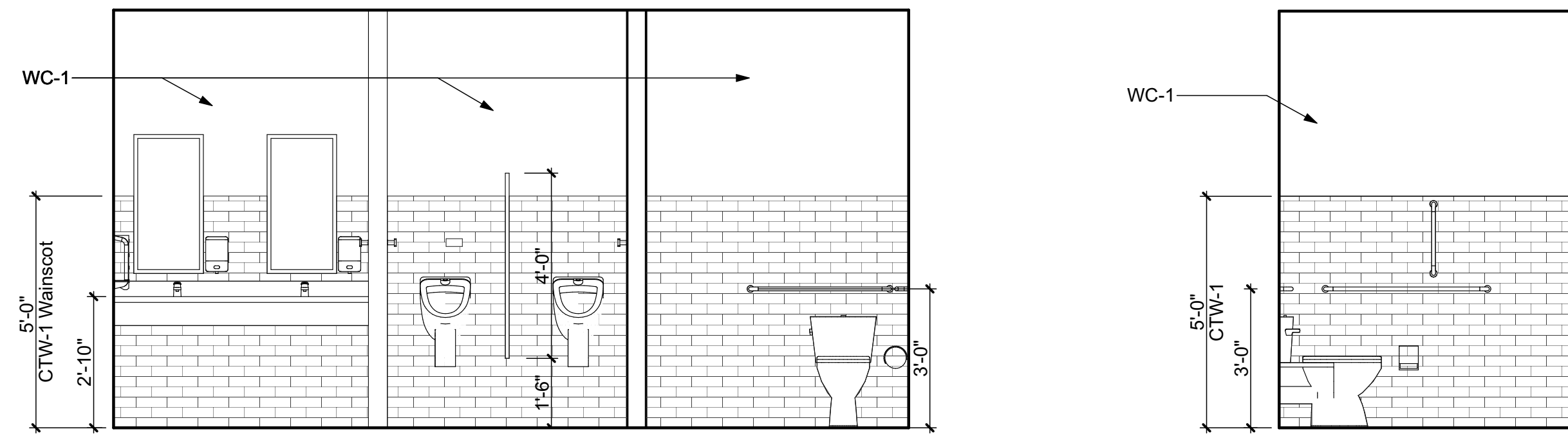
TOILET ROOM ACCESSORIES LEGEND		
TAG	DESCRIPTION	SPECIFICATION
A	42" horizontal grab bar	TBD
B	36" horizontal grab bar	TBD
C	18" vertical grab bar	TBD
D	Soap Dispenser	TBD
E	Paper Towel Dispenser / Waste Receptacle	TBD
F	Toilet Paper Dispenser	TBD
G	Sanitary Napkin Disposal	TBD
H	Mirror	TBD
I	Hook	TBD
J	Hand Dryer	TBD
K	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 ANS1 117.1.



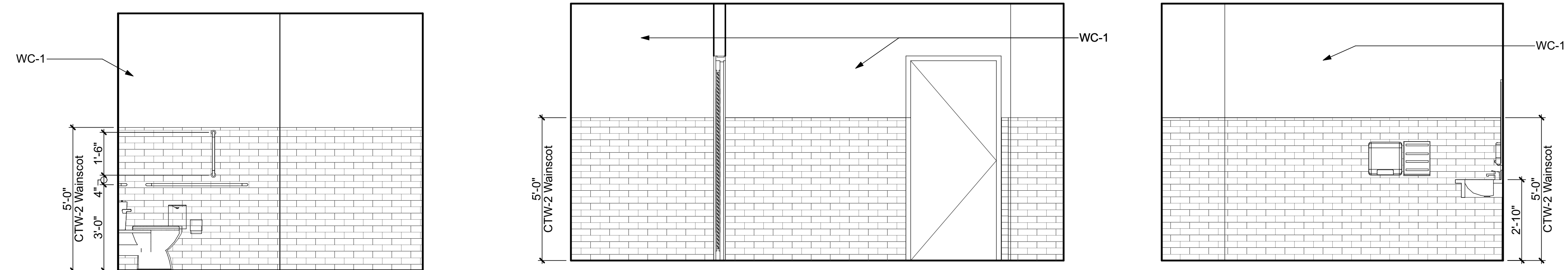
3 Men's Restroom North
A1.50 SCALE: 3/8" = 1'-0"

4 Men's Restroom East
A1.50 SCALE: 3/8" = 1'-0"



5 Men's Restroom South
A1.50 SCALE: 3/8" = 1'-0"

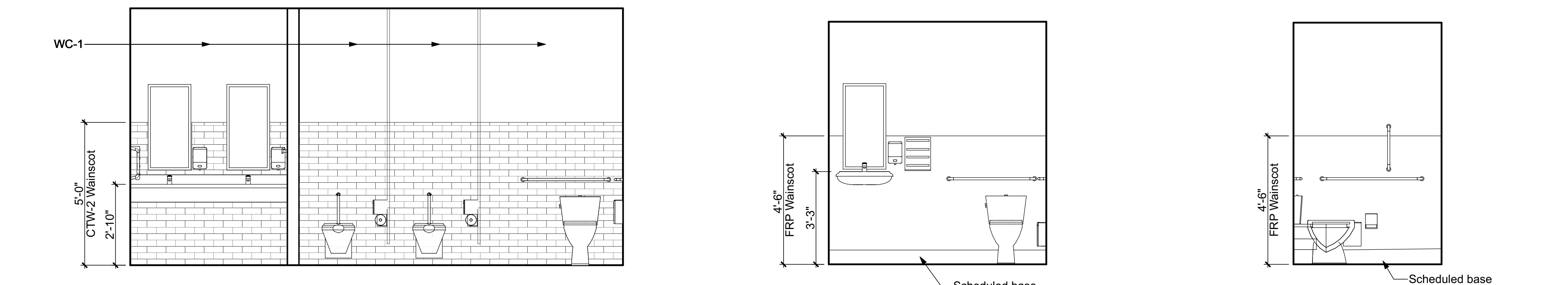
6 Men's Restroom West
A1.50 SCALE: 3/8" = 1'-0"



7 Women's Restroom North
A1.50 SCALE: 3/8" = 1'-0"

8 Women's Restroom East
A1.50 SCALE: 3/8" = 1'-0"

9 Women's Restroom South
A1.50 SCALE: 3/8" = 1'-0"



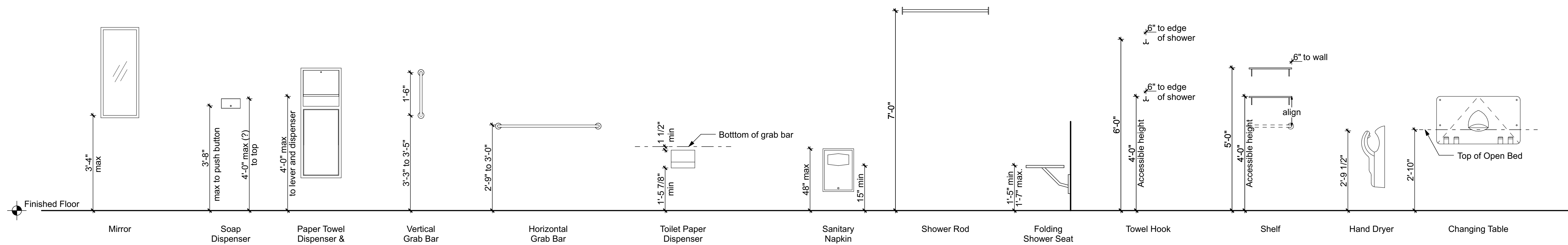
10 Women's Restroom West
A1.50 SCALE: 3/8" = 1'-0"

11 Employee Restroom East
A1.50 SCALE: 3/8" = 1'-0"

12 Employee Restroom South
A1.50 SCALE: 3/8" = 1'-0"

1 Enlarged Plan - Restroom
A1.50 SCALE: 1/2" = 1'-0"

2 Typical Toilet Accessories
A1.50 SCALE: 1/2" = 1'-0"



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Project Information

Coop De Ville Savannah
301 Passage Way Savannah, 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

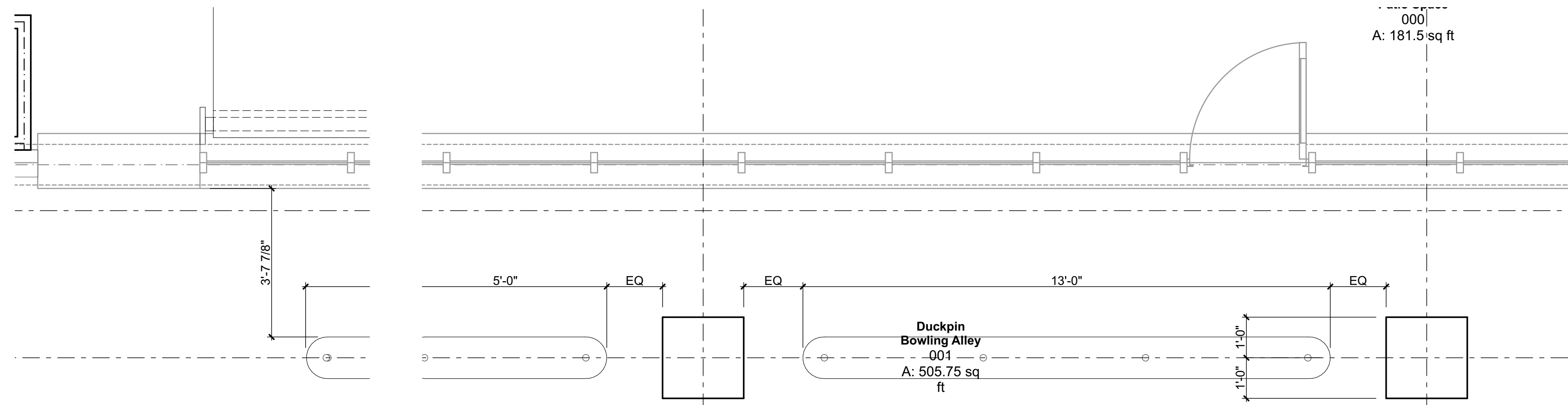
Date Project Phase
05.11.23 Permit Set

Drawing Title

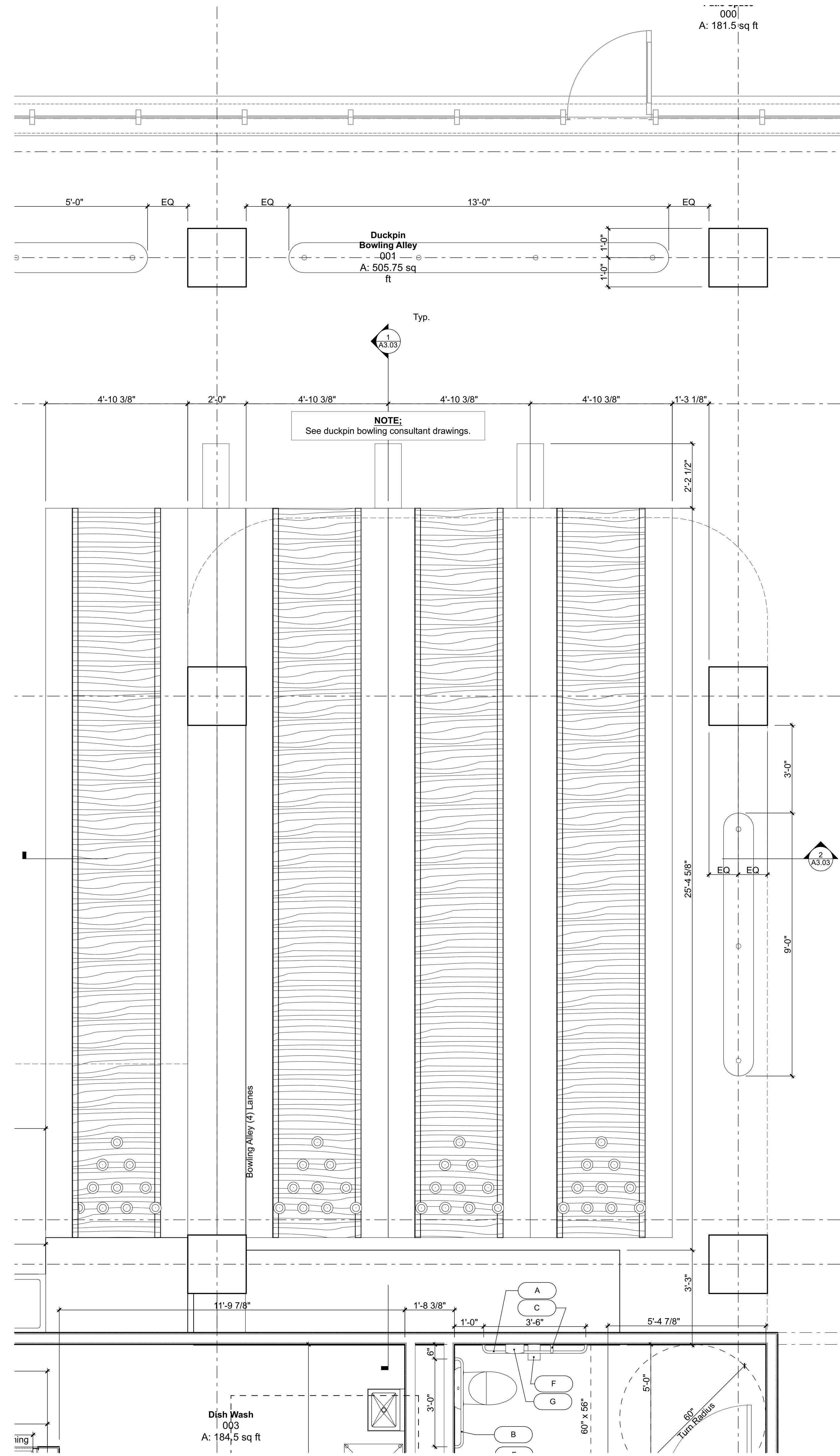
Enlarged Restroom Plans

Sheet Number

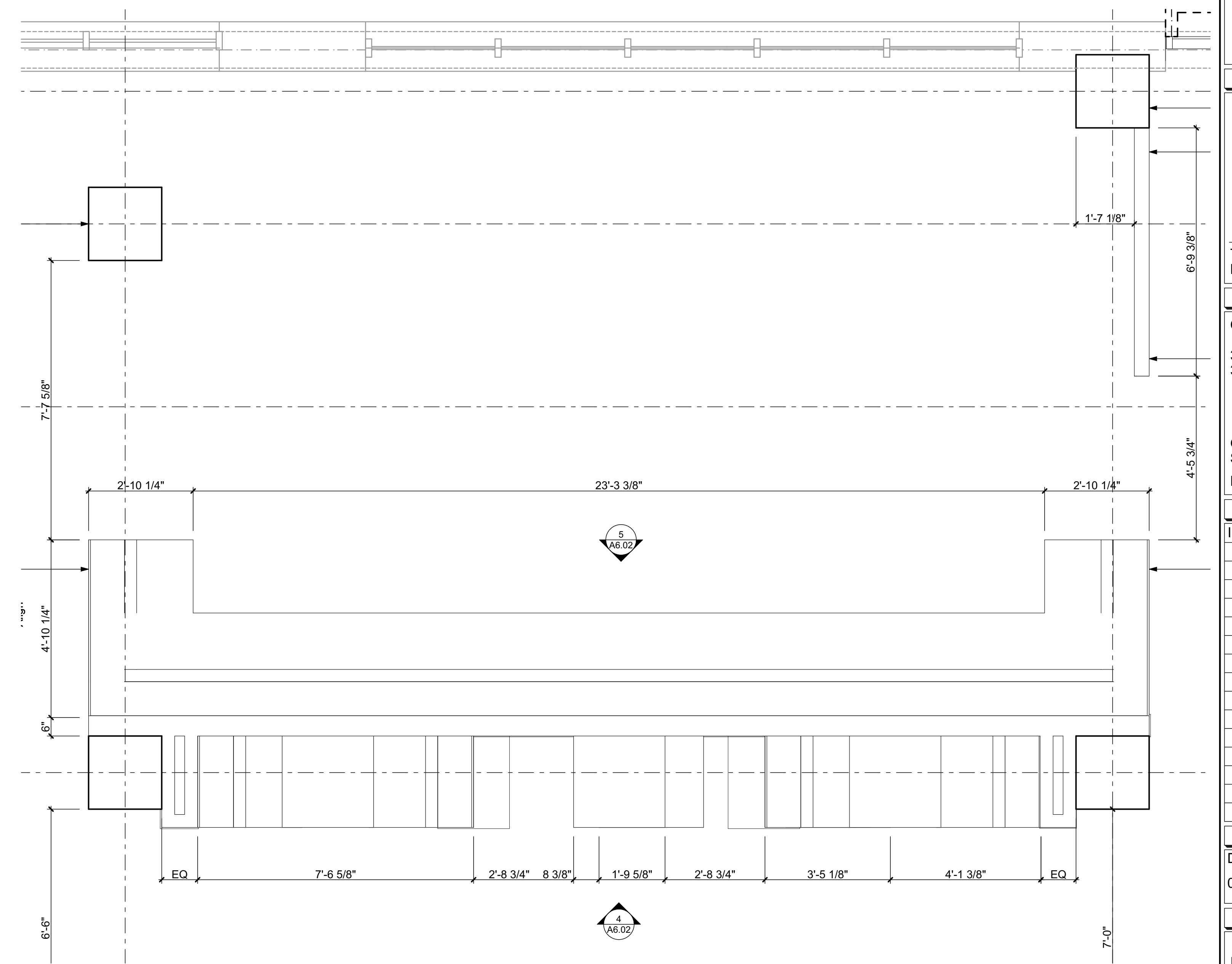
A1.50



1 Enlarged Plan Under Stair
A1.52 SCALE: 1/2" = 1'-0"



2 Enlarged Plan - Duckpin Bowling
A1.52 SCALE: 1/2" = 1'-0"



3 Enlarged Plan - Booth Seating
A1.52 SCALE: 1/2" = 1'-0"

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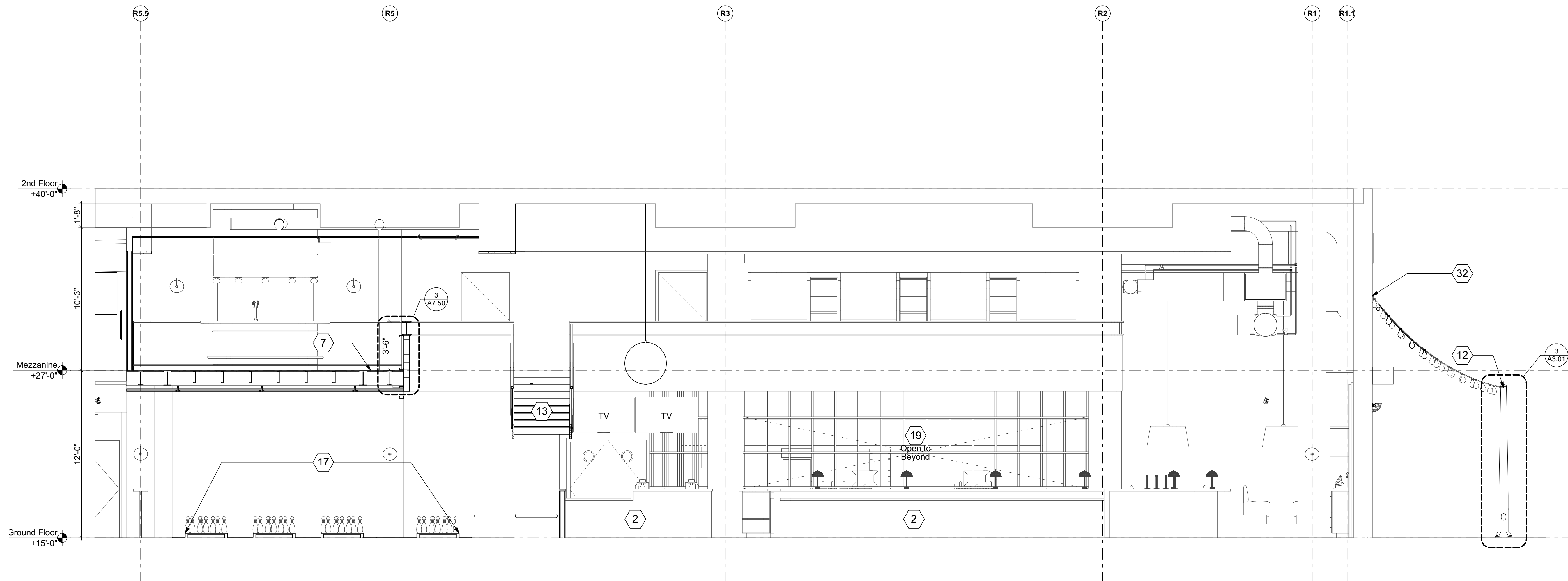
Date: 05.11.23
Project Phase: Permit Set

Drawing Title

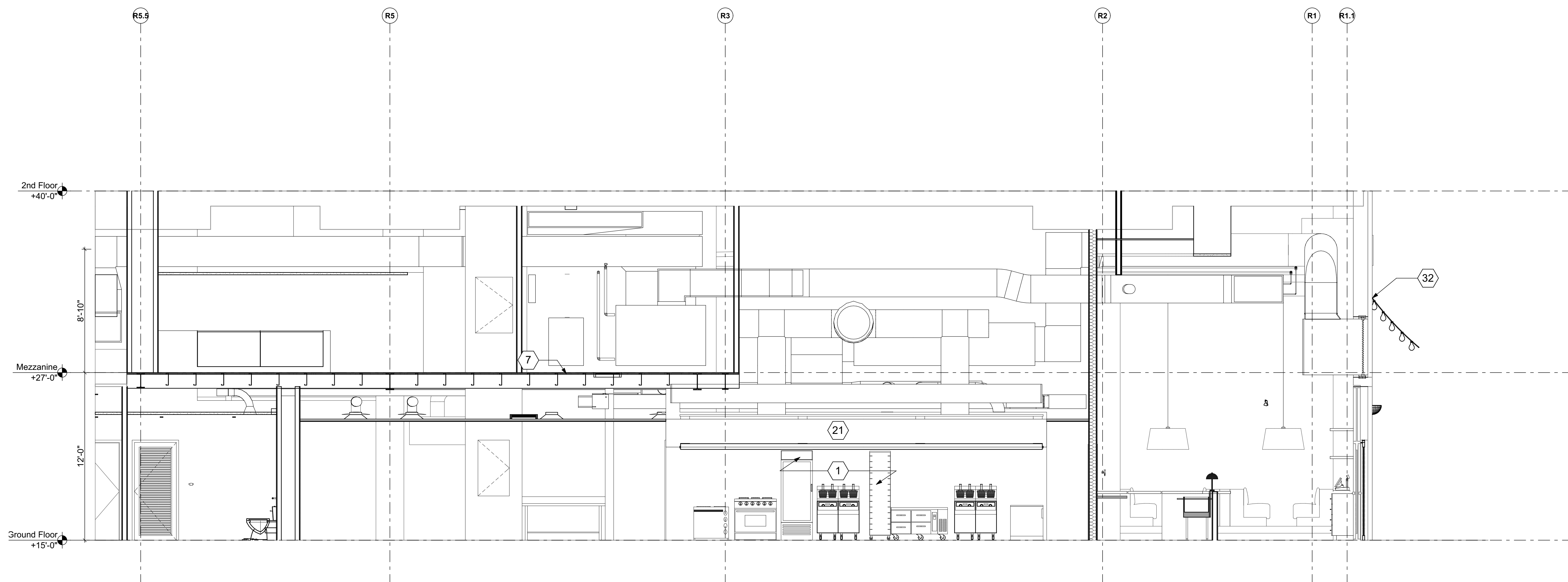
Enlarged Plans

Sheet Number

A1.52



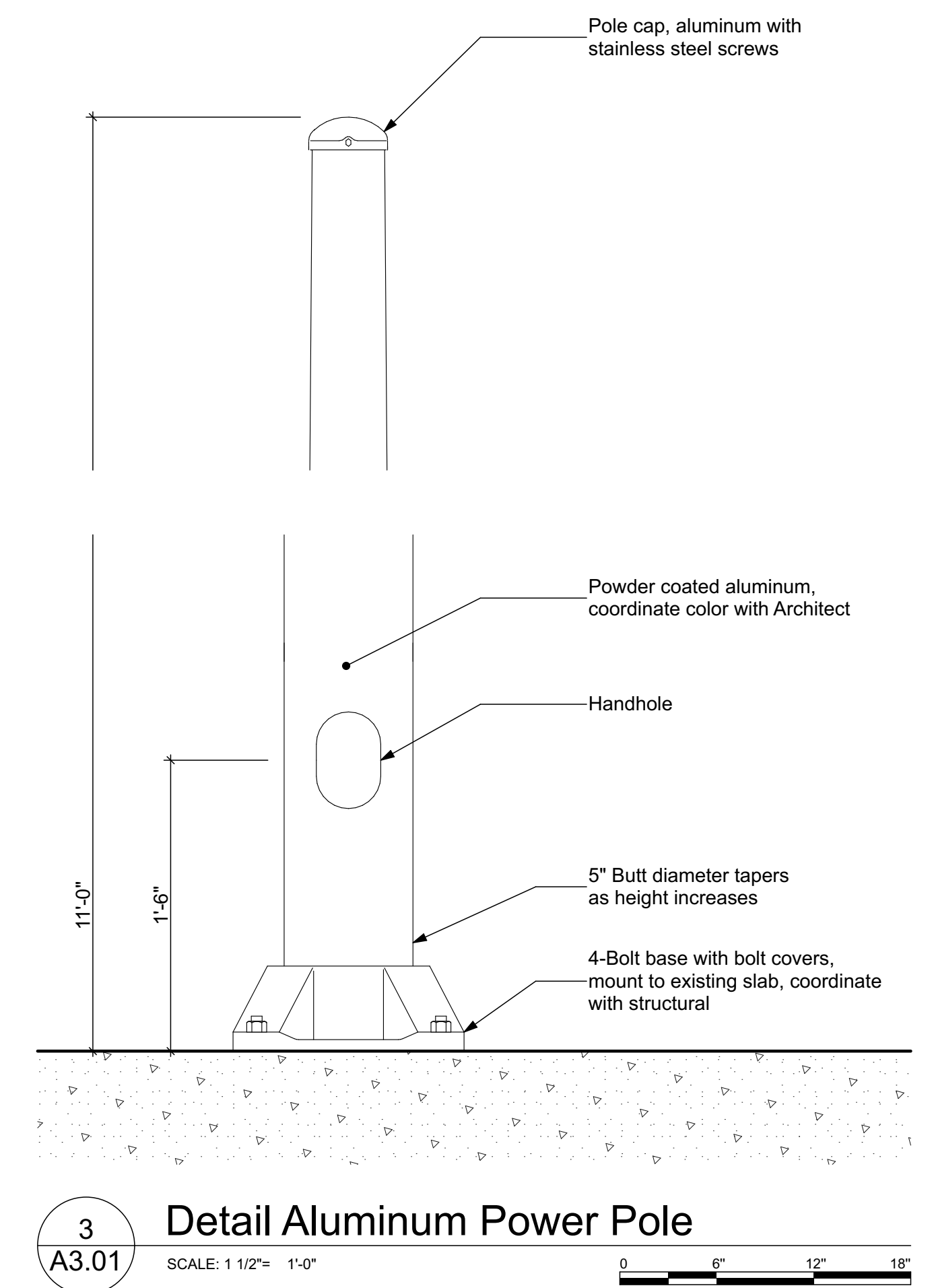
1 Section
A3.01 SCALE: 1/4" = 1'-0"



2 Section
A3.01 SCALE: 1/4" = 1'-0"

CODED NOTES

- 1 Food Service equipment by Owner.
- 2 Custom casework with quartz countertop, height varies see details for more information.
- 3 Custom casework, banquette/booth see details for more information.
- 4 Existing grease shaft, cleanout to be coordinated with tenant and landlord.
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- 9 Low wall, see elevations.
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- 32 Hook holding festoon lighting in mortar joint between bricks, see elevations.
- 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 details.
- 38 Custom countertop, see details.
- 39 Provide plywood blocking to walls, 4'-0" AFF, typ.



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

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SAVANNAH, LLC
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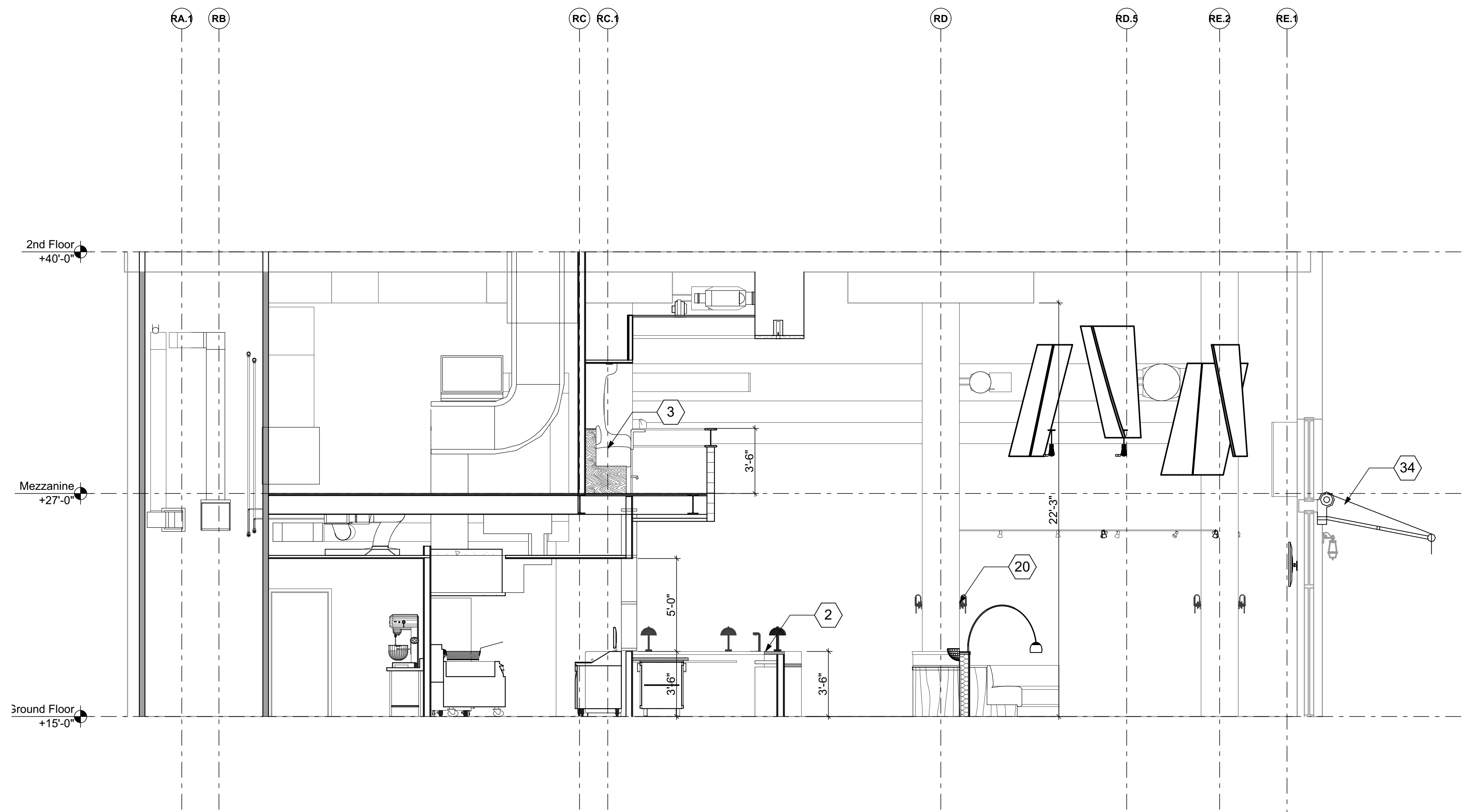
Date: 05.11.23
Project Phase: Permit Set

Drawing Title

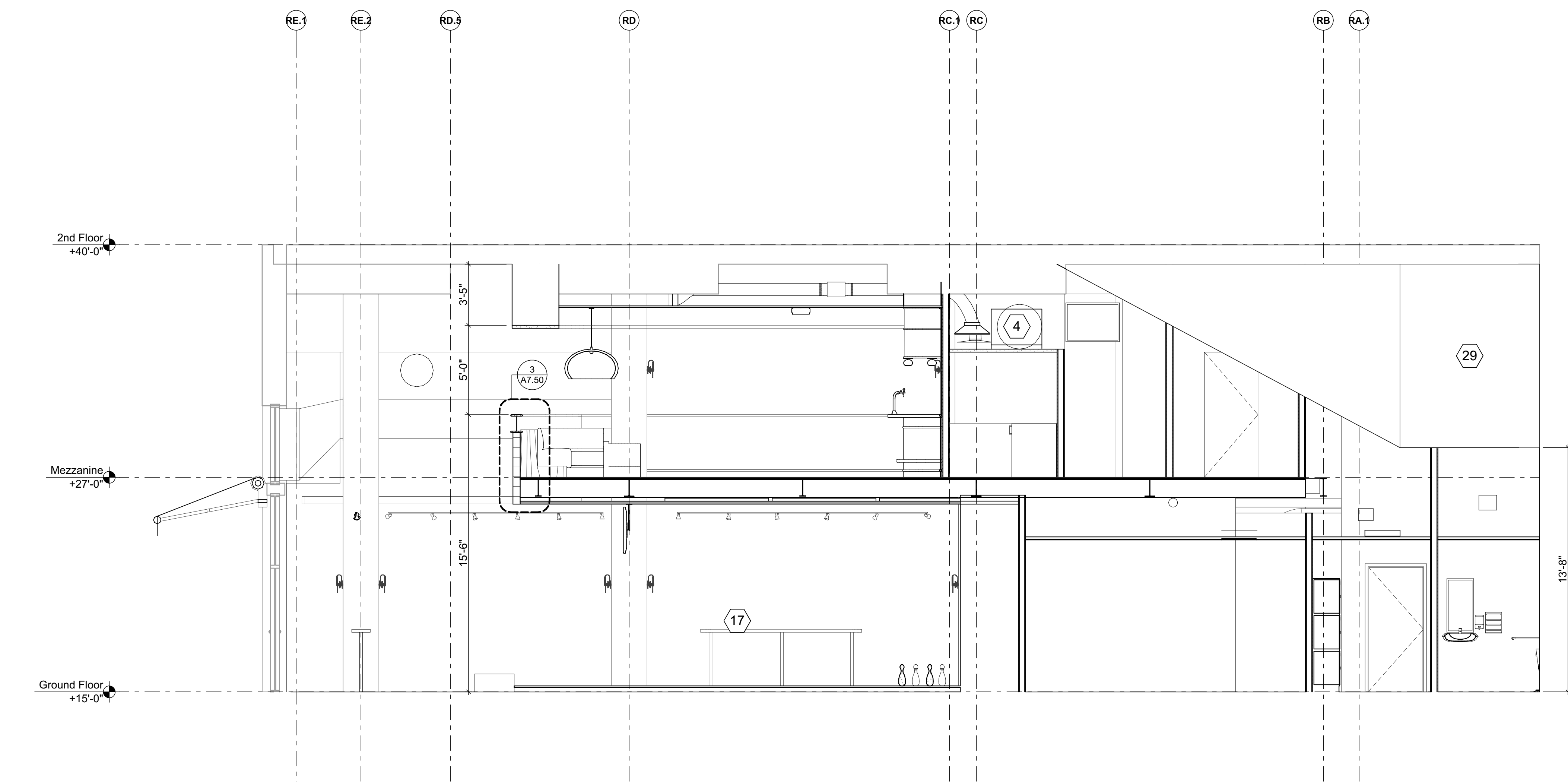
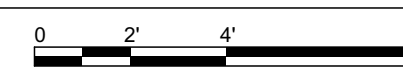
Building Sections

Sheet Number

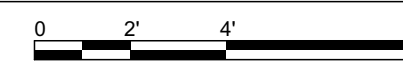
A3.01



1
A3.02
3 Section
SCALE: 1/4" = 1'-0"



2
A3.02
4 Section
SCALE: 1/4" = 1'-0"



- CODED NOTES**
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 - 38 Custom countertop, see details.
 - 39 Provide plywood blocking to walls, 4'-0" AFF, typ.

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License: RA014683

Project Information

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31401

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Project Number: 22059

Revision History

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		Permit Set

Current Issuance

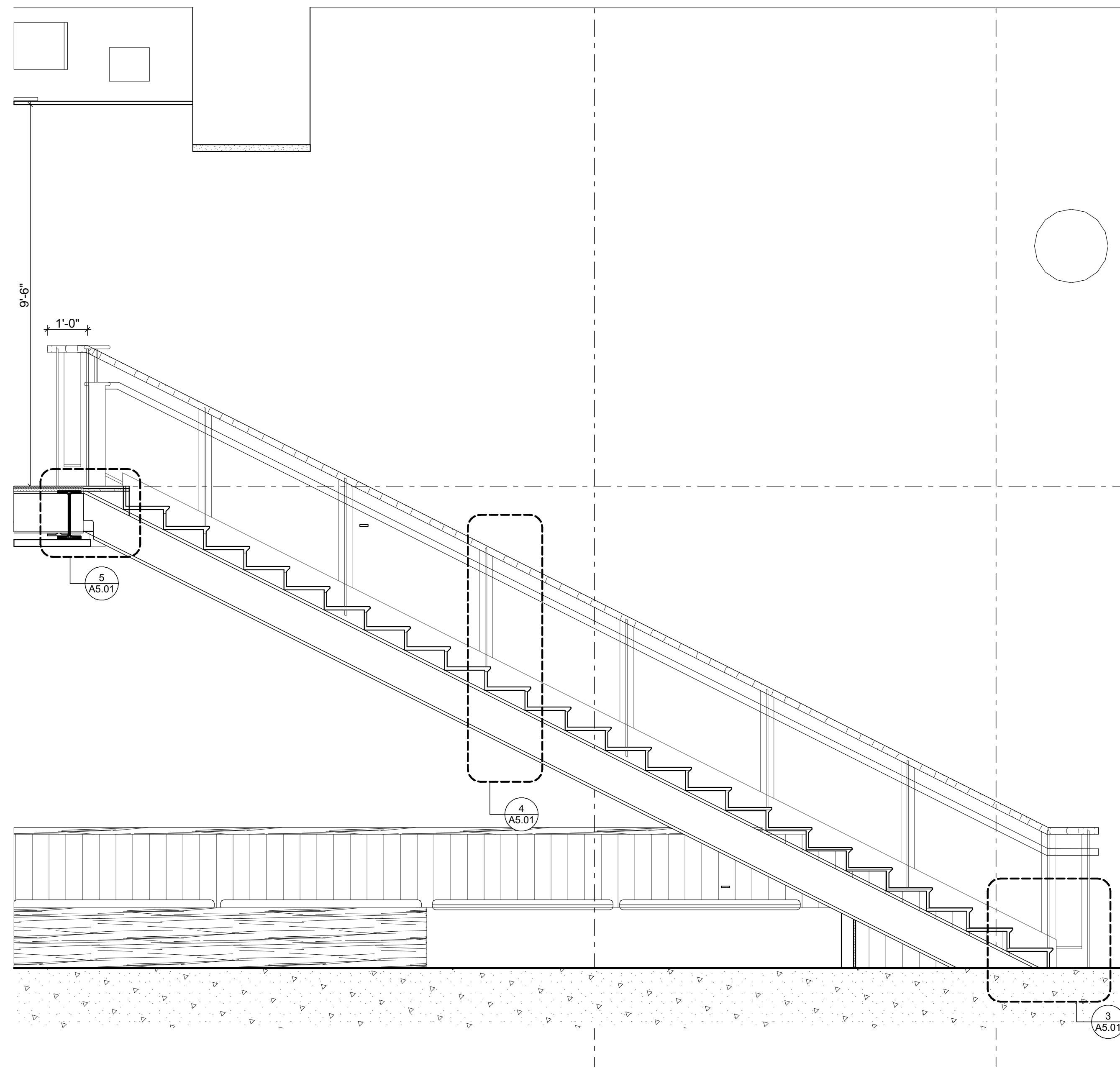
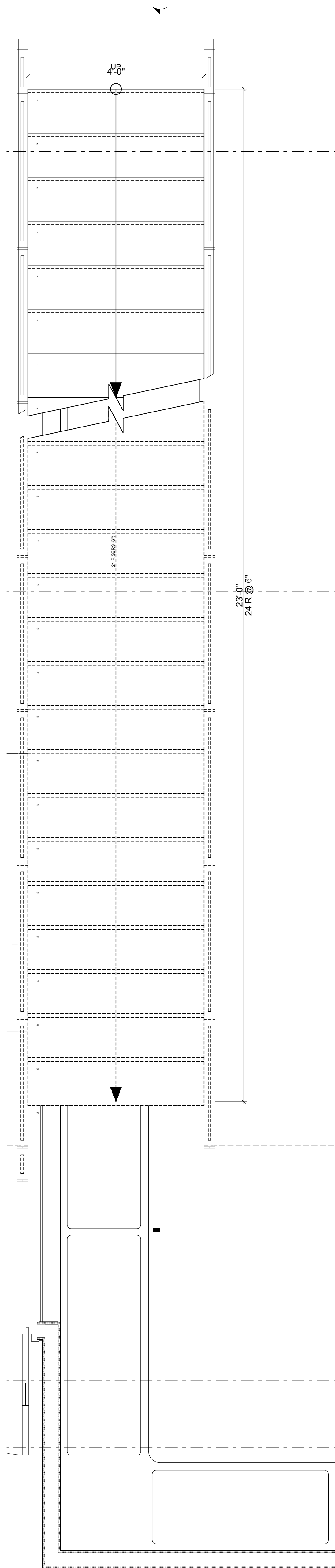
Date	Project Phase
05.11.23	Permit Set

Drawing Title

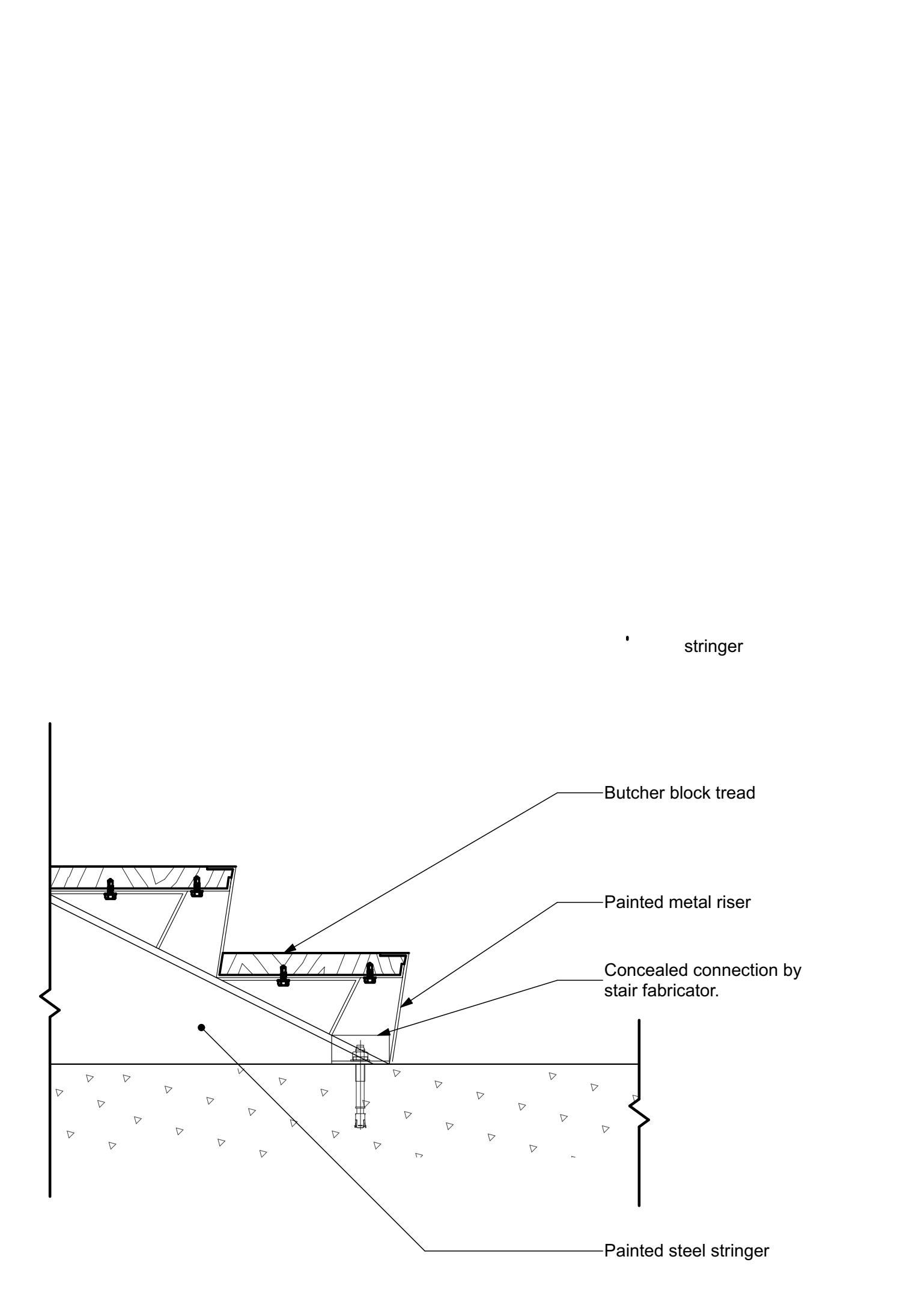
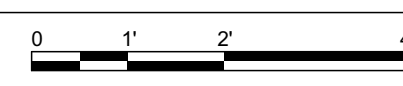
Building Sections

Sheet Number

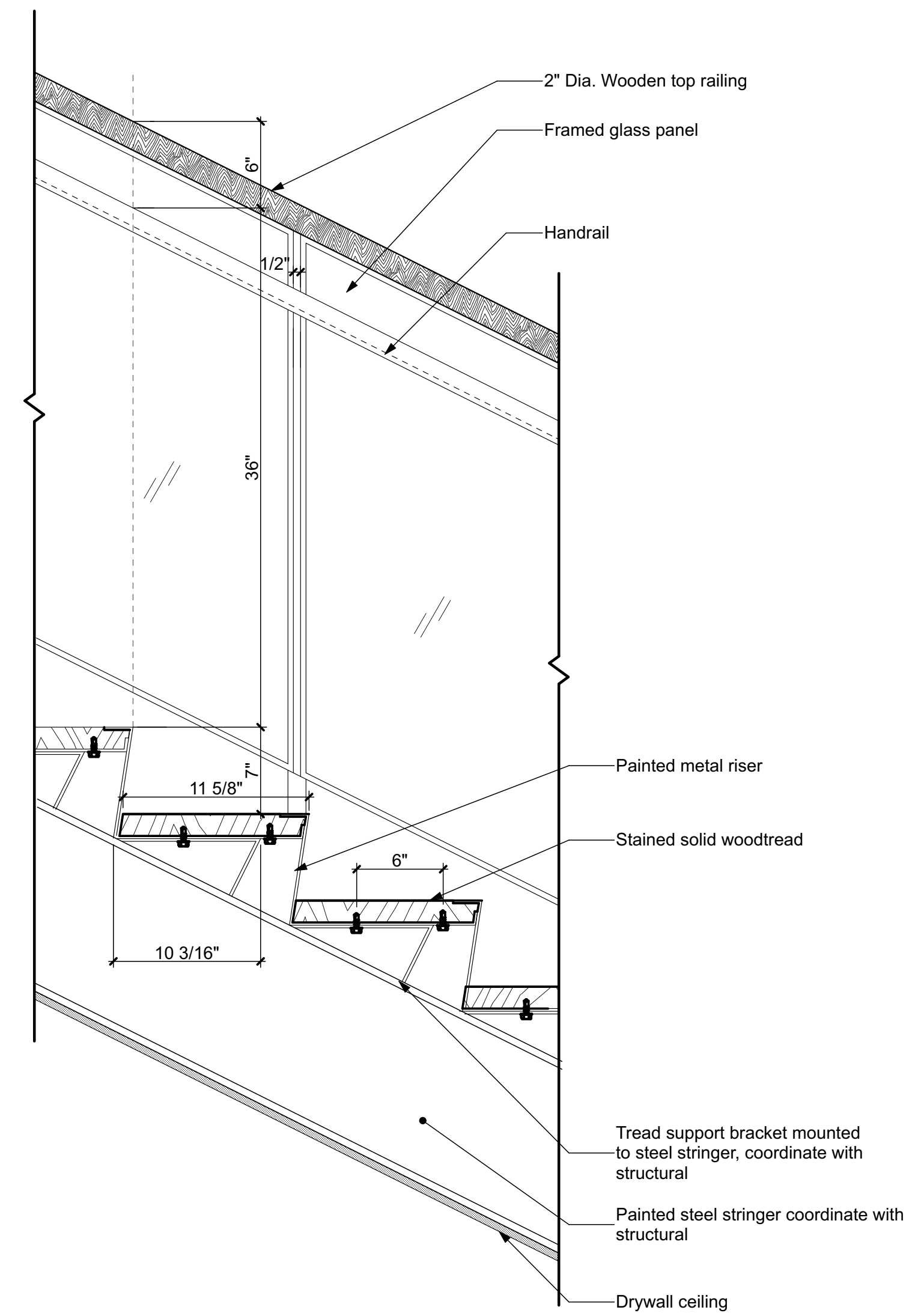
A3.02



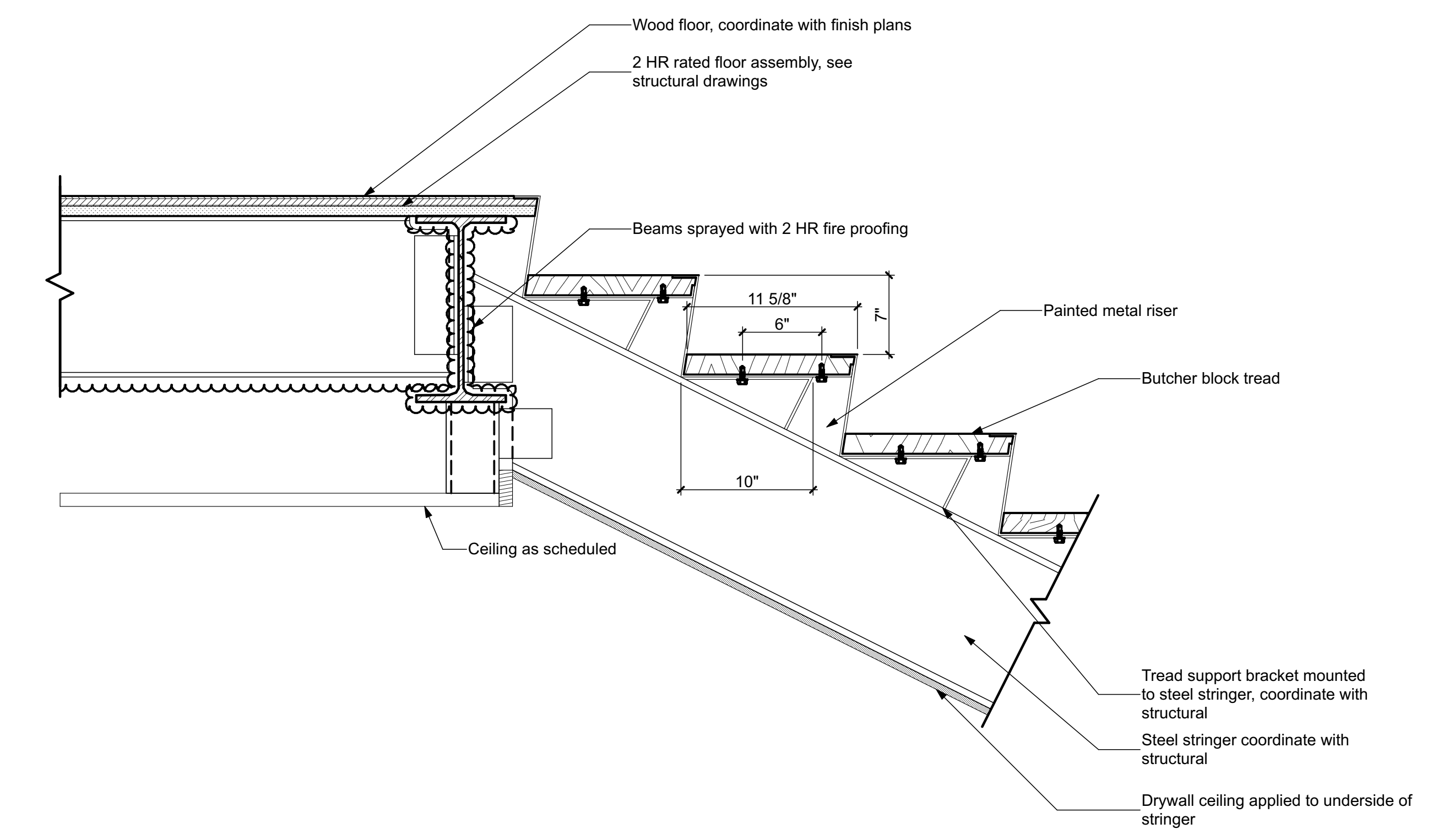
2 Section Mezzanine Stair
SCALE: 1/2" = 1'-0"



3 Stair Detail
SCALE: 1 1/2" = 1'-0"



4 Stair Detail
SCALE: 1 1/2" = 1'-0"



5 Stair Detail
SCALE: 1 1/2" = 1'-0"

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301 Passage Way Savannah, GA 31401

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01.13.23		Design Drawing Set
05.11.23		Permit Set

Current Issuance

Date	Project Phase
05.11.23	Permit Set

Drawing Title

Mezzanine Stair

Sheet Number

A5.01

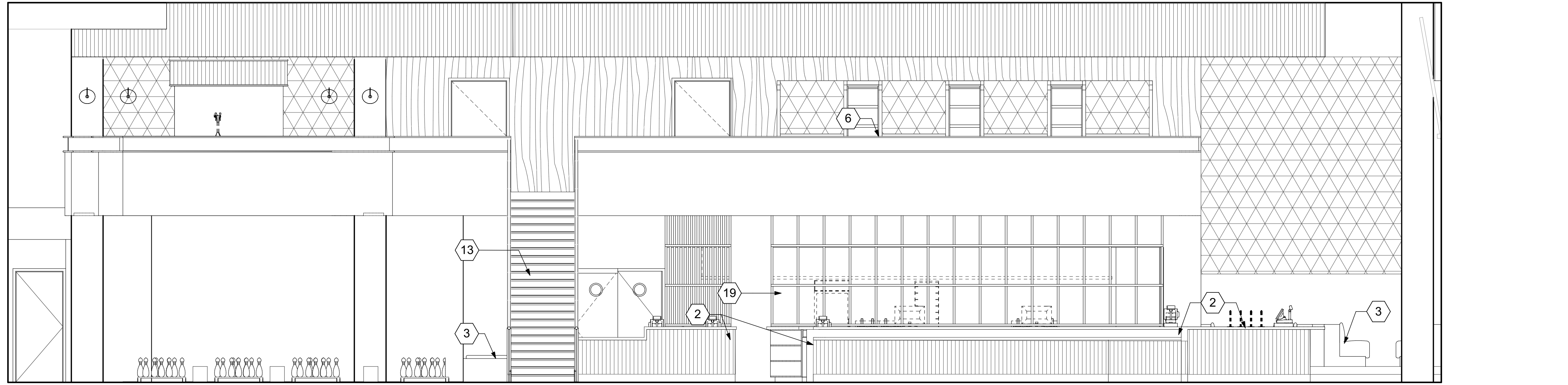
INTERIOR ELEVATION LEGEND			
	Wood Tambour		Wood Veneer
	Wallcovering		Wall Panel
	Ceramic Tile Wall		

CODED NOTES

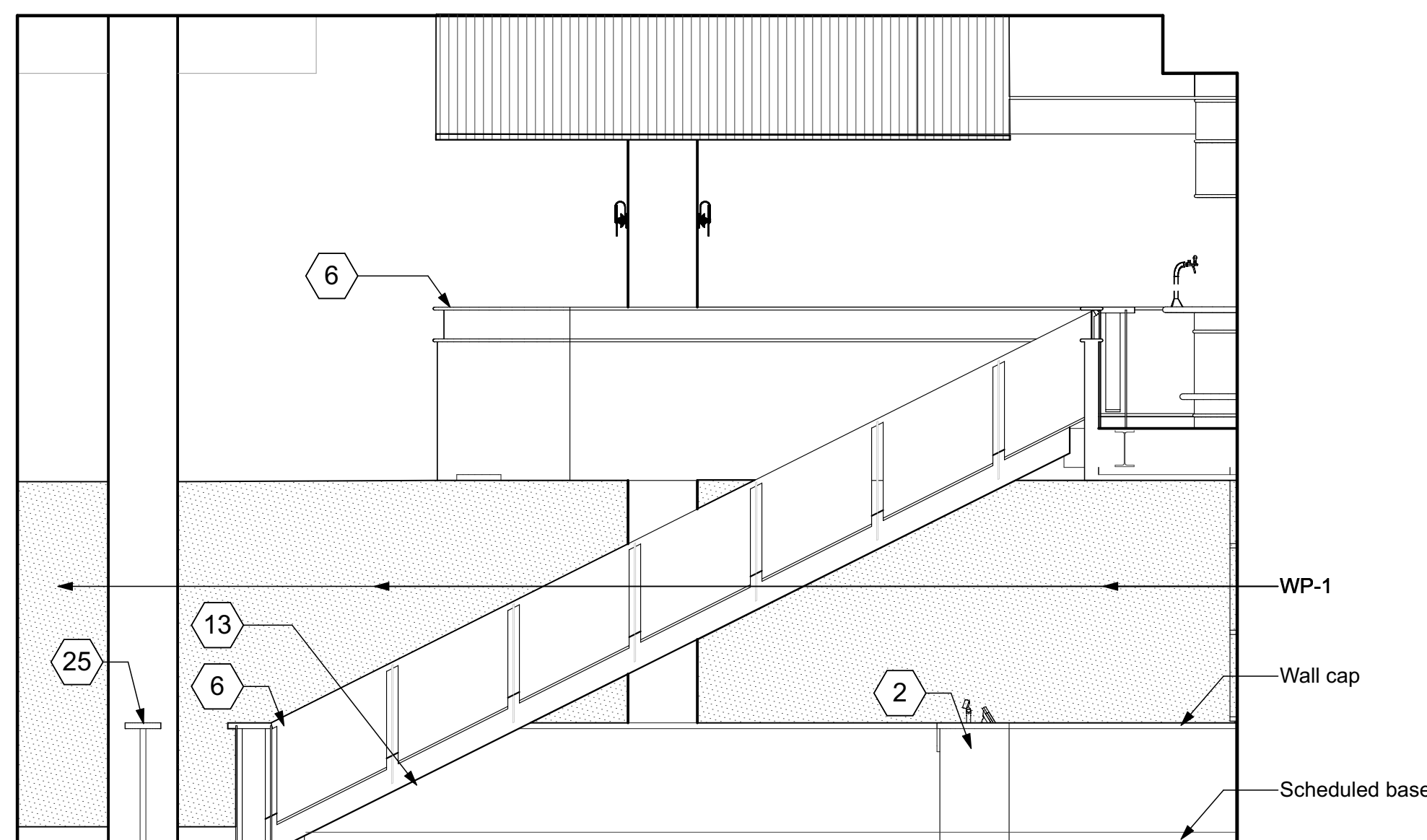
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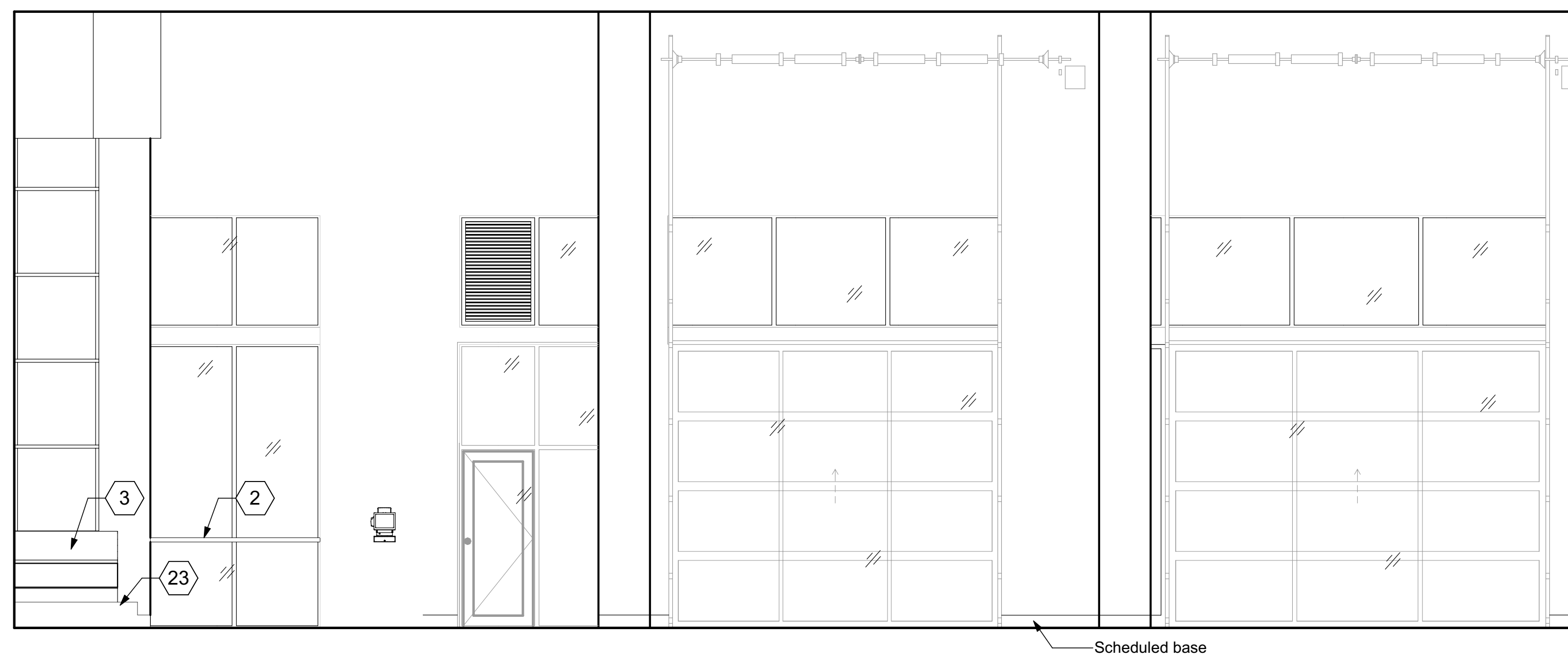
1 Dining Room North
A6.01 SCALE: 1/4" = 1'-0"



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



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



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

Strada Architecture



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01	01.13.23	Design Drawing Set
02	05.11.23	Permit Set

Current Issuance

Date	Project Phase
05.11.23	Permit Set

Drawing Title

Interior Elevations

Sheet Number

A6.01

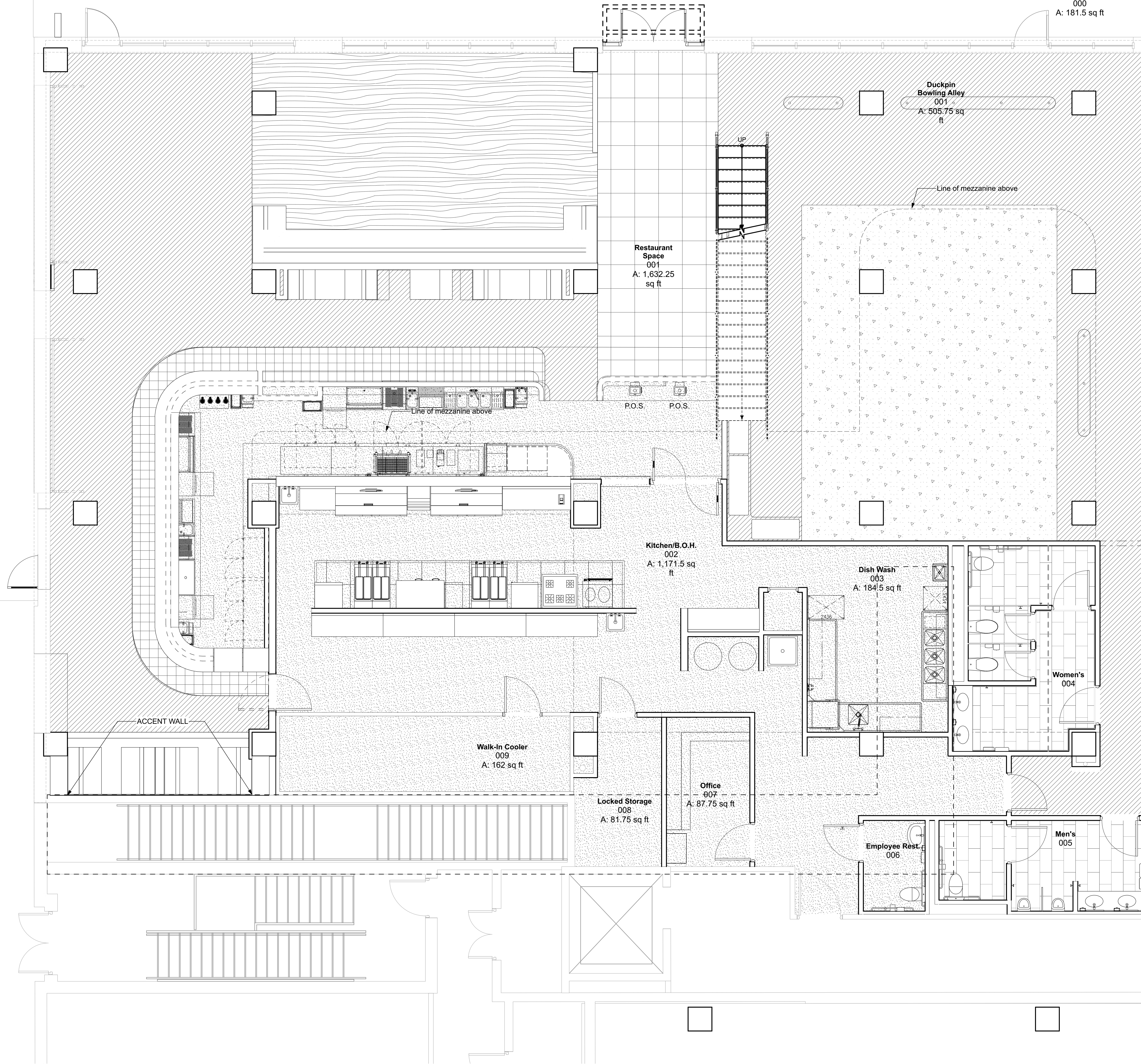
FINISH LEGEND			
	CONC-1 Polished Concrete		CONC-2 Stained Concrete
	EPOX-1 Epoxy Flooring		CONC-3 Stenciled Concrete
	WD-1 Wood Flooring		CONC-4 Stained and Stenciled Concrete
	CTF-1 Ceramic Tile Flooring		

NOTE: Hatches shown are representational and not intended to show pattern, size of material or installation direction. Refer to finish legend for specific finishes and installation information.

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

Patio Space
000
A: 1,243.75
sq ft

Patio Space
000
A: 181.5 sq ft



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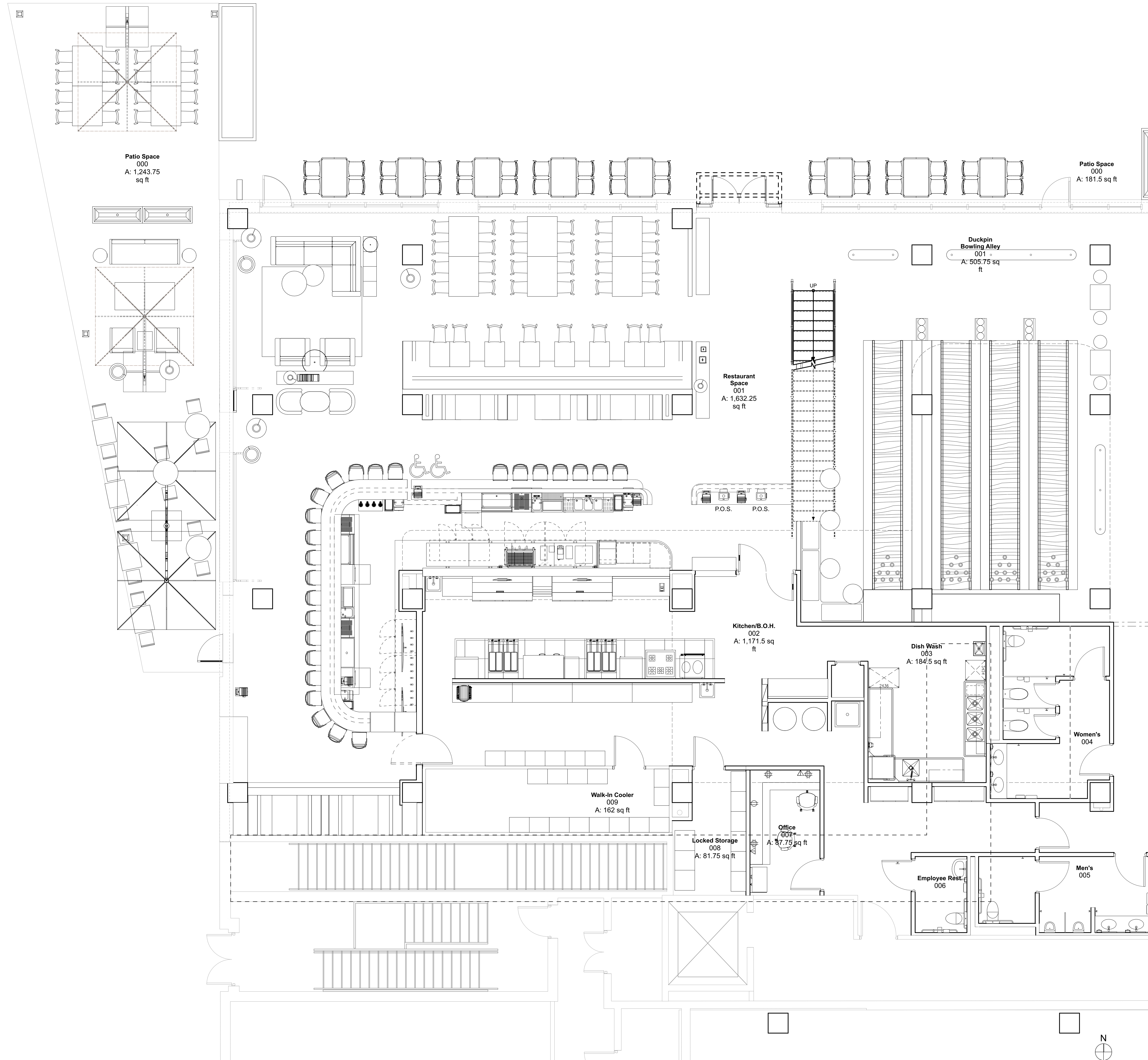
Ground Floor Finish
Plans

Sheet Number

A9.01

FURNITURE LEGEND	
	Not In Scope

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



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Current Issuance

Date	Project Phase
05.11.23	Permit Set

Drawing Title

Ground Floor Furniture
Plan

Sheet Number

A9.50

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
3. STAIRS 2000 LB
100 PSF

* 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:
1. FLAT ROOF 20 PSF
C. HANDRAIL AND GUARD LOADS:
1. UNIFORM LOAD (ANY DIRECTION) 50 PLF
2. 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.

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.
110.7 THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS, DIMENSIONS, ETC., AND SHALL 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.
110.9 THE CONTRACTOR SHALL PREPARE A WRITTEN DEMOLITION PLAN TO BE SUBMITTED TO THE 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 PREPARED 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
B. STEEL DECK
C. CONCRETE AND/OR MASONRY POST-INSTALLED ANCHORS
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, COPIES, 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.
120.3 ALL SHOP DRAWING RESUBMITTALS AND RECORD COPY SUBMITTALS SHALL HAVE ALL 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.
120.4 THE CONTRACTOR SHALL DESIGN AND SUBMIT CALCULATIONS, SIGNED AND SEALED BY A 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-TRANSFERABLE 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 "HLTI HIT-HY 200 V3 ADHESIVE ANCHORS" AS MANUFACTURED BY HLTI 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 HLTI SPECIFICATIONS.
350.5 ALL EXPANSION ANCHORS FOR ANCHORING TO CONCRETE OR GROUT-FILLED MASONRY SHALL BE "HLTI KWIK-BOLT T2Z EXPANSION ANCHORS" AS MANUFACTURED BY HLTI FASTENING SYSTEMS, INC. (OR APPROVED EQUIVALENT).
350.6 ALL SCREW ANCHORS FOR ANCHORING TO CONCRETE OR GROUT-FILLED MASONRY SHALL BE "HLTI KWIK-HUS-EZ" AS MANUFACTURED BY HLTI FASTENING SYSTEMS, INC. (OR APPROVED EQUIVALENT).
350.7 ALL ADHESIVE ANCHORS FOR ANCHORING TO GROUT-FILLED MASONRY SHALL BE "HLTI HIT-HY 270 ADHESIVE ANCHORS" AS MANUFACTURED BY HLTI FASTENING SYSTEMS, INC. (OR EQUAL).
350.8 ALL ADHESIVE ANCHORS FOR ANCHORING TO HOLLOW MASONRY SHALL BE HLTI "HIT-HY 270 ADHESIVE ANCHORS" WITH PLASTIC MESH SCREEN TUBES INDICATED ON THE DRAWINGS AND MANUFACTURED BY HLTI FASTENING SYSTEMS, INC. (OR APPROVED EQUIVALENT).
350.9 ALL EXPANSION ANCHORS FOR ANCHORING TO HOLLOW MASONRY SHALL BE "HLTI HLC SLEEVE ANCHORS" AS MANUFACTURED BY HLTI FASTENING SYSTEMS, INC. (OR EQUAL).
350.10 ALL POWDER ACTUATED FASTENERS FOR ANCHORING TO CONCRETE AND STEEL SHALL BE "HLTI X-U UNIVERSAL KNURLED SHANK FASTENERS" WITH A MINIMUM SHANK DIAMETER (0.157") AS MANUFACTURED BY HLTI FASTENING SYSTEMS, INC. (OR EQUAL).
350.11 THE SPACING AND MINIMUM EMBEDMENT OF POST-INSTALLED ANCHORS SHALL BE AS 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 ANSIAISC 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 SHAPES ASTM A992
B. STRUCTURAL C, MC, AND L SHAPES ASTM A36
C. HOLLOW STRUCTURAL SECTIONS (HSS) (ROUND OR RECTANGULAR) ASTM A500, GRADE B OR ASTM A1085, GRADE 50
D. STEEL PIPE ASTM A53, GRADE B
E. PLATES AND BARS ASTM A36
510.3 GALVANIZED STRUCTURAL STEEL:
A. STRUCTURAL SHAPES AND RODS ASTM A1223
B. BOLTS, FASTENERS AND HARDWARE ASTM F2329
510.4 ALL STRUCTURAL STEEL NOTED ON THE DRAWINGS AS STAINLESS STEEL SHALL HAVE A MINIMUM YIELD STRENGTH OF 25,000 (304), F51 AND SHALL CONFORM TO THE FOLLOWING ASTM SPECIFICATIONS:
A. STRUCTURAL BARS, ROUNDS, AND HOT ROLLED SHAPES ASTM A276
B. HIGH STRENGTH BOLTING MATERIAL ASTM F593
C. HIGH STRENGTH NUTS ASTM 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:
A. SNUG-TIGHTENED JOINTS: ALL SIMPLE SHEAR CONNECTIONS.
B. SLIP-CRITICAL JOINTS: ALL LATERAL BRACING, WIND COLUMN SPLICES, AND MOMENT CONNECTIONS.
C. PRETENSIONED JOINTS: CONNECTIONS WHERE A490 BOLTS ARE FURNISHED AND ARE IN TENSION OR COMBINED SHEAR AND TENSION.
510.8 THE USE OF TENSION-CONTROL (T.C.) BOLTS IN SNUG-TIGHTENED JOINTS IS PROHIBITED.
510.9 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" (LATEST EDITION).
510.10 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 D.1, LATEST EDITION, OF THE AMERICAN WELDING SOCIETY. ELECTRODES SHALL BE E70XX FOR MANUAL ARC WELDING AND F7X-EXXX FOR SUBMERGED ARC WELDINGS.
510.12 ALL NON-COMPOSITE BEAM END CONNECTIONS SHALL BE SELECTED, UNLESS NOTED OTHERWISE, FOR AN END CONNECTION "B" EQUAL TO NOT LESS THAN ONE HALF THE UNIFORM LOAD CAPACITY OF THE MEMBER IN ACCORDANCE WITH AISC SPECIFICATIONS, BUT NOT LESS THAN 8 KIPS. THE EFFECTS OF CONCENTRATED LOADS OCCURRING CLOSE TO THE ENDS OF THE BEAMS SHALL BE CONSIDERED IN THE CONNECTION DESIGN.
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 FABRICATOR'S 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 TNEMC BRAND TNE-M-ZINC 90-92 PRIMER (OR APPROVED EQUIVALENT) AND TWO FINISH COATS OF TNEMC BRAND TNE-M-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 GIRDS 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 BOLT AND WELD TESTING:
A. ALL SHOP AND FIELD BOLTS SHALL BE TESTED PER AISC REQUIREMENTS.
B. ALL WELDS SHOULD BE VISUALLY INSPECTED.
C. TEN PERCENT OF ALL WELDS AT BEAM AND GIRDER SHEAR CONNECTIONS SHALL BE RANDOMLY INSPECTED BY MAGNETIC PARTICLE METHOD, COMPLYING WITH ASTM E109, PERFORMED ON ROOF 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 DECK, 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 THE 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 ARC PUDDLE WELDS OR HLTI POWDER-DRIVEN FASTENERS (PDFS), OR APPROVED EQUIVALENT. FASTENERS SHALL BE SPACED AT 12" O.C. IN A 360 PATTERN, UNO. HLTI X-HSN24 PDFS SHALL BE USED IN MATERIAL RANGING FROM 1/8" TO 3/8" THICKNESS (JOISTS) AND HLTI X-KEN19 PDFS SHALL BE USED IN MATERIAL 1/4" AND THICKER (BEAMS). SIDE DECK LAPS SHALL BE FASTENED WITH 5/8" DIAMETER WELDS, #10 TEK SCREWS, OR HLTI S-SLC SCREWS AT THIRD POINTS BETWEEN SUPPORTS WITH A SPACING NOT TO EXCEED 2'-0" ON CENTER. ANY SPLIT OR PARTIAL PANELS SHALL BE FASTENED TO THE SUPPORTING STRUCTURE IN EVERY VALLEY REGARDLESS OF ADJACENT FASTENER PATTERNS. THE CONTRACTOR MAY SUBMIT ALTERNATE FASTENING 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, WHICH HAVE NOT BEEN DETELED.
530.6 ALL DECK SHALL BE A MINIMUM OF THREE SPANS CONTINUOUS.
530.7 DECKING CONTRACTOR SHALL COORDINATE OPENING SIZES AND LOCATIONS IN FLOORS AND 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 REQUIRED AT THE EDGES OF ALL FLOOR OPENINGS AND AT ALL SLAB DEPRESSIONS OR CHANGES OF DECK DIRECTION, WHICH HAVE NOT BEEN DETELED.
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, HANDLING AND ERECTION, MOVEMENT OF BUILDING, AND THERMAL MOVEMENT. THE ATTACHMENT OF THE COLD-FORMED STEEL FRAMING SYSTEM TO THE STRUCTURE IS SUBJECT TO REVIEW BY THE STRUCTURAL ENGINEER.
540.2 THE CONTRACTOR SHALL SUBMIT CALCULATIONS AND SHOP DRAWINGS SIGNED AND SEALED 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 SHALL CONFORM TO THE MOST CURRENT EDITION OF THE CODE OF STANDARD PRACTICE FOR COLD-FORMED STEEL STRUCTURAL FRAMING, AMERICAN IRON AND STEEL INSTITUTE (AISI) AISI 202-15.
540.4 THE DESIGN AND INSTALLATION OF COLD-FORMED STEEL BOX HEADERS, BACK-TO-BACK HEADERS, AND SINGLE AND DOUBLE HEADERS USED IN SINGLE SPAN CONDITIONS FOR LOAD-CARRYING PURPOSES SHALL BE IN ACCORDANCE WITH THE MOST CURRENT EDITION OF 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 OF 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-DIPPED 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 ASTM 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 RECOMMENDATIONS 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 PERPENDICULAR MEMBERS OR AS REQUIRED FOR AN ANGULAR FIT AGAINST ABUTTING MEMBERS. MEMBERS 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 OF COLD-FORMED STEEL FRAMING MEMBERS IS UNACCEPTABLE.
540.11 NO SPLICES IN STUDS, JOISTS, OR OTHER LOAD CARRYING MEMBERS MAY BE MADE WITHOUT PRIOR REVIEW BY STRUCTURAL ENGINEER AND SPECIFIC DETAILS FOR ANY SUCH SPLICES(S).
540.12 REQUESTS FOR ALLOWABLE SUBSTITUTIONS FOR THE ABOVE NOTED STUD SYSTEMS SHALL BE 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 1/8 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.

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Project Information

Coop De Ville Savannah

301 Passage Way Savannah,
Ga 31401

Owner: Owner
Project Number: .

Revision History

Table with 3 columns: ID, Date, Issue Name. Contains multiple empty rows for revision tracking.

Current Issuance

Date: 05.11.23
Project Phase: Permit Set

Drawing Title

GENERAL NOTES

Sheet Number

S001

COMcheck Software Version 4.1.5.5 Interior Lighting Compliance Certificate

Project Information
 Energy Code: 2018 IECC
 Project Title: Coop De Ville Savannah
 Project Type: New Construction
 Construction Site: 301 Passage Way Savannah, GA 31401
 Owner/Agent: Designer/Contractor: Allen + Shariff 2 Allegheny Center Nova Tower 2, Suite 1001 Pittsburgh, PA 15212 412-325-2459

Additional Efficiency Package(s)

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts (B X C)
1-Restaurant/Bar (Dining Family)	8186	0.70	5747
Total Allowed Watts = 5747			

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
LED 1: DL1: 6" DOWNLIGHT: Other: Exemption:Furniture-mounted supplemental task lighting	1	14	20	276
LED 2: DL2: 4" DOWNLIGHT: Other: Exemption:Furniture-mounted supplemental task lighting	1	30	26	780
LED 3: DL3: 4" DOWNLIGHT: Other: Exemption:Furniture-mounted supplemental task lighting	1	17	33	561
LED 4: DL4: 5" CYLINDER DOWNLIGHT: Other: Exemption:Furniture-mounted supplemental task lighting	1	7	16	112
LED 5: DP1: DECORATIVE PENDANT: Other: Exemption:Furniture-mounted supplemental task lighting	1	4	9	35
LED 6: DP2: DECORATIVE PENDANT: Other: Exemption:Furniture-mounted supplemental task lighting	1	3	16	48
LED 7: DP3: DECORATIVE PENDANT: Other: Exemption:Furniture-mounted supplemental task lighting	1	7	9	63
LED 8: LR1: 18" 1/4" LINEAR: Other: Exemption:Furniture-mounted supplemental task lighting	1	1	105	105
LED 9: LR2: 5A: 5'2" LINEAR: Other: Exemption:Furniture-mounted supplemental task lighting	1	1	26	26
LED 10: LR2: 5B: 5'4" LINEAR: Other: Exemption:Furniture-mounted supplemental task lighting	1	1	28	28
LED 11: LR2: 6" LINEAR: Other: Exemption:Furniture-mounted supplemental task lighting	1	2	30	60
LED 12: LR2: 11" 1/4" LINEAR: Other: Exemption:Furniture-mounted supplemental task lighting	1	1	56	56
LED 13: PL1: PUCK LIGHT: Other: Exemption:Furniture-mounted supplemental task lighting	1	20	3	60
LED 14: RT1: 2X2' TROFFER: Other: Exemption:Furniture-mounted supplemental task lighting	1	21	33	693
LED 15: SM1: DECORATIVE FIXTURE: Other: Exemption:Furniture-mounted supplemental task lighting	1	5	25	125
LED 16: SM2: 18" LINEAR: Other: Exemption:Furniture-mounted supplemental task lighting	1	3	80	240
LED 17: SP1: 4' STRIP: Other: Exemption:Furniture-mounted supplemental task lighting	1	41	10	410
LED 18: TL1: TAPE LIGHT (WFT): Other: Exemption:Furniture-mounted supplemental task lighting	1	220	4	880
Total Proposed Watts =				5644

Project Title: Coop De Ville Savannah Report date: 05/11/23
 Data filename: \\alishenariff.com\ENGP\T\Jobs\Jobs_2212241141 Strada - COOP Savannah\8_Electrical\Misc\Co Page 1 of 9 Lighting Comcheck.cck

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
LED 19: TL2: TAPE LIGHT (WFT): Other: Exemption:Furniture-mounted supplemental task lighting	1	175	5	875
LED 20: TL3: TAPE LIGHT: Other: Exemption:Furniture-mounted supplemental task lighting	1	1	108	108
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 capacity	0	0	120	120
Track lighting 1 copy 3: TR2, TR4 TR8: TRACK: Wattage based on current limiting device capacity	0	0	120	120
Track lighting 1 copy 4: TR2, TR4 TR8: TRACK: Wattage based on current limiting device capacity	0	0	120	120
Track lighting 1 copy 5: TR2, TR4 TR8: TRACK: Wattage based on current limiting device capacity	0	0	120	120
Track lighting 1 copy 6: TR2, TR4 TR8: TRACK: Wattage based on current limiting device capacity	0	0	120	120
Track lighting 1 copy 7: TR2, TR4 TR8: TRACK: Wattage based on current limiting device capacity	0	0	120	120
Track lighting 1 copy 8: TR2, TR4 TR8: TRACK: Wattage based on current limiting device capacity	0	0	120	120
LED 21: WM2: 40' 40" LINEAR: Other: Exemption:Furniture-mounted supplemental task lighting	1	1	280	280
LED 22: WS1: WALL SCONCE: Other: Exemption:Furniture-mounted supplemental task lighting	1	21	12	252
Incandescent 1: WS2: WALL SCONCE: Incandescent 60W: Exemption:Furniture-mounted supplemental task lighting	1	4	60	240
LED 23: WS3: WALL SCONCE: Other: Exemption:Furniture-mounted supplemental task lighting	1	4	29	116
LED 24: WS4: WALL SCONCE: Other: Exemption:Furniture-mounted supplemental task lighting	1	4	8	32
LED 25: WS5: WALL SCONCE: Other: Exemption:Furniture-mounted supplemental task lighting	1	2	5	10
LED 26: WS6: WALL SCONCE: Other: Exemption:Furniture-mounted supplemental task lighting	1	3	5	15
Total Proposed Watts =				5644

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 plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2018 IECC requirements in COMcheck Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title Signature Date

Project Title: Coop De Ville Savannah Report date: 05/11/23
 Data filename: \\alishenariff.com\ENGP\T\Jobs\Jobs_2212241141 Strada - COOP Savannah\8_Electrical\Misc\Co Page 2 of 9 Lighting Comcheck.cck

COMcheck Software Version 4.1.5.5 Exterior Lighting Compliance Certificate

Project Information
 Energy Code: 2018 IECC
 Project Title: Coop De Ville Savannah
 Project Type: New Construction
 Exterior Lighting Zone: 2 (Neighborhood business district (LZ2))
 Construction Site: 301 Passage Way Savannah, GA 31401
 Owner/Agent: Designer/Contractor: Allen + Shariff 2 Allegheny Center Nova Tower 2, Suite 1001 Pittsburgh, PA 15212 412-325-2459

Allowed Exterior Lighting Power

A Area/Surface Category	B Quantity	C Allowed Watts / Unit	D Tradable Wattage	E Allowed Watts (B X C)
Patio (Plaza area)	962 ft2	0.1	Yes	96
Total Tradable Watts (a) =				96
Total Allowed Watts =				96
Total Allowed Supplemental Watts (b) =				400

(a) Wattage tradeoffs are only allowed between tradable areas/surfaces.
 (b) A supplemental allowance equal to 400 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

Proposed Exterior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
Patio (Plaza area 962 ft2): Tradable Wattage				
LED 1: YS1: FESTOON LIGHTS: Other: Exemption:Furniture-mounted supplemental task lighting	1	1	65	65
LED 2: YW1: WALL FIXTURE: Other: Exemption:Furniture-mounted supplemental task lighting	1	2	10	20
Total Tradable Proposed Watts =				85

Exterior Lighting PASSES: Design 83% better than code
Exterior Lighting Compliance Statement
 Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 2018 IECC requirements in COMcheck Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title Signature Date

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COMcheck Software Version 4.1.5.5 Inspection Checklist

Energy Code: 2018 IECC
 Requirements: 72.0% were addressed directly in the COMcheck software
 Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate 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 exterior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C103.2 (PR4)2	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.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> 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.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

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Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.2 (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.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C405.2.1 (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 room, locker rooms, warehouse storage areas, and other spaces <= 300 sqft that are enclosed by floor-ceiling height partitions. Reference section language C405.2.2 for control function in warehouses and section C405.2.1.3 for open plan office spaces.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C405.2.1 (EL19)2	Occupancy sensors control function in warehouses. In warehouses, the lighting in aislesways and open areas is controlled with occupancy 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.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
C405.2.1 (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 >= 50% 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 or control zone general lighting only when occupancy for the same area is detected.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
C405.2.2 (EL21)1	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.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

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Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.3 (EL23)1	Daylight zones provided with individual controls that control the lights independent of general area lighting. See code section C405.2.3.2 for applicable spaces, C405.2.3.1 for applicable spaces, C405.2.3.1 for applicable spaces, C405.2.3.1 for applicable spaces, C405.2.3.1 for applicable spaces.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
C405.2.4 (EL26)1	Separate lighting control devices for specific uses installed per approved lighting plans.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C405.2.4 (EL27)1	Additional interior lighting power allowed for special functions per the approved lighting plans and is automatically controlled and separated from general lighting.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C405.2.5 (EL28)1	Manual controls required by the energy code are in a location with ready access to occupants and located where the controlled lights are visible, or identify the area served and their status.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C405.2.6 (EL30)1	Automatic lighting controls for exterior lighting installed. Controls will be daylight controlled, set based on business operation time-of-day, or reduce connected lighting > 30%.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C405.3 (EL6)1	Exit signs do not exceed 5 watts per face.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C405.6 (EL26)1	Low-voltage dry-type distribution electric transformers meet the minimum efficiency requirements of Table C405.6.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C405.7 (EL27)1	Electric motors meet the minimum efficiency requirements of Tables C405.7(1) through C405.7(4). Efficiency verified through certification under an approved certification program or the equipment efficiency ratings shall be provided by motor manufacturer (where certification programs do not exist).	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C405.8.2 (EL28)1	Escalators and moving walks comply with ASME A17.1/CSA B44 and have automatic controls configured to reduce speed to the minimum permitted speed in accordance with ASME A17.1/CSA B44 or applicable local code when not conveying passengers.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C405.9 (EL29)1	Total voltage drop across the combination of feeders and branch circuits <= 5%.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

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Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C303.3 (F17)1	Furnished O&M instructions for systems and equipment to the building owner or designated representative.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C405.4.1 (F18)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.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Interior Lighting fixture schedule for values.
C405.5.1 (F19)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.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Exterior Lighting fixture schedule for values.
C408.1.1 (F19)1	Building operations and maintenance documents will be provided to the owner. Documents will cover manufacturer's information, specifications, programming procedures and means of illustrating to owner how building, equipment and systems are intended to be installed, maintained, and operated.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C408.2.5 (F16)1	Furnished as-built drawings for electric power systems within 90 days of system acceptance.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C408.3 (F19)1	Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

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 A-9 Project Number: 2241141

Strada Architecture



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: 05.05.23
 Project Phase: Permit Set

Drawing Title

Lighting Comcheck

Sheet Number

E8.01

MECHANICAL SPECIFICATIONS

MECHANICAL GENERAL CONDITIONS (230010)

A. GENERAL

- CONFORM TO ALL GENERAL AND SPECIAL CONDITIONS OF CONTRACT AS SPECIFIED BY ARCHITECT AND/OR OWNER.
- 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 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.

- ALL SPECIFICATIONS AND DRAWINGS, I.E. ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL ARE COMPLEMENTARY 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.
- 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.

- 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 CONTRACTORS EXPENSE.

- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, SEQUENCES OF CONSTRUCTION AND THE SAFETY OF WORKMEN.

- NO PIPING, DUCTWORK, CONTROLS, ETC., SHALL BE INSTALLED OR ROUTED ABOVE ELECTRICAL PANELS AND EQUIPMENT OR THROUGH ELEVATOR ROOMS.

- 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.

- 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.

- 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.

- 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.

- 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.

- OBTAIN PERMITS AND PAY ALL FEES. ARRANGE FOR ALL REQUIRED INSPECTIONS AND APPROVALS.

B. DEMOLITION

- 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.

- 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.

- ANY EQUIPMENT DESIGNATED BY OWNER TO BE SALVAGED SHALL BE PROTECTED AND DELIVERED TO AN OWNER DESIGNATED AREA ON SITE.

- 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

- 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".

- 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 NOTED 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 INSPECTION 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 ACTED INTO THE BASE PRICE BY THE ARCHITECT AND OWNER IF ACCEPTED.

- 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 ORIGINAL REQUEST SHALL 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.

- 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.

- 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.

- 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.

- ALL EQUIPMENT AND MATERIALS SHALL BE NEW, FREE OF DEFECTS AND U.L. LABELED.

D. CUTTING, PATCHING AND DRILLING

- ALL CUTTING AND PATCHING OF THE BUILDING CONSTRUCTION REQUIRED FOR THIS WORK SHALL BE BY THIS CONTRACTOR UNLESS SHOWN ON ARCHITECTURAL DRAWINGS AND CONFIRMED IN WRITING. PRIOR TO NEW CONSTRUCTION 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.

- 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.

- 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.

- EXACT LOCATION OF ROOFTOP EQUIPMENT SHALL BE APPROVED BY OWNER'S STRUCTURAL ENGINEER.

- 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

- 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.

- 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

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

- 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 ALL CRITICAL LOCATIONS.

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

- 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 INSTALLATION.

- WHERE SUBMITTALS VARY FROM THE CONTRACT REQUIREMENTS, THE CONTRACTOR SHALL CLEARLY INDICATE ON REFER TO ACCOMPANYING DOCUMENTS THE NATURE AND REASON FOR VARIATIONS.

- SUBMIT TO VARIOUS SECTIONS FOR LISTING OF SHOP DRAWINGS REQUIRED ON THIS PROJECT.

- 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 THE TIME OF SUBMITTAL.

G. RECORD DRAWINGS

- 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 MADE DURING CONSTRUCTION.

- 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.

- 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.

- 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.

H. FIRESTOPPING

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

- ALL FIRESTOPPING AND/OR SMOKE STOPPING MATERIAL AND INSTALLATION SHALL BE AS MANUFACTURED BY HLTI OR APPROVED EQUAL.

I. ACCESS DOORS & PANELS

- 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.

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

- 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 PLAN FLANGED TYPE FRAME FOR TILE, MASONRY OR GYP-SUM BOARD SURFACES. DOORS AND FRAMES SHALL BE FINISHED 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.

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

J. PAINTING

- 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 CONTRACTOR.

K. TEMPORARY HEAT

- THE COSTS OF TEMPORARY HEAT, INCLUDING UTILITY COSTS, SHALL BE AT THE EXPENSE OF THE HEATING TRADE CONTRACTOR. HEAT PROVIDED FOR TEMPORARY HEAT, INCLUDING EXHAUST AND OTHER HEATING EQUIPMENT AND SYSTEMS MAY NOT BE USED DURING CONSTRUCTION AS THE SYSTEMS SERVE OTHER OCCUPIED SPACES WITHIN THE BUILDING.
- 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 NO EVENT SHALL THE MECHANICAL CONTRACTOR'S ONE YEAR WARRANTY BE SHORTENED BY THE USE OF PERMANENT EQUIPMENT FOR TEMPORARY HEAT.

HYDRONIC PIPING (232113)

- PIPE AND FITTINGS – HYDRONIC PIPING 2" AND SMALLER SHALL BE:
 1. "1" TYPE "L" HARD COPPER TUBING ASTM B 88-832 WITH SWEATED JOINTS PER ASTM B 16.2 USING 99.5 OR ANTIMONY SOLDER OR "PRESS-FIT" MECHANICAL JOINTING. ALL FITTINGS SHALL BE MADE FROM WROUGHT COPPER.
 2. SCHEDULE 40 STEEL PIPING WITH VICTAULIC PLAN END QUICKVIC SD (R) FITTINGS. FITTINGS SHALL BE MADE FROM DUCTILE IRON. SPOUTER SCREWED UNIONS OR GROOVED FITTINGS AT FINAL CONNECTIONS TO EQUIPMENT TO ALLOW DISCONNECTION FOR REPAIR OR SERVICING.

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

- GROOVED JOINTS QUALITY ASSURANCE: GROOVED JOINTS SHALL BE VISUALLY VERIFIABLE TO ENSURE PROPER INSTALL SUPPORTED FROM THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. A TORQUE LOG OF EVERY COUPLING SHALL BE PROVIDED FOR APPROVAL TO THE ENGINEER AND OWNER TO VERIFY PROPER INSTALL.

- BALL VALVES – UP TO 2" - BRONZE TWO PIECE BODY, STAINLESS STEEL BALL, TEFLOM SEATS AND BLOW-OUT PROOF STUFFING BOX RING, LEVER HANDLE, AND BALANCING STOPS, UNION SOLDER ENDS. ACCEPTABLE MANUFACTURERS: APOLLO, LEGEND VALVE, VICTAULIC, OR WATTS.

- 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 DOWNSWTRAM FLANGES ARE REMOVED.

- VENT AND DRAIN VALVES – ALL WATER PIPING SYSTEMS SHALL BE INSTALLED IN SUCH A MANNER THAT THEY CAN BE COMPLETELY VENTED AND DRAINED. PROVIDE VENT AND DRAIN VALVES WITH EPDM SEATS/SEALS. VALVES SHALL HAVE 1/4" BRASS COMPRESSION VENT COCKS, AND AT ALL LOW POINTS 1/2" BALL VALVES WITH HOSE BIB ENDS AND CAPS.

- 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 1000 PSIG. PROVIDE TEST KIT CONSISTING OF TWO PRESSURE GAUGES WITH PROBES AND 2 DIAL THERMOMETERS WITH CARRYING CASE.

- STRAINERS – V-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 BASKET. WITH TAPPED BLOWOFF PLUG, RATING: 150-PSIG WORKING PRESSURE.

- BALANCING VALVES – PROVIDE VICTAULIC MULTI-TURN BALANCING VALVES WHERE SHOWN IN PIPING DETAILS ON THE DRAWINGS. VALVES SHALL BE OF BRONZE CONSTRUCTION (2" TO 2 1/2" 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.

- 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.

- 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 RETURN. 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.

- 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.

- 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 PLOT 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.

- 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.

- 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.

- 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)

- INSTALL REFRIGERANT PIPING BETWEEN CONDENSING UNIT AND DX COIL. PIPING SHALL BE REFRIGERANT GRADE TYPE "L" OR ACR COPPER WITH BRAZED JOINTS. PIPE PER MANUFACTURERS PIPING DIAGRAMS AND RECOMMENDATIONS.

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

- AFTER COMPLETION, PRESSURE TEST PIPING, PURGE AND EVACUATE SYSTEM TWICE AND CHARGE SYSTEM WITH REFRIGERANT AND OIL.

- INSTALL PIPING IN AS SHORT AND DIRECT ARRANGEMENT AS POSSIBLE TO MINIMIZE PRESSURE DROP. PROVIDE OIL TRAP AS RECOMMENDED BY THE EQUIPMENT MANUFACTURER.

- INSTALL UNIONS TO ALLOW REMOVAL OF SOLENOID VALVES, PRESSURE REDUCING VALVES, EXPANSION VALVES, AND AT CONNECTIONS TO COMPRESSORS AND EVAPORATORS.

- FILL THE PIPE AND FITTINGS DURING BRAZING, WITH NITROGEN TO PREVENT FORMATION OF SCALE.

PIPE WALL SEALS (230517)

- 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.

- 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 BOLTS AND NUT OF EACH LINK. SEALS SHALL BE CONSTRUCTED TO PROVIDE ELECTRICAL INSULATION BETWEEN THE PIPE AND SLEEVE, THIS REDUCING CHANCES OF CATHODIC REACTION BETWEEN THESE TWO MEMBERS.

- 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.

- 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 (232313)

- FABRICATE AND ERECT ALL DUCTWORK TO ASHRAE AND SMACNA STANDARDS FROM G90 GALVANIZED STEEL. COMPLY WITH NFPA BULLETIN 90A REQUIREMENTS.

- SUPPLY DUCTWORK UPSTREAM OF TERMINAL UNITS AND WITHIN 15' OF ANY AHU FAN OUTLET SHALL HAVE A SMACNA 3" STATIC PRESSURE RATING WITH SEAL GLASS A SEAMS AND JOINTS.

- GENERAL SUPPLY AND RETURN DUCTWORK HAVE A SMACNA 2" STATIC PRESSURE RATING WITH SEAL CLASS B SEAMS AND JOINTS.

- OUTDOOR AIR INTAKE DUCTWORK SHALL HAVE A SMACNA 2" STATIC PRESSURE RATING WITH SEAL CLASS A SEAMS AND JOINTS.

- ALL EXPOSED ROUND AND OVAL DUCTWORK IN SHALL HAVE SPIRAL LOCKSEAM CONSTRUCTION.

- 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.

- 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.

- 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(DEFINIED BY NFPA), WRAP EXHAUST WITH 2 HOUR FIRE RATED INSULATION INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH MANUFACTURE'S WRITER 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 FOL.

- 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.

- 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 MANUFACTURERS RECOMMENDATIONS. UTILIZING SUPPORT SYSTEM THAT FULLY ENCLOSES THE DUCT. REINFORCE DUCT AS NECESSARY PER SMACNA HVAC PHENOLIC DUCT CONSTRUCTION STANDARDS. ACCEPTABLE MANUFACTURERS ARE ACG INDUSTRIES Q-DUCT AND THERMADUCT.

- ALL FLEXIBLE DUCTWORK SHALL BEAR THE UL 181 LABEL (CLASS 1 AIR DUCT) AND SHALL BE FACTORY INSULATED (1-1/2" O.B LE. FIBERGLASS) ATCO UPR #076 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 TO BE INSTALLED. CONSOLE AND DRIFT BANDS TIGHTENED WITH MANUFACTURERS TOOL. FLEXIBLE DUCTS ARE NOT PERMITTED IN ROOMS WITHOUT CEILINGS.

CONTROLS (230910)

- INCLUDE ALL ACOUSTIC, DOUBLE RADIUS AIRFOIL SHAPED PERFORATED ALUMINUM TURNING VANES, MANUAL DAMPERS, FLEXIBLE CONNECTORS, GRILLSES 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"

UNIT DES.	SUPPLY FAN DATA					DX COOLING COIL						HOT WATER HEATING COIL						ELECTRICAL DATA			WEIGHT LBS	BASIS OF DESIGN	MODEL	REMARKS						
	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 ROWS	NUMBER OF ROWS	COIL MODEL	VOLTS/PH	MCA	MOCP
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.

UNIT DES.	SERVES	NO. OF STAGES	NOMINAL CAPACITY TONS	COOLING EFF.		EAT	ELECTRICAL			REFRIGERANT LINESET		SOUND PRESS. DBA	WEIGHT	MANUF.	MODEL	REMARKS
				EER	IEER		VOLTS / PH.	MCA	MOCP	SUCTION CKT A / CKT B	LIQUID CKT A / CKT B					
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

- NOTES:
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.

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-309FBN	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.

TAG	MAKE/MODEL	LENGTH	MAX. COOKING TEMP.	TYPE	EXHAUST PLENUM				SUPPLY PLENUM				HOOD CONFIGURATIO N		FILTER(S)				LIGHT(S)				FIRE SYSTEM PIPING	HOOD WEIGHT (LBS)	REMARKS
					TOTAL EXHAUST CFM	RISER(S)			TOTAL SUPPLY CFM	RISER(S)		END TO END	ROW	TYPE	QTY.	HEIGHT	LENGTH	QTY.	TYPE	WIRE GAURD					
						DIA	NO./CFM EA	S.P. IN. W.C.		WIDTH	LENGTH										NO./CFM SA	S.P. IN. W.C.			
KH-1	CAPTIVEAIRE / 6024 ND-2-PPS-F	13'-1.5"	600°F	I	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-PPS-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	II	600	10"	1 / 600	0.09	NA	NA	NA	NA	NA	ALONE	ALONE	NA	NA	NA	NA	NA	NA	NO	156	10	

- REMARKS:
1. PROVIDE A REMOTE ACTIVATION PULL STATION WITH PROTECTIVE COVER FOR MANUAL ACTIVATION.
 2. PROVIDE 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 UL106.
 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.

TAG	SERVES	TYPE	FAN					COOLING				HEATING				CONDENSER UNIT					WEIGHT (LBS)	BASIS OF DESIGN (MANUF. / MODEL)	REMARKS				
			OUTSIDE AIR CFM	MIN CFM	E.S.P. IN W.G.	RPM	HP	VOLTS / PH.	MCA	MOCP	TOTAL CAPACITY MBH	SENSIBLE CAPACITY MBH	EAT DB / WB	LAT DB / WB	FUEL TYPE	MBH INPUT	MBH OUTPUT	TEMP RISE	CONDENSER TAG	TONNAGE				VOLTS / PH.	MCA	MOCP	SEER
MAU-01	KH-1 & KH-2	INDOOR UNIT HEATING AND COOLING	5200	3600	0.5	2043	5.0	460V / 3PH	8.5	15	120	71	93°F / 77°F	80.1°F / 71.1°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

- 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

TAG	SERVES	TYPE	CFM	ESP IN W.C.	FAN RPM	SONES (INLET)	WT. LB.S	MOTOR		BASIS OF DESIGN		REMARKS
								HP (WATT)	VOLTS/ PH	MFG.	MODEL	
KEF-01	KITCHEN HOOD	ROOF	6230	2.5	740	28.5	1329	10.0	460V / 3PH	CAPTIVEAIRE	USB136DD-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	1667	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.

TAG	SYSTEM	LOCATION	TYPE	DESIGN CAPACITY GPM	DESIGN HEAD FT.	PUMP EFF.	SOLUTION	FLUID TEMP. (°F)	MOTOR			PUMP SIZE			WEIGHT	BASIS OF DESIGN MANUF./MODEL	REMARKS
									WATTS	HP	RPM	VOLTS/PH/ HZ	SUCT. IN. DIA.	DISCH. IN. DIA.			
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

TAG	FACE SIZE (SLOT WIDTH)	# SLOTS/ BAR GRID SPACE	DEFLECTION THROU	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	165	0.051	N/A	-	TITUS	350RL	SEE BELOW

- REMARKS:
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.

CFM RANGE	NECK SIZE	MAX LENGTH
0 - 50	4"∅	4'-0"
51 - 125	6"∅	4'-0"
126 - 230	8"∅	5'-0"
231 - 420	10"∅	5'-0"
421 - 650	12"∅	6'-0"
651 - 900	14"∅	6'-0"

NOTE: DIAMETER OF DIFFUSER FLEXIBLE DUCT CONNECTOR IS EQUAL DIFFUSER NECK SIZE. SEE PLANS AND SPECIFICATIONS FOR FACE TYPE AND MODEL NUMBERS.

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

- NOTES:
1. SIZING BASED ON 0.057/100 FT. P.D. - 700 FPM
 2. REFER TO DETAIL FOR DUCT CONFIGURATION.
 3. PROVIDE 1" THICK ACOUSTICAL LINER.

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

- 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

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

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

TAG	SERVES	BASIS OF DESIGN MANUF. / MODEL #	PRIMARY AIR				HEATING COIL DATA						NC		ELECTRICAL VOLTS / PHASE	REMARKS		
			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.
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 BELOW
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 BELOW
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 BELOW
VAV-04	RESTROOMS	CARRIER / 35E	280	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 BELOW
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 BELOW
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 BELOW
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 BELOW
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 BELOW
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			

PLUMBING SPECIFICATION

GENERAL INFORMATION

A. GENERAL

- 1. CONFORM TO GENERAL AND SPECIAL CONDITIONS OF CONTRACT.
2. SPECIFICATIONS ARE APPLICABLE TO CONTRACTORS AND/OR SUBCONTRACTORS.
3. 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 DRAWINGS AND SPECIFICATIONS AND BECOME THOROUGHLY FAMILIAR WITH THE PROVISIONS CONTAINED THEREIN. THE SUBMISSION OF THE BID SHALL INDICATE SUCH KNOWLEDGE.
4. VISIT SITE, CHECK FACILITIES AND CONDITIONS.
5. SYSTEMS SHALL BE COMPLETE AND PLACED IN OPERATION.
6. EACH 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.
7. CONTRACTORS SHALL CONFIRM AND COMPLY WITH UTILITY COMPANY REQUIREMENTS, COORDINATE CONNECTION POINTS IN FIELD.
8. ARRANGE FOR AND OBTAIN OWNER'S AND INSURANCE REPRESENTATIVE'S PERMISSION FOR ANY SERVICE SHUTDOWNS.
9. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, SEQUENCES OF CONSTRUCTION AND THE SAFETY OF WORKMEN.
10. PIPING, CONTROLS, ETC., SHALL NOT BE INSTALLED, OR ROUTED ABOVE, ELECTRICAL PANELS AND EQUIPMENT OR THROUGH ELEVATOR MACHINE ROOMS.
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.
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 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 INTERRUPTION OF NORMAL BUILDING USE BY OWNER. REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR PHASING REQUIREMENTS.
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.

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 REQUIRED TESTS, INSPECTIONS AND APPROVALS. PROVIDE COPIES OF INSPECTIONS, AND APPROVALS TO THE ARCHITECT-ENGINEER.

C. RELATED WORK SPECIFIED ELSEWHERE

- 1. OPENINGS AND CHASES, WHEN SHOWN ON ARCHITECTURAL DRAWINGS.
2. TEMPORARY WATER SERVICE, SANITARY FACILITIES, FIRE PROTECTION AND HEATING DURING CONSTRUCTION.
3. POURED-IN-PLACE CONCRETE.
4. FINISH PAINTING.
5. ELECTRIC POWER WIRING.

D. DRAWINGS

- 1. THE SYSTEMS SHOWN ON 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.

E. DEMOLITION AND REMOVAL

- 1. DISCONNECT, DISASSEMBLE, CAP, PLUG AND REMOVE PIPING, DUCTS 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 OWNERS ON SITE.
3. DEMOLITION SHALL BE DONE IN A MANNER NOT TO DAMAGE ADJACENT WORK AND NOT AFFECT THE OPERATION OF SYSTEMS TO REMAIN. IF 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 AND DUCTS THAT REMAIN SHALL BE CAPPED AND PROPERLY SECURED.
5. ASBESTOS REMOVAL WILL BE HANDLED BY THE OWNER AND IS NOT A PART OF THIS WORK.
6. EXAMINE AREAS AND CONDITIONS UNDER WHICH DEMOLITION WORK SHALL BE PERFORMED. CONTRACTOR SHALL COORDINATE WORK WITH OTHER TRADES PERFORMING DEMOLITION WORK.
7. REMOVE SUPPORTS, HANGERS, AND ACCESSORIES FROM EQUIPMENT AND MATERIAL INDICATED TO BE REMOVED.

F. BASE EQUIPMENT, MATERIALS AND SUBSTITUTIONS

- 1. EQUIPMENT AND MATERIALS SHALL BE NEW, FREE OF DEFECTS AND U.L. LABELED.
2. BASE BID MANUFACTURERS ARE INCLUDED IN SPECIFICATIONS OR LISTED IN SCHEDULE ON DRAWINGS. OTHER MANUFACTURERS 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 "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 ALTERNATE.
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, AND PERFORM START UP 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 LEAK FREE SYSTEMS.
3. CONCEALED OR INSULATED WORK SHALL REMAIN UNCOVERED UNTIL REQUIRED INSPECTIONS, AND TESTS HAVE BEEN COMPLETED. IF CONSTRUCTION SCHEDULE REQUIRES IT, ARRANGE FOR PRIOR TESTS ON PARTS OF SYSTEM AS APPROVED BY THE TENANT.
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 OWNERS REPRESENTATIVES.

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 OPENINGS.
3. NEATLY SAW CUT FLOORS FOR SEWER INSTALLATION AND PATCH FLOOR TO MATCH EXISTING, INCLUDING FLOOR 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.
4. CORE DRILL AND SLEEVE ROUND OPENINGS.
5. DO NOT CUT ANY STRUCTURAL COMPONENTS WITHOUT ARCHITECT'S/ENGINEER'S APPROVAL.
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.

- 7. 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 PREMIUM TIME IN BID.
8. 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.

I. WARRANTY

- 1. FULLY WARRANT MATERIALS, EQUIPMENT AND WORKMANSHIP FOR ONE (1) YEAR FROM DATE OF ACCEPTANCE.
2. PROVIDE MANUFACTURER'S WARRANTIES TO OWNER, INCLUDING AVAILABLE 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 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. SUBMITTAL WITH MULTIPLE ITEMS MUST BE MARKED FOR PROPOSED ITEM OR SUBMITTAL WILL BE REJECTED.
2. PLUMBING DRAWINGS SHALL BE FULLY DIMENSIONED BASED ON FIELD VERIFIED BUILDING CLEARANCES AND ARCHITECTURAL CEILING LAYOUTS. INDICATE STRUCTURAL, LIGHTING, DUCTWORK AND PIPING AT CRITICAL LOCATIONS.
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 INSTALLATION.
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 LISTINGS OF SHOP DRAWINGS REQUIRED ON THIS PROJECT.
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.

K. RECORD DRAWINGS

- 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 DEVIATIONS OR CHANGES FROM SUCH CONTRACT DRAWINGS MADE DURING CONSTRUCTION.
2. THESE DRAWINGS SHALL RECORD THE LOCATION OF 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 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 CONDITION, AS A PERMANENT RECORD OF THE INSTALLATION.

PLUMBING SYSTEMS

A. SCOPE

- 1. PROVIDE PLUMBING FIXTURES, EQUIPMENT AND MATERIAL INDICATED AND SHOWN ON DRAWINGS AND PLACE IN PROPER OPERATION.
2. PLUMBING SYSTEMS TO ESSENTIALLY CONSIST OF BUT NOT LIMITED TO THE FOLLOWING:
a. ROOF DRAINS, RAIN CONDUCTORS, HUBS FOR DOWN SPOUTS, CATCH BASINS, CLEANOUTS, MANHOLES AND STORM SEWERS TO FIVE (5) FEET OUTSIDE BUILDING, OR AS DEFINED BY CONTRACT DOCUMENTS.
b. SANITARY WASTE AND VENT PIPING AND SANITARY SEWER EXTENDED TO FIVE (5) FEET OUTSIDE BUILDING, OR AS DEFINED BY CONTRACT DOCUMENTS.
c. SANITARY WASTE AND VENT PIPING AND SANITARY SEWER EXTENDED TO EXISTING BUILDING FACILITIES. CONTRACTOR SHALL MAKE THE CONNECTIONS TO THE EXISTING SERVICES AS INDICATED ON DRAWINGS. EXISTING LINE SIZES, CONDITIONS, AND CAPACITIES SHALL BE VERIFIED. CLEAN, TEST, AND VIDEO TAPE PIPING FOR PROPER OPERATION BEFORE FINAL CONNECTION FOR UTILITIES. IMMEDIATELY REPORT TO THE ARCHITECT OR ENGINEER ANY INSTANCES WHERE CONNECTIONS CANNOT BE MADE BETWEEN NEW AND EXISTING SYSTEMS AS INDICATED ON PLANS. ADDITIONAL COMPENSATION WILL NOT BE GRANTED FOR NEW WORK THAT MUST BE ABANDONED AND REPLACED BECAUSE LOCATION AND ELEVATION OF EXISTING WAS NOT DETERMINED BEFORE STARTING NEW WORK.
d. DOMESTIC WATER EXTENDED FROM CITY MAIN AND DISTRIBUTION SYSTEM, INCLUDING TAP TO MAIN, METER VAULT AND METER, BACKFLOW PREVENTION DEVICE AS REQUIRED.
e. PROVIDE DOMESTIC WATER FROM CITY MAIN INTO BUILDING AS INDICATED ON DRAWINGS. INSTALL WATER METER WITH REMOTE REGISTER AND REDUCED PRESSURE BACKFLOW PREVENTION DEVICE INSIDE BUILDING. PIPE BACKFLOW DEVICE DRAIN TO FLOOR DRAIN. INCLUDE FITTINGS, VALVES, HANGERS, AND OTHER ACCESSORIES REQUIRED FOR COMPLETE INSTALLATION. PROVIDE INSTALLATION AS REQUIRED BY AUTHORITY HAVING JURISDICTION.
f. EXTEND DOMESTIC WATER FROM FIVE (5) FEET OUTSIDE BUILDING INTO BUILDING AS INDICATED ON DRAWINGS AND INSTALL DOMESTIC WATER DISTRIBUTION PIPING TO FIXTURES AND EQUIPMENT REQUIRING SAME. INCLUDE FITTINGS, VALVES, HANGERS, AND OTHER ACCESSORIES REQUIRED FOR COMPLETE INSTALLATION. PROVIDE WATER METER AS REQUIRED. PROVIDE INSTALLATION AS REQUIRED BY AUTHORITY HAVING JURISDICTION.
g. EXTEND DOMESTIC WATER FROM EXISTING BUILDING FACILITIES AS INDICATED ON DRAWINGS. INSTALL WATER METER WITH REMOTE REGISTER AS INDICATED ON DRAWINGS AND INSTALL DOMESTIC WATER DISTRIBUTION PIPING TO FIXTURES AND EQUIPMENT REQUIRING SAME. INCLUDE FITTINGS, VALVES, HANGERS, AND OTHER ACCESSORIES REQUIRED FOR COMPLETE INSTALLATION. PROVIDE INSTALLATION AS REQUIRED BY AUTHORITY HAVING JURISDICTION.
h. DOMESTIC WATER EXTENDED FROM FIVE (5) FEET OUTSIDE BUILDING AND DISTRIBUTION SYSTEM, INCLUDING PRESSURE REDUCING VALVE AND BACKFLOW PREVENTION DEVICES AND UTILITY METER.
i. DOMESTIC WATER EXTENDED FROM EXISTING BUILDING FACILITIES AND DISTRIBUTION SYSTEM TO NEW FIXTURES.
j. GAS SERVICE EXTENDED FROM FIVE (5) FEET OUTSIDE THE BUILDING TO GAS USING EQUIPMENT, INCLUDING METER MANIFOLDS AND SETTING OF GAS METER.
k. GAS SERVICE EXTENDED FROM EXISTING BUILDING FACILITIES TO GAS USING EQUIPMENT, AND SUB METERS IF SO REQUIRED.
l. PLUMBING FIXTURES, DRAINS AND EQUIPMENT WITH REQUIRED TRIM, CONTROLS AND ACCESSORIES.
m. INSULATION OF PLUMBING PIPING.
n. NEW GREASE INTERCEPTOR TANK WITH REQUIRED ACCESSORIES, AND PIPING.
o. A COMPLETE SYSTEM OF COMPRESSED AIR DISTRIBUTION AS SHOWN ON DRAWINGS.
p. OTHER ITEMS INDICATED ON DRAWINGS OR REQUIRED FOR COMPLETE INSTALLATION.

B. EXCAVATION AND BACKFILL

- 1. PERFORM EXCAVATION AND BACKFILL REQUIRED FOR INSTALLATION OF PIPING.
2. EXCAVATE TO DEPTH REQUIRED TO INSTALL PIPING AT REQUIRED LEVEL AND PITCH. PIPE SHALL BE INSTALLED ON SAND BEDDING TO GIVE UNIFORM BEARING ALONG LENGTH OF PIPE (SAND INSIDE BUILDING AND INTERLOCKING AGGREGATE OUTSIDE BUILDING).
3. BACKFILL WITH BEDDING MATERIAL TO A MINIMUM OF TWELVE (12) INCHES ABOVE TOP OF PIPES AND COMPACT. BALANCE OF BACKFILL IN GRASS AREAS SHALL BE CLEAN EARTH UP TO SIX (6) INCHES ABOVE SURROUNDING GRADES, UNDER FLOORS SAND, AND UNDER PAVING INTERLOCKING AGGREGATE. BACKFILL SHALL BE COMPACTED IN MAXIMUM SIX (6) INCH LAYERS.
4. OTHER EXCAVATIONS SHALL BE BACKFILLED WITH CLEAN EARTH, EXCLUDING RUBBISH AND BOULDERS AND THE DIRT SHALL BE PROPERLY COMPACTED.
5. PATCH FLOOR TO MATCH EXISTING.

C. CONNECTIONS TO EQUIPMENT FURNISHED BY OTHERS

- 1. PROVIDE VALVED WATER AND/OR GAS CONNECTION FOR EQUIPMENT FURNISHED BY OTHER CONTRACTORS OR OWNER. PROVIDE SANITARY DRAINAGE AND VENT CONNECTIONS FOR EQUIPMENT FURNISHED BY OTHERS.
2. INCLUDE ACCESSORIES REQUIRED BY CODE, DRAWINGS, OR MANUFACTURER'S INSTRUCTIONS.
3. FULLY COORDINATE WITH KITCHEN EQUIPMENT SUPPLIER AND CONFIRM ROUGH-IN REQUIREMENTS PRIOR TO STARTING WORK. PROVIDE FINAL CONNECTIONS TO EQUIPMENT.

D. SANITARY AND STORM SEWERS

- 1. PROVIDE SANITARY AND STORM SEWERS, RAIN CONDUCTORS, STACKS, VENTS, FLOOR DRAINS, HUBS FOR DOWN SPOUTS AND CLEANOUTS FOR PROJECT AND EXTEND TO EXISTING BUILDING FACILITIES AS INDICATED ON THE DRAWINGS.
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 VENT 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-742-W/ WITH ASTM C-664-70 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) 1-30/178. 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 ISOLATION 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 "H" 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 B876 AND USING "PROPEX" FITTINGS MEETING ASTM F1980, CSA B137.5, NSF/ANSI 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 D2946, ASTM F437, ASTM 438, ASTM F439, CSA B137.6, ASSE 1061.
5. WATER PIPING BELOW GRADE SHALL BE TYPE "K" SOFT COPPER WITHOUT JOINTS.
6. VENT AND SANITIZE WATER PIPING WITH EQUIVALENT SOLUTION OF 60 PPM OF AVAILABLE CHLORINE UPON COMPLETION. COMPLY WITH PLUMBING CODE REQUIREMENTS FOR SANITIZATION. SUBMIT WRITTEN VERIFICATION OF PIPING SANITIZATION.
7. DOMESTIC HOT AND COLD WATER PIPING UNDER CONCRETE FLOOR TO BE COVERED WITH SAND SO THAT PIPING 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.
2. 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.
3. 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.
4. EQUIPMENT CONNECTIONS AT EACH UNIT SHALL INCLUDE GAS COCK, PRESSURE REGULATOR, UNION AND DIRT LEG.
5. CONSTRUCT CONCRETE BASE TO BELOW FROST LINE FOR METER INSTALLATION.
6. GAS PIPING SHALL CONFORM TO RECOMMENDED PRACTICE AND REGULATIONS OF THE LOCAL GAS CO. AND STATE OF ____ CODE.
7. 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-TAS 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.
2. EXTEND COMPRESSED AIR PIPING FROM EXISTING AIR COMPRESSOR, AND CONNECT TO COMPRESSED AIR USING EQUIPMENT.
3. PROVIDE COMPRESSED AIR SYSTEM INCLUDING COMPRESSOR, REGULATORS, PIPING, HANGERS, TERMINATIONS AND CONNECTIONS TO EQUIPMENT USING COMPRESSED AIR.
4. COMPRESSED AIR CONNECTIONS AT EQUIPMENT SHALL INCLUDE PRESSURE REGULATOR AND FLEXIBLE PIPE CONNECTIONS.
5. COMPRESSED AIR PIPING SHALL BE AS FOLLOWS:
a. ABOVE-GRADE INSIDE OR OUTSIDE BUILDING, LOW PRESSURE - SCHEDULE 40 SEAMLESS BLACK STEEL PIPE, THREADED ENDS.
b. ABOVE-GRADE INSIDE OR OUTSIDE BUILDING, LOW PRESSURE - SCHEDULE 5 STEEL PIPE WITH PRESSURE SEAL FITTINGS.
c. ABOVE-GRADE INSIDE OR OUTSIDE BUILDING, LOW PRESSURE - COPPER TUBE TYPE K, TYPE L, TYPE M WITH WROUGHT COPPER FITTINGS.
d. ABOVE-GRADE INSIDE OR OUTSIDE BUILDING, LOW PRESSURE - BLUE ABS PIPE, WITH ABS MODIFIED RESIN, WITH SOCKET TYPE FITTINGS.
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.

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.
3. FIXTURES AND EQUIPMENT SHALL BE AS INDICATED ON THE PLUMBING FIXTURE SCHEDULE.
4. CLEANOUTS SHALL BE INSTALLED FLUSH WITH FINISHED FLOOR OR WALLS WITH PLATED COVERS.
5. 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

- 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 SCUMPS 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 INSULATED 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 AND SEALED OVER EXISTING.
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

- 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 1/2" THRU 1 1/2" 6 FT 3/8"
2" THRU 3" 10 FT 1/2"
4" THRU 5" 12 FT 5/8"
6" AND LARGER 16 FT 3/4"

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

- 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 LINGS 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 FIT 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 SLEEVE.
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 730LF-1170LF-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 WAFFER 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 GLOBE 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 150R, TEFLON DISC, UNION BONNET TYPE VALVES WITH THREADED OR SOLDER JOINT ENDS. GLOBE VALVES OVER 3 INCHES IN SIZE, SHALL BE HAMMOND, MODEL 18413T, OR APPROVED EQUAL. GLOBE VALVES FOR INSTALLATION IN COPPER TUBING SHALL BE HAMMOND, MODEL 18423, 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 SHALL BE INSTALLED IN HORIZONTAL LINES SHALL BE HAMMOND, MODEL 18940, OR APPROVED EQUAL (SCREWED JOINTS) OR HAMMOND, MODEL 18941, OR APPROVED EQUAL (SOLDER JOINTS). CHECK VALVES TO BE INSTALLED IN VERTICAL PIPING SHALL BE HAMMOND, MODEL 18939, 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 3

