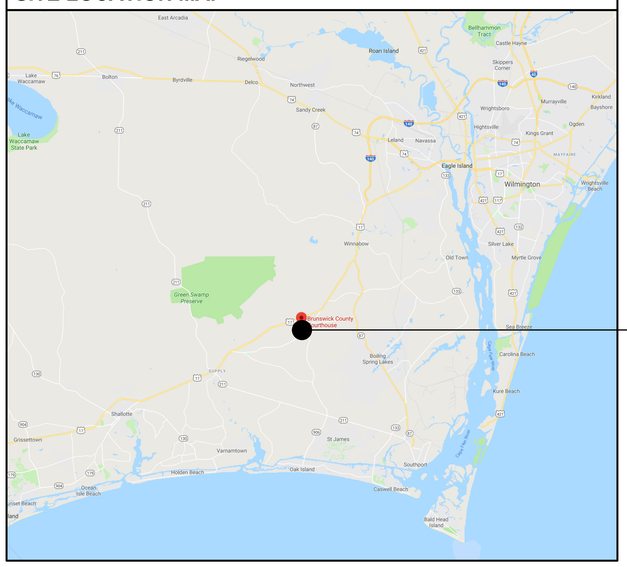
Brunswick County Courthouse Addition & Renovations

Bolivia, NC

Construction Drawings
September 23, 2019

SITE LOCATION MAP



Abbreviations

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

Symbols Legend

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

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

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

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

PLAN DETAIL REFERENCE
3-A4.0
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100 DOOR #
100 ROOM #
A WINDOW TYPE
VERTICAL ELEVATION ABOVE REFERENCE POINT

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Brunswick County Courthouse Addition & Renovations

Bolivia, NC

Construction Drawings
September 23, 2019

Revisions:

Cover, Index, Legend, Abbreviations

G1.0

01 of 07

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

Name of Project: Brunswick County Courthouse - Addition and Renovations
Address: 310 Government Center Dr. NE, Bolivia, NC Zip Code 28422
Owner/Authorized Agent: Sawyer Sherwood & Associate, P.C. Phone # (910) 762 0892
E-Mail john@s2a3.com
Owned By: County
Code Enforcement Jurisdiction: County

CONTACT: _____

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #	E-MAIL
Architectural	Sawyer Sherwood & Associate, P.C.	John R. Sawyer	3428	(910) 762 0892	john@s2a3.com
Civil	Criser Troutman Tanner Consulting	David Criser	011270	(910) 397 2929	dcriser@ardurra.com
Electrical	Cheatham and Associates, P.A.	Mark A. Ciarrocca	17593	(910) 452 4210	mciarrocca@cheathampa.com
Fire Alarm	Cheatham and Associates, P.A.	Mark A. Ciarrocca	17593	(910) 452 4210	mciarrocca@cheathampa.com
Plumbing	Cheatham and Associates, P.A.	Casey D. Gilman	043164	(910) 452 4210	cgilman@cheathampa.com
Mechanical	Cheatham and Associates, P.A.	Kenneth Lynch	17655	(910) 452 4210	klynch@cheathampa.com
Sprinkler-Standpipe	Cheatham and Associates, P.A	Casey D. Gilman	043164	(910) 452 4210	cgilman@cheathampa.com
Structural	Criser Troutman Tanner Consulting	Jeffery R. Troutman	22567	(910) 397 2929	jtroutman@ardurra.com
Retaining Walls >5' High				(___)	
Other				(___)	

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

2018 NC BUILDING CODE: Addition

2018 NC EXISTING BUILDING CODE: Chapter 14 N/A N/A

CONSTRUCTED: 2000 **CURRENT OCCUPANCY(S)** (Ch. 3)**:** Business & Assembly

RENOVATED: NA **PROPOSED OCCUPANCY(S)** (Ch. 3)**:** Business & Assembly

OCCUPANCY CATEGORY (Table 1604.5)**: EXISTING :** II **ADDITION:** III

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

Gross Building Area Table

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL
3rd Floor	30,280	5,021	35,301
2nd Floor	36,085	5,021	41,106
Mezzanine			
1st Floor	36,085	5,021	41,106
Basement			
TOTAL	102,450	15,063	117,513

ALLOWABLE AREA

Primary Occupancy Classification(s) ADDITION : Assembly - A-3
Accessory Occupancy Classification(s) ADDITION : Storage - S-1 ; Business -B

Primary Occupancy Classification(s) EXISTING : Business B
Accessory Occupancy Classification(s) EXISTING : Storage - S-1 ; Assembly A-3

Incidental Uses (Table 509): _____
Special Uses (Chapter 4 – List Code Sections): _____
Special Provisions: (Chapter 5 – List Code Sections): _____
Mixed Occupancy: Yes Separation: 1 Hr.

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

FIRST FLOOR

A-3		S-1		B		
2,841	+	4,324	+	33,941		
28,500		52,500		69,000		
.099		.08		.49	= .67	≤ 1

SECOND FLOOR

A-3		S-1		B		
5,432	+	1,360	+	34,314		
28,500		52,500		69,000		
.19		.02		.49	= .70	≤ 1

THIRD FLOOR

S-1		B		
3,253	+	32,048		
52,500		69,000		
.06		.46	= .52	≤ 1

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

[1] Frontage area increases from Section 506.2 are computed thus:
a. Perimeter which fronts a public way or open space having 20 feet minimum width = _____ (F)
b. Total Building Perimeter = _____ (P)
c. Ratio (F/P) = _____ (F/P)
d. W = Minimum width of public way = _____ (W)
[2] Unlimited area applicable under conditions of Section 507.
[3] Maximum Building Area = total number of stories in the building x D (maximum3 stories) (506.2).
[4] The maximum area of open parking garages must comply with Table 406.5.4. The maximum area of air traffic control towers must comply with Table 412.3.1.
[5] Frontage increase is based on the unsprinklered area value in Table 506.2.

ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE
Building Height in Feet (Table 504.3)	55	42	
Building Height in Stories (Table 504.4)	4	3	

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

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D	RATING PROVIDED (W/_____ * REDUCTION)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	SHEET # FOR RATED PENETRATION	SHEET # FOR RATED JOINTS
Structural Frame, including columns, girders, trusses		0	0				
Bearing Walls		0	0				
Exterior		0	0				
North		0	0				
East		0	0				
West		0	0				
South		0	0				
Interior		0	0				
Nonbearing Walls and Partitions							
Exterior walls							
North		0	0				
East		0	0				
West		0	0				
South		0	0				
Interior walls and partitions		0	0				
Floor Construction Including supporting beams and joists		0	0				
Floor Ceiling Assembly		0	0				
Columns Supporting Floors		0	0				
Roof Construction, including supporting beams and joists		0	0				
Roof Ceiling Assembly		0	0				
Columns Supporting Roof		0	0				
Shaft Enclosures - Exit		1	1	G 3.0	U465	M0.1, P0.2	
Shaft Enclosures - Other		1	1	G 3.0	U415	M0.1, P0.2	
Corridor Separation		0					
Occupancy/Fire Barrier Separation		1	1	G 3.0 G 3.0	U 465 Walls D 957 Floor above assembly uses.	M0.1, P0.2	
Party/Fire Wall Separation		NA					
Smoke Barrier Separation		NA					
Smoke Partition		NA					
Tenant/Dwelling Unit/ Sleeping Unit Separation		NA					
Incidental Use Separation		NA					

* Indicate section number permitting reduction

PERCENTAGE OF WALL OPENING CALCULATIONS

FIRE SEPARATION DISTANCE (FEET) FROM PROPERTY LINES	DEGREE OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)
14'-5"	No protection	45%	5.1%

LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting: Yes
Exit Signs: Yes
Fire Alarm: Yes
Smoke Detection Systems: Yes
Carbon Monoxide Detection: No

LIFE SAFETY PLAN REQUIREMENTS

Life Safety Plan Sheet #: G2.0, G2.1, G2.2

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

ACCESSIBLE DWELLING UNITS
(SECTION 1107) NOT APPLICABLE TO THIS PROJECT

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

ACCESSIBLE PARKING
(SECTION 1106)

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES REQUIRED	TOTAL # OF PARKING SPACES PROVIDED	# OF ACCESSIBLE SPACES PROVIDED: REGULAR WITH 5' ACCESS AISLE	VAN SPACES WITH 132" ACCESS AISLE	VAN SPACES WITH 8' ACCESS AISLE	TOTAL # ACCESSIBLE PROVIDED
Zoning Req.	293					
Northeast Lot		206			7	7
West Lot		40			2	2
East Lot	Within 500' rad	82			4	4
TOTAL		328			13	13

PLUMBING FIXTURE REQUIREMENTS
(TABLE 2902.1) OCCUPANCY & FIXTURE CALCULATION

Brunswick County Courthouse Additon & Renovations 12/9/2018

FIRST FLOOR	Occupancy as per 2018 NC Code section 1004				
Occupancy Type	Area Description	Area (sf)	Gross SF/Person	People	
Business	Office Areas	13,922	100	140	staff
Storage or Mechanical	Accessory to Business	4,324	300	15	staff
Assembly A-3	Courtrooms				
	inside bar			66	
	outside bar			516	
Accused in Custody	Security personell in holding area			10	staff

Total Occupancy **Business Use Areas**				231	
Plumbing facilities per 2018 NC Plumbing Code					
Occupancy (50% Men 50% Women)		Male 116		Female 116	
		Req'd Fixtures	Provided Fixtures	Req'd Fixtures	Provided Fixtures
Water Closets	1 per 25 for first 50	2.00	5	2.00	4
	1 per 50 for remaining	1.31		1.31	
Urinals (<50% of WC)			0		
Lavatories	1 per 40 for first 80	2.00	5	2.00	4
	1 per 80 for remaining	0.44		0.44	
Drinking fountains	25-100=1	2	1 ewc 2 sinks		breakroom exception
	101-250=2				
	251-500=3				
	>500, then add 1 per 500				

Total Occupancy **Assembly Use Areas**				516	
Plumbing facilities per 2012 NC Plumbing Code					
Occupancy (50% Men 50% Women)		Male 258		Female 258	
		Req'd Fixtures	Provided Fixtures	Req'd Fixtures	Provided Fixtures
Water Closets	Men 1 per 125	2.06	2		
	Women 1 per 65			3.97	4
Urinals (<50% of WC)			2.00		
Lavatories	1 per 200	1.29	2.00	1.29	2
Drinking fountains	1 per 500	1.032	2		

SECOND FLOOR	Occupancy as per 2018 NC Code section 1004				
Occupancy Type	Area Description	Area (sf)	Gross SF/Person	People	
Business	Office Areas	14,800	100	148	staff
Storage or Mechanical	Accessory to Business	1,360	300	5	staff
Assembly A-3	Courtrooms				
	inside bar			86	
	outside bar			360	
Accused in Custody	Holding cells			2	staff
Jury Assembly & Lounge	Jury Duty Participants			200	jury

Total Occupancy **Business Use**				241	
Plumbing facilities per 2018 NC Plumbing Code					
Occupancy (50% Men 50% Women)		Male 121		Female 121	
		Req'd Fixtures	Provided Fixtures	Req'd Fixtures	Provided Fixtures
Water Closets	1 per 25 for first 50	2.00	5.00	2.00	7
	1 per 50 for remaining	1.41		1.41	
Urinals (<50% of WC)			3.00		
Lavatories	1 per 40 for first 80	2.00	5.00	2.00	4
	1 per 80 for remaining	0.51		0.51	
Drinking fountains	25-100=1	2	2 ewcs, 2 sinks		breakroom exception
	101-250=2				
	251-500=3				
	>500, then add 1 per 500				

Total Occupancy **Assembly Use**				560	
Plumbing facilities per 2012 NC Plumbing Code					
Occupancy (50% Men 50% Women)		Male 280		Female 280	
		Req'd Fixtures	Provided Fixtures	Req'd Fixtures	Provided Fixtures
Water Closets	Men 1 per 125	2.24	4		
	Women 1 per 65			4.31	7
Urinals (<50% of WC)			3.00		
Lavatories	1 per 200	1.40	4.00	1.40	4
Drinking fountains	1 per 500	1.12	4		

THIRD FLOOR	Occupancy as per 2018 NC Code section 1004				
Occupancy Type	Area Description	Area (sf)	Gross SF/Person	People	
Business	Office Areas	22,330	100	224	staff
Storage or Mechanical	Accessory to Business	3,253	300	11	staff
Business	Estates & Grand Jury Hearings				
	visitors			36	
	staff & jury			25	

Total Occupancy **Business Use**				296	
Plumbing facilities per 2018 NC Plumbing Code					
Occupancy (50% Men 50% Women)		Male 148		Female 148	
		Req'd Fixtures	Provided Fixtures	Req'd Fixtures	Provided Fixtures
Water Closets	1 per 25 for first 50	2.00	9.00	2.00	11
	1 per 50 for remaining	1.96		1.96	
Urinals (<50% of WC)			3.00		
Lavatories	1 per 40 for first 80	2.00	7.00	2.00	8
	1 per 80 for remaining	0.85		0.85	
Drinking fountains	25-100=1	3	2 ewc, 5 sinks		breakroom exception
	101-250=2				
	251-500=3				
	>500, then add 1 per 500				

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JOHN R. SAWYER REGISTERED ARCHITECT 3428 NORTH CAROLINA WILMINGTON, N.C.

Brunswick County Courthouse Addition & Renovations

Bolivia, NC

Construction Drawings
September 23, 2019

Revisions:

Appendix B

G1.1

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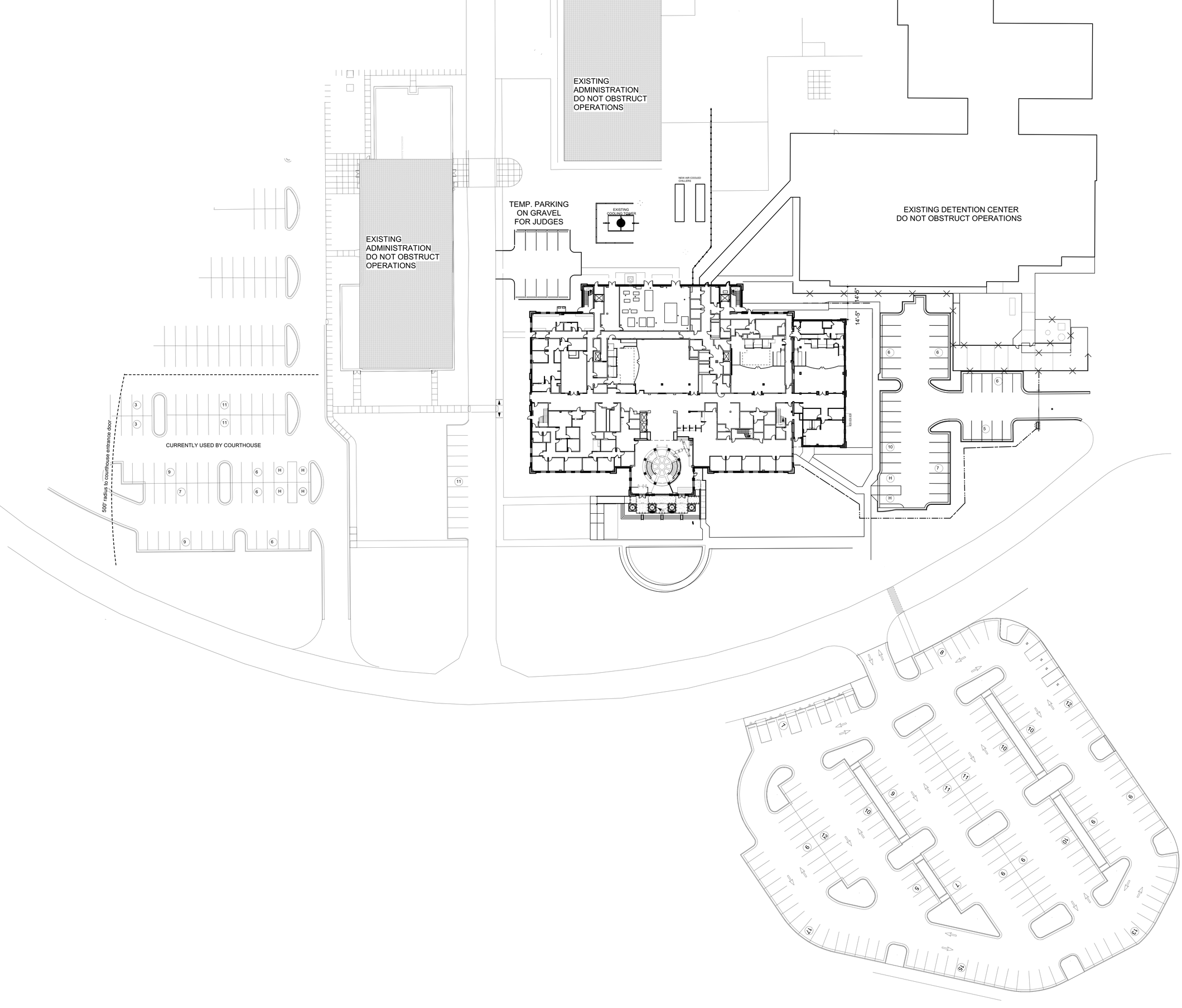

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Brunswick County Courthouse Addition & Renovations

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Construction Drawings
September 23, 2019

Revisions:

Site Plan

G1.2

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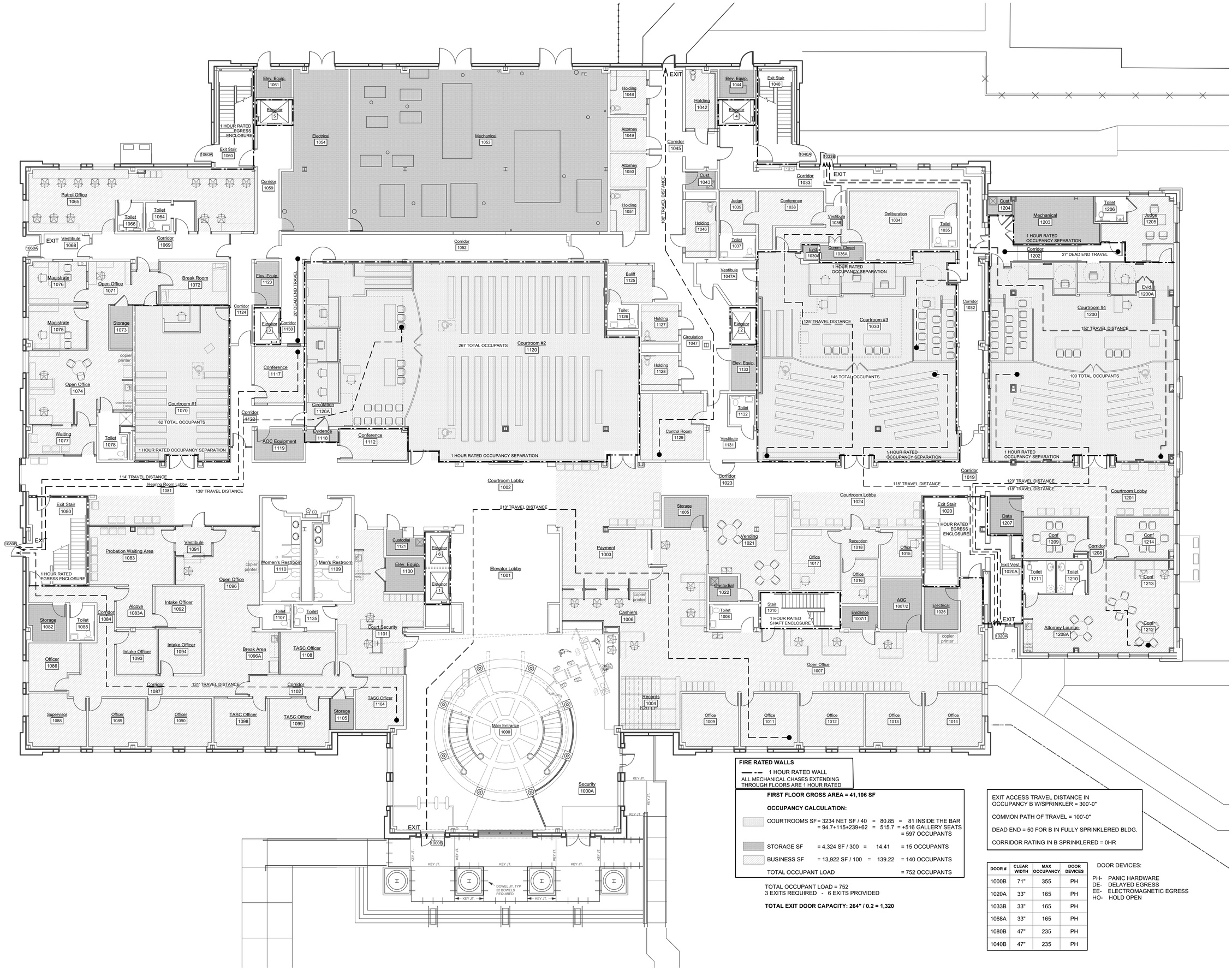

FIRE RATED WALLS

1 HOUR RATED WALL

ALL MECHANICAL CHASES EXTENDING THROUGH FLOORS ARE 1 HOUR RATED

FIRST FLOOR GROSS AREA = 41,106 SF

OCCUPANCY CALCULATION:

COURTROOMS SF	= 3234 NET SF / 40	=	80.85	=	81 INSIDE THE BAR
	= 94.7+115+239+62	=	515.7	=	+516 GALLERY SEATS
					= 597 OCCUPANTS
STORAGE SF	= 4,324 SF / 300	=	14.41	=	15 OCCUPANTS
BUSINESS SF	= 13,922 SF / 100	=	139.22	=	140 OCCUPANTS
TOTAL OCCUPANT LOAD				=	752 OCCUPANTS

TOTAL OCCUPANT LOAD = 752
3 EXITS REQUIRED - 6 EXITS PROVIDED

TOTAL EXIT DOOR CAPACITY: 264" / 0.2 = 1,320

EXIT ACCESS TRAVEL DISTANCE IN OCCUPANCY B W/SPRINKLER = 300'-0"

COMMON PATH OF TRAVEL = 100'-0"

DEAD END = 50 FOR B IN FULLY SPRINKLERED BLDG.

CORRIDOR RATING IN B SPRINKLERED = 0HR

DOOR #	CLEAR WIDTH	MAX OCCUPANCY	DOOR DEVICES
1000B	71"	355	PH
1020A	33"	165	PH
1033B	33"	165	PH
1068A	33"	165	PH
1080B	47"	235	PH
1040B	47"	235	PH

DOOR DEVICES:

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

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Brunswick County Courthouse Addition & Renovations

Bolivia, NC

Construction Drawings
September 23, 2019

Revisions:

First Floor Life Safety Plan

G2.0

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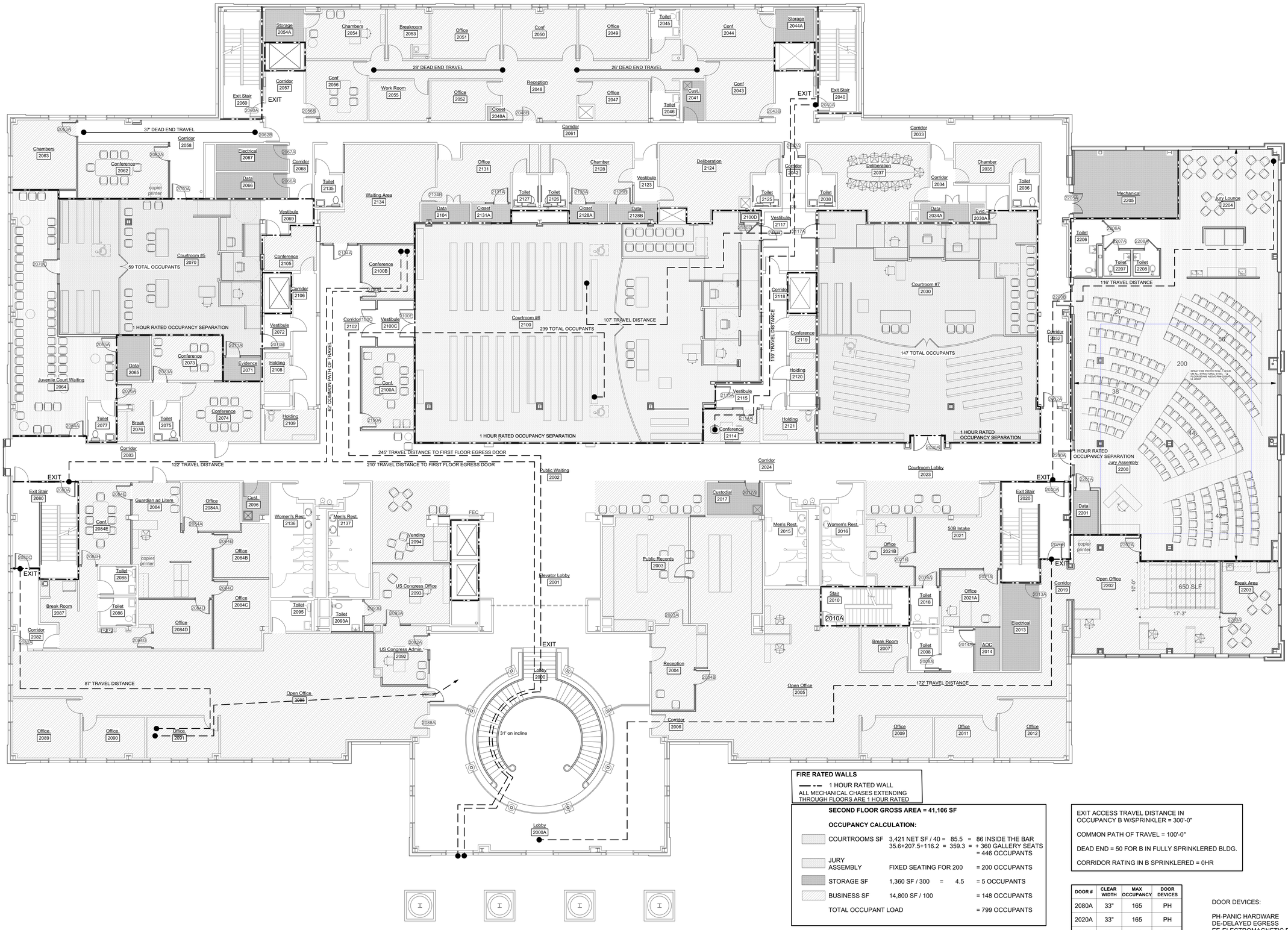

FIRE RATED WALLS

1 HOUR RATED WALL

ALL MECHANICAL CHASES EXTENDING THROUGH FLOORS ARE 1 HOUR RATED

SECOND FLOOR GROSS AREA = 41,106 SF

OCCUPANCY CALCULATION:

COURTROOMS SF	3,421 NET SF / 40 =	85.5	=	86 INSIDE THE BAR
	35.6+207.5+116.2 =	359.3	=	+ 360 GALLERY SEATS
				= 446 OCCUPANTS
JURY ASSEMBLY	FIXED SEATING FOR 200			= 200 OCCUPANTS
STORAGE SF	1,360 SF / 300 =	4.5		= 5 OCCUPANTS
BUSINESS SF	14,800 SF / 100			= 148 OCCUPANTS
TOTAL OCCUPANT LOAD				= 799 OCCUPANTS

TOTAL OCCUPANT LOAD = 799
3 EXITS REQUIRED - 6 EXITS PROVIDED

TOTAL EXIT DOOR OCCUPANCY: 165" / 0.2 = 825
TOTAL STAIR CAPACITY: 247" / 0.3 = 823

EXIT ACCESS TRAVEL DISTANCE IN OCCUPANCY B W/SPRINKLER = 300'-0"

COMMON PATH OF TRAVEL = 100'-0"

DEAD END = 50 FOR B IN FULLY SPRINKLERED BLDG.

CORRIDOR RATING IN B SPRINKLERED = 0HR

DOOR #	CLEAR WIDTH	MAX OCCUPANCY	DOOR DEVICES
2080A	33"	165	PH
2020A	33"	165	PH
2060A	33"	165	PH
2040A	33"	165	PH
2010A	33"	165	

DOOR DEVICES:

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

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Brunswick County Courthouse Addition & Renovations

Bolivia, NC

Construction Drawings
September 23, 2019

Revisions:

Second Floor Life Safety Plan

G2.1

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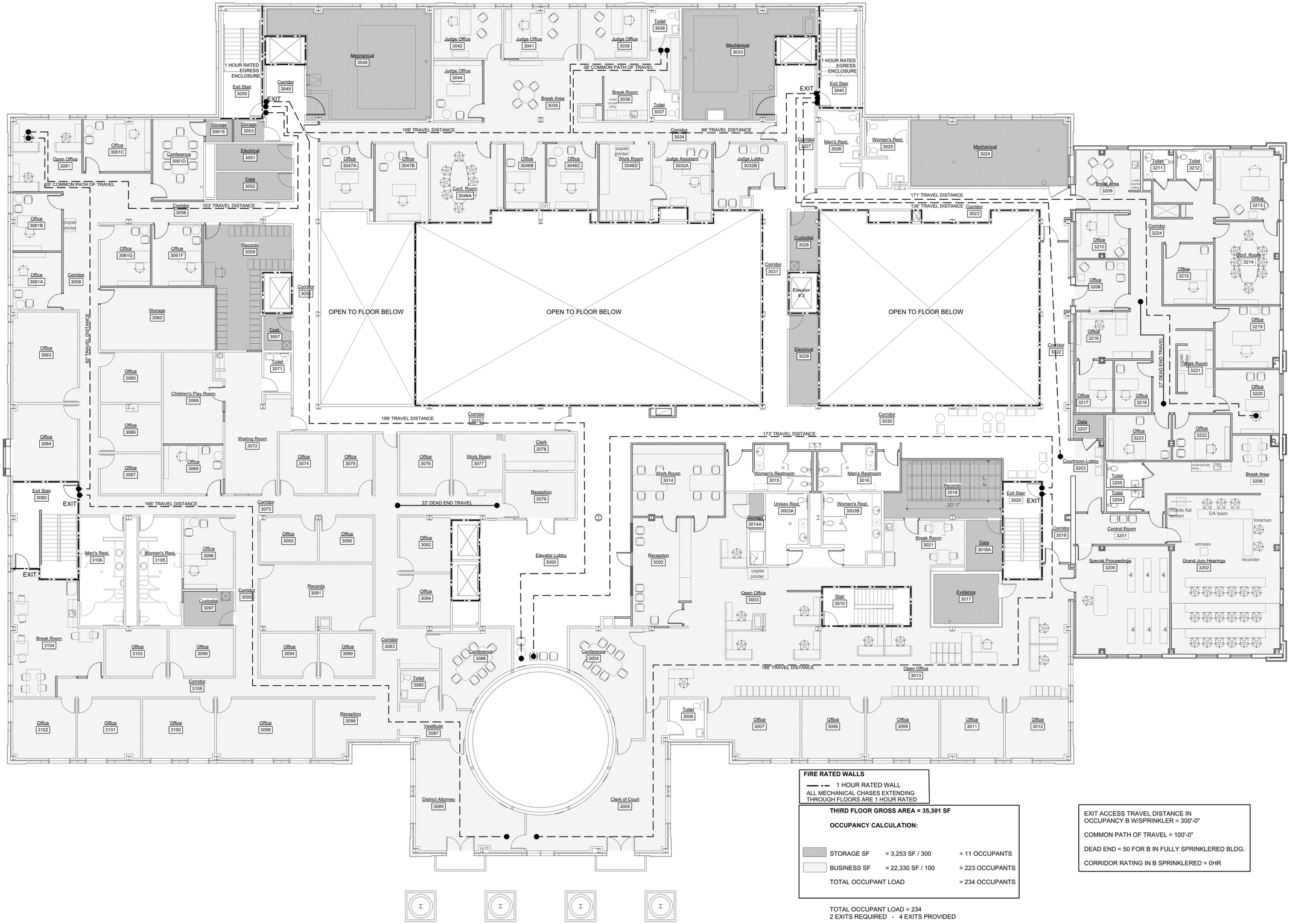

FIRE RATED WALLS

1 HOUR RATED WALL

ALL MECHANICAL CHASES EXTENDING THROUGH FLOORS ARE 1 HOUR RATED

THIRD FLOOR GROSS AREA = 35,301 SF

OCCUPANCY CALCULATION:

STORAGE SF	= 3,253 SF / 300	= 11 OCCUPANTS
BUSINESS SF	= 22,330 SF / 100	= 223 OCCUPANTS
TOTAL OCCUPANT LOAD		= 234 OCCUPANTS

TOTAL OCCUPANT LOAD = 234
2 EXITS REQUIRED - 4 EXITS PROVIDED

TOTAL EXIT DOOR OCCUPANCY: 165" / 0.2 = 825
TOTAL STAIR CAPACITY: 164" / 0.3 = 546

EXIT ACCESS TRAVEL DISTANCE IN OCCUPANCY B W/SPRINKLER = 300'-0"

COMMON PATH OF TRAVEL = 100'-0"

DEAD END = 50 FOR B IN FULLY SPRINKLERED BLDG.

CORRIDOR RATING IN B SPRINKLERED = 0HR

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Brunswick County Courthouse Addition & Renovations

Bolivia, NC

Construction Drawings
September 23, 2019

Revisions:

Third Floor Life Safety Plan

G2.2

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FIRE-RESISTANCE DESIGN

Assembly Usage Disclaimer

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

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

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

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

Design No. U415

April 24, 2019

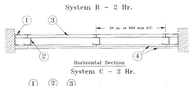
Nonbearing Wall Ratings — 1, 2, 3 or 4 Hr

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

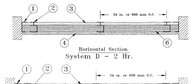
System A – 1 Hr.



System B – 2 Hr.



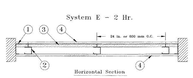
System C – 2 Hr.



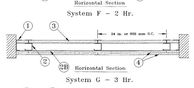
System D – 2 Hr.



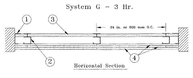
System E – 2 Hr.



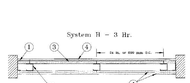
System F – 2 Hr.



System G – 3 Hr.



System H – 3 Hr.



System I – 4 Hr.



1. **Floor Side and Ceiling Runners** — Formed of No. 25 MSG galv. steel, 2-1/2 in. deep (mm) 4 in. deep when System C is used), with nominal legs of 1 in. and 2 in. (mm) 25 and 51 mm) long, fastened to floor and ceiling at 24 in. (600 mm) OC with fasteners. Runners positioned with short leg toward finished side of wall. Runners attached to structural supports with steel fasteners located not greater than 2 in. from ends and not greater than 24 in. OC. "E" - shaped studs (item 2A) may be used as side runners in place of 3" - shaped runners.

2. **Steel Studs** — "C-H" - shaped studs, min 2-1/2 in. deep (mm 4 in. deep when System C is used), fabricated from min 25 MSG (min 20 MSG when items 2D, 4A, 4B, 4C, 4D or 7 is used) galv steel. Cut to lengths 3/8 to 1/2 in. less than floor-to-ceiling height and spaced 24 in. or 600 mm OC (max 16 in. OC when items 4A, 4B, 4C, or 4D are used).

2A. **Steel Studs** — (Not Shown) — "E" - shaped studs installed back to back in place of "C-H" - shaped studs (item 2) "E" - shaped studs secured together with steel screws spaced a maximum 12 in. OC. Fabricated from min 25 MSG (min 20 MSG when item 2D, 4A, 4B or 7 is used) galv steel, min 2-1/2 in. deep (min 4 in. deep when System C is used), with one leg 1 in. long and two legs 3/4 in. long. Shorter legs 1 in. apart to engage gypsum liner panels. Cut to lengths 3/8 to 1/2 in. less than floor to ceiling heights.

2B. **Furring Channels** — (Optional, Not Shown) — For use with single or double layer systems. Resilient furring channels fabricated from min 25MSG corrosion protected steel, installed horizontally, and spaced vertically a max 24 in. OC. Flange portion of channel attached to each intersecting "C-H" or "E" stud on side of stud opposite the 1 in. liner panels with 1/2 in. long Type S or S-12 pan-head steel screws. When furring channels are used, wallboard to be installed vertically only. Not to be used with Type FRX-G gypsum wallboard, Type RBI-BG (Item 4A), Type Nelco (Item 4B) or cementitious backer units (Item 7).

2C. **Furring Channels** — For use with System I - "Hat" - shaped, 25 MSG galv steel furring channels attached directly over the inner layers of wallboard to each stud with 2 in. long Type S pan head steel screws. Screws alternate from top flange to bottom flange at each stud intersection. Furring channels spaced vertically max 24 in. OC.

2D. **Steel Framing Members"** — (Optional, Not Shown) — For use with single or double layer systems. Furring channels and Steel Framing Members as described below. Not to be used with Type FRX-G gypsum wallboard, Type RBI-BG (Item 4A), Type Nelco (Item 4B) or cementitious backer units (Item 7).

a. **Furring Channels** — Formed of No. 25 MSG galv steel, 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item 5. Gypsum board installed vertically only and attached to furring channels as described in Item 4.

b. **Steel Framing Members"** — Used to attach furring channels (Item 2Da) to studs (Item 2 or 2A). Clips spaced max. 24 in. OC, and secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. Furring channels are friction fitted into clips. RSIC-1 clip for use with 2-9/16 in. wide furring channels, CHANNELLOCK 25 for use with 2-23/32 in. furring channels. **PAC INTERNATIONAL L L C** — Types RSIC-1, RSIC-1 (Z.75)

2E. **Steel Framing Members"** — (Optional, Not Shown) — Furring channels and Steel Framing Members as described below. Not to be used with Type FRX-G gypsum wallboard, Type RBI-BG (Item 4A), Type Nelco (Item 4B), Type X-Ray Shielded Gypsum (Item 4C), Type RPP-Lead Lined Drywall (Item 4F) or cementitious backer units (Item 7).

a. **Furring Channels** — Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item 2Gb. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Gypsum board attached to furring channels as described in Item 4.

b. **Steel Framing Members"** — Used to attach furring channels (Item 2Da) to studs. Clips spaced 24 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips. **KEQUPOL AMERICA** — Type SonusClip

2H. **Steel Framing Members"** — (Optional, Not Shown) — Resilient channels and Steel Framing Members as described below. Not to be used with Type FRX-G gypsum wallboard, Type RBI-BG (Item 4A), Type Nelco (Item 4B), Type X-Ray Shielded Gypsum (Item 4C), Type RPP-Lead Lined Drywall (Item 4F) or cementitious backer units (Item 7).

a. **Resilient Channels** — Formed of No. 25 MSG galv steel, spaced 24 in. OC, and perpendicular to studs. Channels secured to studs as described in Item 5. Ends of adjoining channels overlapped 6 in. and secured in place with two No. 8 15 x 12 in. Phillips Modified Truss screws spaced 2-1/2 in. from the center of the overlap. Gypsum board attached to resilient channels as described in Item 4.

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

2I. **Steel Framing Members"** — (Optional, Not Shown) — For use with single or double layer systems. Furring channels and Steel Framing Members as described below. Not to be used with Type FRX-G gypsum board, lead backed gypsum boards (Items 4A-4D), or cementitious backer units (Item 7).

a. **Furring Channels** — Formed of No. 25 MSG galv steel, 2-23/32 in. wide by 7/8 in. or 1-1/2 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item 5. Gypsum board installed vertically only and attached to furring channels as described in Item 4.

b. **Steel Framing Members"** — Used to attach furring channels (Item 2Ia) to studs (Item 2 or 2A). Clips spaced max. 24 in. OC, and secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. Furring channels are friction fitted into clips. **CLARKDIETRICH BUILDING SYSTEMS** — Type ClarkDesign Sound Clip

3. **Gypsum Board** — Gypsum liner panels, nom 12 in. wide, 24 in. or 600 mm OC metal studs spacing wide. Panels cut 1 in. less in length than floor-to-ceiling height. Liner panels applied vertically (parallel to studs) with tight joints over the 3rd in. legs of the "E" studs, three edges of end panels attached to long leg of vertical "J" - runners with 1-5/8 in. long Type S steel screws spaced not greater than 12 in. OC. When wall height exceeds liner panel length, liner panel may be butted to extend to the full height of the wall. Horizontal joints need not be backed by steel framing. In System I, butt joints in liner panels are staggered min 36 in. Butt joints backed with 6 in. by 22 in. strips of 3/4 in. thick gypsum wallboard (Item 4). Wallboard strips centered over butt joints and attached to liner panels with no 1-1/2 in. long Type S steel screws, three screws along the 22 in. dimension at the top and bottom of the strips.
CGC INC — Type SLX

UNITED STATES GYPSUM CO — Type SLX

USG BORAL DRYWALL SFZ LLC — Type SLX

USG MEXICO S A DE C V — Type SLX

4. **Gypsum Board"** —

System A — 1 Hr

Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, attached to studs with 1 in. long Type S steel screws spaced 12 in. when installed vertically or 8 in. OC when installed horizontally. Horizontal joints need not be backed by steel framing.

CGC INC — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

UNITED STATES GYPSUM CO — Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULIX, ULX, USGX, WRC, WRX. When ULIX is used insulation, item 5, **Batts and Blankets"** is required and minimum stud depth is 4 in.

USG BORAL DRYWALL SFZ LLC — Types C, SCX, SGX, USGX

USG MEXICO S A DE C V — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

System B — 2 Hr

Gypsum panels, with beveled, square or tapered edges, nom 12 in. or 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally in two layers. Inner or base layer attached to studs with 1 in. long Type S steel screws spaced 24 in. OC when installed vertically or 16 in. OC when installed horizontally. Outer or face layer attached to studs with 1-5/8 in. long Type S steel screws spaced 12 in. OC when installed vertically or 8 in. OC when installed horizontally and staggered 8 in. from base layer screws. Horizontal joints between inner and outer layers staggered a min of 12 in. Horizontal joints need not be backed by steel framing. Vertical joints centered over studs and staggered 24 in.

CGC INC — 1/2 in. Type C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

UNITED STATES GYPSUM CO — 1/2 in. Types C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

USG BORAL DRYWALL SFZ LLC — 1/2 in. Type C; 5/8 in. Types C, SCX, SGX, USGX

USG MEXICO S A DE C V — 1/2 in. Types C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

System C — 2 Hr

Gypsum panels, with beveled, square or tapered edges, nom 3/4 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, secured with 1-1/4 in. long Type S steel screws spaced 8 in. OC along vertical edges and 12 in. OC in the field when installed vertically or 8 in. OC along the vertical edges and in the field when installed horizontally. Horizontal joints need not be backed by steel framing. Screws along side joints offset 4 in. Requires min 4 in. deep framing per items 1, 2 and 3. Requires min 3 in. thick mineral wool batts per item 5.

CGC INC — Types IP-X3 or ULTRACODE

UNITED STATES GYPSUM CO — Types IP-X3 or ULTRACODE

USG BORAL DRYWALL SFZ LLC — Type ULTRACODE

USG MEXICO S A DE C V — Types IP-X3 or ULTRACODE

System D — 2 Hr

Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, attached directly to studs with 1 in. long Type S steel screws spaced 24 in. when installed vertically or 16 in. OC when installed horizontally. Horizontal joints need not be backed by steel framing. Requires face layer of 1/2 or 5/8 in. thick cementitious backer units per Item 7 and min 1-1/2 in. thick mineral wool batts per Item 5.

CGC INC — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

UNITED STATES GYPSUM CO — Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULIX, ULX, USGX, WRC, WRX

USG BORAL DRYWALL SFZ LLC — Types C, SCX, SGX, USGX

USG MEXICO S A DE C V — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

System E — 2 Hr

Gypsum panels, with beveled, square or tapered edges, nom 12 in. or 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, attached to studs with 1 in. long Type S steel screws spaced 12 in. OC when installed vertically or 8 in. when installed horizontally. Horizontal joints need not be backed by steel framing.

CGC INC — 1/2 in. Types C, IP-X2, IPC-AR; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

UNITED STATES GYPSUM CO — 1/2 in. Types C, IP-X2, IPC-AR; 5/8 in. Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULIX, ULX, USGX, WRC, WRX

USG BORAL DRYWALL SFZ LLC — 1/2 in. Type C; 5/8 in. Types C, SCX, SGX, USGX

USG MEXICO S A DE C V — 1/2 in. Types C, IP-X2, IPC-AR; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

System F — 2 Hr

Gypsum panels, with beveled, square or tapered edges, nom 1/2 in. or 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically in two layers, inner or base layer attached to resilient furring channels (Item 2B) with 1 in. long Type S steel screws spaced 24 in. OC when installed vertically or 16 in. OC when installed horizontally. Outer or face layer attached to studs with 2-1/4 in. long Type S steel screws spaced 16 in. when installed vertically or 12 in. OC when installed horizontally. Screws offset 6 in. from layer below. Horizontal joints on adjacent layers staggered 24 in. Horizontal joints need not be backed by steel framing. Vertical joints centered over studs and staggered 24 in. on adjacent layers.

CGC INC — Types C, IP-X2, IPC-AR, WRC

UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR, WRC

USG BORAL DRYWALL SFZ LLC — Type C

USG MEXICO S A DE C V — Types C, IP-X2, IPC-AR, WRC

System G — 3 Hr

Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally in three layers. Inner or base layer attached to studs with 1 in. long Type S steel screws spaced 24 in. OC when installed vertically or 16 in. OC when installed horizontally. Second layer attached to studs with 2-1/4 in. long Type S steel screws spaced 24 in. when installed vertically or 16 in. OC when installed horizontally. Outer or face layer attached to studs with 2-1/4 in. long Type S steel screws spaced 16 in. when installed vertically or 12 in. OC when installed horizontally. Screws offset 6 in. from layer below. Horizontal joints on adjacent layers staggered a min of 12 in. Horizontal joints need not be backed by steel framing. Vertical joints centered over studs and staggered 24 in. on adjacent layers.

CGC INC — Types C, IP-X2, IPC-AR, WRC

UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR, WRC

USG BORAL DRYWALL SFZ LLC — Type C

USG MEXICO S A DE C V — Types C, IP-X2, IPC-AR, WRC

System H — 3 Hr

Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, two layers over the flange of the "C" section of the studs, one layer over the flange of the "H" section of the studs. Inner or base layer attached to studs with 1 in. long Type S steel screws spaced 24 in. OC when installed vertically or 16 in. OC when installed horizontally. Outer or face layer attached to studs with 1-5/8 in. long Type S steel screws spaced 16 in. when installed vertically or 12 in. OC when installed horizontally. Screws offset 6 in. from layer below. Horizontal joints on adjacent layers staggered a min of 12 in. Horizontal joints need not be backed by steel framing. Vertical joints centered over studs and staggered 24 in. on adjacent layers.

CGC INC — Types C, IP-X2, IPC-AR, WRC

UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR, WRC

USG BORAL DRYWALL SFZ LLC — Type C

USG MEXICO S A DE C V — Types C, IP-X2, IPC-AR, WRC

System I — 4 Hr

Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 24 in. or 600 mm (for metric spacing) wide. Panels cut 1 in. less in length than floor-to-ceiling height. Liner panel applied vertically (parallel to studs) with tight joints over the 3rd in. legs of the "E" studs, three edges of end panels attached to long leg of vertical "J" - runners with 1-5/8 in. long Type S steel screws spaced not greater than 12 in. OC. When wall height exceeds liner panel length, liner panel may be butted to extend to the full height of the wall. Horizontal joints need not be backed by steel framing. In System I, butt joints in liner panels are staggered min 36 in. Butt joints backed with 6 in. by 22 in. strips of 3/4 in. thick gypsum wallboard (Item 4). Wallboard strips centered over butt joints and attached to liner panels with no 1-1/2 in. long Type S steel screws, three screws along the 22 in. dimension at the top and bottom of the strips.
CGC INC — Type SLX

UNITED STATES GYPSUM CO — Type SLX

USG BORAL DRYWALL SFZ LLC — Type SLX

USG MEXICO S A DE C V — Type SLX

4. **Gypsum Board** —

System A — 1 Hr

Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, attached to studs with 1 in. long Type S steel screws spaced 12 in. when installed vertically or 8 in. OC when installed horizontally. Horizontal joints need not be backed by steel framing.

CGC INC — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

UNITED STATES GYPSUM CO — Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULIX, ULX, USGX, WRC, WRX. When ULIX is used insulation, item 5, **Batts and Blankets"** is required and minimum stud depth is 4 in.

USG BORAL DRYWALL SFZ LLC — Types C, SCX, SGX, USGX

USG MEXICO S A DE C V — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

System B — 2 Hr

Gypsum panels, with beveled, square or tapered edges, nom 12 in. or 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally in two layers. Inner or base layer attached to studs with 1 in. long Type S steel screws spaced 24 in. OC when installed vertically or 16 in. OC when installed horizontally. Outer or face layer attached to studs with 1-5/8 in. long Type S steel screws spaced 12 in. OC when installed vertically or 8 in. OC when installed horizontally and staggered 8 in. from base layer screws. Horizontal joints between inner and outer layers staggered a min of 12 in. Horizontal joints need not be backed by steel framing. Vertical joints centered over studs and staggered 24 in. on adjacent layers.

CGC INC — 1/2 in. Type C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

UNITED STATES GYPSUM CO — 1/2 in. Types C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULIX, USGX, WRC, WRX

USG BORAL DRYWALL SFZ LLC — 1/2 in. Type C; 5/8 in. Types C, SCX

USG MEXICO S A DE C V — 1/2 in. Types C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

System C — 2 Hr

Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally in three layers. Inner or base layer attached to studs with 1 in. long Type S steel screws spaced 24 in. OC when installed vertically or 16 in. OC when installed horizontally. Second layer attached to studs with 1-5/8 in. long Type S steel screws spaced 24 in. when installed vertically or 16 in. OC when installed horizontally. Screws offset 6 in. from layer below. Outer or face layer attached to studs with 2-1/4 in. long Type S steel screws spaced 16 in. when installed vertically or 12 in. OC when installed horizontally. Screws offset 6 in. from layer below. Horizontal joints on adjacent layers staggered a min of 12 in. Horizontal joints need not be backed by steel framing. Vertical joints centered over studs and staggered 24 in. on adjacent layers.

CGC INC — Types C, IP-X2, IPC-AR, WRC

UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR, WRC

USG BORAL DRYWALL SFZ LLC — Type C

USG MEXICO S A DE C V — Types C, IP-X2, IPC-AR, WRC

System D — 2 Hr

Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, attached directly to studs with 1 in. long Type S steel screws spaced 24 in. when installed vertically or 16 in. OC when installed horizontally. Horizontal joints need not be backed by steel framing. Requires face layer of 1/2 or 5/8 in. thick cementitious backer units per Item 7 and min 1-1/2 in. thick mineral wool batts per Item 5.

CGC INC — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

UNITED STATES GYPSUM CO — Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULIX, ULX, USGX, WRC, WRX

USG BORAL DRYWALL SFZ LLC — Types C, SCX, SGX, USGX

USG MEXICO S A DE C V — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

System E — 2 Hr

Gypsum panels, with beveled, square or tapered edges, nom 12 in. or 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, attached to studs with 1 in. long Type S steel screws spaced 12 in. OC when installed vertically or 8 in. when installed horizontally. Horizontal joints need not be backed by steel framing.

CGC INC — 1/2 in. Types C, IP-X2, IPC-AR; 5/8 in. Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

UNITED STATES GYPSUM CO — 1/2 in. Types C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULIX, ULX, USGX, WRC, WRX

USG BORAL DRYWALL SFZ LLC — 1/2 in. Type C; 5/8 in. Types C, SCX, SGX, USGX

USG MEXICO S A DE C V — 1/2 in. Types C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

System F — 2 Hr

Gypsum panels, with beveled, square or tapered edges, nom 1/2 in. or 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically in two layers, inner or base layer attached to resilient furring channels (Item 2B) with 1 in. long Type S steel screws spaced 24 in. when installed vertically or 16 in. OC when installed horizontally. Outer or face layer attached to studs with 2-1/4 in. long Type S steel screws spaced 16 in. when installed vertically or 12 in. OC when installed horizontally. Screws offset 6 in. from layer below. Horizontal joints on adjacent layers staggered 24 in. Horizontal joints need not be backed by steel framing. Vertical joints centered over studs and staggered 24 in. on adjacent layers.

CGC INC — Types C, IP-X2, IPC-AR, WRC

UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR, WRC

USG BORAL DRYWALL SFZ LLC — Type C

USG MEXICO S A DE C V — Types C, IP-X2, IPC-AR, WRC

System G — 3 Hr

Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally in three layers. Inner or base layer attached to studs with 1 in. long Type S steel screws spaced 24 in. when installed vertically or 16 in. OC when installed horizontally. Second layer attached to studs with 2-1/4 in. long Type S steel screws spaced 24 in. when installed vertically or 16 in. OC when installed horizontally. Screws offset 6 in. from layer below. Outer or face layer attached to studs with 2-1/4 in. long Type S steel screws spaced 16 in. when installed vertically or 12 in. OC when installed horizontally. Screws offset 6 in. from layer below. Horizontal joints on adjacent layers staggered a min of 12 in. Horizontal joints need not be backed by steel framing. Vertical joints centered over studs and staggered 24 in. on adjacent layers.

CGC INC — Types C, IP-X2, IPC-AR, WRC

UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR, WRC

USG BORAL DRYWALL SFZ LLC — Type C

USG MEXICO S A DE C V — Types C, IP-X2, IPC-AR, WRC

System H — 3 Hr

Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, two layers over the flange of the "C" section of the studs, one layer over the flange of the "H" section of the studs. Inner or base layer attached to studs with 1 in. long Type S steel screws spaced 24 in. when installed vertically or 16 in. OC when installed horizontally. Outer or face layer attached to studs with 1-5/8 in. long Type S steel screws spaced 16 in. when installed vertically or 12 in. OC when installed horizontally. Screws offset 6 in. from layer below. Horizontal joints on adjacent layers staggered a min of 12 in. Horizontal joints need not be backed by steel framing. Vertical joints centered over studs and staggered 24 in. on adjacent layers.

CGC INC — Types C, IP-X2, IPC-AR, WRC

UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR, WRC

USG BORAL DRYWALL SFZ LLC — Type C

USG MEXICO S A DE C V — Types C, IP-X2, IPC-AR, WRC

System I — 4 Hr

1. **Floor and Ceiling Runners** — (Not Shown) — Channel shaped runners, 3-5/8 in. deep (min), 1-1/4 in. legs, formed from min No. 25 MSG galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.

1A. **Framing Members" — Floor and Ceiling Runners** — (Not Shown) — As an alternate to Item 1 — Channel shaped, min 3-5/8 in. deep, attached to floor and ceiling with screws spaced 24 in. OC max.
ALLSTEEL & GYPSUM PRODUCTS INC — Type SUPREME D24/30EGD and Type SUPREME D20

CONSOLIDATED FABRICATORS CORP, BUILDING PRODUCTS DIV — Type SUPREME D24/30EGD and Type SUPREME D20

GUAL RUN BUILDING MATERIALS INC — Type SUPREME D24/30EGD and Type SUPREME D20

SCAFCO STEEL STUD MANUFACTURING CO — Type SUPREME D24/30EGD and Type SUPREME D20

STEEL CONSTRUCTION SYSTEMS INC — Type SUPREME D24/30EGD and Type SUPREME D20

UNITED METAL PRODUCTS INC — Type SUPREME D24/30EGD and Type SUPREME D20

1B. **Framing Members" — Floor and Ceiling Runners** — Not Shown — In lieu of Item 1 — For use with Item 1B, proprietary channel shaped steel studs, 1-1/4 in. wide by min 3-5/8 in. deep fabricated from min 0.020 in. thick galv steel. Studs cut 3/4 in. less in length than assembly height.
CALIFORNIA EXPANDED METAL PRODUCTS CO — ViperZ0™

MARINOWARE, DIV OF WARE INDUSTRIES INC — ViperZ0™ Track

FUSION BUILDING PRODUCTS — ViperZ0™ Track

IMPERIAL MANUFACTURING GROUP INC — ViperZ0™ Track

1C. **Floor and Ceiling Runners** — (Not Shown) — For use with Item 2C — Channel shaped, fabricated from min 20 MSG corrosion-protected steel, min depth to accommodate stud size, with min 1 in. long legs, square or tapered edges and toothing features spaced 24 in. OC.

1D. **Framing Members" — Floor and Ceiling Runners** — Not Shown — In lieu of Items 1 through 1C — For use with Item 2D and 4G only, proprietary channel shaped steel studs, 1-1/4 in. wide by min 3-5/8 in. deep fabricated from min 0.018 in. thick galv steel. Studs cut 3/4 in. less in length than assembly height.
CLARKDIETRICH BUILDING SYSTEMS — CD ProSTUD

DMFCWBS L L C — ProSTUD

MBA METAL FRAMING — ProSTUD

RAM SALES L L C — Ram ProSTUD

STEEL STRUCTURAL PRODUCTS L L C — Tri-S ProSTUD

1E. **Framing Members" — Steel Studs** — As an alternate to Items 1 through 1D — For use with Item 2E and 4I only, proprietary channel shaped studs, minimum 3-5/8 in. wide. Studs to be cut 1/2 in. less than the assembly height.
STUDCO BUILDING SYSTEMS — CROCSTUD

1F. **Framing Members" — Steel Studs** — Not Shown — In lieu of Item 1 through 1E — For use with Item 2, channel shaped studs, fabricated from min 25 MSG corrosion-protected steel, 3-5/8 in. deep (min), spaced 24 in. OC max. Studs to be cut 3/4 in. less than assembly height.
KIRI (HONG KONG) LTD — Type KIRI

1G. **Framing Members" — Steel Studs** — As an alternate to Items 1 through 1F — For use with Item 2, channel shaped studs, fabricated from min 25 MSG galv steel, 3-5/8 in. deep (min), spaced 24 in. OC max. Studs to be cut 3/4 in. less than assembly height.
STUDCO BUILDING SYSTEMS — CROCSTUD Track

1H. **Floor and Ceiling Runners** — (Not Shown) — Channel shaped, fabricated from min 0.02 in. galv steel, min width to accommodate stud size, with min 1 in. long legs, for use with studs specified below and fastened to floor and ceiling with fasteners spaced 24 in. OC max.
MARINOWARE, DIV OF WARE INDUSTRIES INC — ViperZ0™ Track VT100

FUSION BUILDING PRODUCTS — ViperZ0™ Track VT100

IMPERIAL MANUFACTURING GROUP INC — ViperZ0™ Track VT100

1I. **Framing Members" — Floor and Ceiling Runners** — Not Shown — In lieu of Item 1 — For use with Item 2H, proprietary channel shaped runners, 1-1/4 in. wide by min 3-5/8 in. deep fabricated from min 0.020 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.
TELLING INDUSTRIES L L C — ViperZ0™ Track

1J. **Framing Members" — Floor and Ceiling Runners** — Not Shown — In lieu of Item 1 — For use with Item 2I, proprietary channel shaped runners, 1-1/4 in. wide by min 3-5/8 in. deep fabricated from min 0.018 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.
STEEL INVESTMENT GROUP L L C — AlphaSTUD

1K. **Framing Members" — Steel Studs** — Not Shown — In lieu of Item 1 — For use with Item 1K, proprietary channel shaped steel studs, 1-1/4 in. wide by min 3-5/8 in. deep fabricated from min 25 MSG (0.018 in. min. bare metal thickness). Studs cut 3/4 in. less in length than assembly height.
CALIFORNIA EXPANDED METAL PRODUCTS CO — Viper X

1L. **Framing Members" — Steel Studs** — Not Shown — In lieu of Item 1 — For use with Item 1L, proprietary channel shaped steel studs, 1-1/4 in. wide by min 3-5/8 in. deep fabricated from min 0.020 in. thick galv steel. Studs cut 3/4 in. less in length than assembly height.
CRACO MFG INC — SmartStuds20™

CONSOLIDATED FABRICATORS CORP, BUILDING PRODUCTS DIV — Type SUPREME D24/30EGD and Type SUPREME D20

GUAL RUN BUILDING MATERIALS INC — Type SUPREME D24/30EGD and Type SUPREME D20

SCAFCO STEEL STUD MANUFACTURING CO — Type SUPREME D24/30EGD and Type SUPREME D20

STEEL CONSTRUCTION SYSTEMS INC — Type SUPREME D24/30EGD and Type SUPREME D20

UNITED METAL PRODUCTS INC — Type SUPREME D24/30EGD and Type SUPREME D20

1M. **Framing Members" — Floor and Ceiling Runners** — Not Shown — In lieu of Item 1 — For use with Item 2B, proprietary channel shaped runners, 1-1/4 in. wide by min 3-5/8 in. deep fabricated from min 0.020 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.
CALIFORNIA EXPANDED METAL PRODUCTS CO — ViperZ0™ Track

MARINOWARE, DIV OF WARE INDUSTRIES INC — ViperZ0™ Track

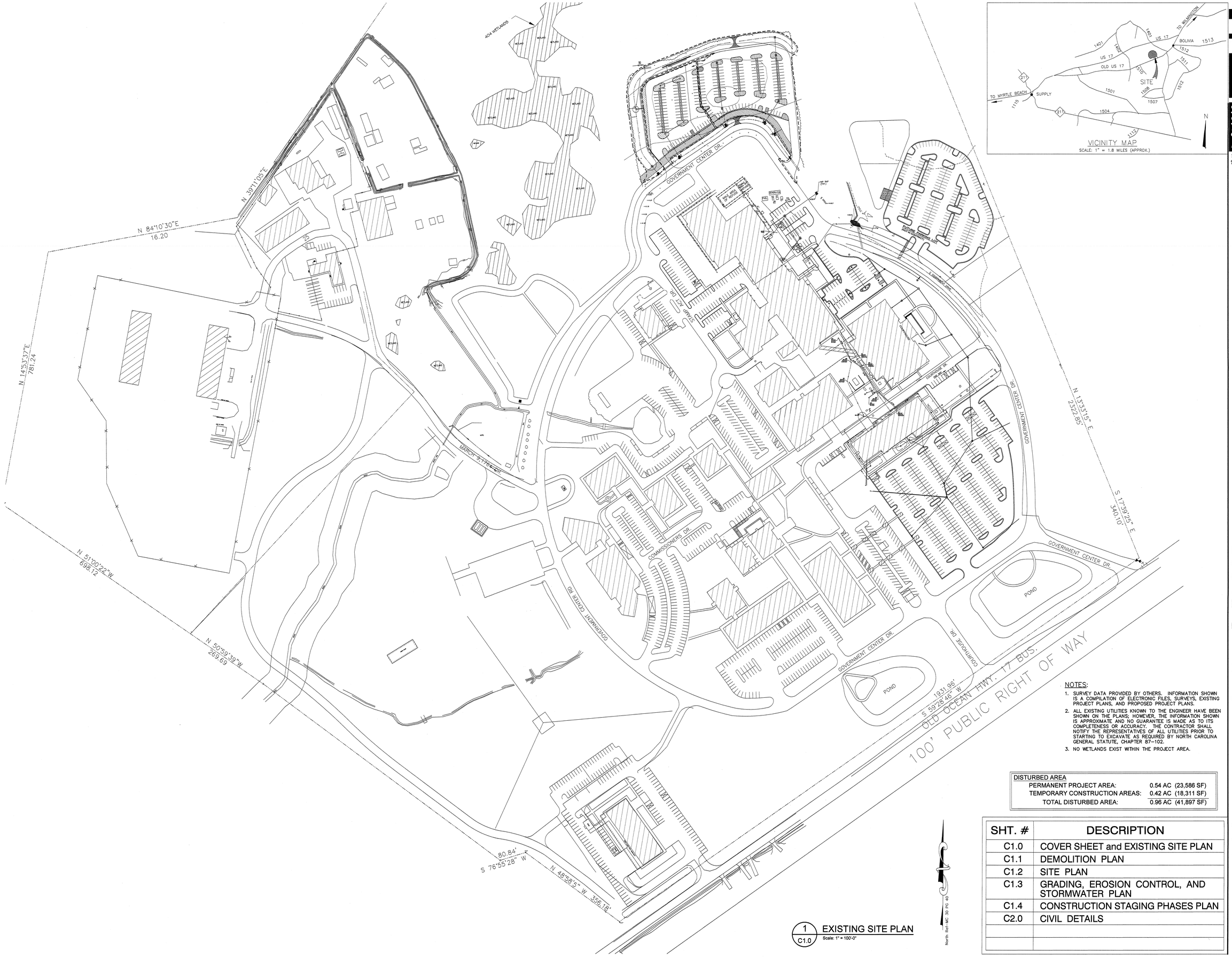
FUSION BUILDING PRODUCTS — ViperZ0™ Track

IMPERIAL MANUFACTURING GROUP INC — ViperZ0™ Track

1O. **Floor and Ceiling Runners** — (Not Shown) — For use with Item 2C — Channel shaped, fabricated from min 20 MSG corrosion-protected steel, min depth to accommodate stud size, with min 1 in. long legs, square or tapered edges and toothing features spaced 24 in. OC.

1Q. **Framing Members" — Floor and Ceiling Runners** — Not Shown — In lieu of Items 1 through 1P — For use with Item 2Q and 4Q only, proprietary channel shaped steel studs, 1-1/4 in. wide by min 3-5/8 in. wide fabricated from min 0.018 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.
CLARKDIETRICH BUILDING SYSTEMS — CD ProTRAK

1R. **Framing Members" — Steel Studs** — As an alternate to Items 1 through 1Q — For use with Item 2R and 4R only, proprietary channel shaped runners, 1-1/4 in. deep by min



1 C1.0 EXISTING SITE PLAN
Scale: 1" = 100'-0"

NOTES:

1. SURVEY DATA PROVIDED BY OTHERS. INFORMATION SHOWN IS A COMPILATION OF ELECTRONIC FILES, SURVEYS, EXISTING PROJECT PLANS, AND PROPOSED PROJECT PLANS.
2. ALL EXISTING UTILITIES KNOWN TO THE ENGINEER HAVE BEEN SHOWN ON THE PLANS; HOWEVER, THE INFORMATION SHOWN IS APPROXIMATE AND NO GUARANTEE IS MADE AS TO ITS COMPLETENESS OR ACCURACY. THE CONTRACTOR SHALL NOTIFY THE REPRESENTATIVES OF ALL UTILITIES PRIOR TO STARTING TO EXCAVATE AS REQUIRED BY NORTH CAROLINA GENERAL STATUTE, CHAPTER 87-102.
3. NO WETLANDS EXIST WITHIN THE PROJECT AREA.

DISTURBED AREA	
PERMANENT PROJECT AREA:	0.54 AC (23,586 SF)
TEMPORARY CONSTRUCTION AREAS:	0.42 AC (18,311 SF)
TOTAL DISTURBED AREA:	0.96 AC (41,897 SF)

SHT. #	DESCRIPTION
C1.0	COVER SHEET and EXISTING SITE PLAN
C1.1	DEMOLITION PLAN
C1.2	SITE PLAN
C1.3	GRADING, EROSION CONTROL, AND STORMWATER PLAN
C1.4	CONSTRUCTION STAGING PHASES PLAN
C2.0	CIVIL DETAILS

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#8240.00

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 11270 DAVID E. CRISER
10/24/19

Brunswick County Courthouse Addition & Renovations

Bolivia, NC

Construction Drawings
September 23, 2019

Revisions:

A	4.16.19	NCDEQ SUBMITTAL
B	9.23.19	CONSTRUCTION DRAWINGS

COVER SHEET and EXISTING SITE PLAN

C1.0

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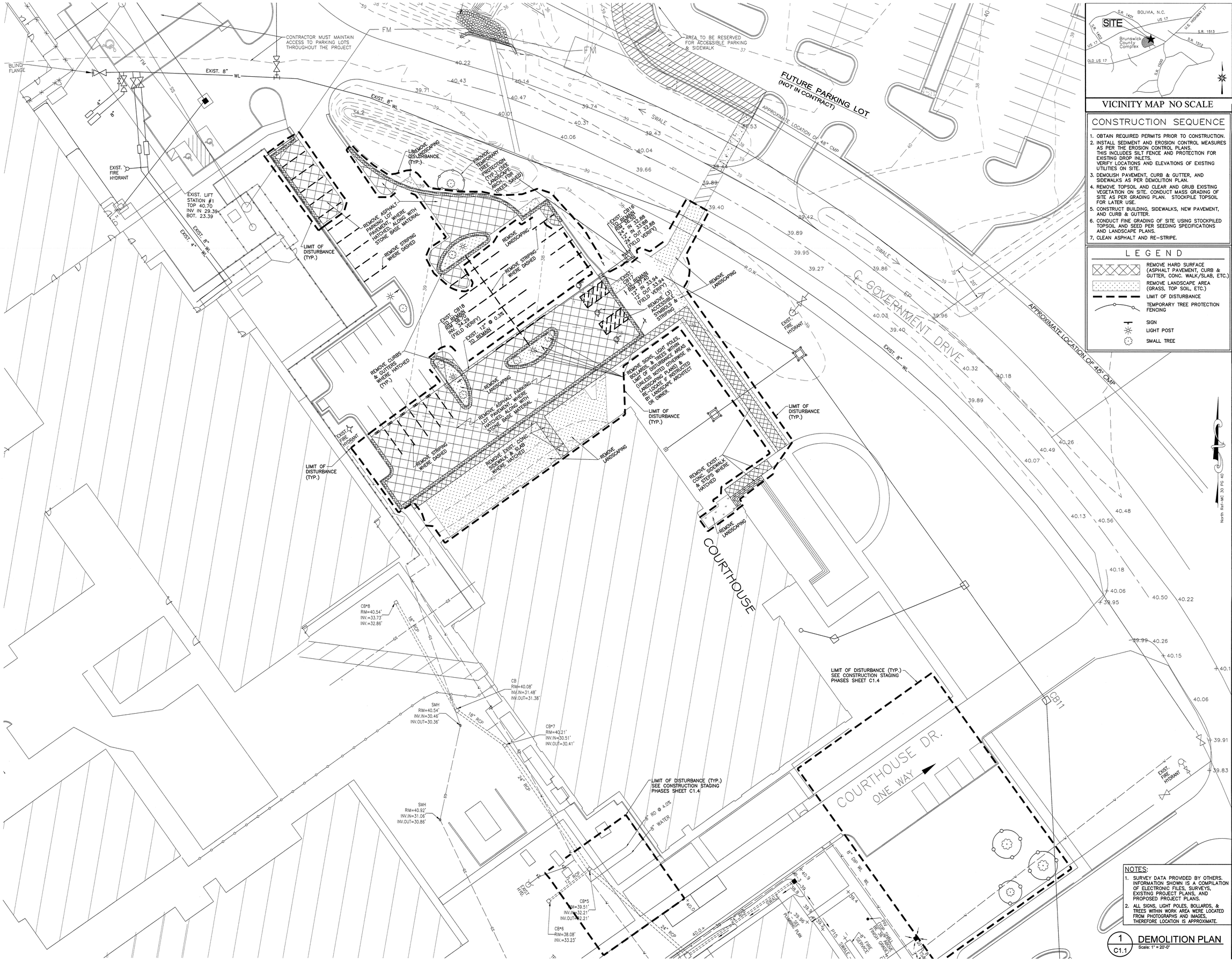

VICINITY MAP NO SCALE

CONSTRUCTION SEQUENCE

1. OBTAIN REQUIRED PERMITS PRIOR TO CONSTRUCTION.
2. INSTALL SEDIMENT AND EROSION CONTROL MEASURES AS PER THE EROSION CONTROL PLANS. THIS INCLUDES SILT FENCE AND PROTECTION FOR EXISTING DROP INLETS. VERIFY LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES ON SITE.
3. DEMOLISH PAVEMENT, CURB & GUTTER, AND SIDEWALKS AS PER DEMOLITION PLAN.
4. REMOVE TOPSOIL AND CLEAR AND GRUB EXISTING VEGETATION ON SITE. CONDUCT MASS GRADING OF SITE AS PER GRADING PLAN. STOCKPILE TOPSOIL FOR LATER USE.
5. CONSTRUCT BUILDING, SIDEWALKS, NEW PAVEMENT, AND CURB & GUTTER.
6. CONDUCT FINE GRADING OF SITE USING STOCKPILED TOPSOIL AND SEED PER SEEDING SPECIFICATIONS AND LANDSCAPE PLANS.
7. CLEAN ASPHALT AND RE-STRIPE.

LEGEND

- REMOVE HARD SURFACE (ASPHALT PAVEMENT, CURB & GUTTER, CONC. WALK/SLAB, ETC.)
- REMOVE LANDSCAPE AREA (GRASS, TOP SOIL, ETC.)
- LIMIT OF DISTURBANCE
- TEMPORARY TREE PROTECTION FENCING
- SIGN
- LIGHT POST
- SMALL TREE

NOTES:

1. SURVEY DATA PROVIDED BY OTHERS. INFORMATION SHOWN IS A COMPILATION OF ELECTRONIC FILES, SURVEYS, EXISTING PROJECT PLANS, AND PROPOSED PROJECT PLANS.
2. ALL SIGNS, LIGHT POLES, BOLLARDS, & TREES WITHIN WORK AREA WERE LOCATED FROM PHOTOGRAPHS AND IMAGES, THEREFORE LOCATION IS APPROXIMATE.

1 / C1.1 DEMOLITION PLAN
Scale: 1" = 20'-0"

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 11710 ENGINEER DAVID E. CRISER
10/24/19

Brunswick County Courthouse Addition & Renovations

Bolivia, NC

Construction Drawings
September 23, 2019

Revisions:

A	4.16.19	NCDEQ SUBMITTAL
B	9.23.19	CONSTRUCTION DRAWINGS

DEMOLITION PLAN

C1.1

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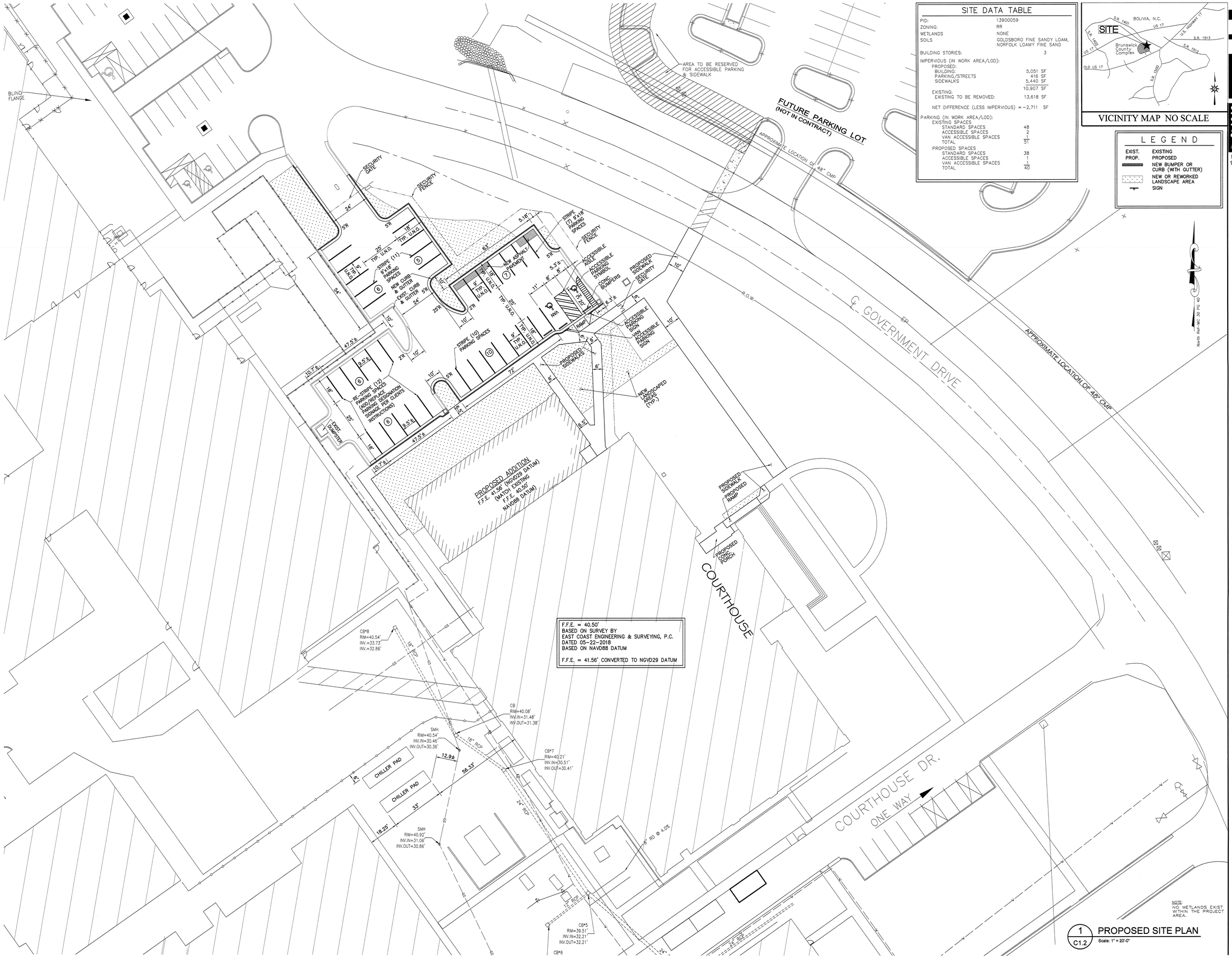

SITE DATA TABLE

PID:	13900059	
ZONING:	RR	
WETLANDS	NONE	
SOILS	GOLDSBORO FINE SANDY LOAM, NORFOLK LOAMY FINE SAND	
BUILDING STORIES:	3	
IMPERVIOUS (IN WORK AREA/LOD):		
PROPOSED:		
BUILDING:	5,051 SF	
PARKING/STREETS	416 SF	
SIDEWALKS	5,440 SF	
	10,907 SF	
EXISTING:		
EXISTING TO BE REMOVED:	13,618 SF	
NET DIFFERENCE (LESS IMPERVIOUS) =	−2,711 SF	
PARKING (IN WORK AREA/LOD):		
EXISTING SPACES		
STANDARD SPACES	48	
ACCESSIBLE SPACES	2	
VAN ACCESSIBLE SPACES	1	
TOTAL	51	
PROPOSED SPACES		
STANDARD SPACES	38	
ACCESSIBLE SPACES	1	
VAN ACCESSIBLE SPACES	1	
TOTAL	40	

VICINITY MAP NO SCALE

LEGEND

EXIST.	EXISTING
PROP.	PROPOSED
	NEW BUMPER OR CURB (WITH GUTTER)
	NEW OR REWORKED LANDSCAPE AREA
	SIGN

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Bolivia, NC

Construction Drawings
September 23, 2019

Revisions:

A	4.16.19	NCDEQ SUBMITTAL
B	9.23.19	CONSTRUCTION DRAWINGS

PROPOSED SITE PLAN

C1.2

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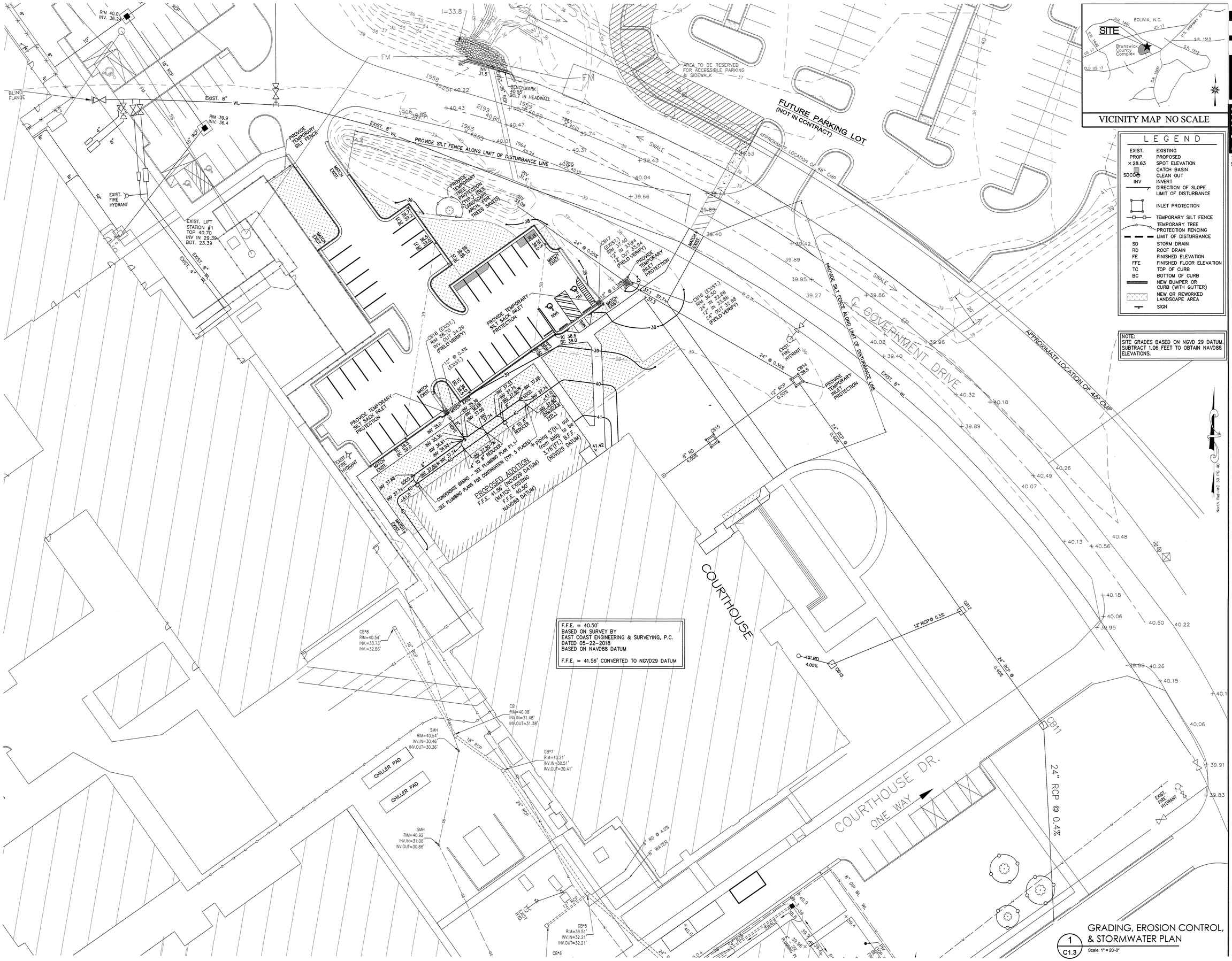
1 C1.2 PROPOSED SITE PLAN
Scale: 1" = 20'-0"



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10/24/19

Brunswick County Courthouse Addition & Renovations

Bolivia, NC

Construction Drawings
September 23, 2019

Revisions:

A	4.16.19	NCDEQ SUBMITTAL
B	6.26.19	GRADE REVISIONS
C	9.23.19	CONSTRUCTION DRAWINGS

GRADING, EROSION CONTROL, & STORMWATER PLAN

C1.3

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EXISTING DETENTION CENTER
(DO NOT OBSTRUCT OPERATIONS)

EXISTING ADMINISTRATION BUILDING (DO NOT OBSTRUCT OPERATIONS)

PHASE 1.b
TEMPORARY PARKING ON GRAVEL FOR JUDGES (10 SPACES)

PHASES 2 and 3
CONSTRUCTION STAGING

PHASE 1.c
1. USE THIS AREA FOR CONSTRUCTION STAGING.
2. AFTER CONSTRUCTION STAGING IS NO LONGER NEEDED IN THIS AREA, PROCEED WITH PARKING LOT IMPROVEMENTS PER SHEETS C1.1, C1.2, & C1.3

EXIST. FIRE HYDRANT
EXIST. STORMWATER PIPING & INLETS
EXIST. WATER SYSTEM
EXISTING
EXISTING
RE-LOCATE AND STRIPE
REMOVE EXIST. PARALLEL PARKING
PARKING RESERVED FOR HIGHWAY PATROL
REMOVE BENCH AND VEGETATION AS NECESSARY
LIMIT OF DISTURBANCE (TYP.) PROVIDE SILT FENCE ALONG THIS LINE AT LOCATIONS WHERE IT DOES NOT INTERFERE WITH VEHICLE OR PEDESTRIAN TRAFFIC OR WITH CONSTRUCTION

EXISTING COURTHOUSE BUILDING

PROPOSED COURTHOUSE ADDITION

TO BE RESERVED FOR JUDGES AND STAFF FOR SECURE PARKING

PROVIDE TEMPORARY SILT FENCE

VAN
HC
HC

LIMIT OF DISTURBANCE (TYP.) PROVIDE SILT FENCE ALONG THIS LINE AT LOCATIONS WHERE IT DOES NOT INTERFERE WITH ETHICAL OR PEDESTRIAN TRAFFIC OR WITH CONSTRUCTION

LIMIT OF DISTURBANCE (TYP.)

PROVIDE TEMPORARY SILT FENCE ALONG LIMIT OF DISTURBANCE LINE

PROVIDE TEMPORARY SILT FENCE ALONG LIMIT OF DISTURBANCE LINE

North Ref: MC-30 PG 40

PHASES 2 and 3
CONSTRUCTION STAGING

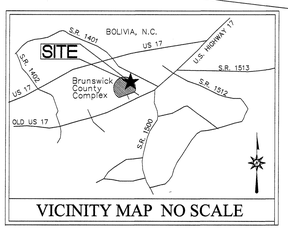
COURTHOUSE DR.
ONE WAY

C GOVERNMENT DRIVE

APPROXIMATE LOCATION OF 48" CMP

PHASE 1.a
(NOT IN CONTRACT)
PARKING LOT IN THIS AREA TO BE COMPLETED BEFORE CONSTRUCTION STAGING PHASES BEGIN OR AS SOON AS POSSIBLE

1 / C1.4 CONSTRUCTION STAGING PHASES PLAN
Scale: 1" = 20'-0"



VICINITY MAP NO SCALE

LEGEND
- SITE AREAS TO BE CONSTRUCTED IN PHASES (1.a, 1.b, 1.c, 2, & 3)
- GRAVEL
- LIMIT OF DISTURBANCE
- TEMPORARY TREE PROTECTION FENCING
- SMALL TREE

NOTES:
1. ALL AREAS USED FOR CONSTRUCTION STAGING SHALL BE RETURNED TO PRIOR EXISTING CONDITION AT NO ADDITIONAL COST TO OWNER, EXCEPT WHERE IMPROVEMENTS ARE PROPOSED.
2. PROVIDE TEMPORARY TREE PROTECTION AND INLET PROTECTION FOR DROP INLETS IN OR NEAR WORK AREA.
3. CONTRACTOR TO PROTECT ALL UNDERGROUND UTILITIES AND STORMWATER PIPING/STRUCTURES FROM CONSTRUCTION AND TRAFFIC LOADS AND REPAIR ANY DAMAGE AT NO ADDITIONAL COST TO THE OWNER.
4. UTILITY LOCATIONS TO BE FEILD VERIFIED BY CONTRACTOR.

CONSTRUCTION PHASES

PHASE 1.a
COMPLETE PARKING & WALKWAYS IN THIS AREA BEFORE BEGINNING ANY CONSTRUCTION STAGING. THIS AREA IS NOT IN CONTRACT.

PHASE 1.b
CONSTRUCT TEMPORARY PARKING ON GRAVEL FOR JUDGES IN THIS AREA.

PHASE 1.c
FIRST USE THIS AREA FOR CONSTRUCTION STAGING.
AFTER CONSTRUCTION STAGING IS NO LONGER NEEDED IN THIS AREA, COMPLETE PARKING, WALKWAYS, GRADING, AND STORMWATER AS PER SHEETS C1.1, C1.2, & C1.3

PHASE 2 / PHASE 3
USE THESE AREAS FOR CONSTRUCTION STAGING AFTER ALL PHASE 1 (a, b, AND c) WORK HAS BEEN COMPLETED.

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Construction Drawings
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Revisions:
A | 4.16.19 | NCDEQ SUBMITTAL
B | 9.23.19 | CONSTRUCTION DRAWINGS

CONSTRUCTION STAGING PHASES PLAN

C1.4

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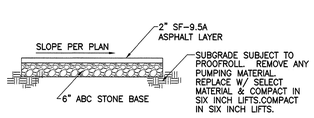
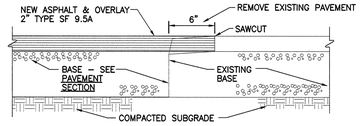


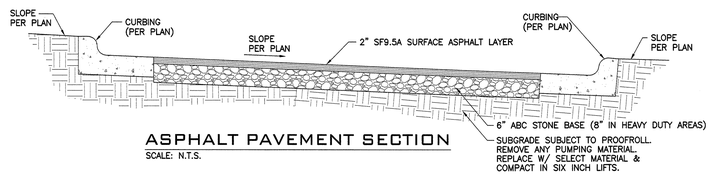
PAVEMENT SECTION

SCALE: N.T.S.



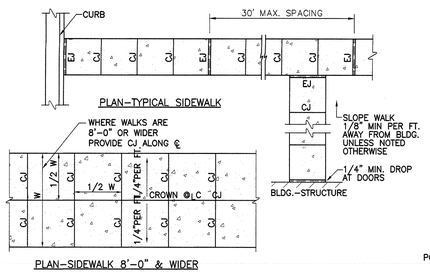
EXIST. & NEW PAVEMENT JOINT DETAIL

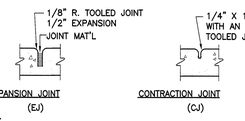
SCALE: N.T.S.



ASPHALT PAVEMENT SECTION

SCALE: N.T.S.

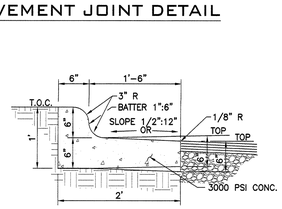




NOTES:
1. SIDEWALK THICKNESS SHALL BE 4" UNLESS NOTED OTHERWISE.
2. CONTRACTION JOINTS (CJ), SPACE SAME AS SIDEWALK WIDTH.
3. THICKEN SIDEWALK TO 6" AT DRIVEWAYS.
4. THICKEN SIDEWALK TO 6" IN LAST 3' WHERE IT ABUTS PAVEMENT WITH NO CURB.
5. 1/2" EXPANSION JOINT (EJ) REQ'D AT 30' MAX., AT SIDEWALK JUNCTIONS, AT STRUCTURES AND AS NOTED ON SITE PLAN.

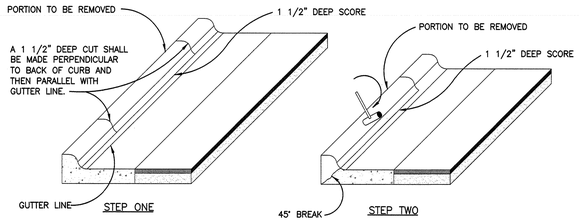
STANDARD SIDEWALK DETAIL

SCALE: N.T.S.



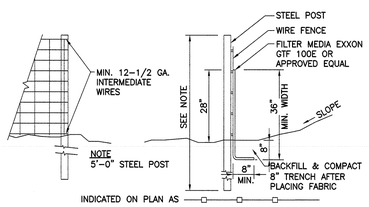
2'-0" CURB AND GUTTER DETAIL

SCALE: N.T.S.



EXISTING CURB REMOVAL DETAIL

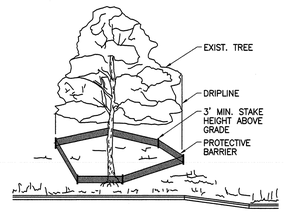
SCALE: N.T.S.



NOTES:
1.) WIRE FENCE SHALL BE A MIN. OF 32" IN WIDTH AND SHALL HAVE A MIN. OF SIX LINE WIRES WITH 12" STAY SPACING.
2.) FILTER FABRIC SHALL MEET OR EXCEED 150 LBS. GRAB TENSILE (ASTM-D-1682), 180 PSI. BURST (ASTM-D-2263) AND 70 ON COE E.O.S. TEST.
3.) STEEL POST SHALL BE 5'-0" IN HEIGHT AND BE OF THE SELF-FASTENER TYPE.
4.) STEEL POSTS FOR SILT FENCE SHALL BE NO WIDER THAN 8' APART O.C. WITH WIRE BACKING.
5.) CONTRACTOR TO FIELD LOCATE AS NECESSARY TO CONTROL SURFACE EROSION.

TEMPORARY SILT FENCE

SCALE: N.T.S.



NOTES:
1. TREES TO BE SAVED WILL BE CLEARLY MARKED PRIOR TO CONSTRUCTION AND A PROTECTIVE BARRIER IS TO BE INSTALLED AT THE DRIPLINE. DRIP LINE – THE AREA OF SOIL DIRECTLY BENEATH THE TREE EXTENDING OUT TO THE TIPS OF THE OUTERMOST BRANCHES.
2. NO CONSTRUCTION EQUIPMENT SHALL BE ALLOWED ON SITE UNTIL ALL TREE PROTECTION FENCING AND SILT FENCING HAS BEEN INSTALLED AND APPROVED
3. TREE PROTECTIVE FENCING TO BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT.
4. LAND CLEARING AND CONSTRUCTION CONTRACTORS SHALL RECEIVE ADEQUATE INSTRUCTION ON TREE PROTECTION REQUIREMENTS AND METHODS.

METHOD OF TREE PROTECTION DURING CONSTRUCTION

SCALE: N.T.S.

CONSTRUCTION SEQUENCE:
1. REQUEST PRE-CONSTRUCTION CONFERENCE WITH COUNTY EROSION INSPECTOR.
2. INSTALL SILT FENCE AND TREE PROTECTION.
3. COMMENCE GRADING OPERATIONS.
4. STABILIZE ALL DISTURBED AREAS AS SOON AS FINAL GRADES ARE ESTABLISHED.
5. REMOVE TEMPORARY CONTROL DEVICES (SILT FENCE, ETC.) ONCE PERMANENT VEGETATIVE COVER IS ESTABLISHED.

GRADING NOTES:
1. INITIATE CONSTRUCTION SEQUENCE BEFORE BEGINNING CLEARING AND GRADING OPERATIONS.
2. CLEAR AREAS TO BE GRADED OF ALL VEGETATION. PROTECT VEGETATION BEYOND GRADING LIMITS.
3. STRIP TOPSOIL TO FULL AREAS TO BE GRADED AND STOCKPILE OR REMOVE FROM SITE.
4. COMPACT ALL FILL AREAS TO 95% OF MAXIMUM DENSITY.
5. ALL BANKS AND SWALE SIDE SLOPES SHALL BE GRADED WITH NO STEEPER THAN 3:1 SLOPES.
6. OPERATOR SHALL VERIFY EXISTING TOPOGRAPHY IN RELATION TO THE PROPOSED GRADES TO ENSURE DRAINAGE IN THE DIRECTIONS INDICATED ON THE PLAN.
7. PROPOSED SPOT ELEVATIONS ARE SHOWN AT FINISHED GRADE.

EROSION CONTROL:
1. ANY GRADING BEYOND THE DENUDED LIMITS SHOWN ON THE PLAN IS A VIOLATION AND IS SUBJECT TO A FINE.
2. STABILIZATION IS THE BEST FORM OF EROSION CONTROL. TEMPORARY SEEDING IS NECESSARY TO ACHIEVE EROSION CONTROL ON LARGE DENUDED AREAS AND ESPECIALLY WHEN SPECIFICALLY REQUIRED AS PART OF THE CONSTRUCTION SEQUENCE SHOWN ON THE PLAN. ALL GRADING SLOPES MUST BE SEEDED AND MULCHED WITHIN 21 CALENDAR DAYS OF COMPLETION OF GRADING. ALL FLAT AREAS ARE TO BE SEEDED AND MULCHED WITHIN 15 WORKING DAYS.
3. ADDITIONAL DEVICES MAY BE REQUIRED AS AGREED UPON BY FIELD INSPECTOR, ENGINEER, AND OWNER.
4. IF ACTIVE CONSTRUCTION CEASES IN ANY SLOPED AREA FOR MORE THAN 21 CALENDAR DAYS OR 15 WORKING DAYS IN FLAT AREAS, ALL DISTURBED AREAS MUST BE SEEDED, MULCHED, AND TACKED, UNLESS WRITTEN APPROVAL IS GRANTED BY THE EROSION CONTROL INSPECTOR.
5. IF ACTIVE CONSTRUCTION CEASES FOR 21 CALENDAR DAYS DURING GRADING OPERATIONS. ALL DISTURBED AREAS, INCLUDING DITCHES MUST BE SEEDED, MULCHED, & TACKED, UNLESS WRITTEN APPROVAL IS GRANTED BY THE EROSION CONTROL INSPECTOR.

GROUND STABILIZATION REQUIREMENTS		
Site Area Description	Stabilization	Timeframe Exceptions
Perimeter dikes, swales, ditches, and slopes	7 days	None
High Quality Water (HQW) Zones	7 days	None
Slopes steeper than 3:1	7 days	If slopes are 10' or less in length & are not steeper than 2:1, 14 days are allowed.
Slopes 3:1 or flatter	14 days	7 days for slopes greater than 50' in length.
All other areas with slopes flatter than 4:1	14 days	None, except for perimeters and HQW Zones.

MAINTENANCE PLAN:
1. ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS WILL BE MADE IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNED.
2. SEDIMENT WILL BE REMOVED FROM BEHIND THE SEDIMENT FENCE AND TREE PROTECTION FENCE WHEN IT BECOMES ABOUT 0.5 FEET DEEP AT THE FENCE. THE SEDIMENT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER.
3. ALL SEEDED AREAS WILL BE FERTILIZED, RESEEDED AS NECESSARY, AND MULCHED ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER.
4. THE CONTRACTOR IS RESPONSIBLE FOR THE SITE UNTIL ALL TEMPORARY CONTROL DEVICES HAVE BEEN REMOVED.

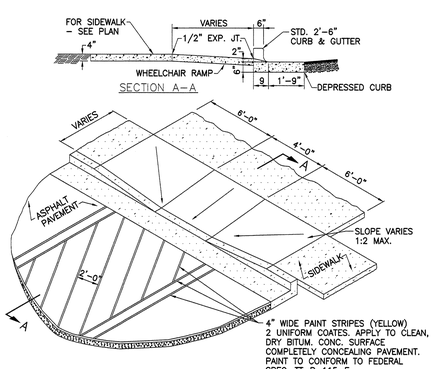
SITE NOTES:
1. THE CONTRACTOR SHALL VISIT THE SITE TO FAMILIARIZE THEMSELVES WITH FIELD CONSTRUCTION CONDITIONS.
2. BORROW MATERIAL: ALL BORROWED MATERIAL MUST COME FROM A LEGALLY OPERATED MINE OR OTHER SOURCE APPROVED BY THE STATE.
3. CLEARED, GRUBBED, STRIPPED, OR EXCAVATED SPOIL SHALL BE REMOVED FROM THE SITE OR USED IN LANDSCAPED ISLANDS.

SEEDING SPECIFICATIONS:
LIME: APPLY 100 POUNDS PER 1,000 SQUARE FEET
FERTILIZER: APPLY 20 POUNDS 8-8-8 PER 1,000 SQUARE FEET
SEED (NON-NCDOT RIGHT OF WAY): PER ACRE

NOVEMBER-MARCH	
BERMUDA (UNHULLED)	20 LBS.
WINTER RYE (GRAIN)	50 LBS.
FESCUE	80 LBS.
MARCH-NOVEMBER	
BERMUDA (HULLED)	30 LBS.
FESCUE	80 LBS.

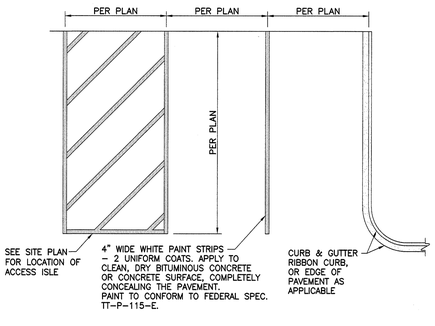
MULCH: APPLY 1-1/2 TONS/ACRE WHEAT STRAW (OR APPROVED EQUAL) ON ALL SEEDED AREAS.
TACK: ALL SLOPES WITH STRAW MULCH EXCEEDING 3:1 TO HAVE ASPHALT TACK APPLIED AT THE RATE OF 225 GALLONS/ACRE.
- AFTER SOIL PREPARATION AND SEEDING, INSTALL JUTE MATTING, OR EQUAL ON ALL DISTURBED AREAS.
- MAINTAIN SEEDED AREAS UNTIL MINIMUM GROWTH IS ESTABLISHED AND/OR FOR CONTRACT TIME.

GENERAL NOTES:
1. ALL SIGNS AND PAVEMENT MARKINGS IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS.
2. ALL TRAFFIC CONTROL SIGNS AND MARKINGS OFF THE RIGHT-OF-WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER IN ACCORDANCE WITH MUTCD STANDARDS.
3. ANY BROKEN OR MISSING SIDEWALK, CURBING OR DRIVEWAY PANELS WILL BE REPLACED.



WHEELCHAIR RAMP DETAILS

SCALE: N.T.S.



PAINT STRIPE DETAIL

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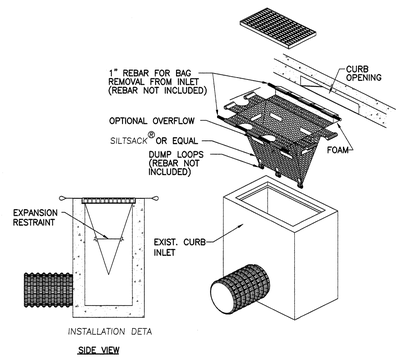

SILT SACK DETAIL

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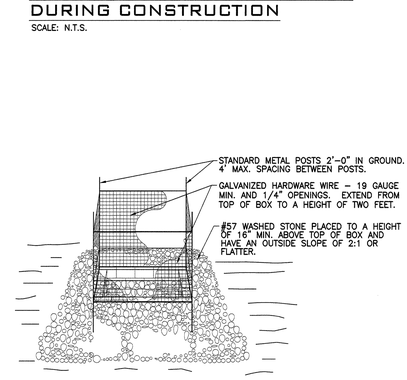
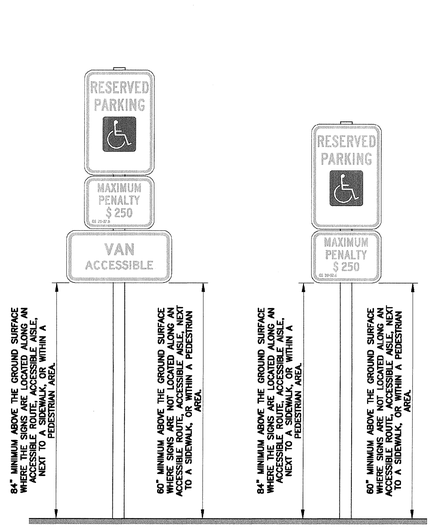
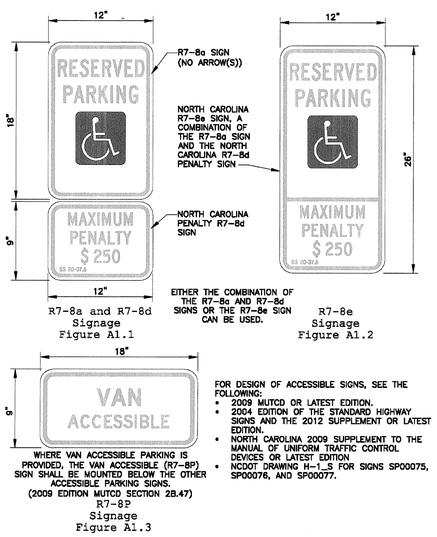


INLET SEDIMENT CONTROL

SCALE: N.T.S.

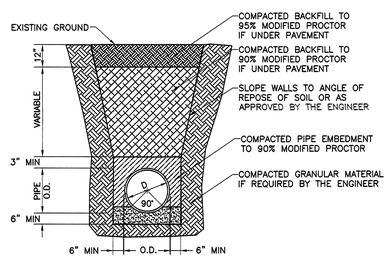




FOR DESIGN OF ACCESSIBLE SIGNS, SEE THE FOLLOWING:
- 2009 MUTCD OR LATEST EDITION.
- 2004 EDITION OF THE STANDARD HIGHWAY SIGNS AND THE 2012 SUPPLEMENT OR LATEST EDITION.
- NORTH CAROLINA 2009 SUPPLEMENT TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES OR LATEST EDITION
- NCDOT DRAWING H-1_S FOR SIGNS SP00075, SP00076, AND SP00077.

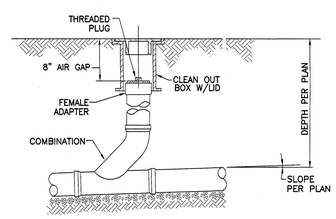
ACCESSIBLE PARKING SIGN DETAILS

SCALE: N.T.S.



PIPE TRENCH DETAIL

SCALE: N.T.S.



NOTE: PIPE SIZE AND MATERIAL PER PLAN

CLEAN OUT DETAIL

SCALE: N.T.S.

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10/24/19

Brunswick County Courthouse Addition & Renovations

Bolivia, NC

Construction Drawings
September 23, 2019

Revisions:
A | 4.16.19 | NCDEQ SUBMITTAL
B | 9.23.19 | CONSTRUCTION DRAWINGS

CIVIL DETAILS

C2.0

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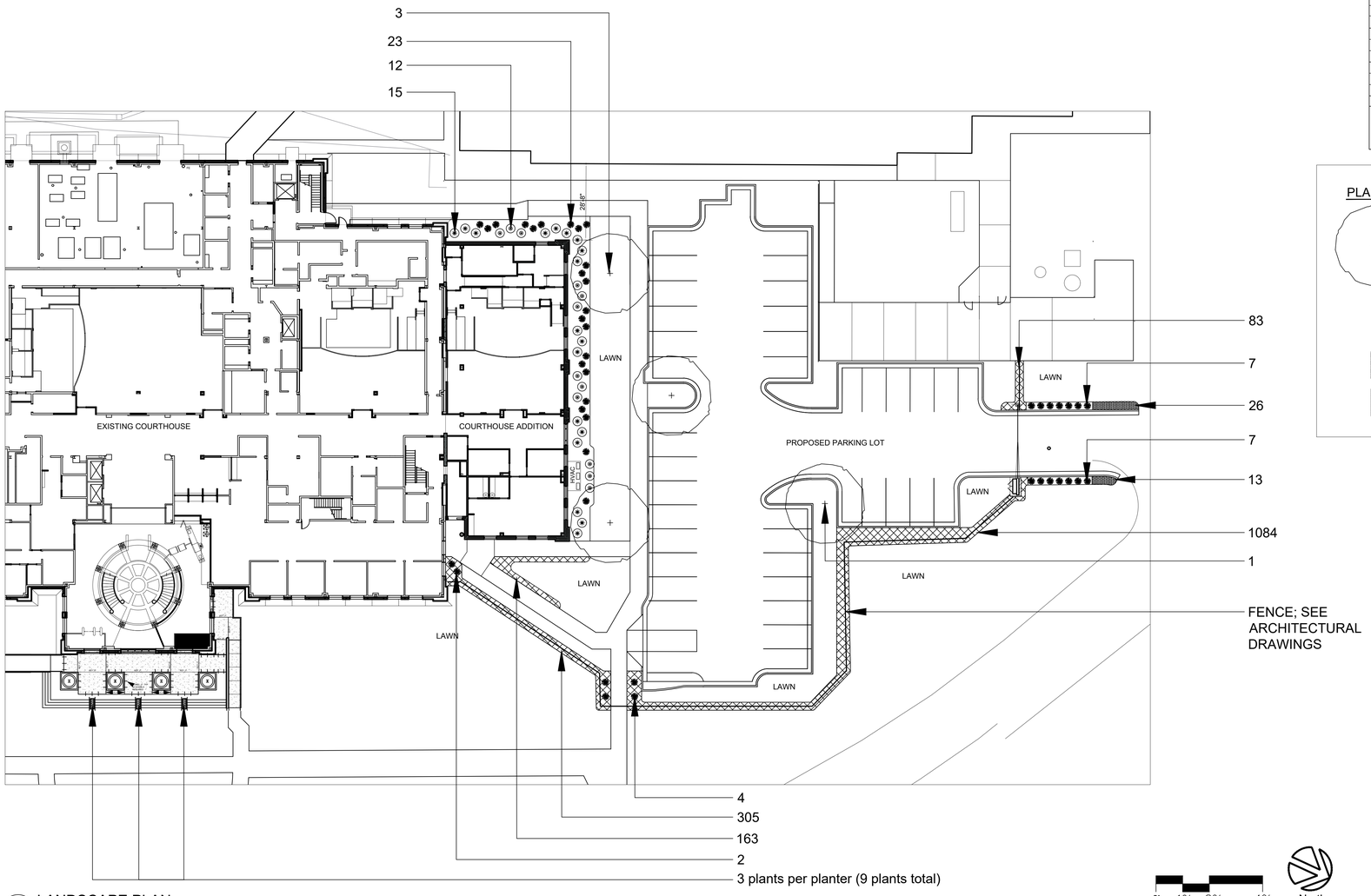
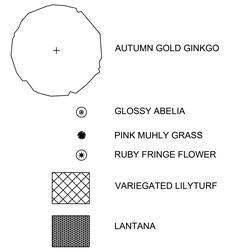


A LANDSCAPE PLAN

SCALE: 1" = 20'-0"

PLANT SCHEDULE						
QTY	KEY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	SPACING
SMALL SHADE TREE						
4		GINKGO BILOBA 'AUTUMN GOLD'	AUTUMN GOLD GINKGO	2" CAL. MIN. & 10' HT. MIN.	B & B/CONT.	AS SHOWN
SHRUBS						
12		ABELIA X GRANDIFLORA	GLOSSY ABELIA	7 GAL. MIN.	CONTAINER	AS SHOWN
15		LOROPETALUM CHINENSE VAR. RUBRUM 'RUBY'	RUBY FRINGE FLOWER	7 GAL. MIN.	CONTAINER	AS SHOWN
GROUNDCOVERS/PERENNIALS						
48		LANTANA	LANTANA	1 GAL MIN.	CONTAINER	18" O.C.
1635		LIRIOPE MUSCARI 'VARIEGATA'	VARIEGATED LILYTURF	3" POT MIN.	CONTAINER	12" O.C.
GRASSES						
43		MUHLENBERGIA CAPILLARIS	PINK MUHLY GRASS	1 GAL MIN.	CONTAINER	36" O.C.
OTHER						
	LAWN	SOD OR SEED TO MATCH EXISTING LAWN; FINAL MATERIAL TO BE SELECTED BY OWNER.				
	MULCH	BROWN HARDWOOD SHREDDED MULCH AT A MINIMUM INSTALLED DEPTH OF 3" ; ALL BEDS BROWN SHREDED HARDWOOD MULCH UNLESS OTHERWISE NOTED ON PLANS	ALL TREES, SHRUBS, AND GROUNDCOVERS/ LANDSCAPE BEDS TO BE INCLUDED IN MULCH BEDS. OWNER TO APPROVE MULCH SIZE AND COLOR.			

PLANTING LEGEND



PLANT MATERIAL NOTES

1. ALL PLANT MATERIAL SHALL CONFORM TO THE MOST CURRENT STANDARDS ESTABLISHED BY 'THE AMERICAN ASSOCIATION OF NURSERYMAN".
2. CONTAINERIZED PLANTS SHALL HAVE A ROOT SYSTEM SUFFICIENT ENOUGH IN DEVELOPMENT TO HOLD THE SOIL INTACT WHEN REMOVED FROM THE CONTAINER. THE ROOT SYSTEM SHALL NOT BE ROOT BOUND, A CONDITION WHERE THE ROOT SYSTEM IS DENSE IN MASS, EXCESSIVELY INTERTWINED, AND HAS ESTABLISHED A CIRCULAR GROWTH PATTERN.
3. ALL PLANTS SHALL BE FRESHLY DUG, SOUND, HEALTHY, VIGOROUS, WELL-ROOTED PLANTS AND ESTABLISHED IN THE CONTAINER IN WHICH THEY ARE SOLD. THE PLANTS SHALL HAVE TOPS WHICH ARE GOOD QUALITY AND ARE IN A HEALTHY GROWING CONDITION.
4. PLANTS SHALL NOT BE PRUNED PRIOR TO DELIVERY UNLESS APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO SHIPMENT.
5. ALL TREE PITS, SHRUB BEDS AND PREPARED PLANTING BEDS ARE TO BE COMPLETELY EXCAVATED IN ACCORDANCE WITH THE PLANTING DETAILS AND SPECIFICATIONS.
6. TOPSOIL AMENDMENTS REQUIRED FOR SOIL MIXES SHALL BE PROVIDED BY CONTRACTOR AND APPROVED BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. CONTRACTOR MUST LOAD, HAUL, MIX AND SPREAD ALL TOPSOIL AND OTHER SOIL ADDITIVES AS REQUIRED ON SITE.
7. CONTRACTOR SHALL VERIFY AND/ OR AMEND ALL PLANTING SOILS TO ENSURE PROPER SUITABILITY INCLUDING STATE RECOMMENDED QUANTITIES OF NITROGEN, PHOSPHORUS, AND POTASH NUTRIENTS AND SOIL AMENDMENTS TO BE ADDED TO PRODUCE QUALITY PLANTING SOIL FOR ALL PLANT MATERIAL TO SURVIVE.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL PLANTING PITS PERCOLATE PROPERLY PRIOR TO PLANTING INSTALLATION.
9. SHRUBS, BULBS, AND GROUNDCOVERS SHALL BE TRIANGULARLY SPACED AT SPACING SHOWN ON PLANTING PLANS AND/OR IN THE PLANT SCHEDULE.
10. THE CONTRACTOR SHALL THE VERIFY EXTENT OF SEEDING OR SOD AREA WITH OWNER REPRESENTATIVE AND LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
11. LANDSCAPER MUST BE A LICENSED NC LANDSCAPE CONTRACTOR.

TREE INSTALLATION NOTES

1. ALL TREES SHALL MEET AMERICAN STANDARD FOR NURSERY STOCK (ANSI, 1990, PART 1, "SHADE AND FLOWERING TREES").
2. TREES SUPPLIED MUST HAVE BEEN PROPERLY PLANTED AND GROWN IN THE NURSERY. THE ROOT CROWN (ALSO CALLED THE TRUNK FLARE) SHALL BE EVIDENT NEAR THE TOP OF THE GROUND. ANY EXCESS SOIL, UP TO 3 INCHES COVERING THE CROWN WILL HAVE TO BE REMOVED CAREFULLY BY HAND, IN ORDER TO PREVENT ROOT SCRAPES. THE TREE IS THEN TO BE PLANTED WITH THE ROOT CROWN IN PROPER RELATION TO THE SURROUNDING GRADE. ANY TREES WITH MORE THAN 3 INCHES OF SOIL ON TOP OF THE ROOT CROWN WILL BE REJECTED. THE NURSERY OWNERS MAY DIG OVERSIZE BALLS AND REMOVE THE SOIL IN ORDER FOR THE ROOT SYSTEM DIAMETER (WHICH IS THE REQUIRED ROOT BALL DIAMETER) TO MEET THE SPECIFICATION FOR THE TRUNK CALIPER REQUIRED.
3. BALL AND BURLAPPED (B&B) PLANTS MUST HAVE FIRM, NATURAL BALLS OF EARTH, OF DIAMETER NOT LESS THAN RECOMMENDED IN THE "TREE AND SHRUB TRANSPLANTING MANUAL", AND BE OF SUFFICIENT DEPTH TO INCLUDE THE FIBROUS AND FEEDING ROOTS. PLANTS MOVED WITH A BALL WILL NOT BE ACCEPTED IF THE BALL IS DRY, CRACKED OR BROKEN BEFORE OR DURING PLANTING OPERATIONS.
4. REMOVE ALL TREATED OR PLASTIC-COATED BURLAP, STRAPPING, WIRE OR NYLON TWINE FROM ROOT BALL. AFTER SETTING IN HOLE, CUT AWAY 2/3 OF WIRE BASKET, IF ANY, AND TOP 1/3 OF BURLAP.
5. SOAK ROOT BALL AND PIT IMMEDIATELY AFTER INSTALLATION.
6. CONSTRUCT 4" HIGH SAUCER (WATER BERM) OUTSIDE OF PLANT MIX BACK FILL.
7. WHERE TREES ARE PLANTED IN ROWS, THEY SHALL BE UNIFORM IN SIZE AND SHAPE.
8. NO EXISTING TREES SHALL BE REMOVED WITHOUT WRITTEN AUTHORIZATION FROM THE OWNER REPRESENTATIVE EXCEPT WHERE NOTED ON PLANS. NO GRUBBING SHALL OCCUR WITHIN EXISTING TREE AREAS.
9. THE CONTRACTOR SHALL STAKE THE LOCATIONS OF ALL PROPOSED TREES AND OBTAIN APPROVAL FROM THE LANDSCAPE ARCHITECT AND OWNER REPRESENTATIVE PRIOR TO INSTALLATION.
10. ALL TREES SHALL BE STAKED AT TIME OF INSTALLATION IN ACCORDANCE WITH PLANTING DETAILS.
11. THE CONTRACTOR SHALL ENSURE THAT TREES REMAIN VERTICAL AND UPRIGHT FOR THE DURATION OF THE GUARANTEE PERIOD.

SHRUB INSTALLATION NOTES

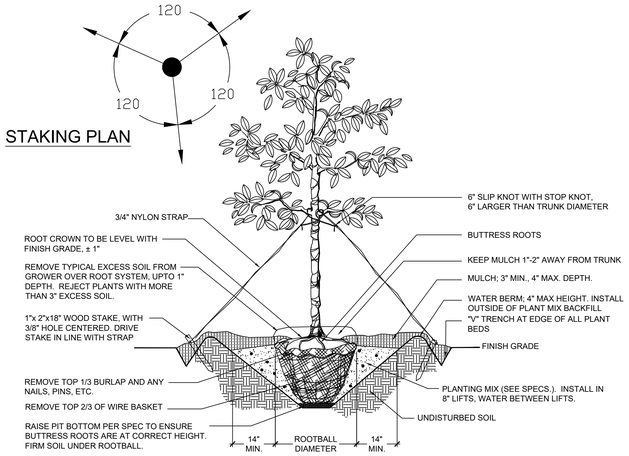
1. CUT ROOTS AS NECESSARY IN CONTAINERIZED PLANTS THAT ARE POT BOUND. REJECT PLANTS THAT HAVE GIRDLED ROOT OR ARE BOUND.
2. INSTALL TOP OF PLANT BALL 2" ABOVE ADJACENT GRADE.
3. TAMP PLANT SOIL MIX FIRMLY IN 8" LIFTS AROUND PLANT BALL.
4. SOAK PLANT BALL AND PIT IMMEDIATELY AFTER INSTALLATION.

WATERING NOTES

1. CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL PLANT MATERIAL HAS ADEQUATE WATER TO ENSURE PLANT SUCCESS. CONTRACTOR SHALL WATER PLANT MATERIAL THROUGH THE DURATION OF THE PROJECT UNTIL OWNER HAS GIVEN APPROVAL AND/OR RELEASED THE CONTRACTOR FROM THE SITE.

GENERAL NOTE

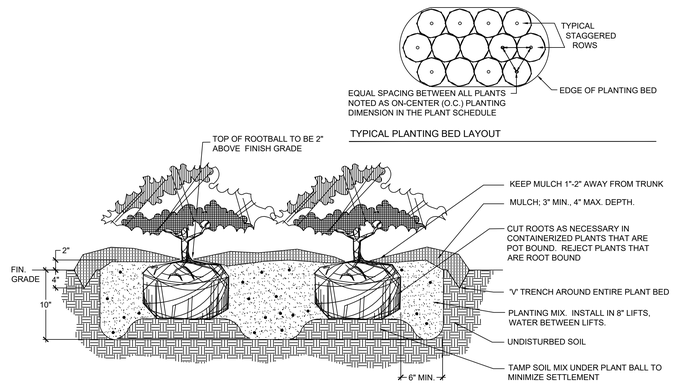
1. SEE CIVIL ENGINEERING PLANS FOR EXISTING CONDITIONS AND ITEMS INCLUDED IN DEMOLITION. SITE PLAN SHOWN TO BE USED FOR PLANTING LOCATION REFERENCE ONLY.



STAKING PLAN

B SINGLE STEM TREE INSTALLATION DETAIL

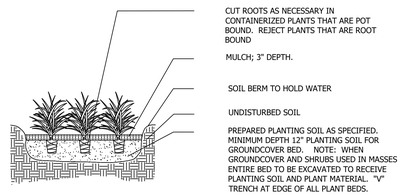
SCALE: NTS



TYPICAL PLANTING BED LAYOUT

C SHRUB INSTALLATION DETAIL

SCALE: NTS



D GROUNDCOVER INSTALLATION DETAIL

SCALE: NTS

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Brunswick County Courthouse Addition & Renovations

Bolivia, NC

Construction Drawings
September 23, 2019

Revisions:

LANDSCAPE PLAN, PLANTING DETAILS & NOTES

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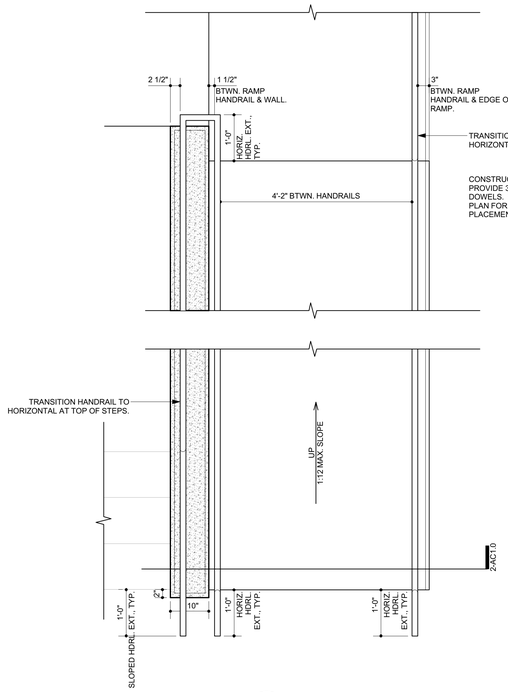
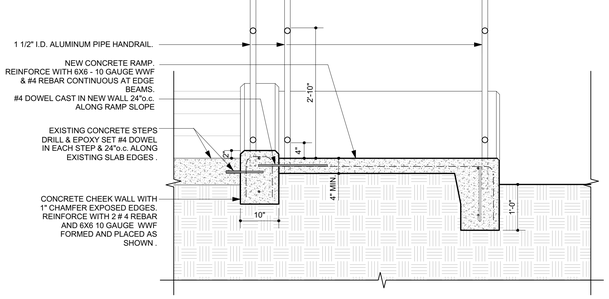


1 AC1.0 Ramp Plan
Scale: 3/4" = 1'-0"



2 AC1.0 Ramp Section
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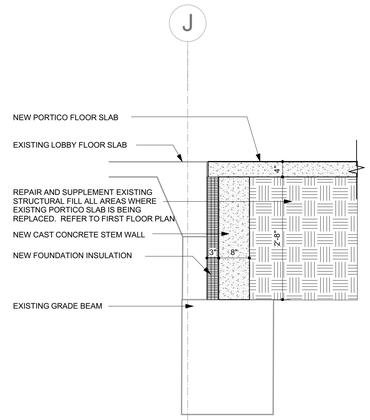
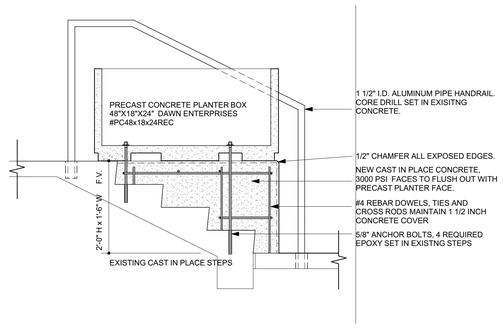


3 AC1.0 Portico Slab Edge
Scale: 3/4" = 1'-0"

TYPICAL AT ALL EXTERIOR WALL OPENINGS ON PORTICO



5 AC1.0 Typical Step Handrail Planter Section
Scale: 3/4" = 1'-0"

4 AC1.0 Architectural Site Plan
Scale: 1" = 20'-0"

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Construction Drawings
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Revisions:

Architectural Site Plan

AC1.0

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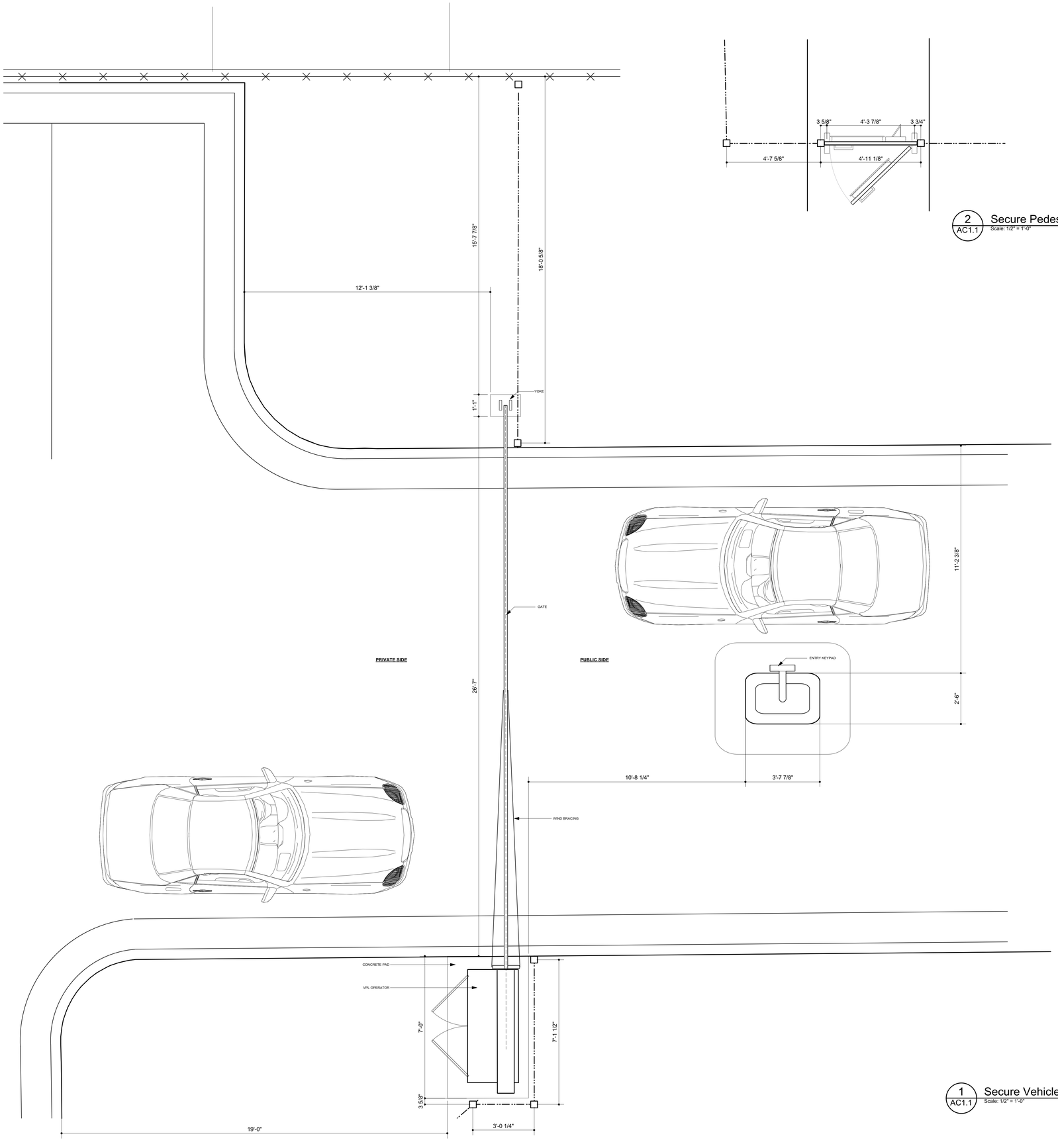
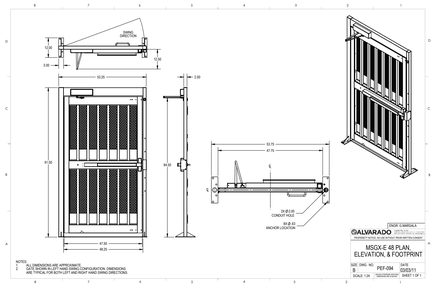
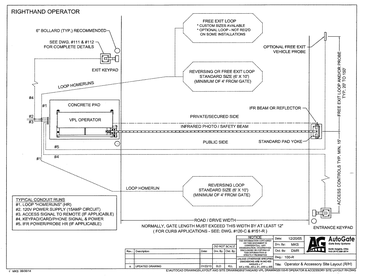
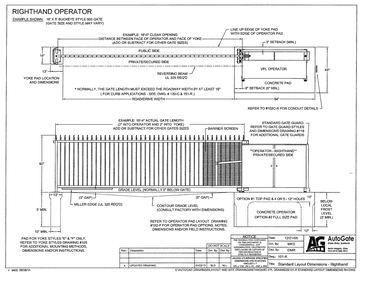


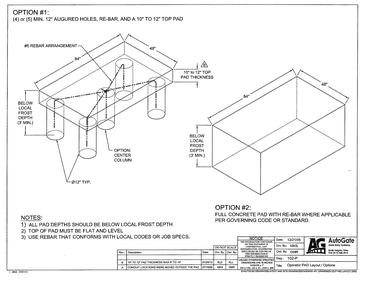
1 AC1.1 Secure Vehicle Gate
Scale: 1/2" = 1'-0"

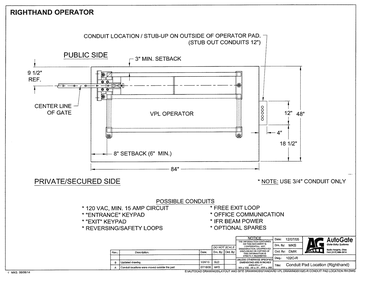
2 AC1.1 Secure Pedestrian Gate
Scale: 1/2" = 1'-0"

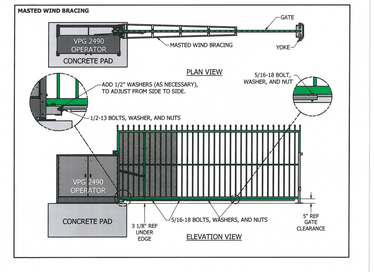












Plan North

North

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Brunswick County Courthouse Addition & Renovations

Bolivia, NC

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Revisions:

Secure Pedestrian & Vehicular Gate Details

AC1.1

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EXISTING ADMINISTRATION DO NOT OBSTRUCT OPERATIONS

TEMP. PARKING ON GRAVEL FOR JUDGES

EXISTING COOLING TOWER

EXISTING DETENTION CENTER
DO NOT OBSTRUCT OPERATIONS

MECHANICAL UPGRADE

COURTROOM

COURTROOM

VENDING

ATTORNEY BREAK

CASHIER

SECURITY

CONSTRUCTION STAGING &
PARKING RENOVATIONS

1 AC1.2 Phase 1 Plan - First Floor
Scale: 1" = 20'-0"

PHASE 1-A
OFF SITE PARKING NOT IN THIS PROJECT CONTRACT

PHASE 1-B
SITE CONSTRUCTION
TEMPORARY PARKING FOR JUDGES

PHASE 1-C
SITE & BUILDING CONSTRUCTION

Plan North

North

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Phase 1
First Floor Plan

AC1.2

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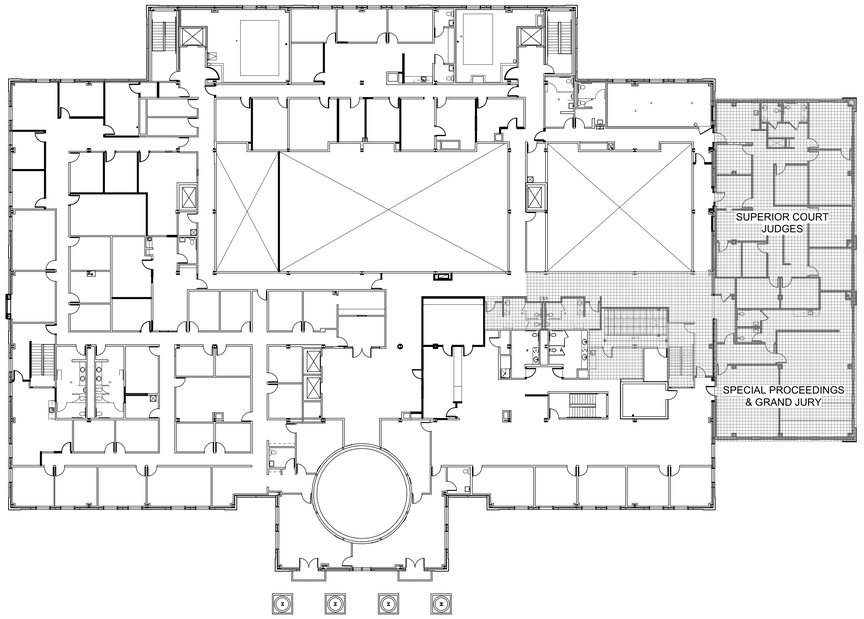
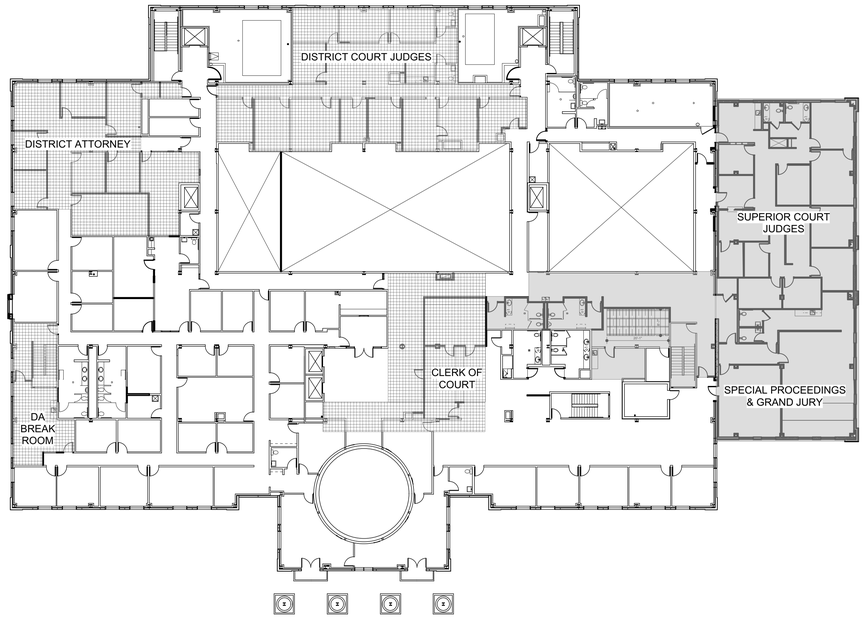


1 AC1.3 Phase 1 Plan - Third Floor
Scale: 1" = 20'-0"

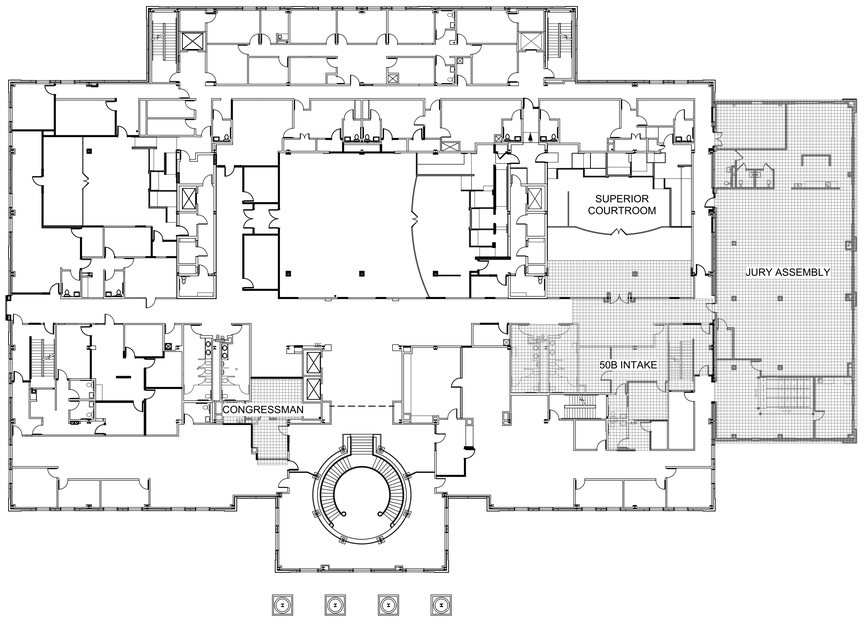
EXTENT OF PHASE 1 BUILDING CONSTRUCTION



2 AC1.3 Phase 2 Plan - Third Floor
Scale: 1" = 20'-0"

EXTENT OF PHASE 2 BUILDING CONSTRUCTION

COMPLETED PHASE 1 BUILDING CONSTRUCTION



3 AC1.3 Phase 1 Plan - Second Floor
Scale: 1" = 20'-0"

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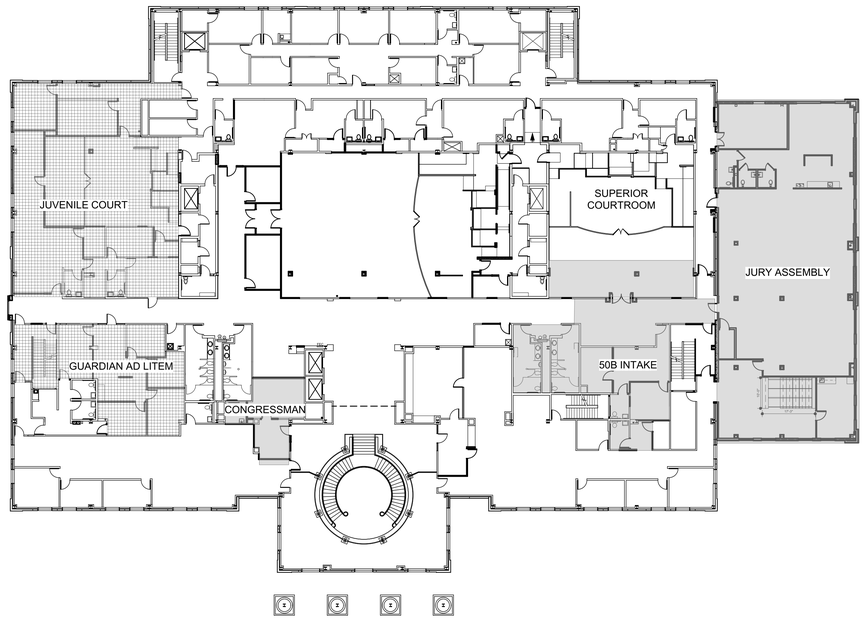

4 AC1.3 Phase 2 Plan - Second Floor
Scale: 1" = 20'-0"

EXTENT OF PHASE 2 BUILDING CONSTRUCTION

COMPLETED PHASE 1 BUILDING CONSTRUCTION

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Brunswick County Courthouse Addition & Renovations

Bolivia, NC

Construction Drawings
September 23, 2019

Revisions:

Phase 1 & 2
Second & Third
Floor Plans

Plan North

North

AC1.3

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PHASE 2 CONSTRUCTION STAGING

EXISTING COOLING TOWER

EXISTING DETENTION CENTER
DO NOT OBSTRUCT OPERATIONS

MECHANICAL UPGRADE

STATE HWY PATROL

MAGISTRATE

COURT ROOM

TRAFFIC COURTROOM

COURTROOM

COURTROOM

JUDGES & STAFF SECURE PARKING IN USE

VENDING

CASHIER

ATTORNEY BREAK

SECURITY

COMPLETED PARKING

PHASE 2 CONSTRUCTION STAGING

COMPLETED PARKING & WALKWAYS

2 / AC1.4 Phase 2 Plan - First Floor
Scale: 1" = 20'-0"

EXTENT OF PHASE 2 BUILDING CONSTRUCTION

EXTENT OF PHASE 2 SITE CONSTRUCTION

COMPLETED PHASE 1 BUILDING CONSTRUCTION

COMPLETED PHASE 1 SITE CONSTRUCTION

Plan North

North

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Bolivia, NC

Construction Drawings
September 23, 2019

Revisions:

Phase 2
First Floor Plan

AC1.4

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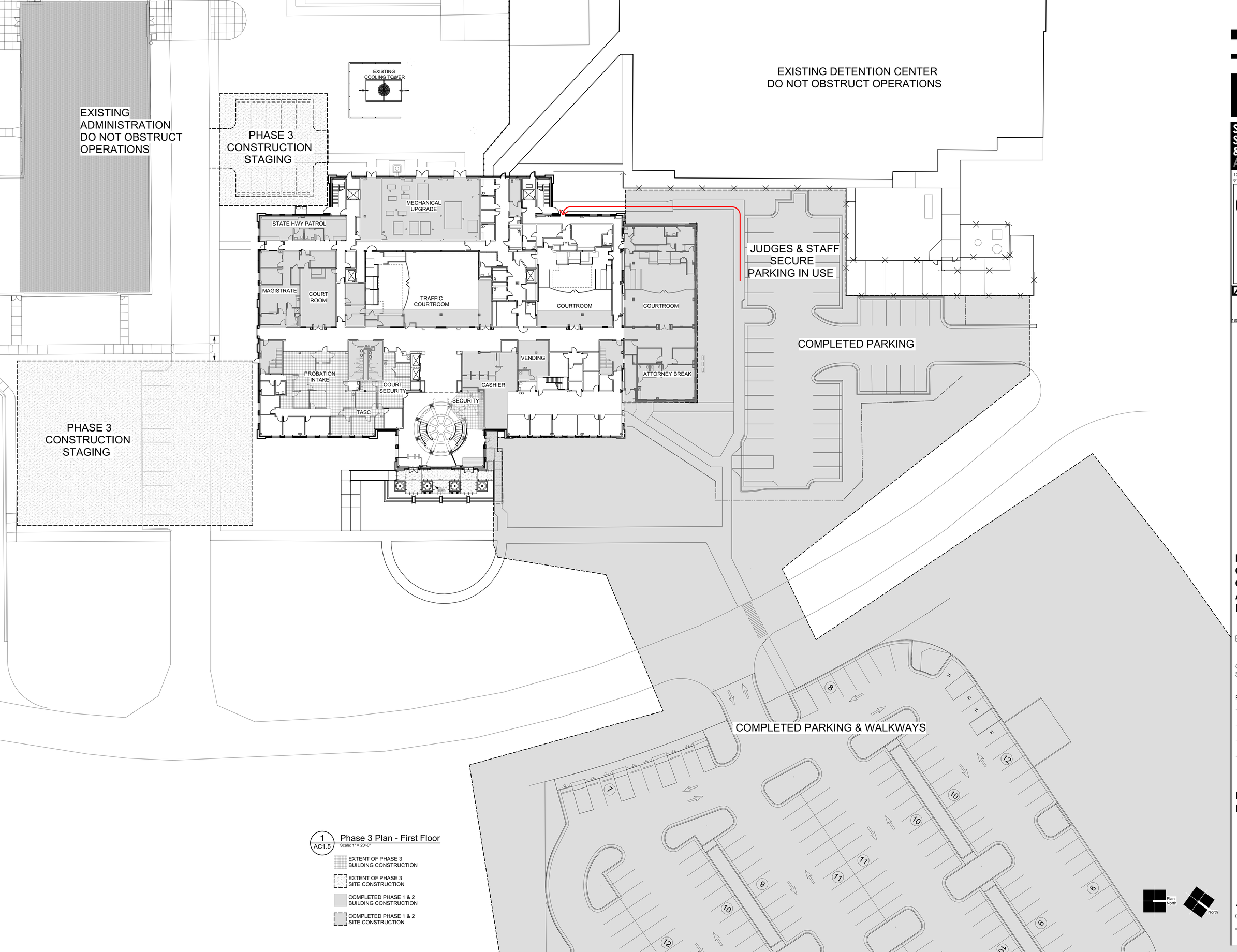

1 / AC1.5 Phase 3 Plan - First Floor

Scale: 1" = 20'-0"

- EXTENT OF PHASE 3 BUILDING CONSTRUCTION
- EXTENT OF PHASE 3 SITE CONSTRUCTION
- COMPLETED PHASE 1 & 2 BUILDING CONSTRUCTION
- COMPLETED PHASE 1 & 2 SITE CONSTRUCTION

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Phase 3
First Floor Plan

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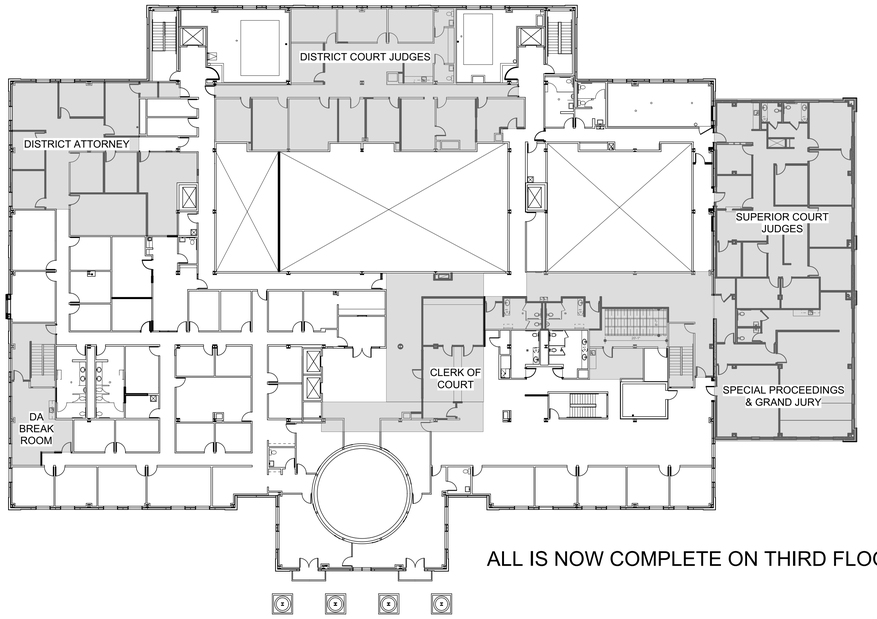
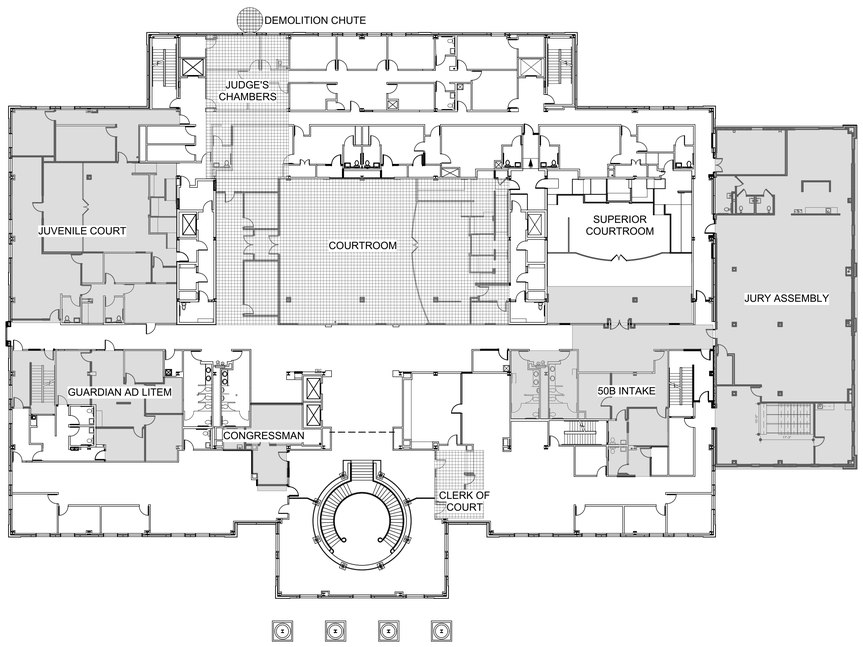


ALL IS NOW COMPLETE ON THIRD FLOOR

1 AC1.6 **Phase 3 Plan - Third Floor**
Scale: 1" = 20'-0"

COMPLETED PHASE 1 & 2 BUILDING CONSTRUCTION



2 AC1.6 **Phase 3 Plan - Second Floor**
Scale: 1" = 20'-0"

EXTENT OF PHASE 3 BUILDING CONSTRUCTION

COMPLETED PHASE 1 & 2 BUILDING CONSTRUCTION

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Revisions:

Phase 3 Second & Third Floor Plans

Plan North

North

AC1.6

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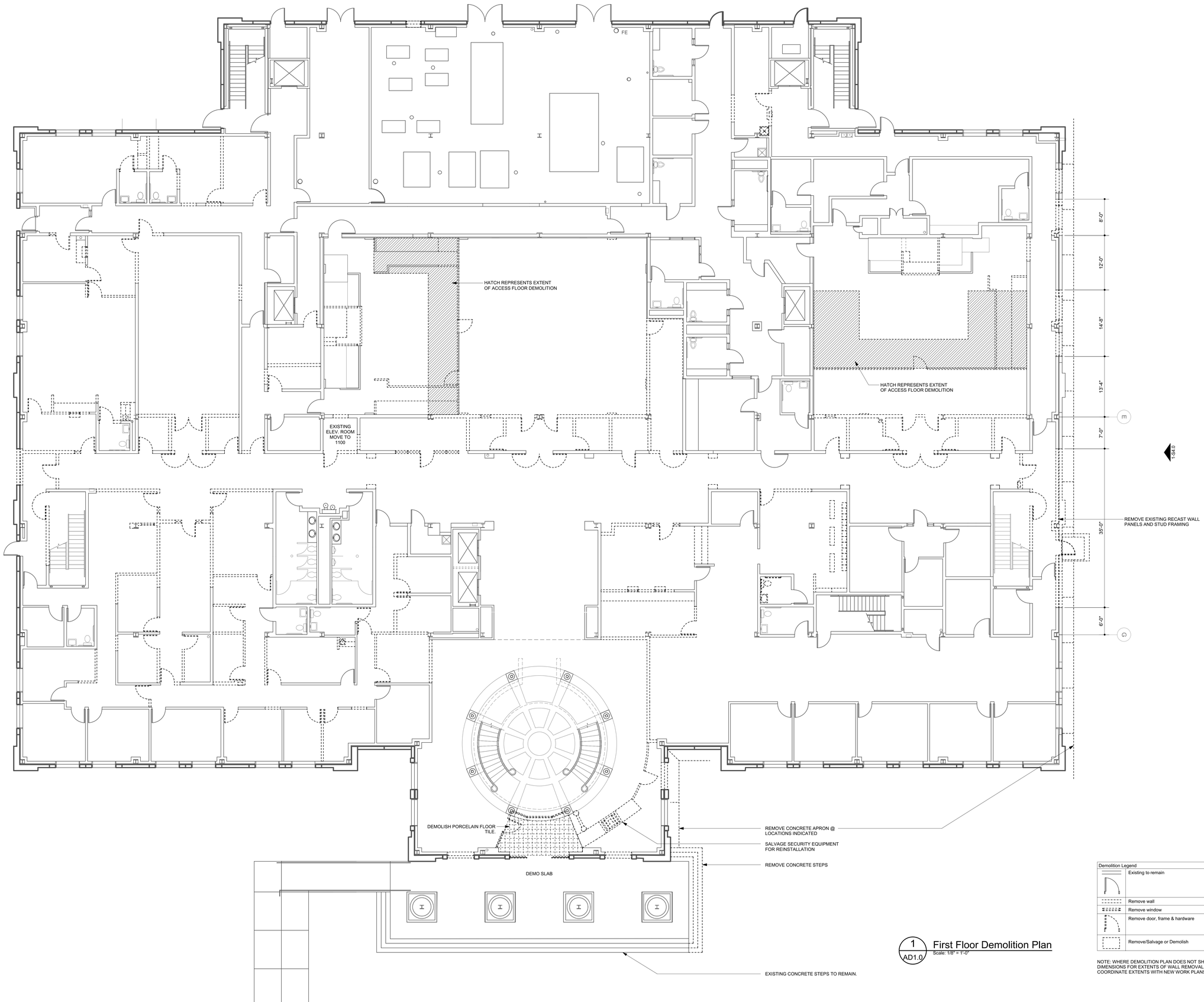

1 AD1.0 **First Floor Demolition Plan**
Scale: 1/8" = 1'-0"

Demolition Legend	
	Existing to remain
	Remove wall
	Remove window
	Remove door, frame & hardware
	Remove/Salvage or Demolish

NOTE: WHERE DEMOLITION PLAN DOES NOT SHOW DIMENSIONS FOR EXTENTS OF WALL REMOVAL, COORDINATE EXTENTS WITH NEW WORK PLANS.

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AD1.0
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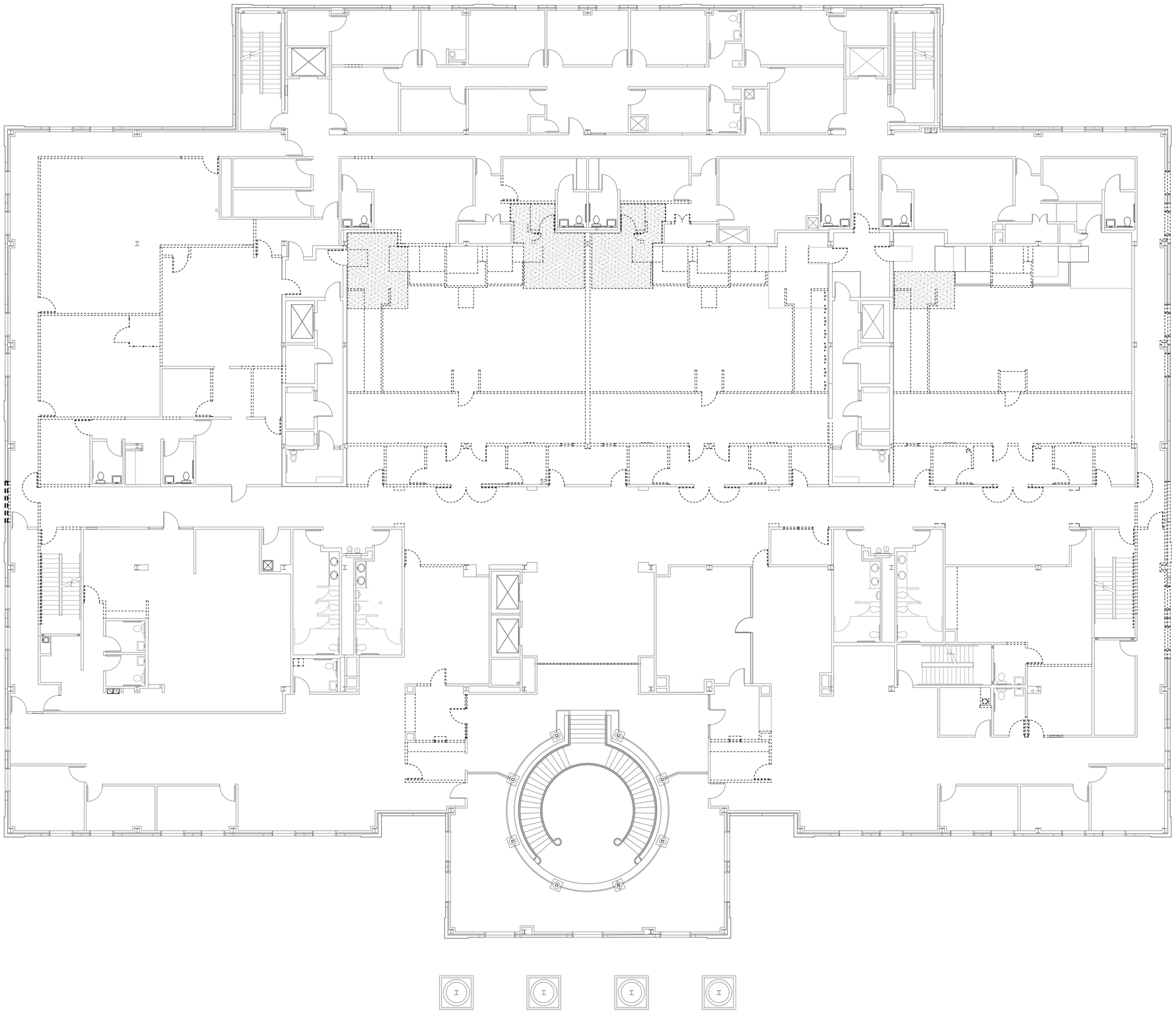

1 AD1.1 Second Floor Demolition Plan
Scale: 1/8" = 1'-0"

Demolition Legend	
	Existing to remain
	Remove wall
	Remove window
	Remove door, frame & hardware
	Remove/Salvage or Demolish

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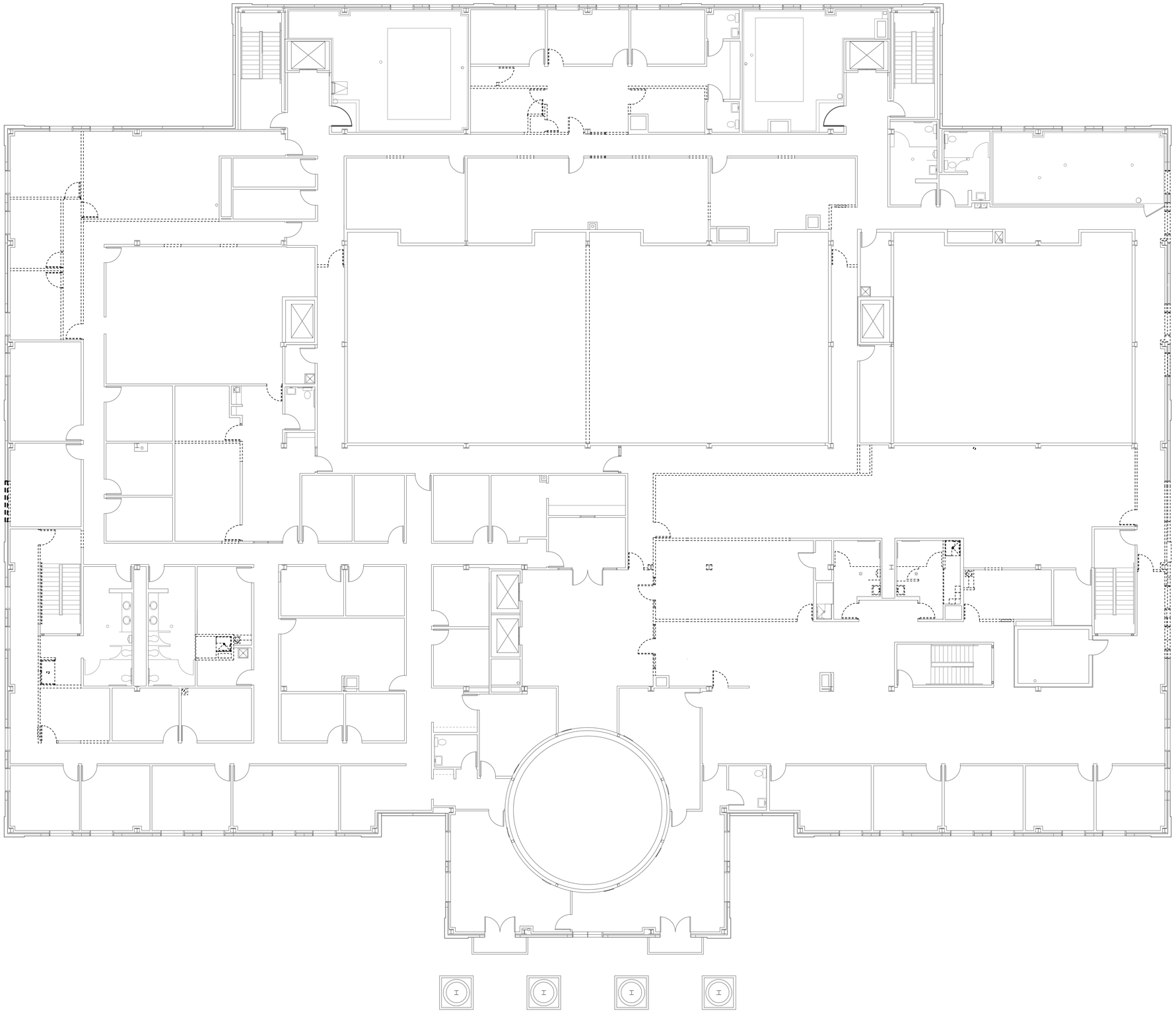

1 AD1.2 Third Floor Demolition Plan
Scale: 1/8" = 1'-0"

Demolition Legend	
	Existing to remain
	Remove wall
	Remove window
	Remove door, frame & hardware
	Remove/Salvage or Demolish

Plan North

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Third Floor
Demolition Plan

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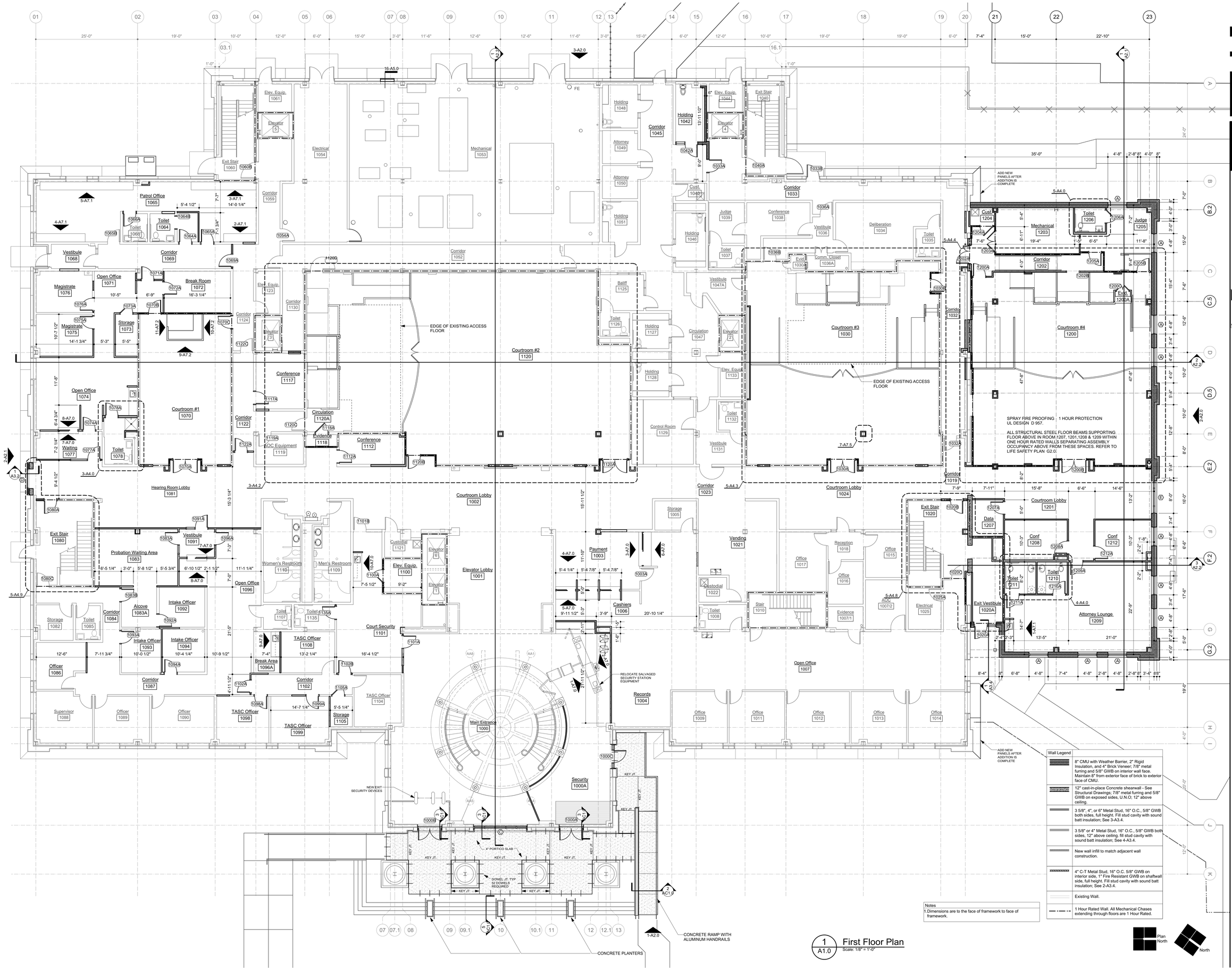

Wall Legend

	8" CMU with Weather Barrier, 2" Rigid Insulation, and 4" Brick Veneer; 7/8" metal furring and 5/8" GWB on interior wall face. Maintain 8" from exterior face of brick to exterior face of CMU.
	12" cast-in-place Concrete shearwall - See Structural Drawings; 7/8" metal furring and 5/8" GWB on exposed sides, U.N.O; 12" above ceiling.
	3 5/8", 4", or 6" Metal Stud, 16" O.C., 5/8" GWB both sides, full height. Fill stud cavity with sound batt insulation; See 3-A3.4.
	3 5/8" or 4" Metal Stud, 16" O.C., 5/8" GWB both sides, 12" above ceiling. fill stud cavity with sound batt insulation; See 4-A3.4.
	New wall infill to match adjacent wall construction.
	4" C-T Metal Stud, 16" O.C. 5/8" GWB on interior side, 1" Fire Resistant GWB on shaftwall side, full height. Fill stud cavity with sound batt insulation; See 2-A3.4.
	Existing Wall.
	1 Hour Rated Wall. All Mechanical Chases extending through floors are 1 Hour Rated.

Notes

1. Dimensions are to the face of framework to face of framework.

1 A1.0 First Floor Plan
Scale: 1/8" = 1'-0"

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SPRAY FIRE PROOFING 1 HOUR PROTECTION
UL DESIGN D 957.

ALL STRUCTURAL STEEL FLOOR BEAMS SUPPORTING FLOOR ABOVE PROVIDE IN ALL AREA WITHIN ONE HOUR RATED WALLS SEPARATING THIS ASSEMBLY OCCUPANCY FROM OTHER OCCUPANCIES. REFER TO LIFE SAFETY PLAN G 2.1

ROOF FRAMING ABOVE THIS SPACE DOES NOT REQUIRE FIREPROOFING

Wall Legend	
	8" CMU with Weather Barrier, 2" Rigid Insulation, and Stucco Finish; 7/8" metal furring and 5/8" GWB on interior wall face.
	6" Metal Stud, 16" O.C., 5/8" Exterior Sheathing with Weather Barrier, 2" Rigid Insulation, and Stucco Finish
	12" cast-in-place Concrete shearwall - See Structural Drawings; 7/8" metal furring and 5/8" GWB on exposed sides, 12" above ceiling.
	3 5/8", 4", or 6" Metal Stud, 16" O.C., 5/8" GWB both sides, full height. Fill stud cavity with sound batt insulation; See 3-A3.4.
	3 5/8" or 4" Metal Stud, 16" O.C., 5/8" GWB both sides, 12" above ceiling. Fill stud cavity with sound batt insulation; See 4-A3.4.
	New wall infill to match adjacent wall construction.
	4" CT Metal Stud, 16" O.C. 5/8" GWB on interior side, 1" GWB on shaftwall side, full height. Fill stud cavity with sound batt insulation; See 2-A3.4
	Existing Wall.
	1 Hour Rated Wall. All Mechanical Chases extending through floors are 1 Hour Rated.

1 A1.1 Second Floor Plan
Scale: 1/8" = 1'-0"

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Revisions:

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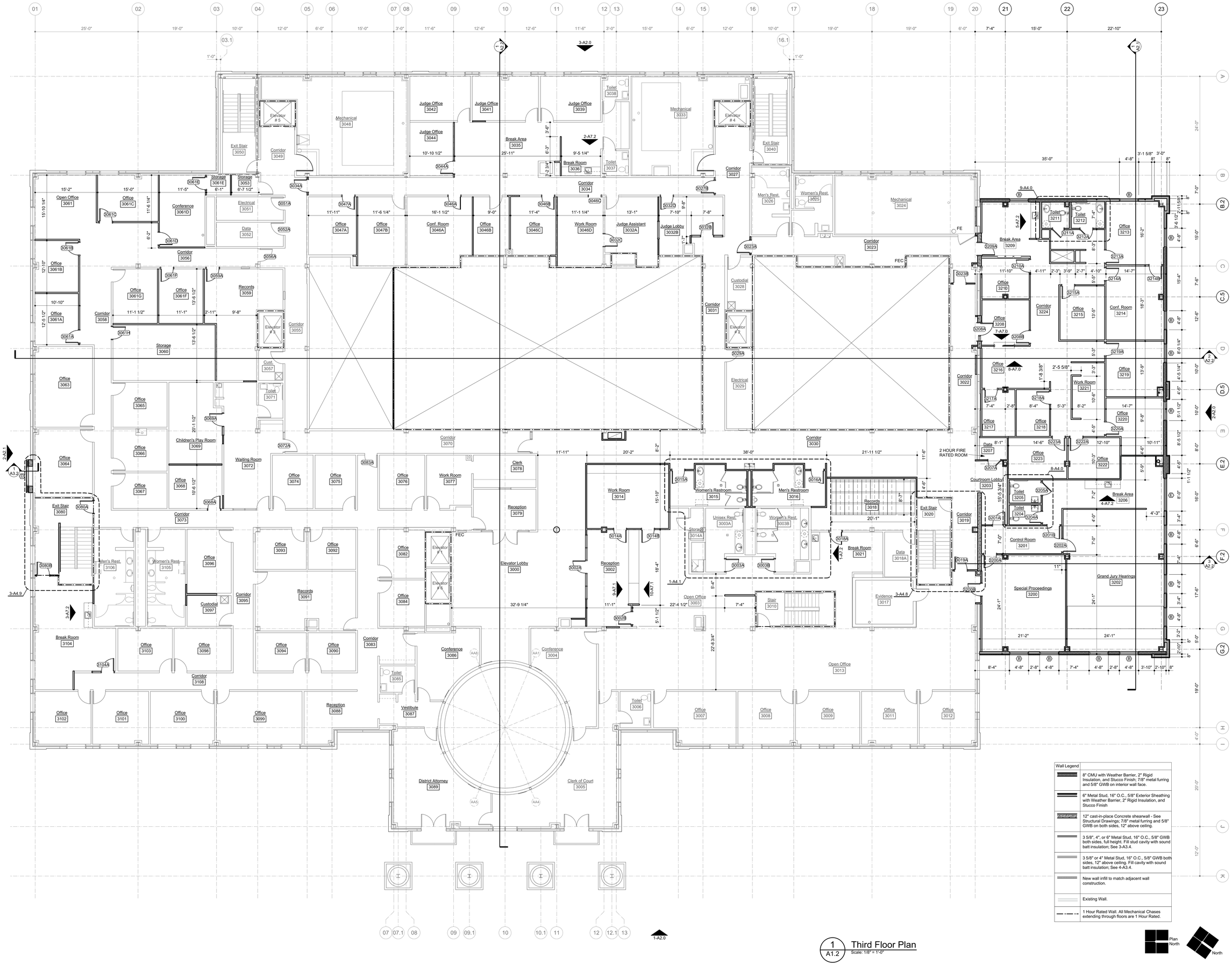

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	6" Metal Stud, 16" O.C., 5/8" Exterior Sheathing with Weather Barrier, 2" Rigid Insulation, and Stucco Finish
	12" cast-in-place Concrete shearwall - See Structural Drawings; 7/8" metal furring and 5/8" GWB on both sides, 12" above ceiling.
	3 5/8", 4", or 6" Metal Stud, 16" O.C., 5/8" GWB both sides, full height. Fill stud cavity with sound batt insulation; See 3-A3.4.
	3 5/8" or 4" Metal Stud, 16" O.C., 5/8" GWB both sides, 12" above ceiling. Fill cavity with sound batt insulation; See 4-A3.4.
	New wall infill to match adjacent wall construction.
	Existing Wall.
	1 Hour Rated Wall. All Mechanical Chases extending through floors are 1 Hour Rated.

1 / A1.2 Third Floor Plan
Scale: 1/8" = 1'-0"

Plan North

North

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Bolivia, NC

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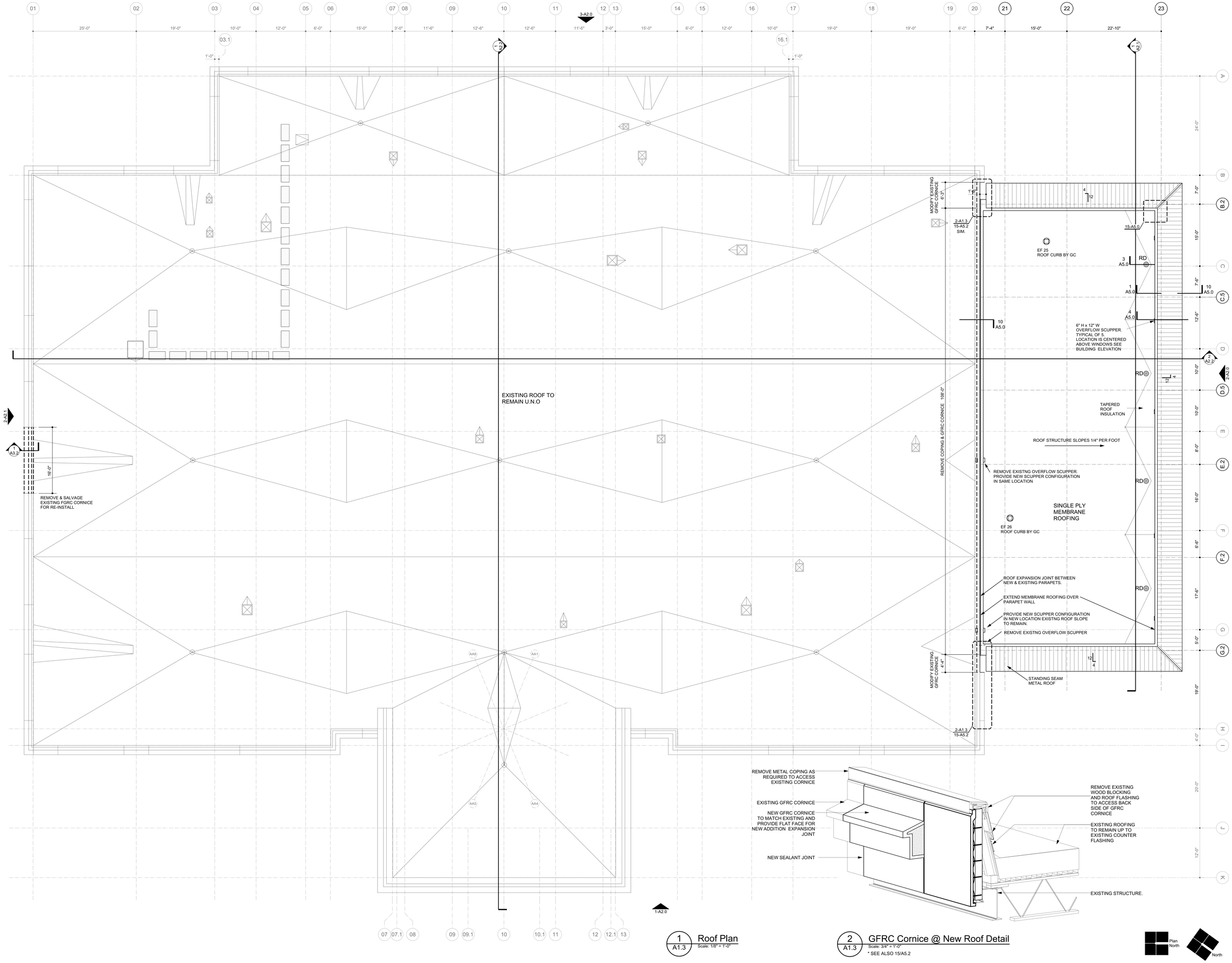

1 A1.3 **Roof Plan**
Scale: 1/8" = 1'-0"

2 A1.3 **GFRC Cornice @ New Roof Detail**
Scale: 3/4" = 1'-0"
* SEE ALSO 15/A5.2

Plan North

North

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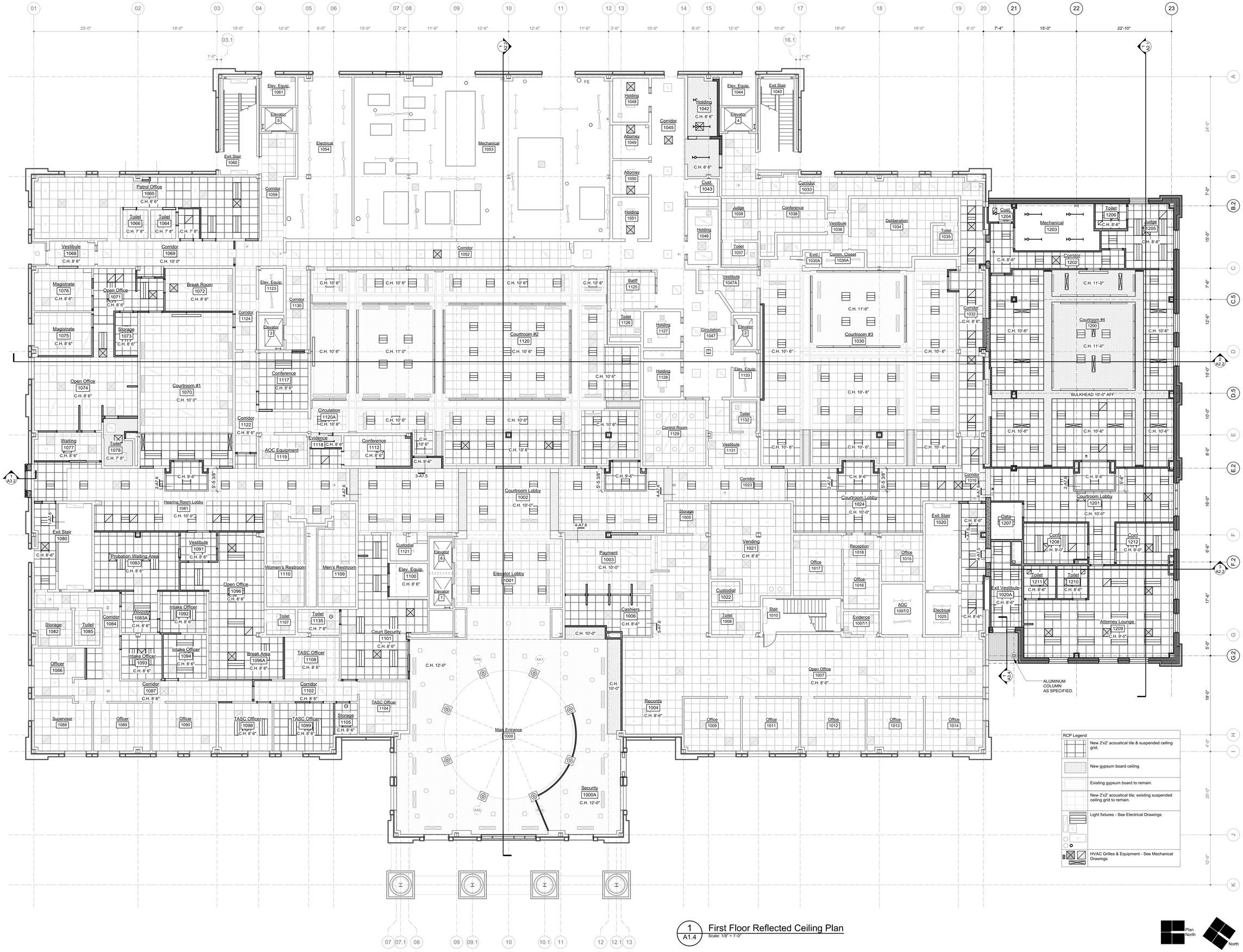

1 A1.4 First Floor Reflected Ceiling Plan
Scale: 1/8" = 1'-0"

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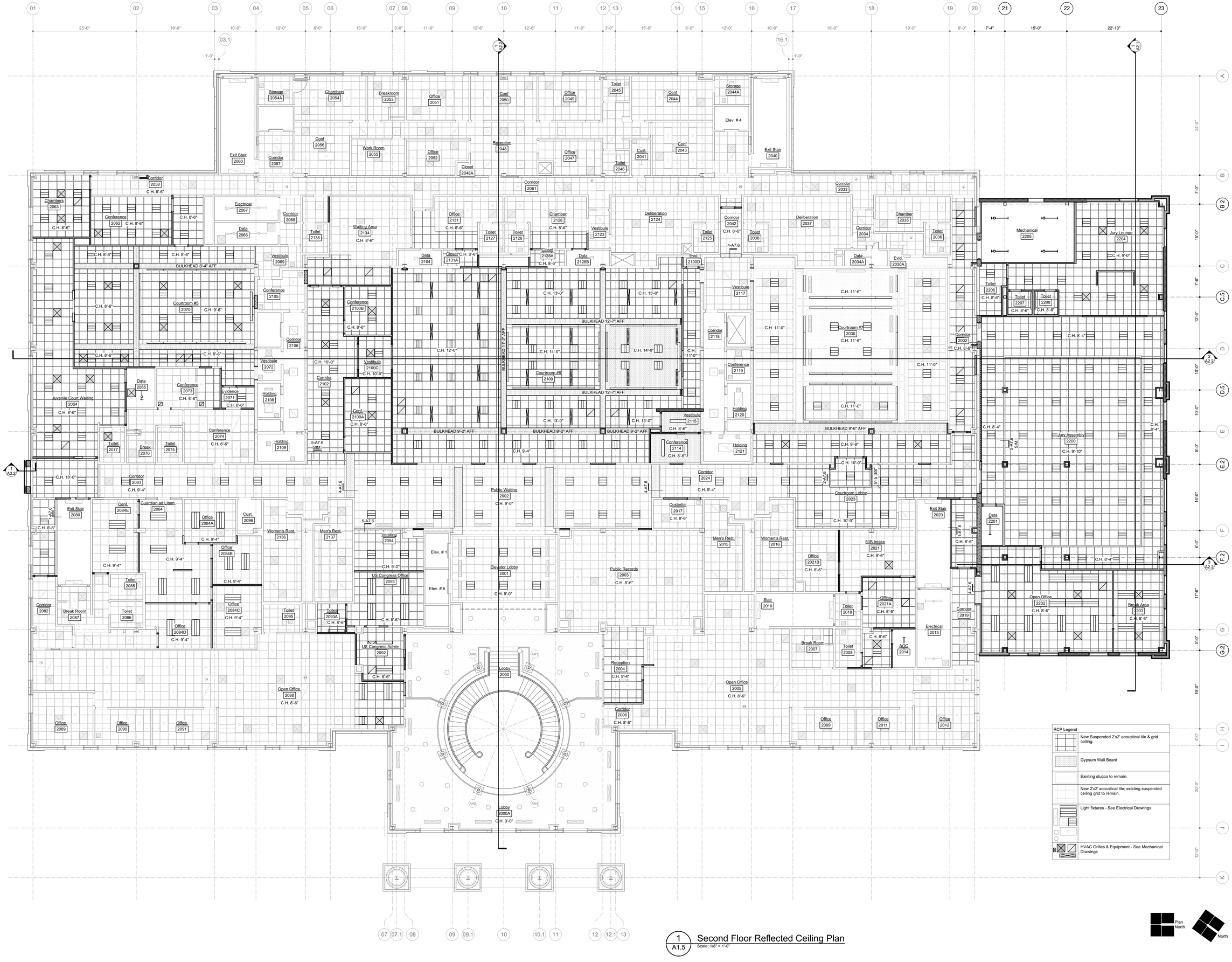

RCP Legend	
	New Suspended 2'x2' acoustical tile & grid ceiling.
	Gypsum Wall Board
	Existing stucco to remain.
	New 2'x2' acoustical tile; existing suspended ceiling grid to remain.
	Light fixtures - See Electrical Drawings
	HVAC Grilles & Equipment - See Mechanical Drawings

1 / A1.5 Second Floor Reflected Ceiling Plan
Scale: 1/8" = 1'-0"

Plan North

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Bolivia, NC

Construction Drawings
September 23, 2019

Revisions:

Second Floor Reflected Ceiling Plan

A1.5

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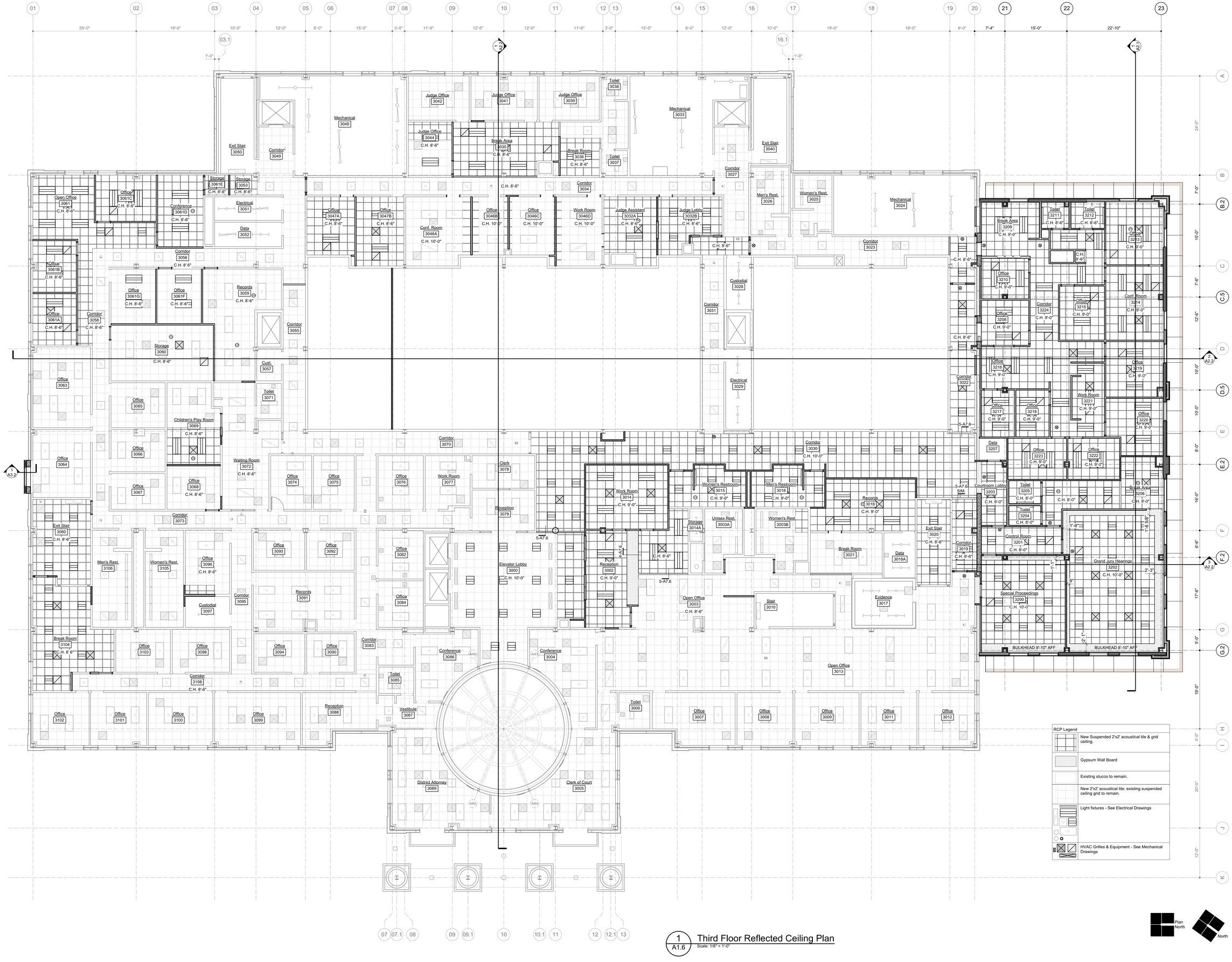

RCP Legend

	New Suspended 2'x2' acoustical tile & grid ceiling.
	Gypsum Wall Board
	Existing stucco to remain.
	New 2'x2' acoustical tile; existing suspended ceiling grid to remain.
	Light fixtures - See Electrical Drawings
	HVAC Grilles & Equipment - See Mechanical Drawings

1 / A1.6 Third Floor Reflected Ceiling Plan
Scale: 1/8" = 1'-0"

Plan North

North

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Construction Drawings
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Revisions:

Third Floor Reflected Ceiling Plan

A1.6

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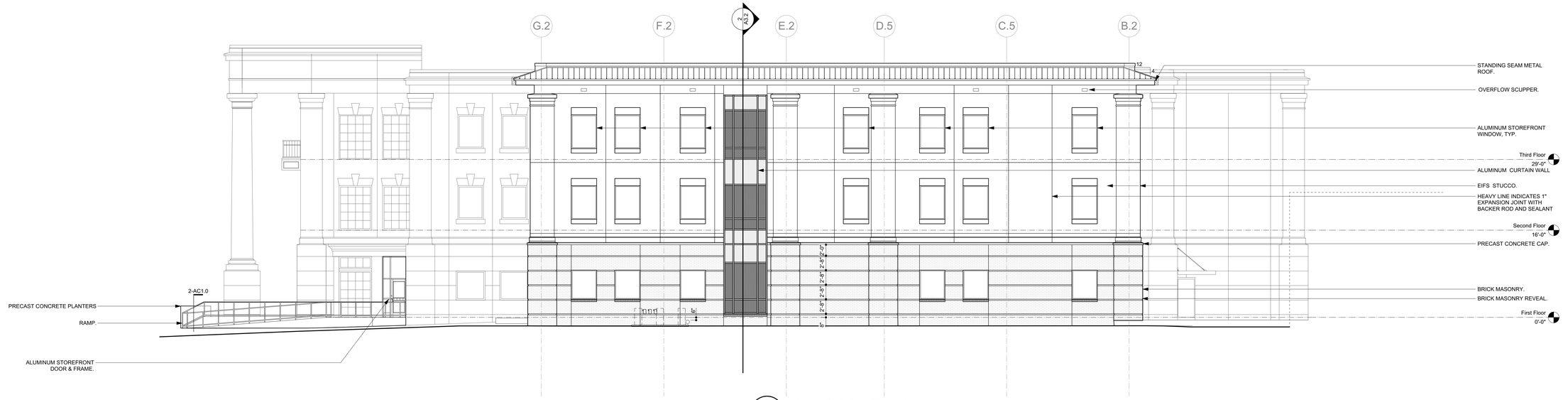
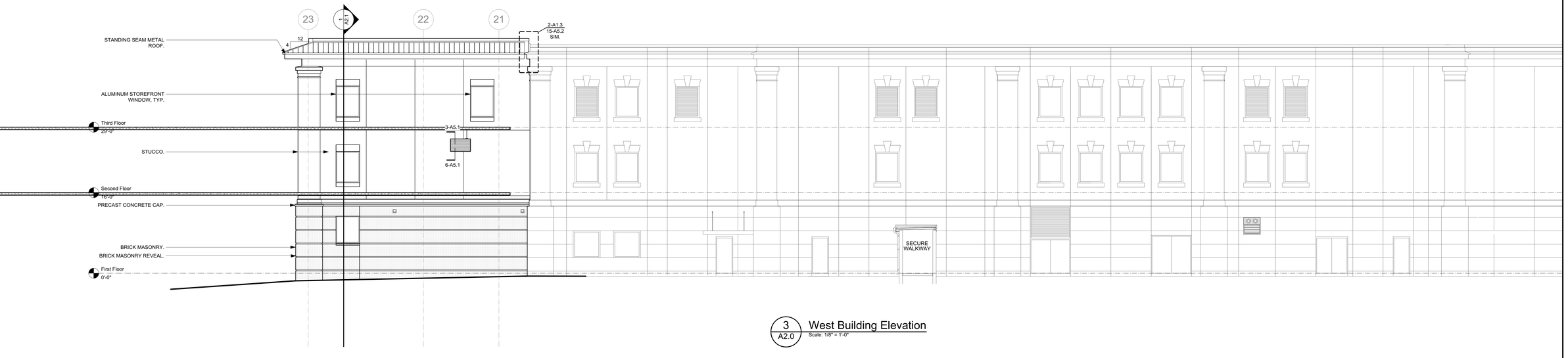
1 A2.0 East Building Elevation
Scale: 1/8" = 1'-0"



2 A2.0 North Building Elevation
Scale: 1/8" = 1'-0"



3 A2.0 West Building Elevation
Scale: 1/8" = 1'-0"

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Revisions:

Building Elevations

A2.0

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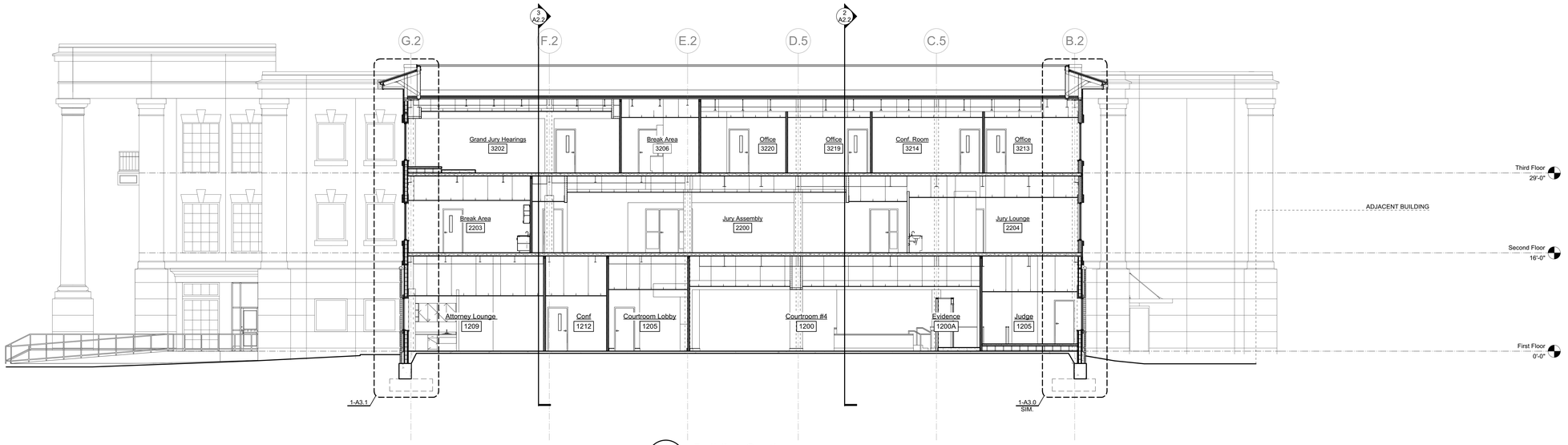
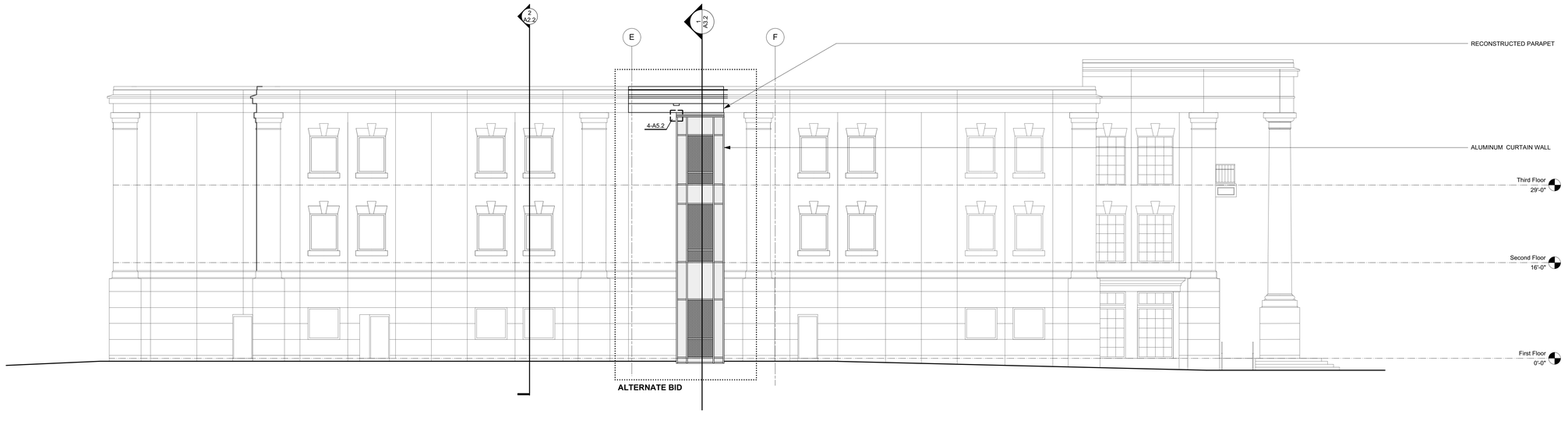


1 A2.1 **Building Section**
Scale: 1/8" = 1'-0"



2 A2.1 **South Elevation**
Scale: 1/8" = 1'-0"

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Revisions:

Building Elevation & Section

A2.1

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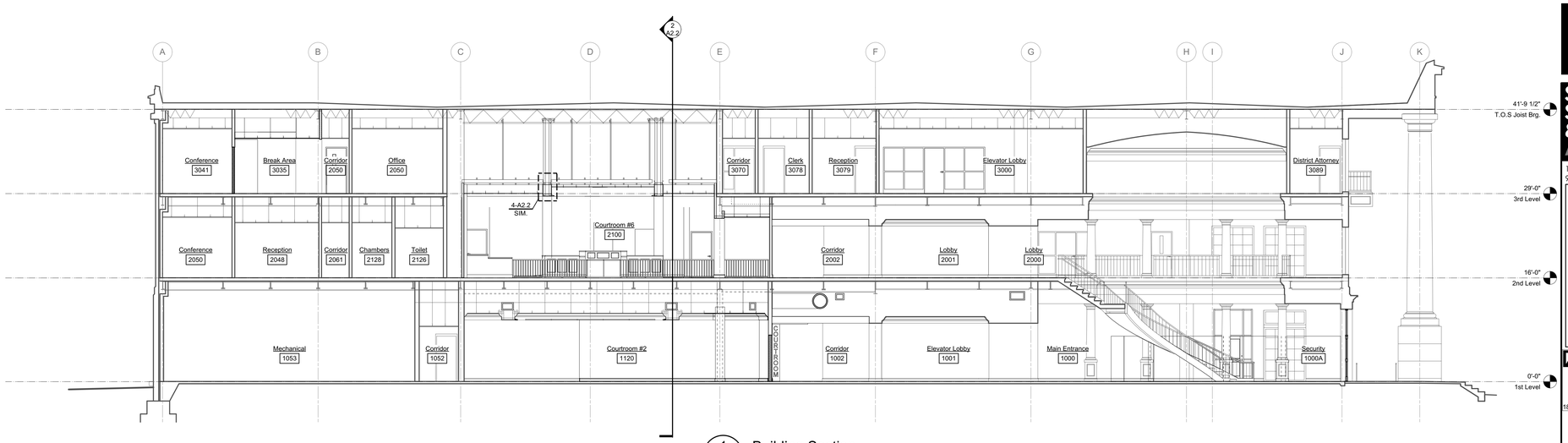

1 A2.2 **Building Section**
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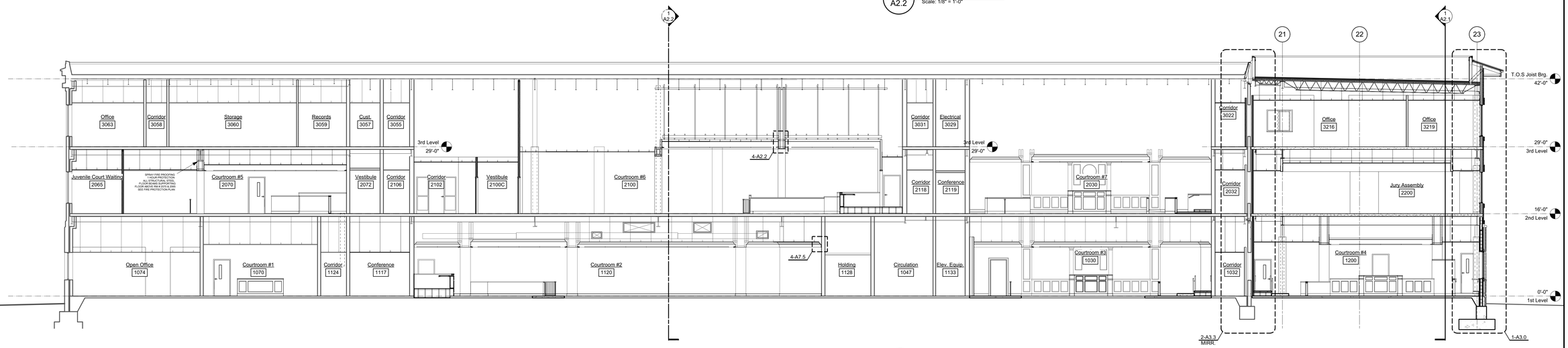
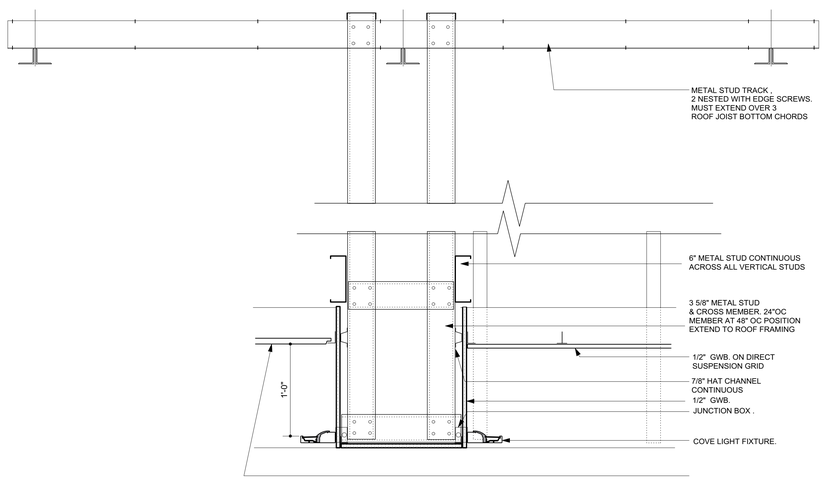
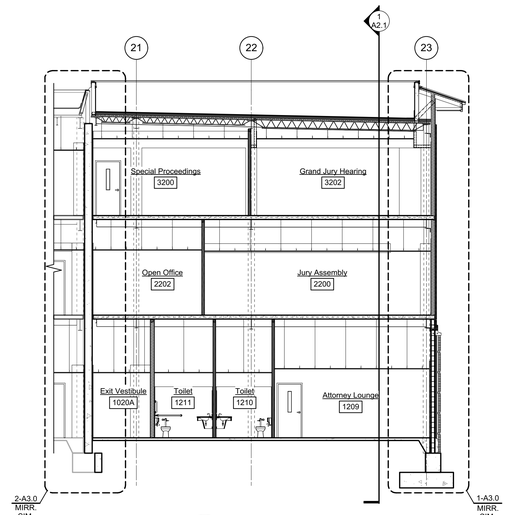


2 A2.2 **Building Section**
Scale: 1/8" = 1'-0"



4 A2.2 **Light Gauge Stud Ceiling Beam Detail**
Scale: 1 1/2" = 1'-0"



3 A2.2 **Building Section**
Scale: 1/8" = 1'-0"

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Revisions:

Building Sections

A2.2

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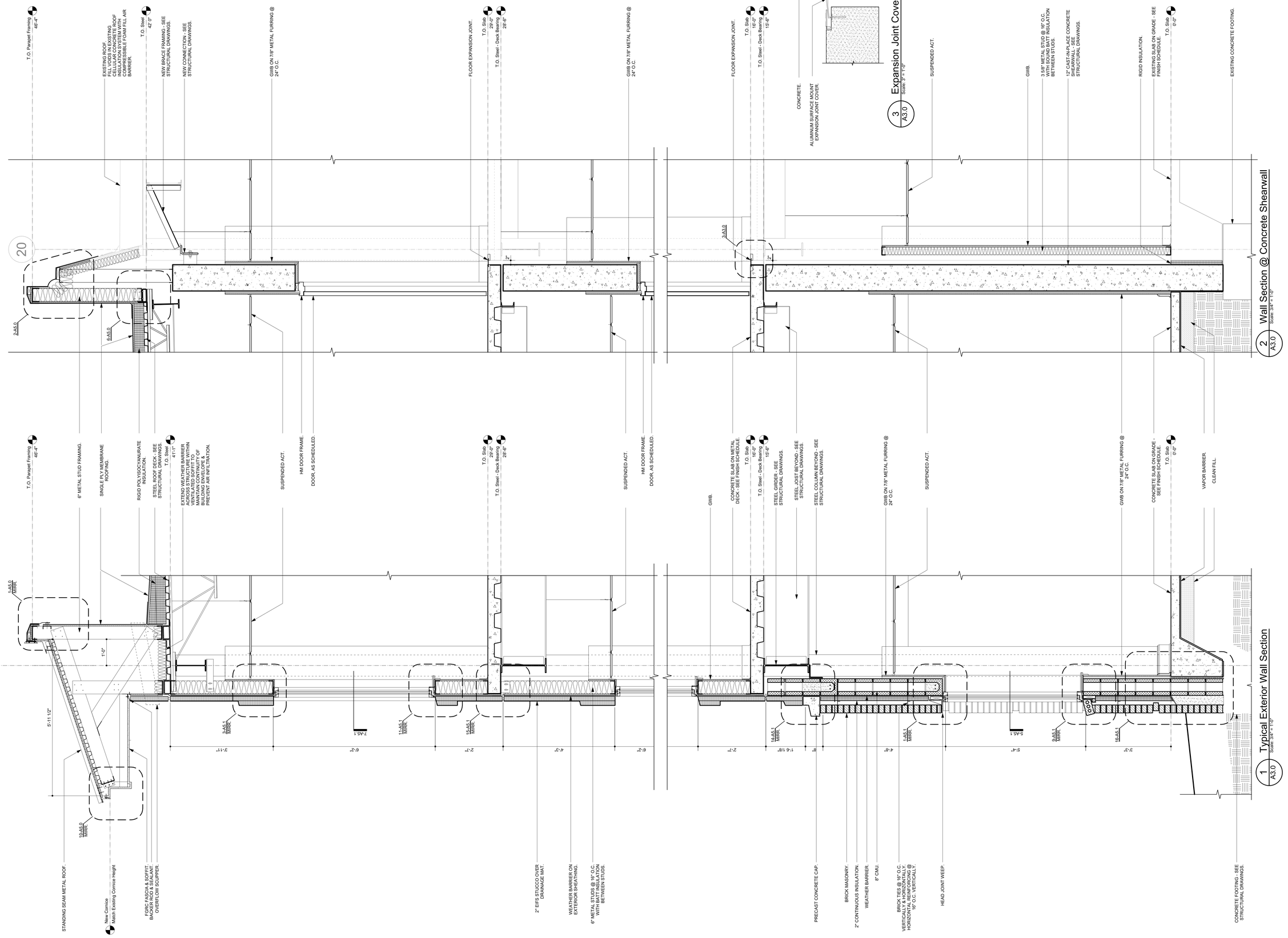

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Wall Sections

A3.0

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Wall Sections

A3.1

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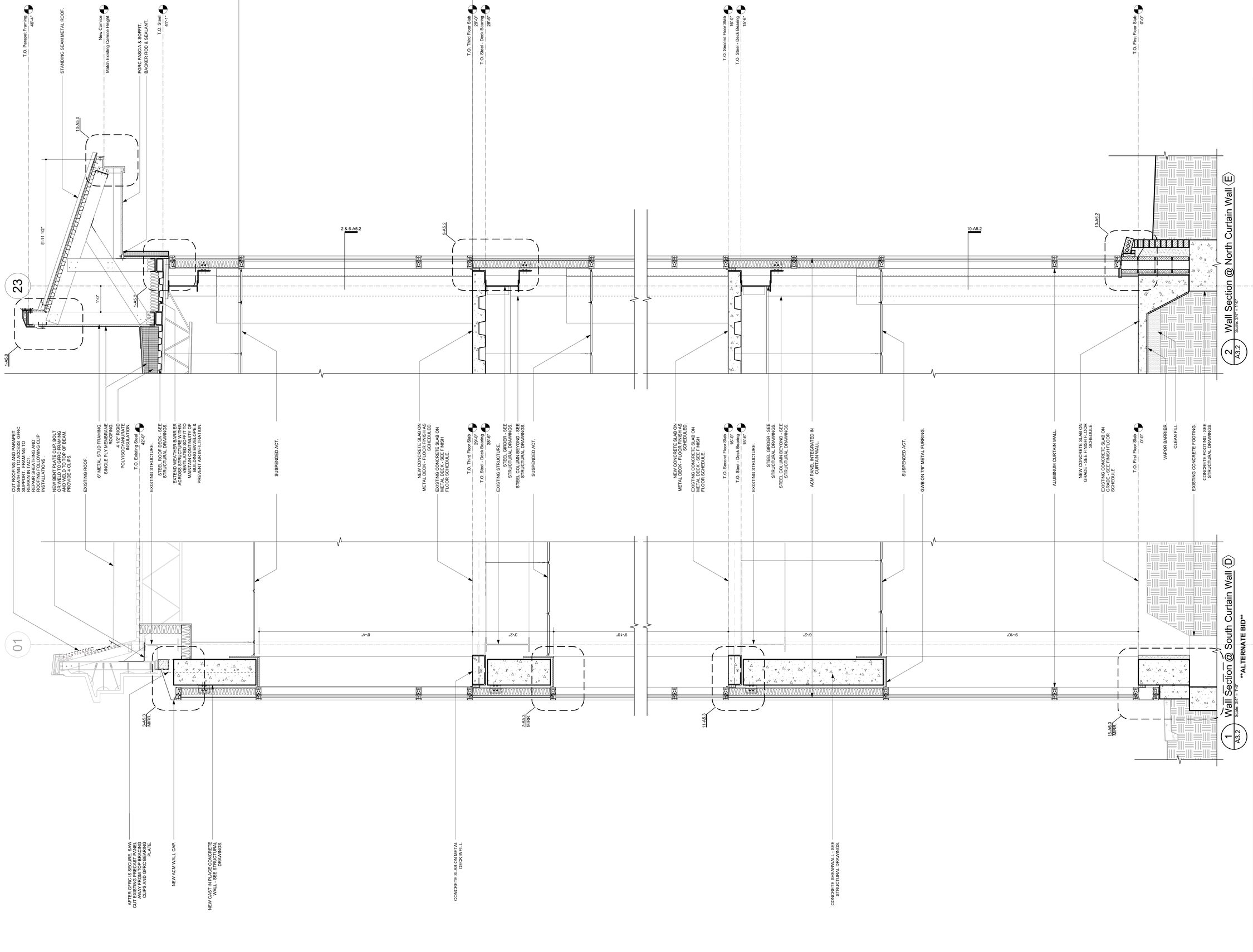

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Wall Sections

A3.2

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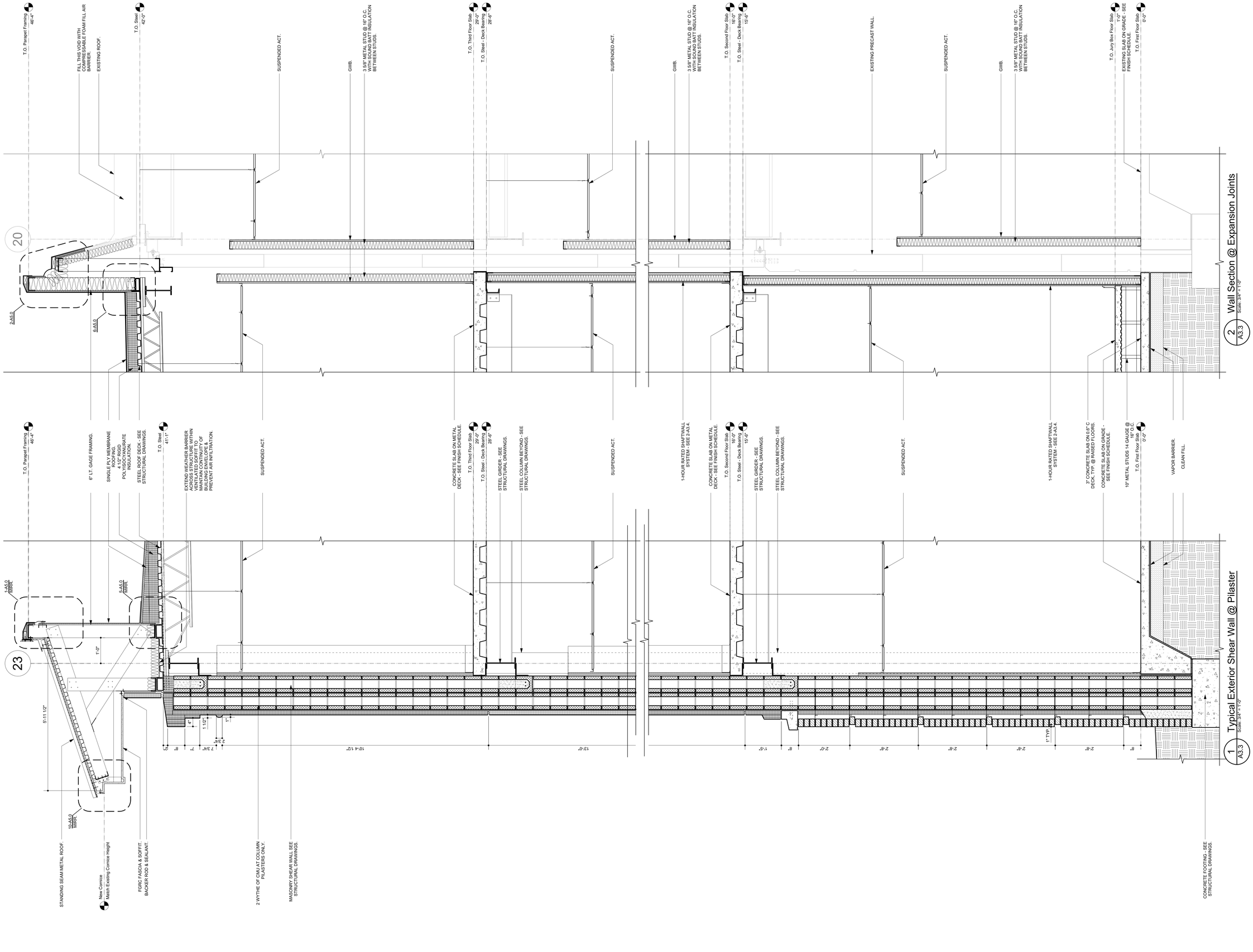

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Wall Sections

A3.3

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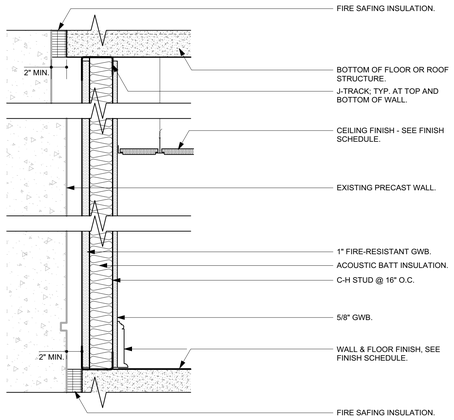
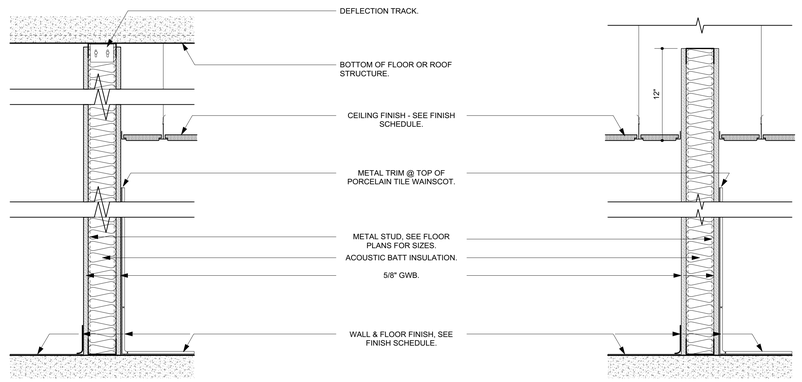
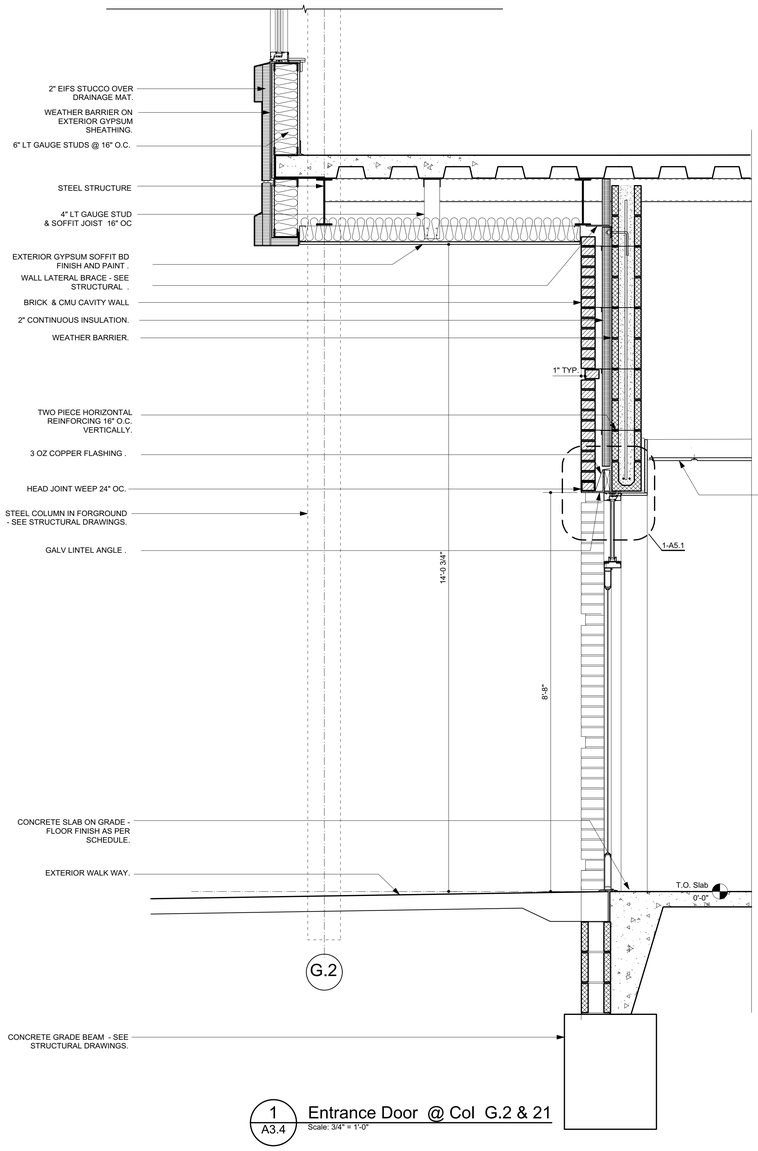


2 / A3.4 — 1-Hour Rated (UL U-415) Full Height Shaftwall System
Scale: 1 1/2" = 1'-0"

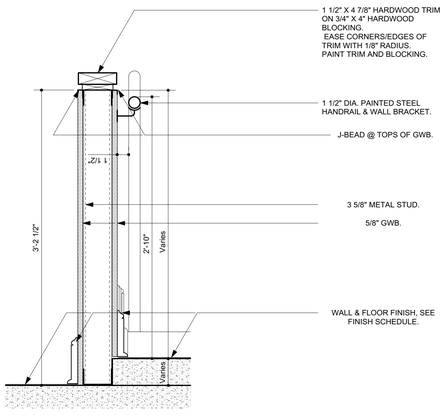


3 / A3.4 — Full Height Wall Partition
Scale: 1 1/2" = 1'-0"

4 / A3.4 — Above Ceiling Wall Partition
Scale: 1 1/2" = 1'-0"

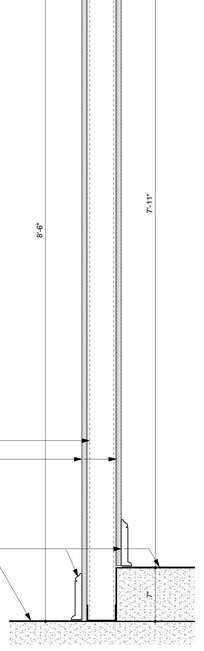


1 / A3.4 — Entrance Door @ Col G.2 & 21
Scale: 3/4" = 1'-0"



NOTE: PROVIDE KNEE WALL BRACES AT UNSUPPORTED ENDS OF WALLS.

11 / A3.4 — Capped Wall Partition
Scale: 1 1/2" = 1'-0"



NOTE: PROVIDE KNEE WALL BRACES AT UNSUPPORTED ENDS OF WALLS.

12 / A3.4 — Capped Wall Partition
Scale: 1 1/2" = 1'-0"

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Interior Wall Sections

A3.4

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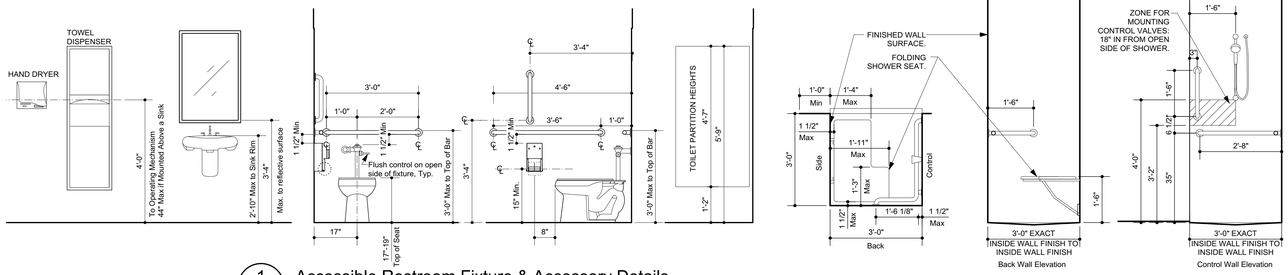


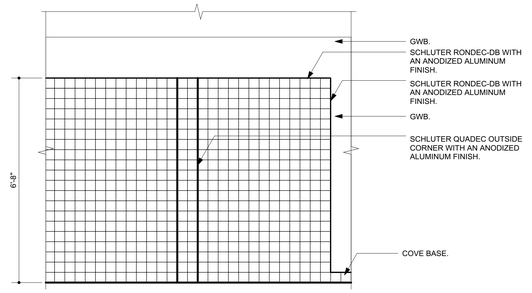
1 A4.0 Accessible Restroom Fixture & Accessory Details

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

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

Note: All accessible urinals shall be mounted with rim 17" Max. AFF and rim shall extend Min. 13-1/2" from finished face of wall.

Accessible Shower Dimensions
Note: See plan for orientation.



2 A4.0 Tile Wainscot Typical Elevation & Trim

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

Accessory Key Notes

1 Accessible Toilet Fixture	14 Clothes/Towel Hook
2 Toilet Fixture	15 Changing Table
3 Accessible Urinal Fixture	16 Toilet Tissue Dispenser
	17 Paper Towel Dispenser
5 Accessible Lav	18 Soap Dispenser
6 Accessible Sink	19 Mirror
7 Accessible Shower	20 Wall Mounted Waste Receptacle
8 Grab Bar 18"	21 Freestanding Waste Receptacle
9 Grab Bar 36"	22 Waste Chute
10 Grab Bar 42"	23 Hi/Lo Water Cooler
11 Shower grab bars	
12 Folding Shower Seat	
13 Shower Curtain, Rod & Hooks	

Notes:

-See Specifications for manufacturers and model #s on all toilet accessories.

-See Plumbing Specifications for manufacturers and model #s on all fixtures.

-Grab bars shall support a 250lb load applied in any direction, along entire length.

-Grab bars shall not rotate in their fittings.

-Grab bar edges shall be min. 1/8" radius & free of sharp elements.

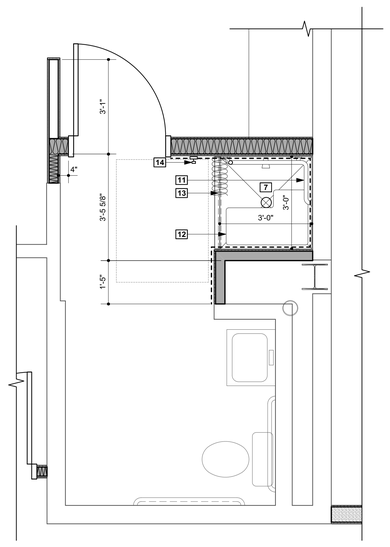
-Toilet Seat shall not spring back automatically to a lifted position.

-Flush control shall be operable w/ one hand w/out requiring tight grasping, twisting of wrist or force greater than 5 lbs.

-Control shall be located on the wide side of accessible stalls.

-Toilet paper dispenser shall allow continuous paper delivery.

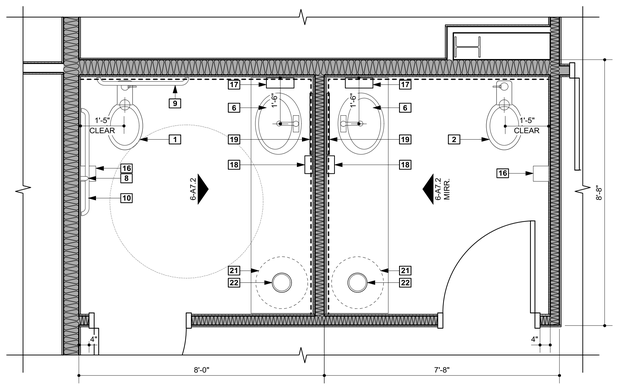
-Supply & drain lines shall be covered w/ pipe insulation or non-heat conducting baffle where exposed & shall not intrude on required knee space.



3 A4.0 Toilet 1078 Enlarged Plan

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

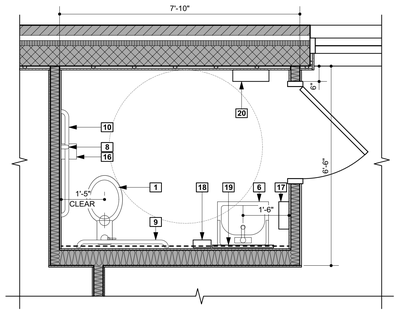
EXTENT OF WAINSCOT



4 A4.0 Toilet 1210 & 1211 Enlarged Plan

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

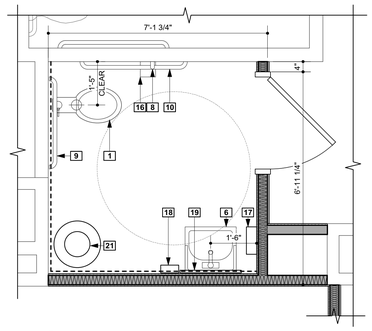
EXTENT OF WAINSCOT



5 A4.0 Toilet 1206 Enlarged Plan

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

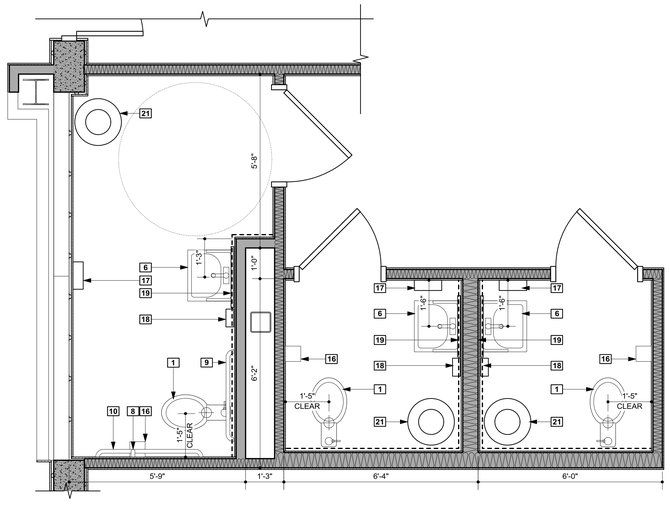
EXTENT OF WAINSCOT



6 A4.0 Toilet 2093A Enlarged Plan

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

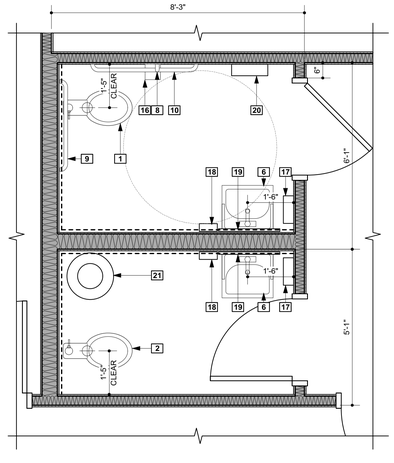
EXTENT OF WAINSCOT



7 A4.0 Toilet 2206, 2207, & 2208 Enlarged Plan

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

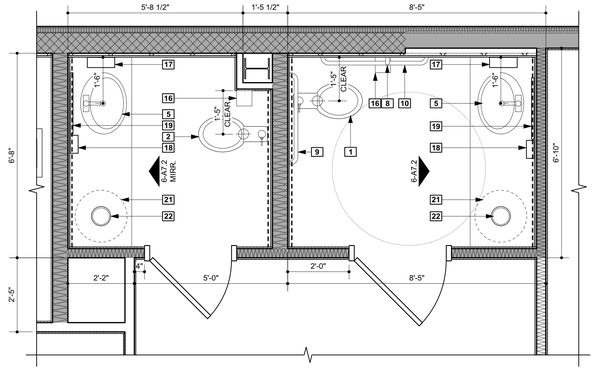
EXTENT OF WAINSCOT



8 A4.0 Toilet 3204 & 3205 Enlarged Plan

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

EXTENT OF WAINSCOT



9 A4.0 Toilet 3211 & 3212 Enlarged Plan

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

EXTENT OF WAINSCOT

Wall Legend	
	8" CMU with Weather Barrier, 2" Rigid Insulation, and Stucco Finish; 7/8" metal furring and 5/8" GWB on interior wall face.
	6" Metal Stud, 16" O.C., 5/8" Exterior Sheathing with Weather Barrier, 2" Rigid Insulation, and Stucco Finish
	12" cast-in-place Concrete shearwall - See Structural Drawings; 7/8" metal furring and 5/8" GWB on exposed sides, 12" above ceiling.
	3 5/8", 4", or 6" Metal Stud, 16" O.C., 5/8" GWB both sides, full height. Fill stud cavity with sound batt insulation; See 3-A3.4.
	3 5/8" or 4" Metal Stud, 16" O.C., 5/8" GWB both sides, 12" above ceiling. Fill stud cavity with sound batt insulation; See 4-A3.4.
	New wall infill to match adjacent wall construction.
	Existing Wall.

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Construction Drawings
September 23, 2019

Revisions:

Enlarged Plans

A4.0

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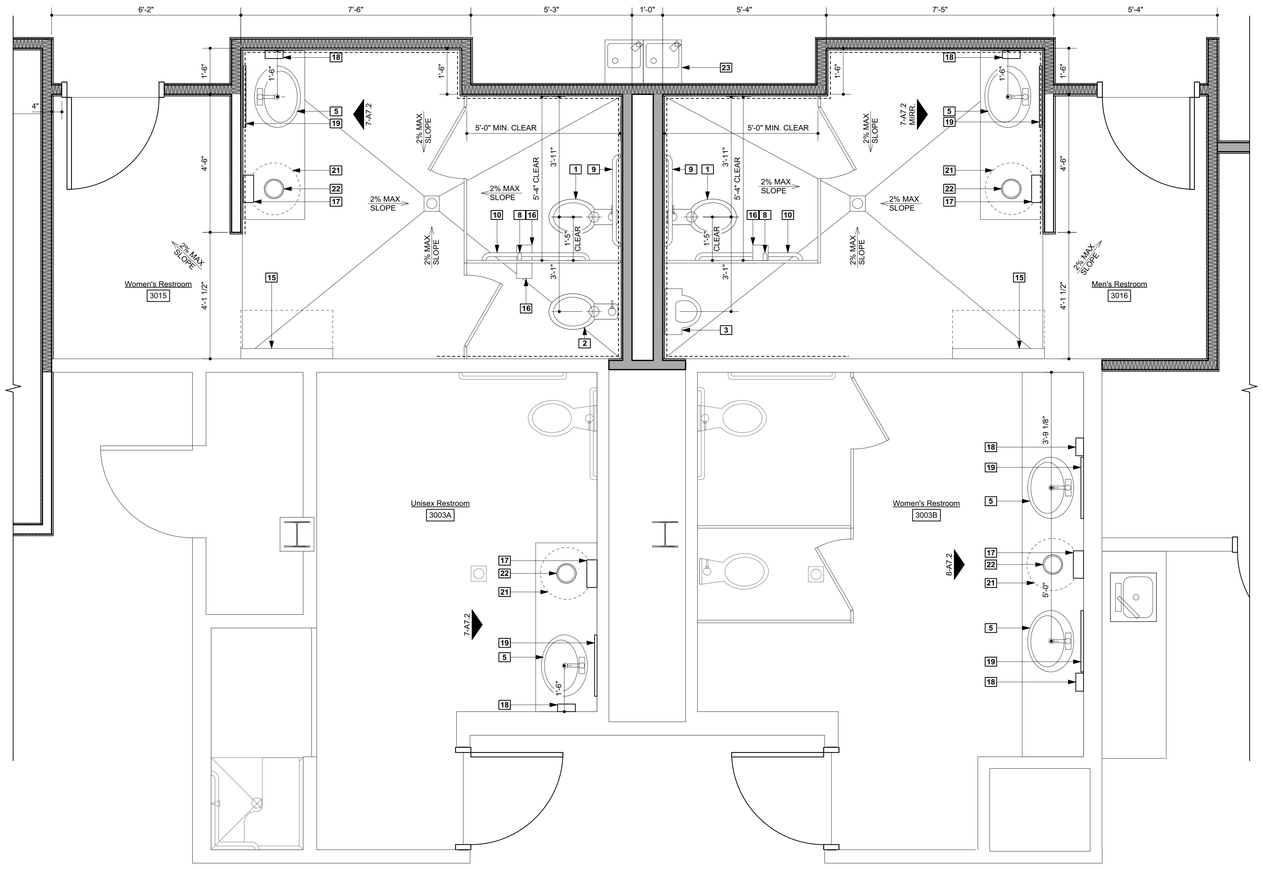

1 A4.1 Restroom 3015, 3016, 3003A, & 3003B Enlarged Plans

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

Accessory Key Notes

1	Accessible Toilet Fixture	14	Clothes/Towel Hook
2	Toilet Fixture	15	Changing Table
3	Accessible Urinal Fixture	16	Toilet Tissue Dispenser
4	Urinal Fixture	17	Paper Towel Dispenser
5	Accessible Lav	18	Soap Dispenser
6	Accessible Sink	19	Mirror
7	Accessible Shower	20	Wall Mounted Waste Receptacle
8	Grab Bar 18"	21	Freestanding Waste Receptacle
9	Grab Bar 36"	22	Waste Chute
10	Grab Bar 42"	23	Hi/Lo Water Cooler
11	Shower grab bars		
12	Folding Shower Seat		
13	Shower Curtain, Rod & Hooks		

Notes:

-See Specifications for manufacturers and model #s on all toilet accessories.

-See Plumbing Specifications for manufacturers and model #s on all fixtures.

-Grab bars shall support a 250lb load applied in any direction, along entire length.

-Grab bars shall not rotate in their fittings.

-Grab bar edges shall be min. 1/8" radius & free of sharp elements.

-Toilet Seat shall not spring back automatically to a lifted position.

-Flush control shall be operable w/ one hand w/out requiring tight grasping, twisting of wrist or force greater than 5 lbs.

-Control shall be located on the wide side of accessible stalls.

-Toilet paper dispenser shall allow continuous paper delivery.

-Supply & drain lines shall be covered w/ pipe insulation or non-heat conducting baffle where exposed & shall not intrude on required knee space.

Wall Legend	
	8" CMU with Weather Barrier, 2" Rigid Insulation, and Stucco Finish; 7/8" metal furring and 5/8" GWB on interior wall face.
	6" Metal Stud, 16" O.C., 5/8" Exterior Sheathing with Weather Barrier, 2" Rigid Insulation, and Stucco Finish
	12" cast-in-place Concrete shearwall - See Structural Drawings; 7/8" metal furring and 5/8" GWB on exposed sides, 12" above ceiling.
	4" Metal Stud, 16" O.C., 5/8" GWB both sides, full height. Fill stud cavity with sound batt insulation; See 3-A3.4.
	4" Metal Stud, 16" O.C., 5/8" GWB both sides, 12" above ceiling. Fill stud cavity with sound batt insulation; See 4-A3.4.
	Existing Wall.

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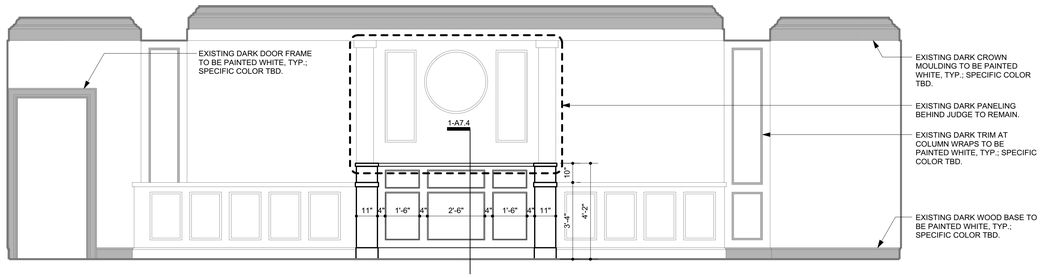
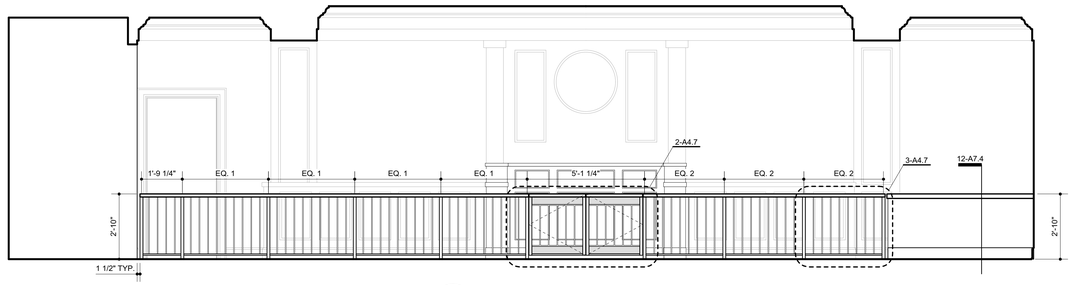
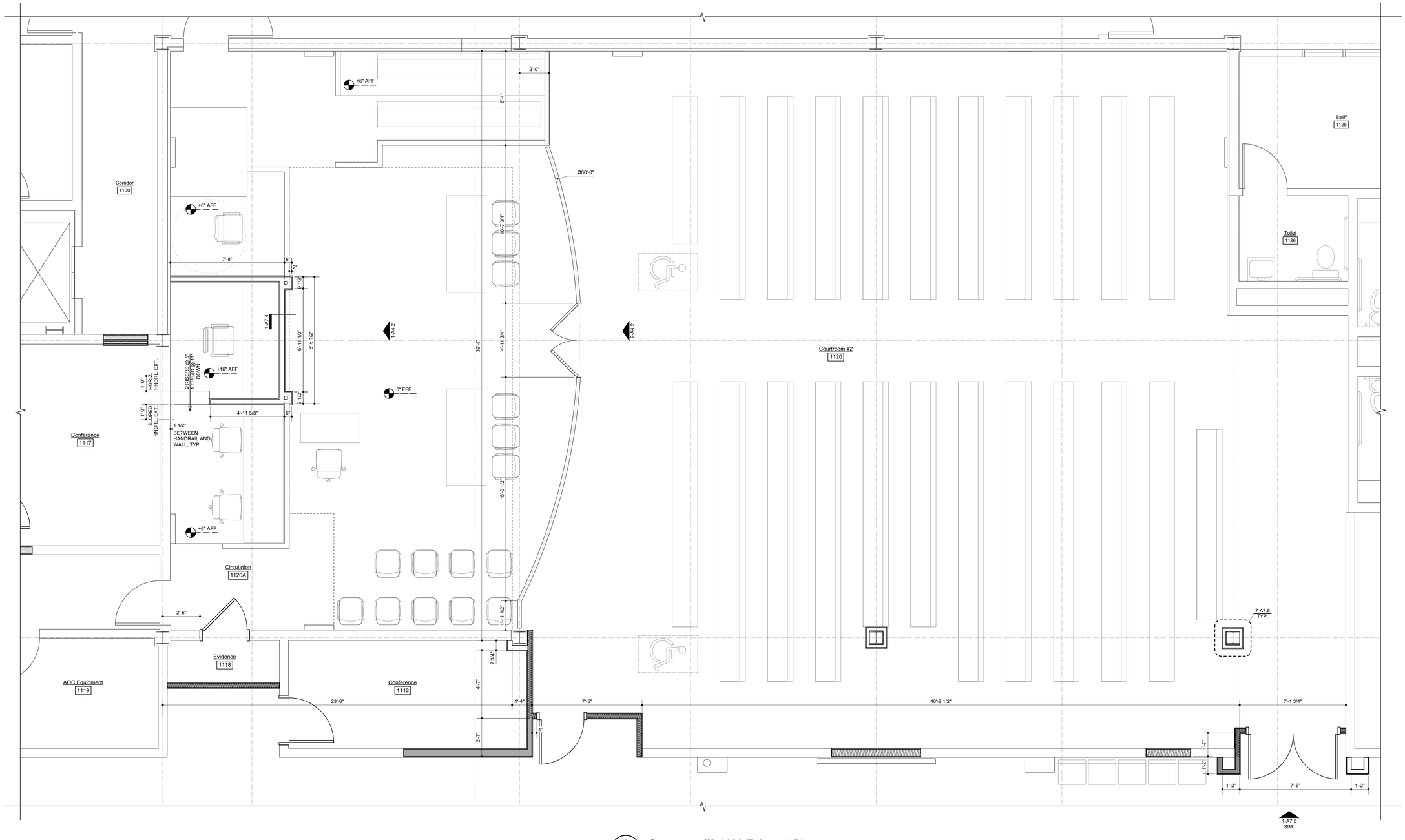


1 A4.2 Courtroom #2 Judge Casework Elevation
Scale: 3/8" = 1'-0"



2 A4.2 Courtroom #2 Bar Elevation
Scale: 3/8" = 1'-0"



3 A4.2 Courtroom #2 1120 Enlarged Plan
Scale: 3/8" = 1'-0"

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Courtroom #2 Enlarged Plan & Casework

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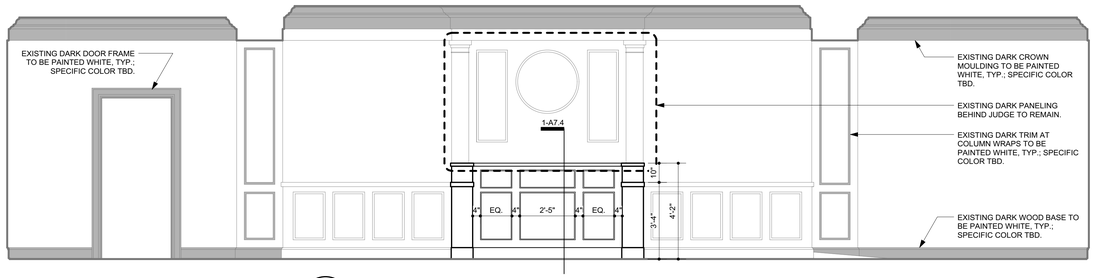
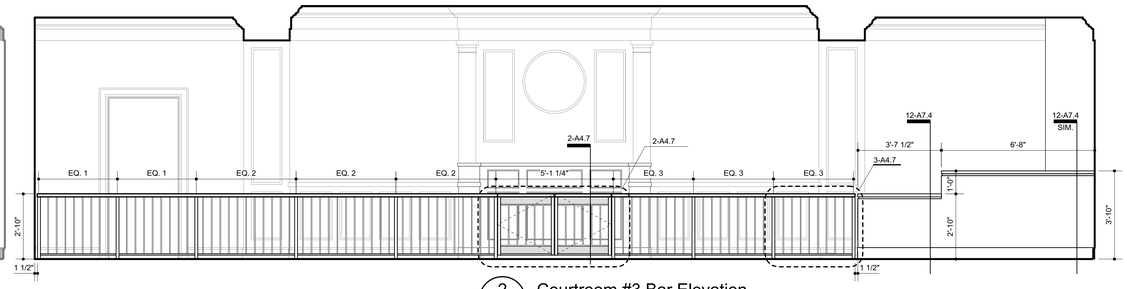


1 A4.3 Courtroom #3 Judge Casework Elevation
Scale: 3/8" = 1'-0"



2 A4.3 Courtroom #3 Bar Elevation
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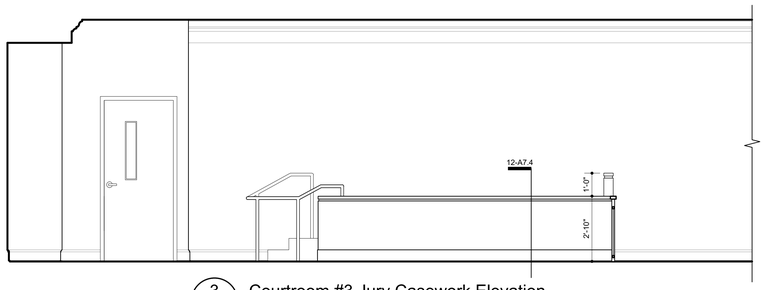
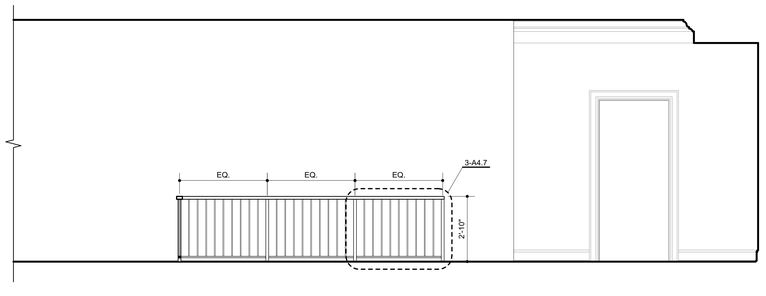


3 A4.3 Courtroom #3 Jury Casework Elevation
Scale: 3/8" = 1'-0"



4 A4.3 Courtroom #3 Barrier Elevation
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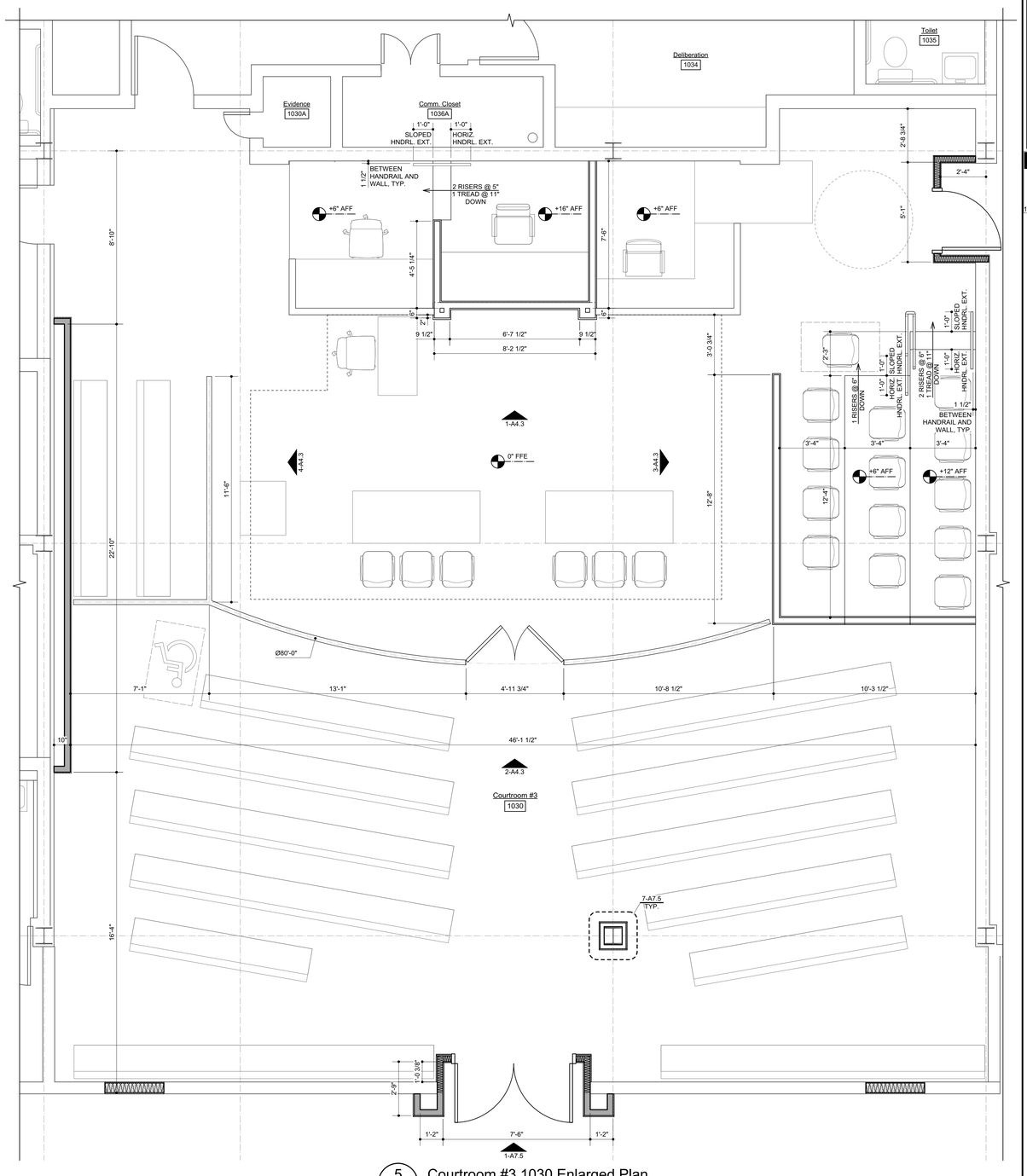

5 A4.3 Courtroom #3 1030 Enlarged Plan
Scale: 3/8" = 1'-0"

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Courtroom #3 Enlarged Plan & Casework

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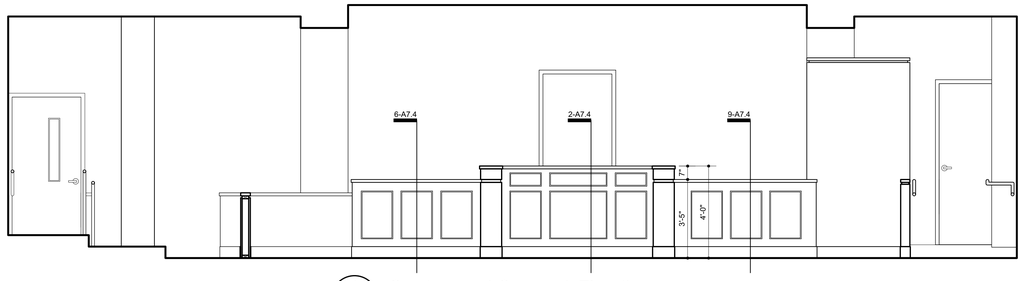
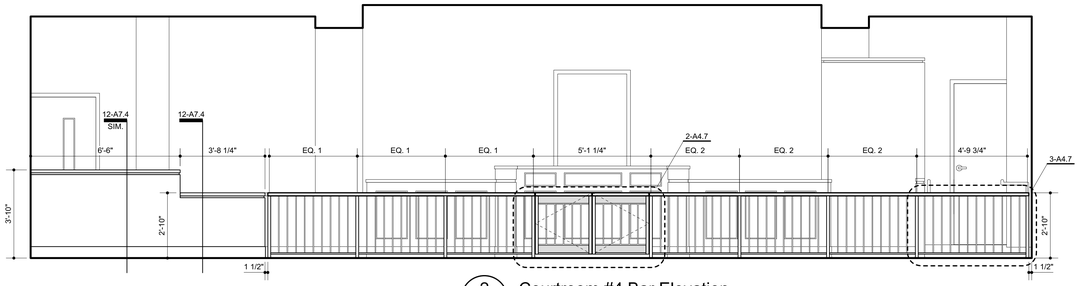


1 A4.4 Courtroom #4 Casework Elevation
Scale: 3/8" = 1'-0"



2 A4.4 Courtroom #4 Bar Elevation
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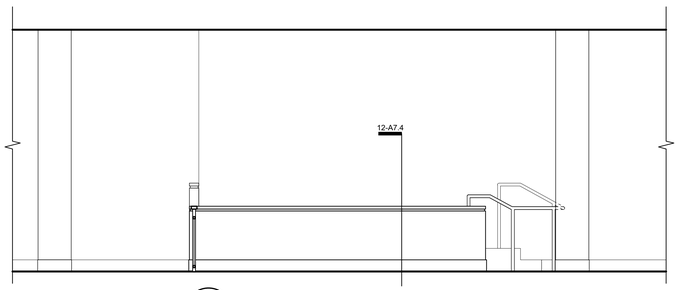

3 A4.4 Courtroom #4 Jury Casework Elevation
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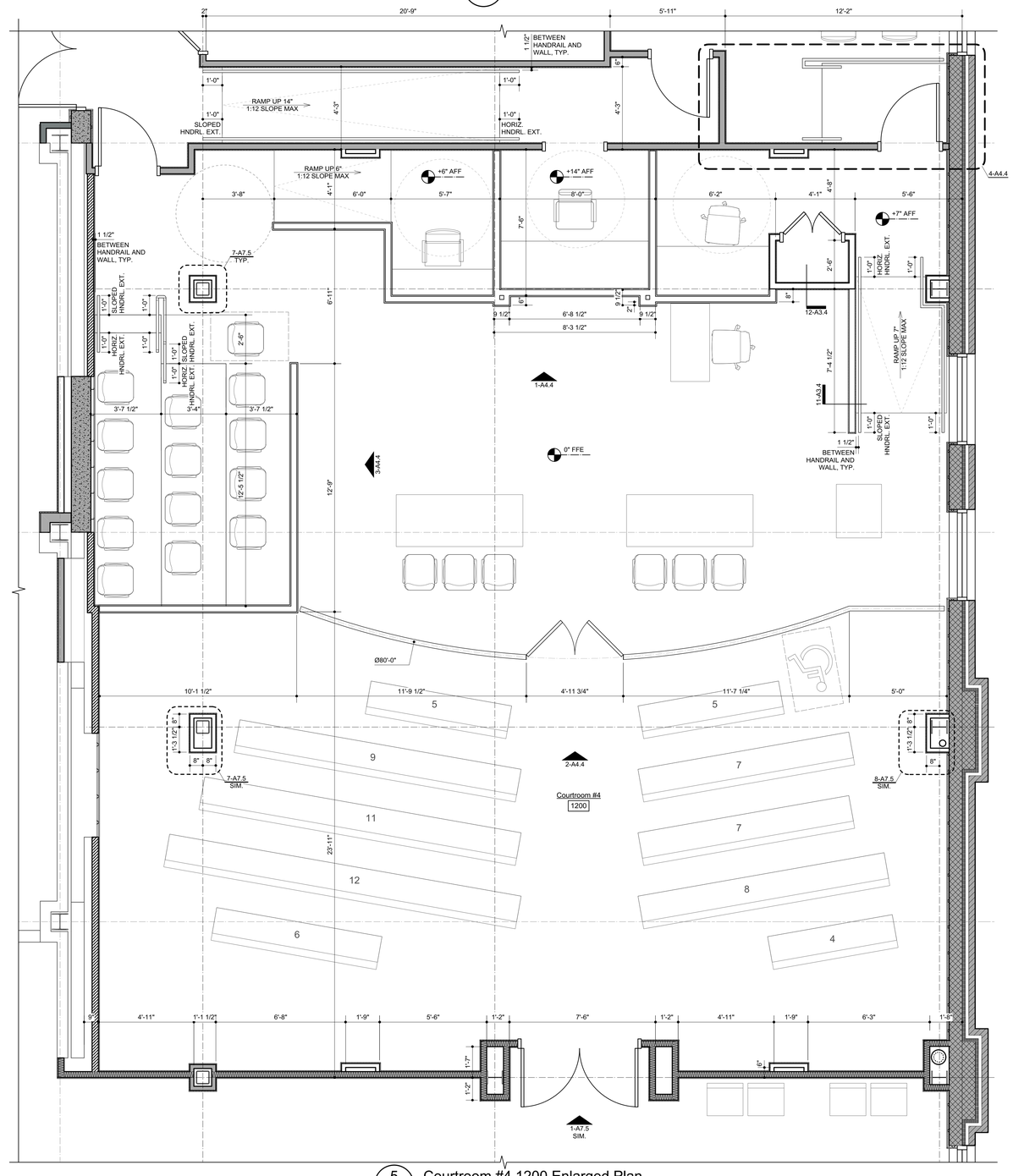
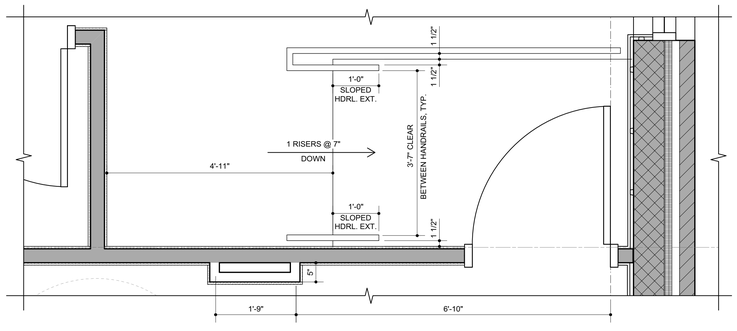


5 A4.4 Courtroom #4 1200 Enlarged Plan
Scale: 3/8" = 1'-0"



4 A4.4 Judge 1205 Stair Plan
Scale: 3/4" = 1'-0"

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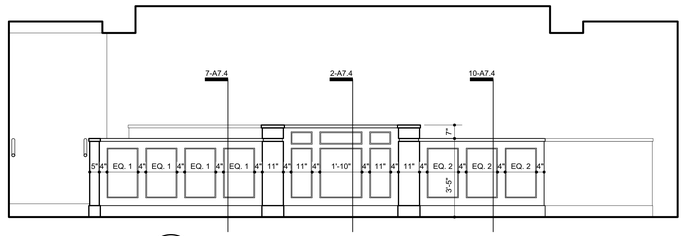
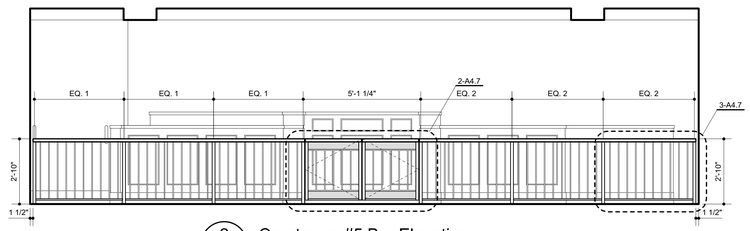


1 A4.5 Courtroom #5 Judge Casework Elevation
Scale: 3/8" = 1'-0"



2 A4.5 Courtroom #5 Bar Elevation
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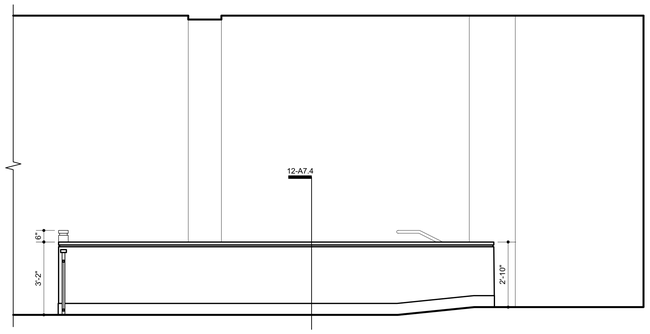
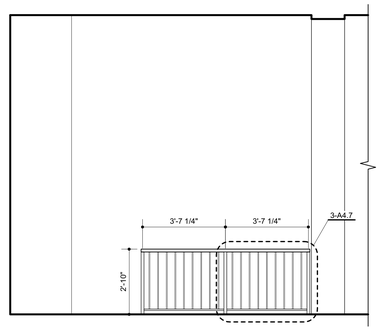
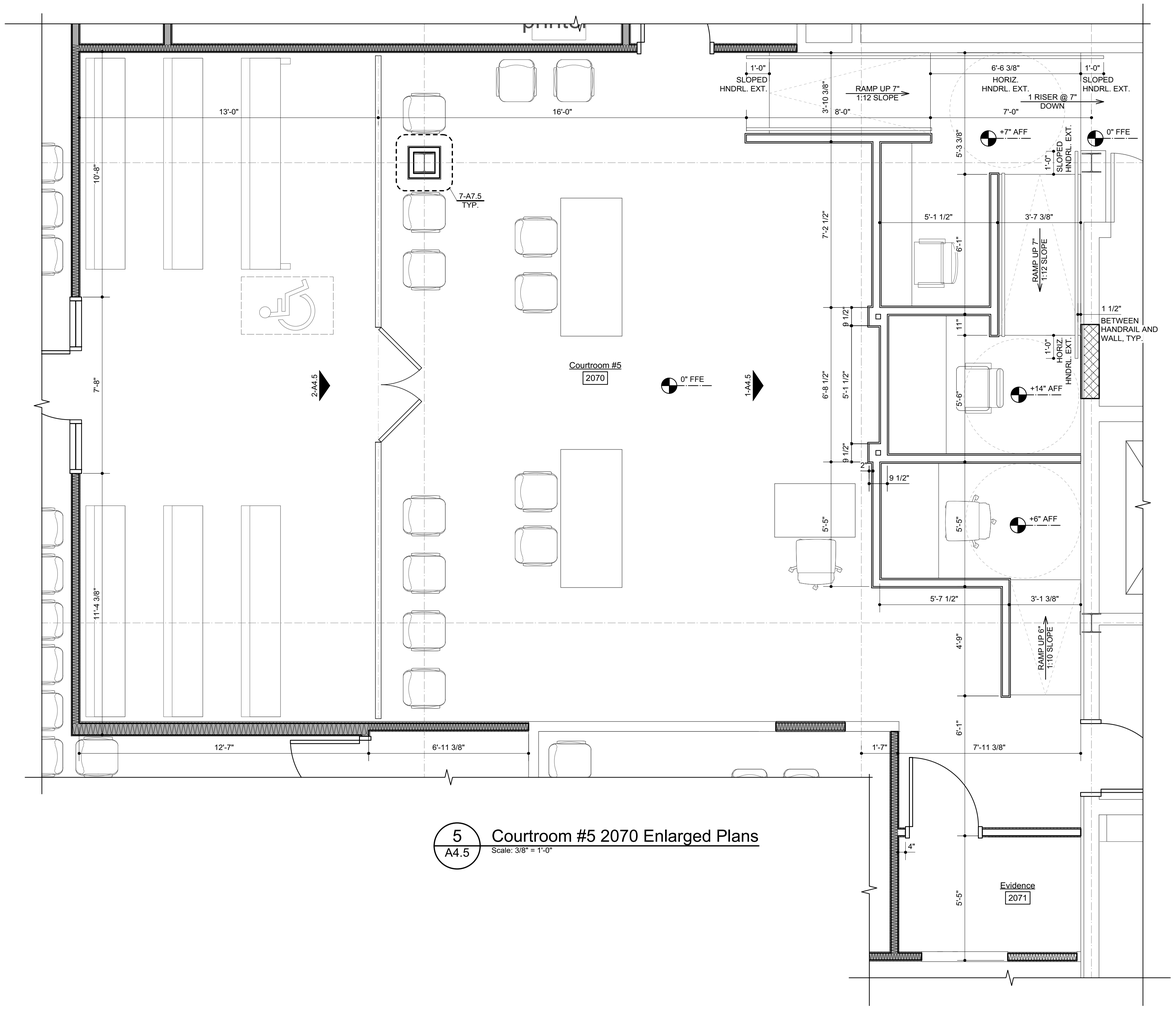


3 A4.5 Courtroom #6 Jury Casework Elevation
Scale: 3/8" = 1'-0"



4 A4.5 Courtroom #6 Barrier Elevation
Scale: 3/8" = 1'-0"



5 A4.5 Courtroom #5 2070 Enlarged Plans
Scale: 3/8" = 1'-0"

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Courtroom #5 Enlarged Plan & Casework

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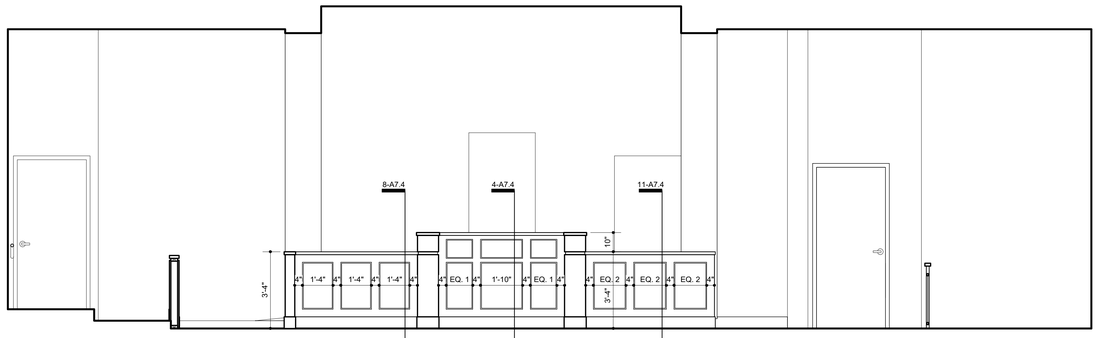

1 A4.6 Courtroom #6 Judge Casework Elevation
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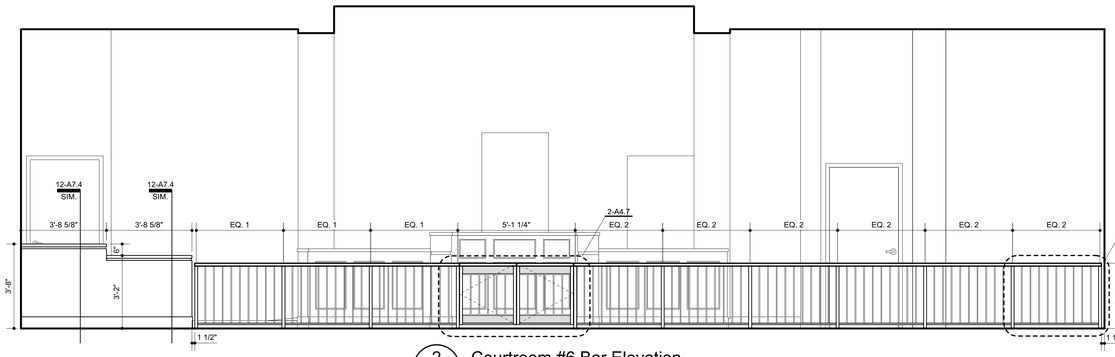
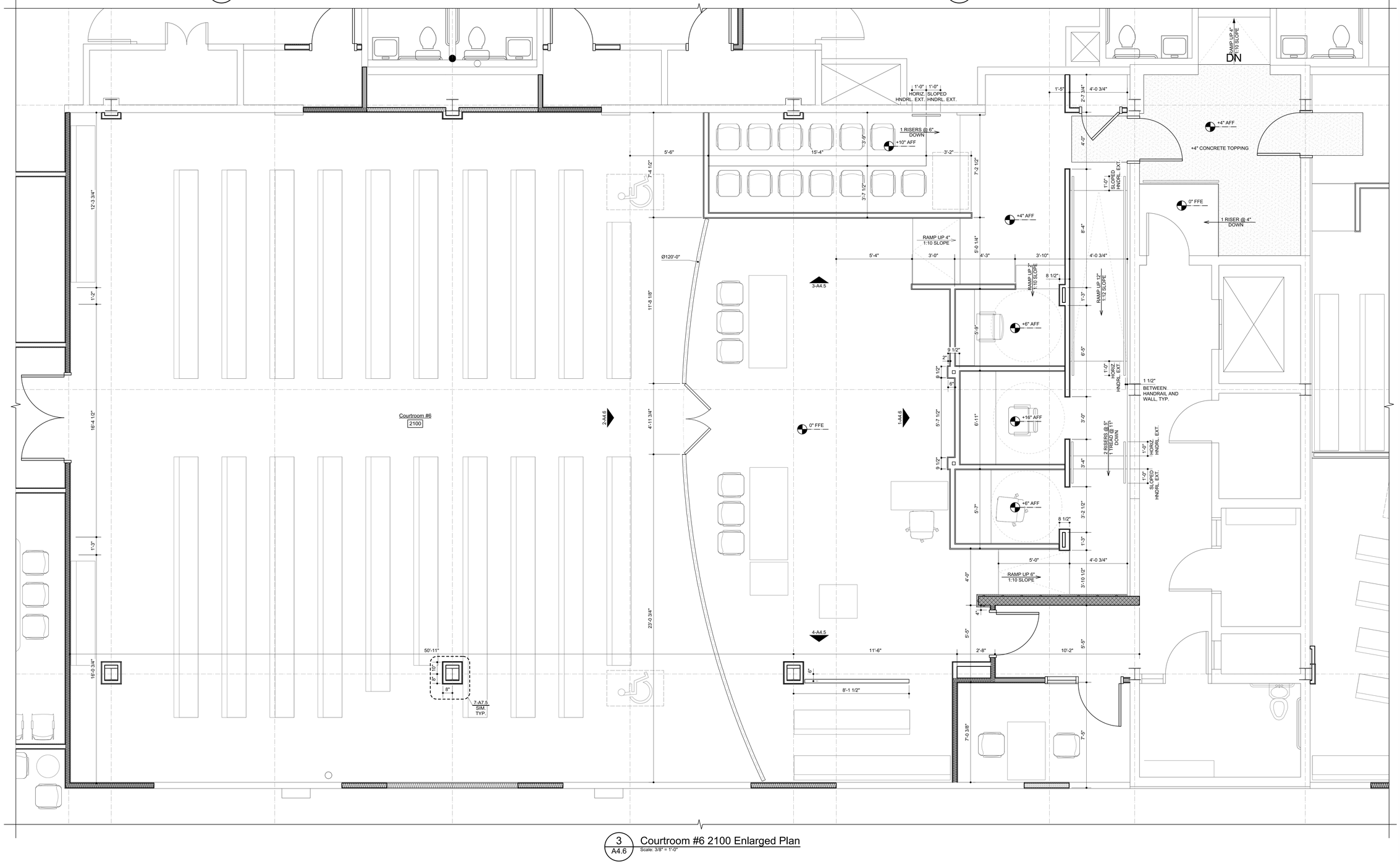


2 A4.6 Courtroom #6 Bar Elevation
Scale: 3/8" = 1'-0"



3 A4.6 Courtroom #6 2100 Enlarged Plan
Scale: 3/8" = 1'-0"

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Bolivia, NC

Construction Drawings
September 23, 2019

Revisions:

Courtroom #6 Enlarged Plan & Casework

A4.6

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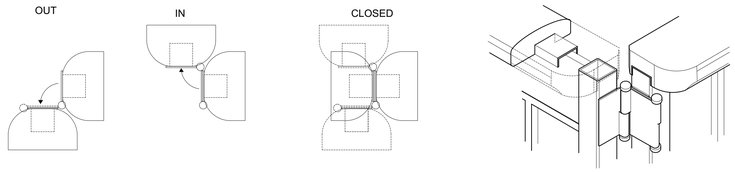

1 A4.7 Typ. Bar Gate Hinge Detail
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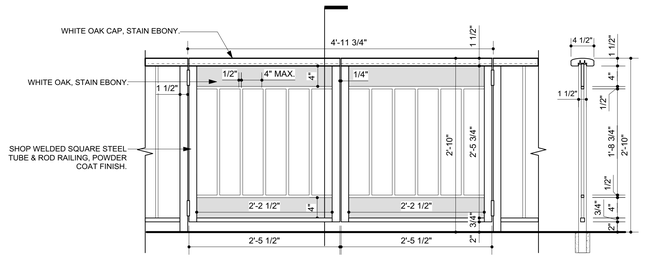

2 A4.7 Typ. Bar Gate Section & Elevation
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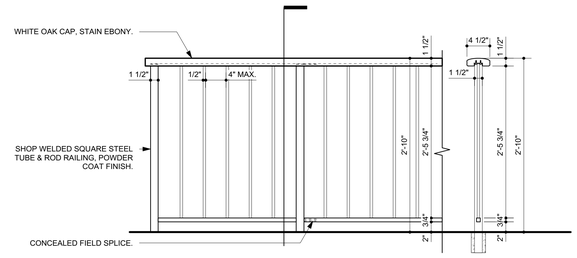

3 A4.7 Typ. Bar Railing Section & Elevation
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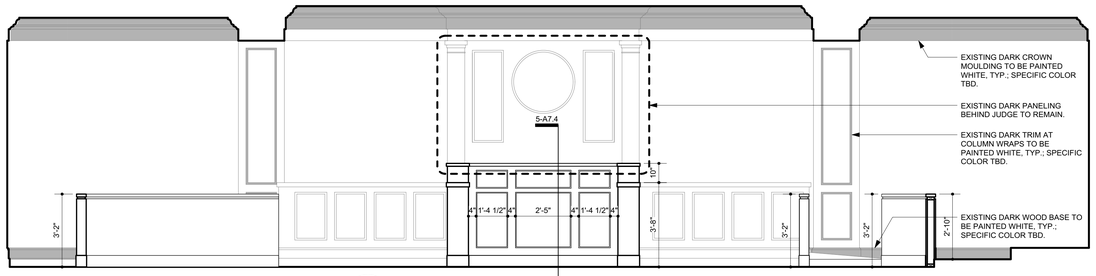
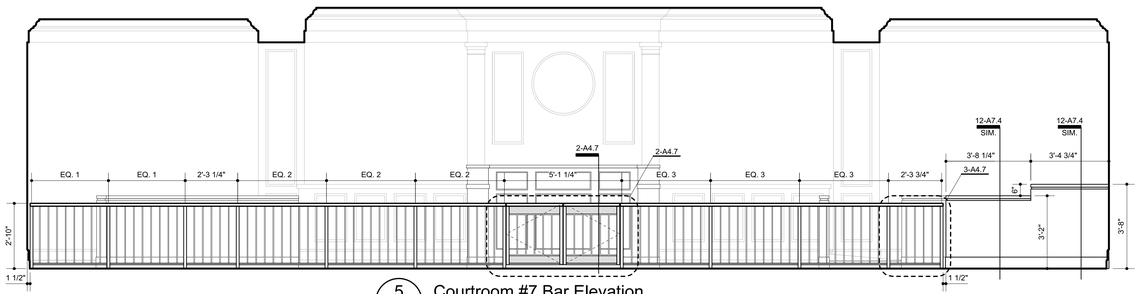
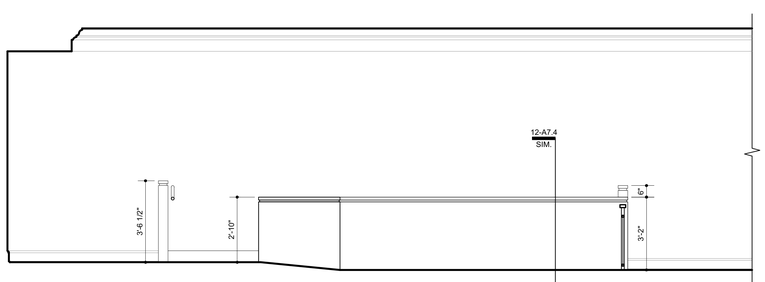


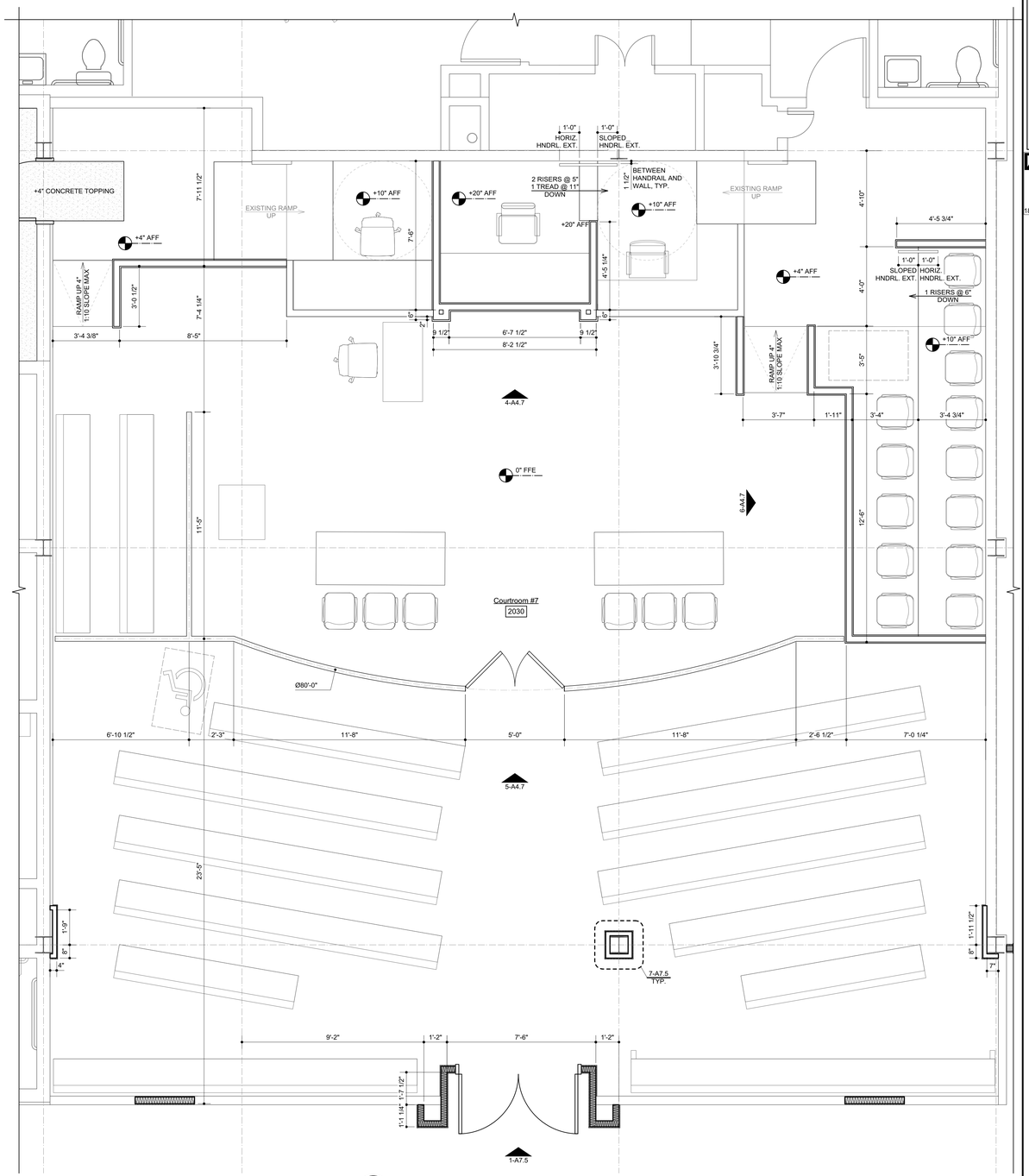
4 A4.7 Courtroom #7 Judge Casework Elevation
Scale: 3/8" = 1'-0"



5 A4.7 Courtroom #7 Bar Elevation
Scale: 3/8" = 1'-0"



6 A4.7 Courtroom #7 Jury Casework Elevation
Scale: 3/8" = 1'-0"



7 A4.7 Courtroom #7 2030 Enlarged Plan
Scale: 3/8" = 1'-0"

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Courtroom #7 Enlarged Plan & Casework

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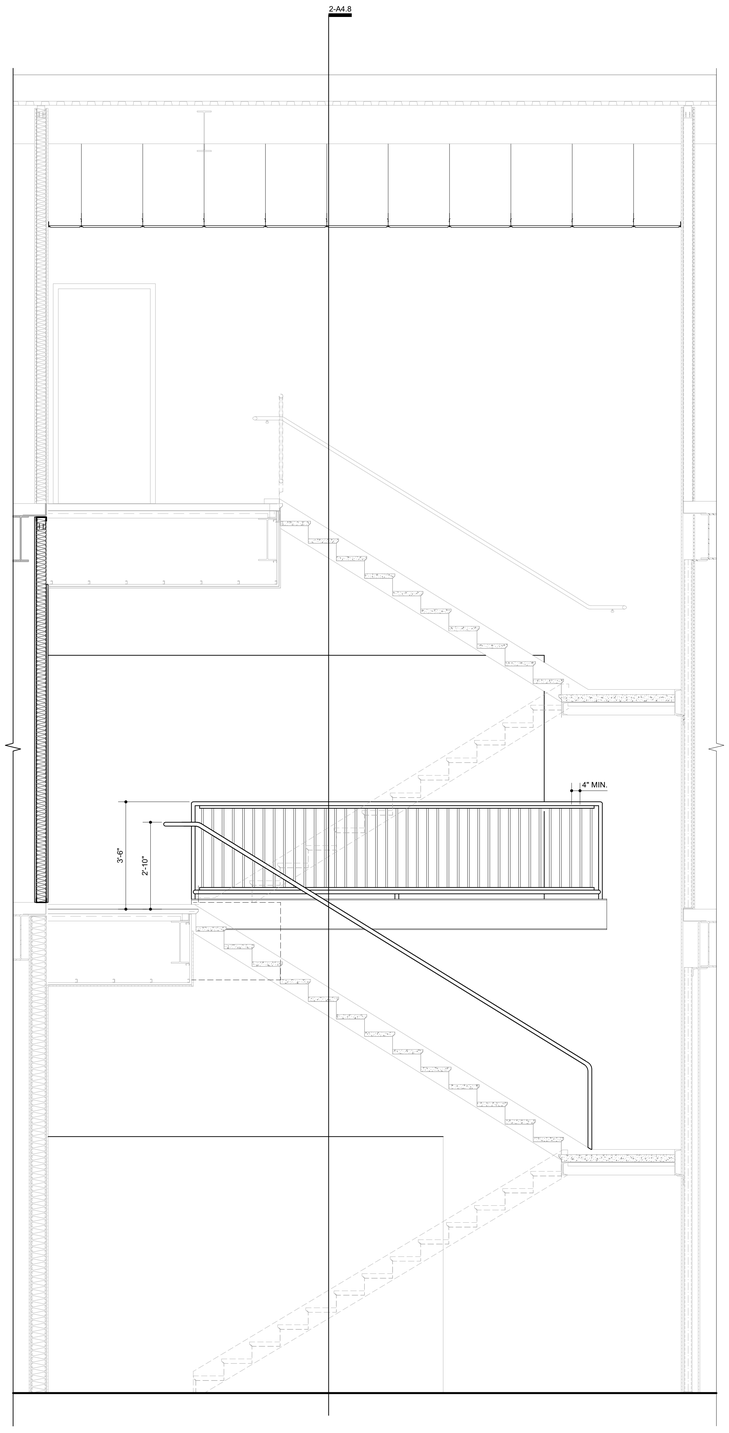
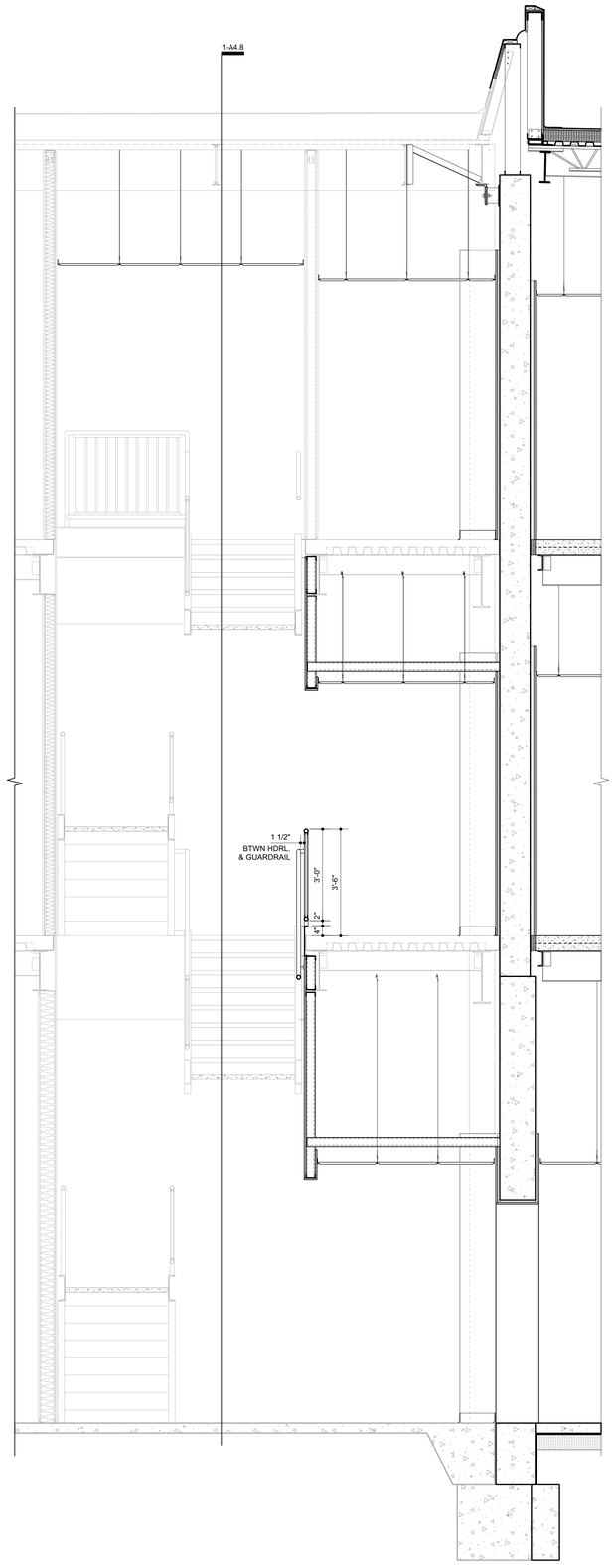
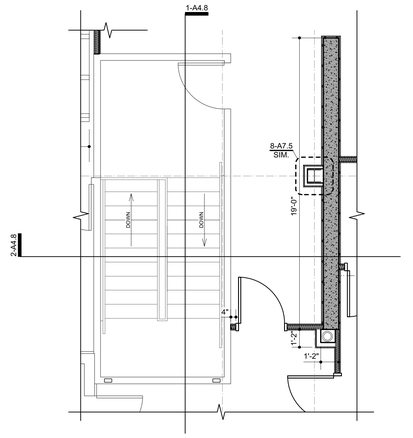


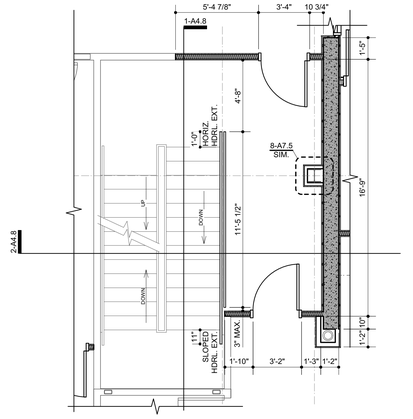
1 Exit Stair 1020 Section
A4.8 Scale: 1/2" = 1'-0"



2 Exit Stair 1020 Section
A4.8 Scale: 1/2" = 1'-0"

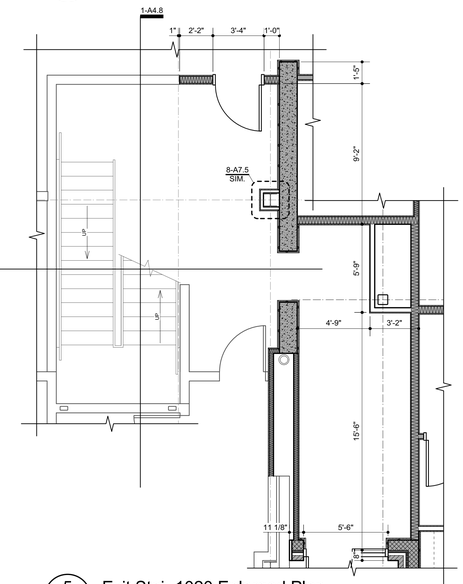


3 Exit Stair 3020 Enlarged Plan
A4.8 Scale: 1/4" = 1'-0"



4 Exit Stair 2020 Enlarged Plan
A4.8 Scale: 1/4" = 1'-0"

Wall Legend	
	8" CMU with Weather Barrier, 2" Rigid Insulation, and Stucco Finish; 7/8" metal furring and 5/8" GWB on interior wall face.
	12" cast-in-place Concrete shearwall - See Structural Drawings; 7/8" metal furring and 5/8" GWB on exposed sides, 12" above ceiling.
	3 5/8" or 4" Metal Stud, 16" O.C., 5/8" GWB both sides, full height. Fill stud cavity with sound batt insulation; See 3-A3.4.
	3 5/8" Metal Stud, 16" O.C., 5/8" GWB both sides, 12" above ceiling. Fill stud cavity with sound batt insulation; See 4-A3.4.
	Existing Wall.



5 Exit Stair 1020 Enlarged Plan
A4.8 Scale: 1/4" = 1'-0"

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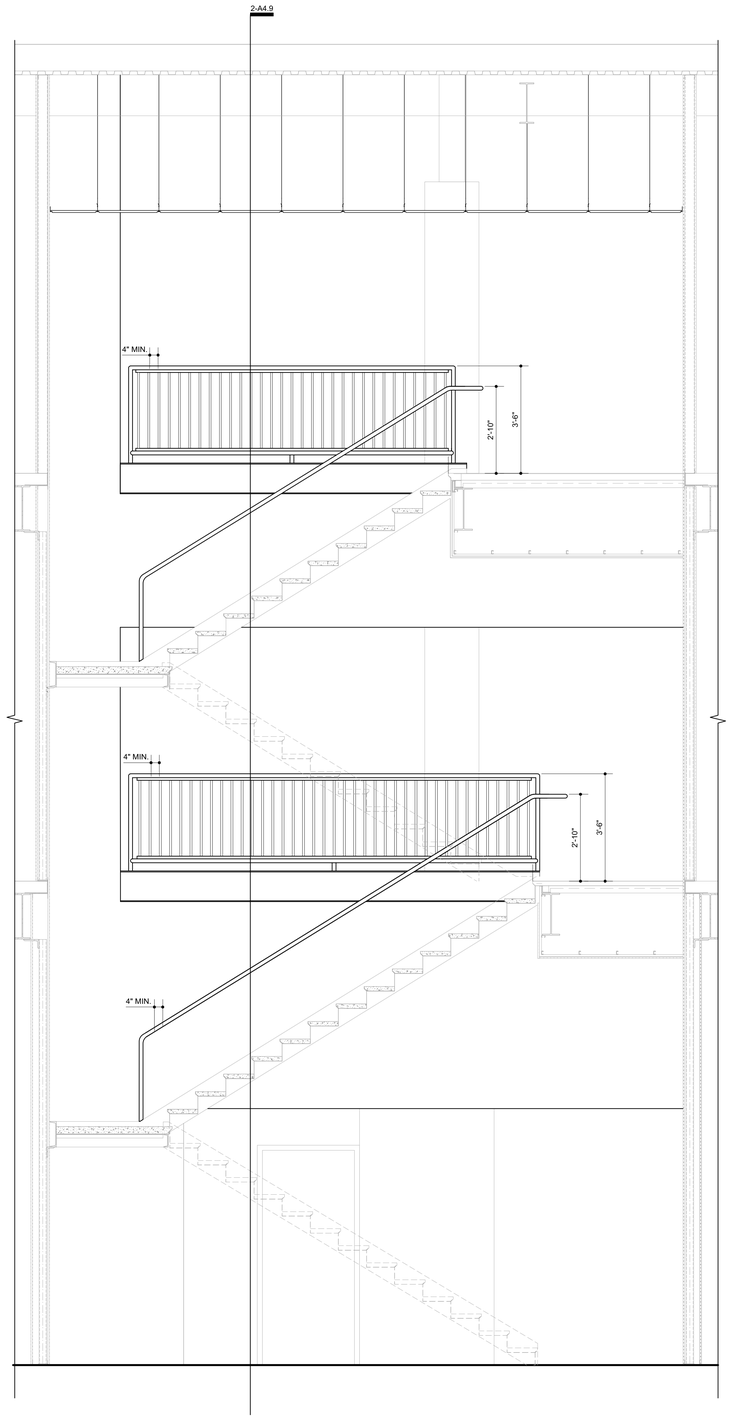
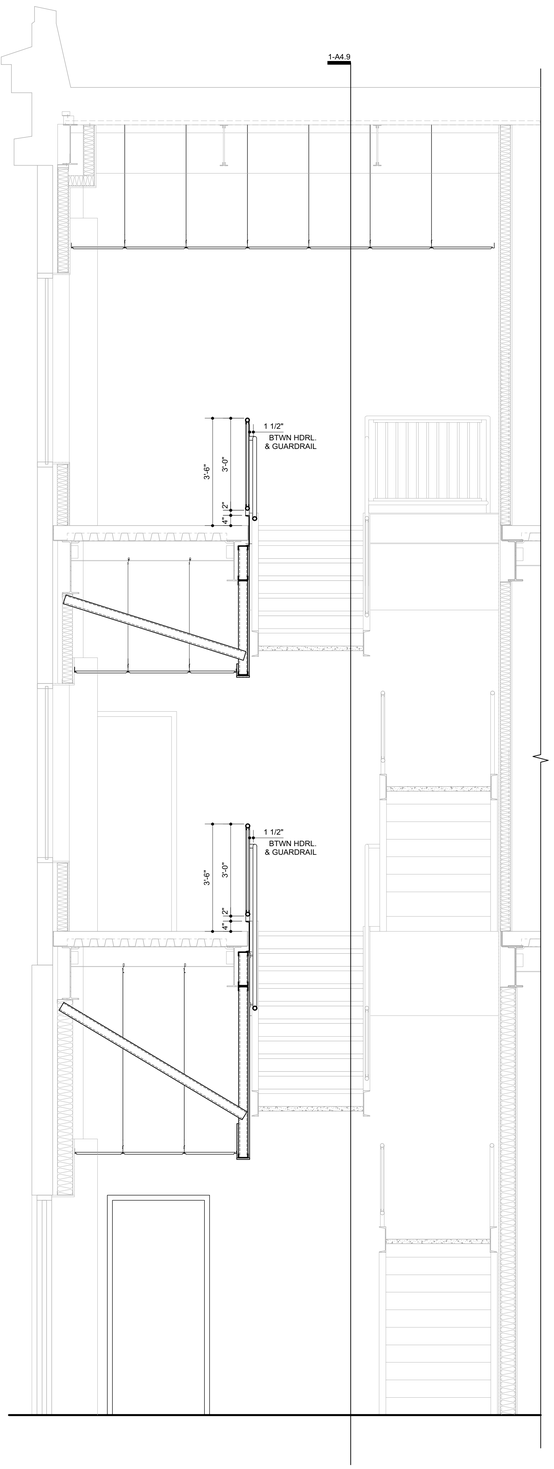
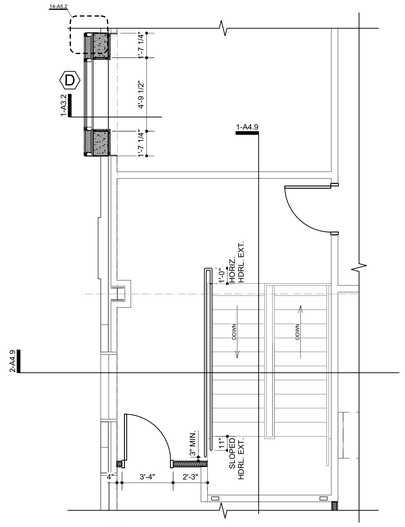


1 A4.9 Exit Stair 1080 Section
Scale: 1/2" = 1'-0"

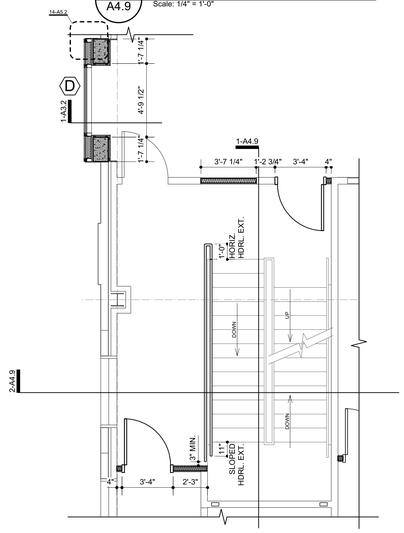


2 A4.9 Exit Stair 1080 Section
Scale: 1/2" = 1'-0"

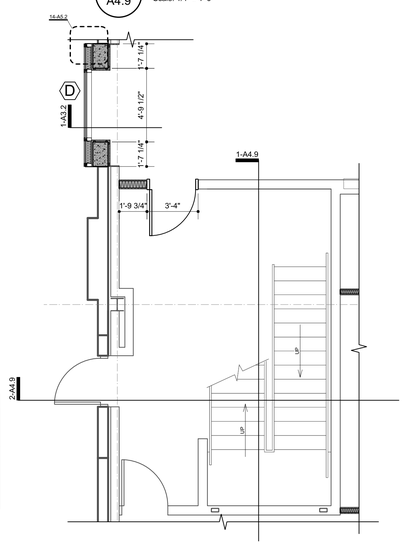
Wall Legend	
	12" cast-in-place Concrete shearwall - See Structural Drawings; 7/8" metal furring and 5/8" GWB on exposed sides, 12" above ceiling.
	4" Metal Stud, 16" O.C., 5/8" GWB both sides, full height. Fill stud cavity with sound batt insulation; See 3-A3.4.
	Existing Wall.



3 A4.9 Exit Stair 3080 Enlarged Plan
Scale: 1/4" = 1'-0"



4 A4.9 Exit Stair 2080 Enlarged Plan
Scale: 1/4" = 1'-0"



5 A4.9 Exit Stair 1080 Enlarged Plan
Scale: 1/4" = 1'-0"

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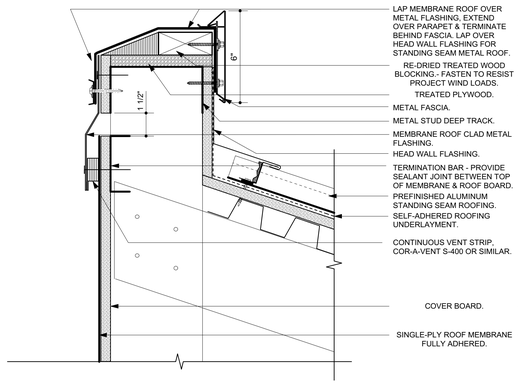
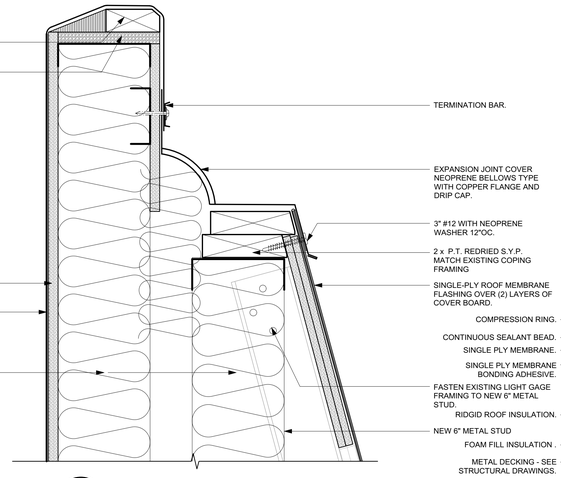
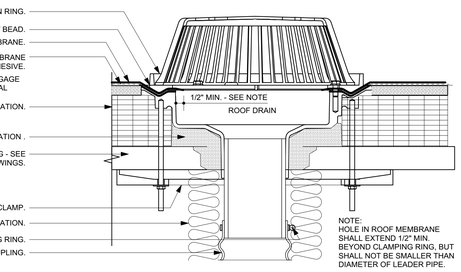


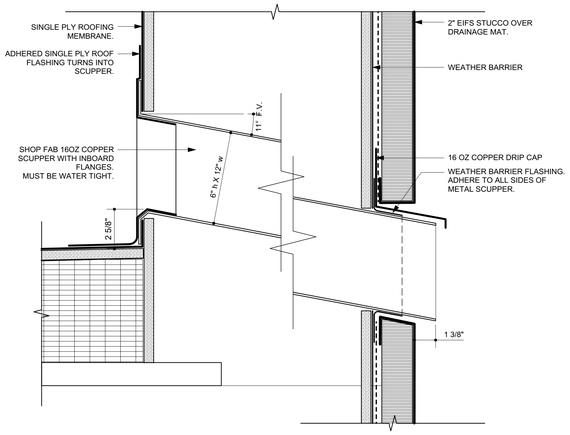
1 A5.0 **Parapet Detail**
Scale: 3" = 1'-0"



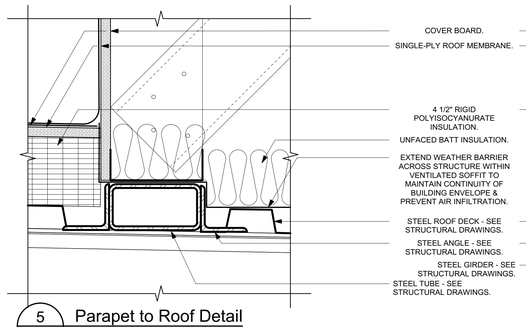
2 A5.0 **Roof Expansion Joint Detail**
Scale: 3" = 1'-0"



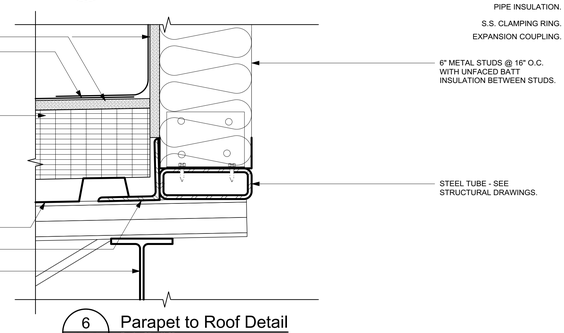
3 A5.0 **Roof Drain Detail**
Scale: 3" = 1'-0"



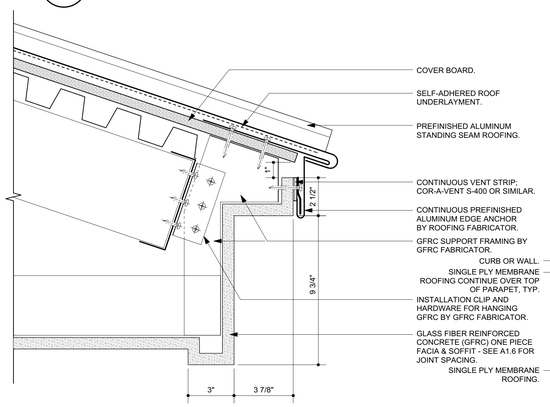
4 A5.0 **Overflow Roof Scupper Detail**
Scale: 3" = 1'-0"



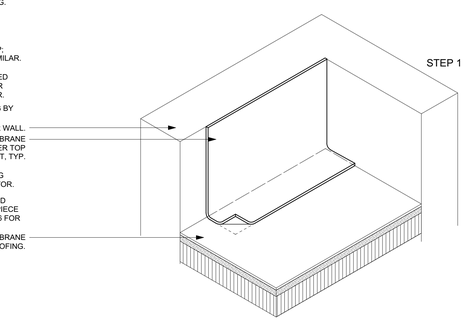
5 A5.0 **Parapet to Roof Detail**
Scale: 3" = 1'-0"

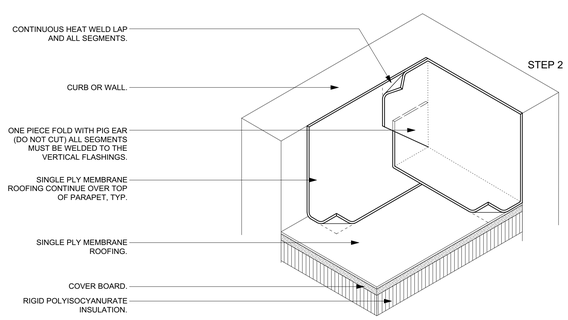


6 A5.0 **Parapet to Roof Detail**
Scale: 3" = 1'-0"



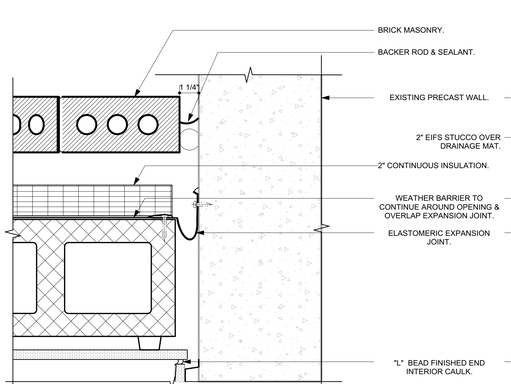
10 A5.0 **Eave Detail**
Scale: 3" = 1'-0"



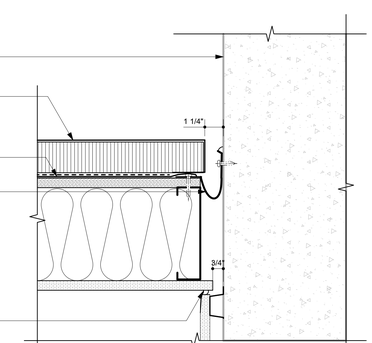


15 A5.0 **Inside Roof Corner Detail**
N.T.S.

16 A5.0 **Exterior Wall Opening Infill Detail**
Scale: 3" = 1'-0"
*COORDINATE WITH MECHANICAL (1 & A M2.2)



13 A5.0 **New to Existing Wall Expansion Joint**
Scale: 3" = 1'-0"



14 A5.0 **New to Existing Wall Expansion Joint**
Scale: 3" = 1'-0"

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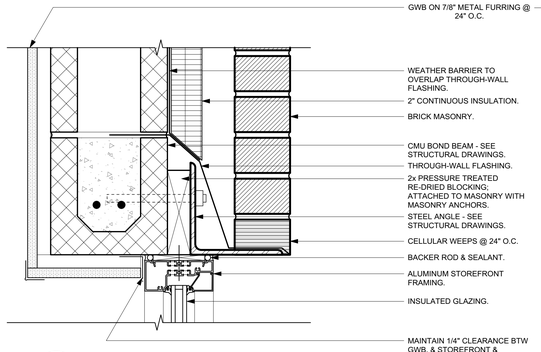
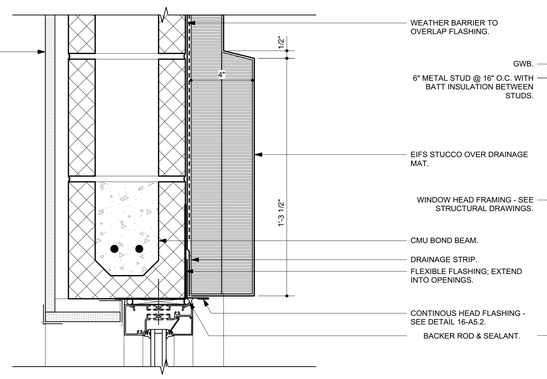
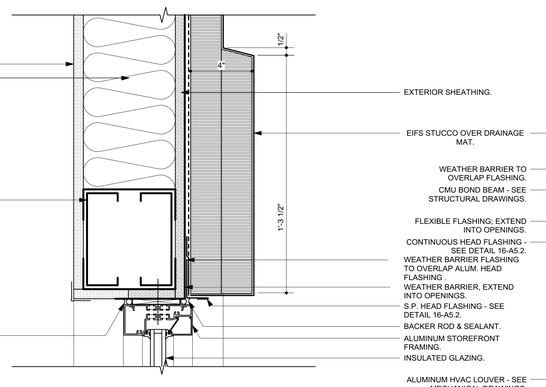


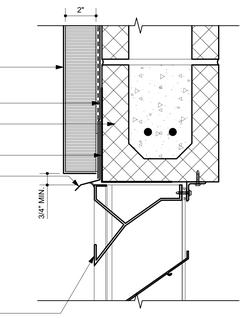
1 A5.1 Storefront Head @ Brick Masonry Detail
Scale: 3" = 1'-0"



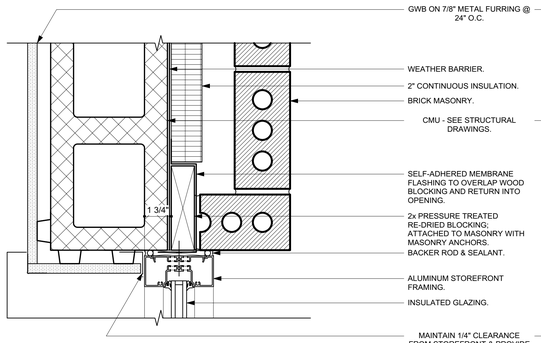
2 A5.1 Storefront Head @ Stucco Detail
Scale: 3" = 1'-0"



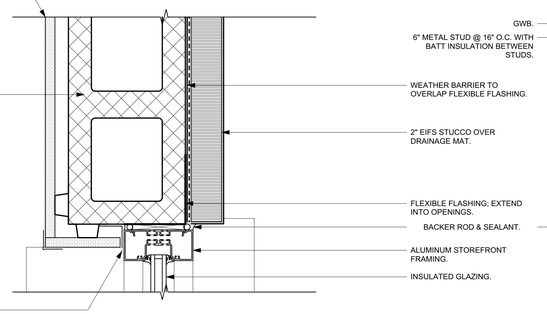
3 A5.1 Storefront Head @ Stucco Detail
Scale: 3" = 1'-0"



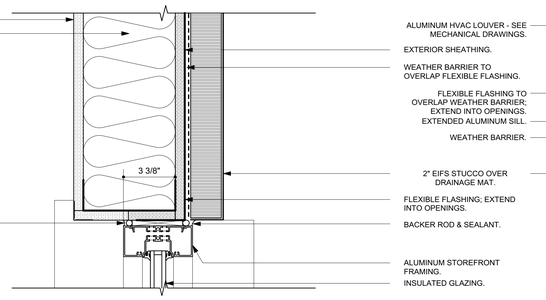
4 A5.1 HVAC Louver Head Detail
Scale: 3" = 1'-0"



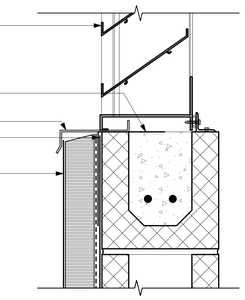
5 A5.1 Storefront Jamb @ Brick Masonry Detail
Scale: 3" = 1'-0"



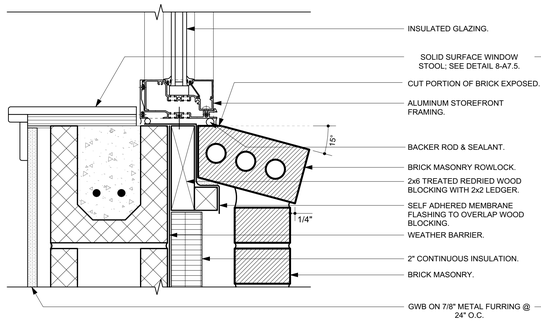
6 A5.1 Storefront Jamb @ Stucco Detail
Scale: 3" = 1'-0"



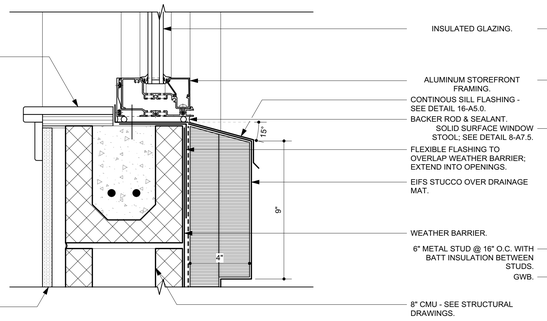
7 A5.1 Storefront Jamb @ Stucco Detail
Scale: 3" = 1'-0"



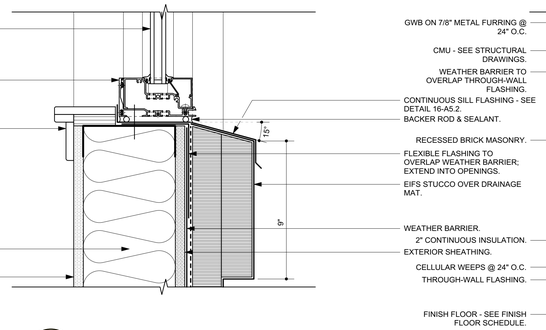
8 A5.1 HVAC Louver Sill Detail
Scale: 3" = 1'-0"



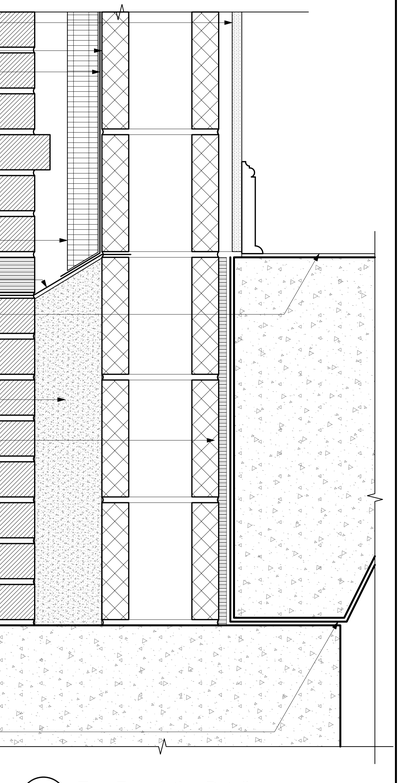
9 A5.1 Storefront Sill @ Brick Masonry Detail
Scale: 3" = 1'-0"

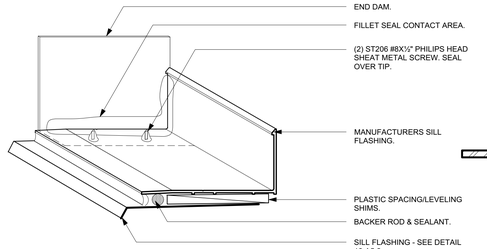


10 A5.1 Storefront Sill @ Stucco Detail
Scale: 3" = 1'-0"

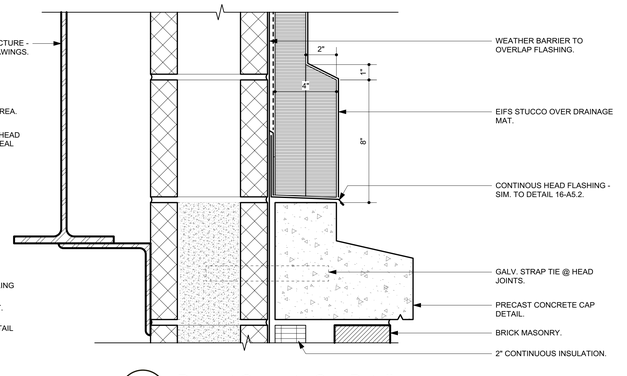


11 A5.1 Storefront Sill @ Stucco Detail
Scale: 3" = 1'-0"

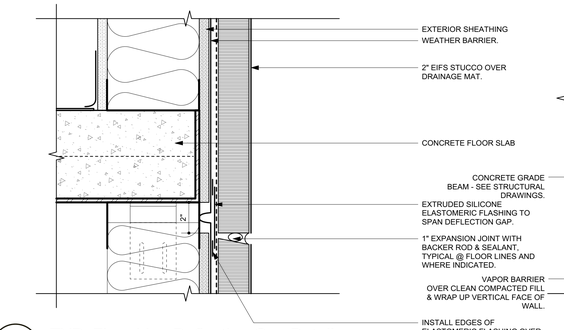




13 A5.1 Storefront Sill Pan Detail
N.T.S.



14 A5.1 Precast Concrete Cap Detail
Scale: 3" = 1'-0"



15 A5.1 TYP. Floor Line Deflection Gap Detail
Scale: 3" = 1'-0"

16 A5.1 Typ. Foundation Detail
Scale: 3" = 1'-0"

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Brunswick County Courthouse Addition & Renovations

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Construction Drawings
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Revisions:

Exterior Wall Details

A5.1

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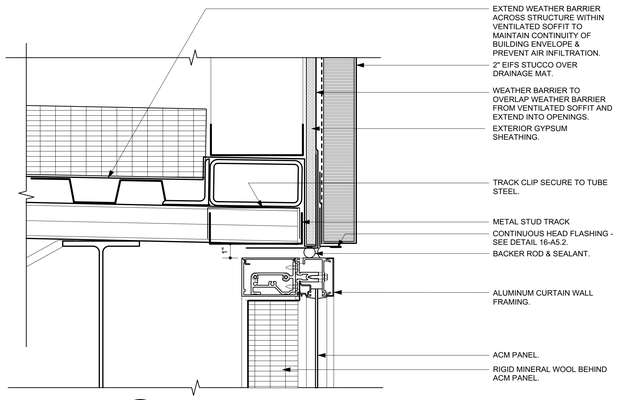
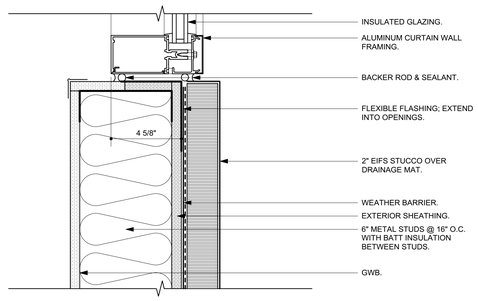
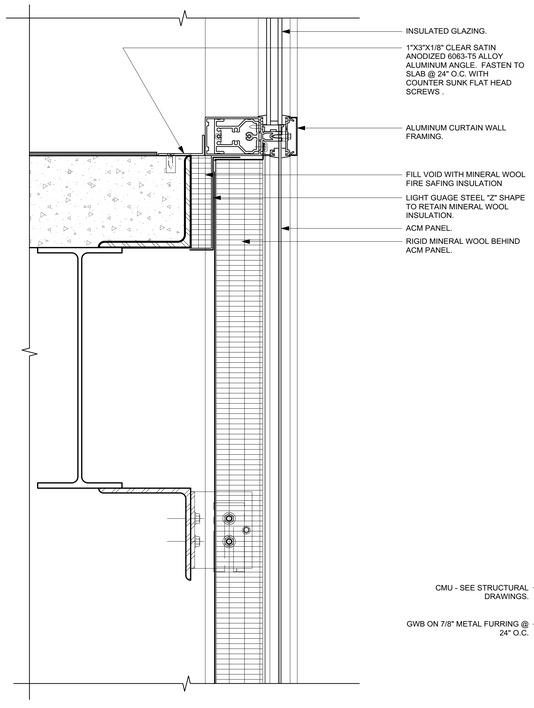


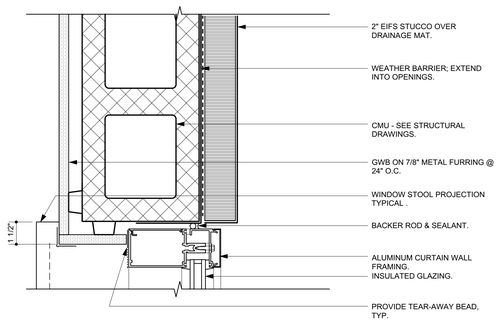
1 A5.2 **Head Detail @ North Curtain Wall**
Scale: 3" = 1'-0"



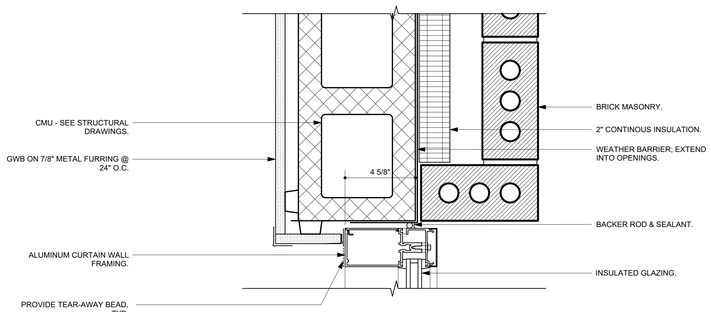
2 A5.2 **Metal Stud Detail @ North Curtain Wall Jamb**
Scale: 3" = 1'-0"



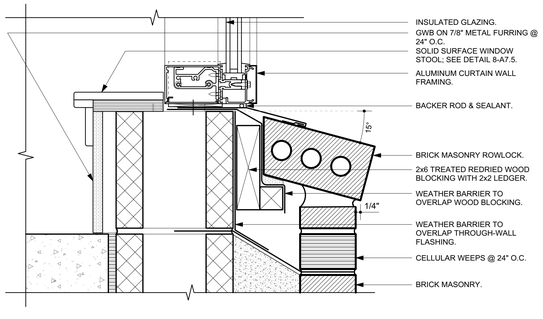
9 A5.2 **Floor Detail @ North Curtain Wall**
Scale: 3" = 1'-0"



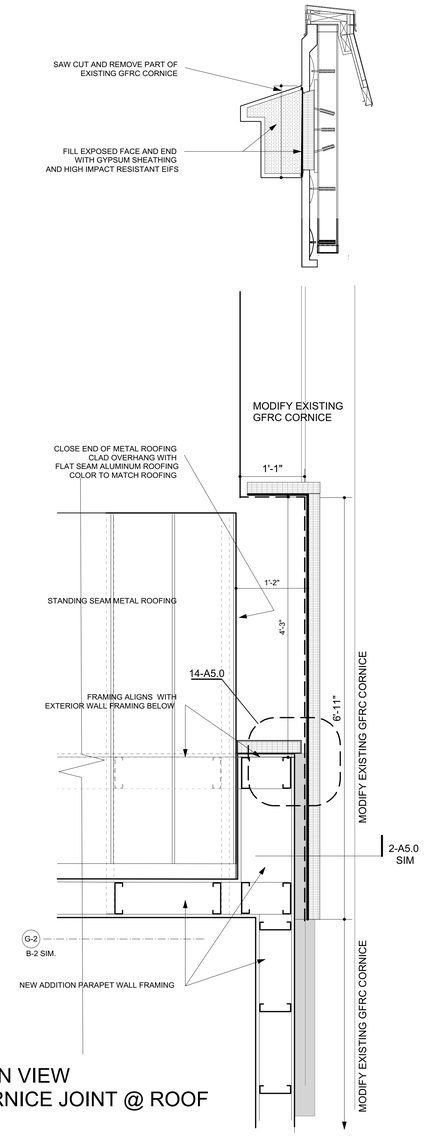
6 A5.2 **EIFS Jamb Detail @ North Curtain Wall**
Scale: 3" = 1'-0"



10 A5.2 **Brick Jamb Detail @ North Curtain Wall**
Scale: 3" = 1'-0"

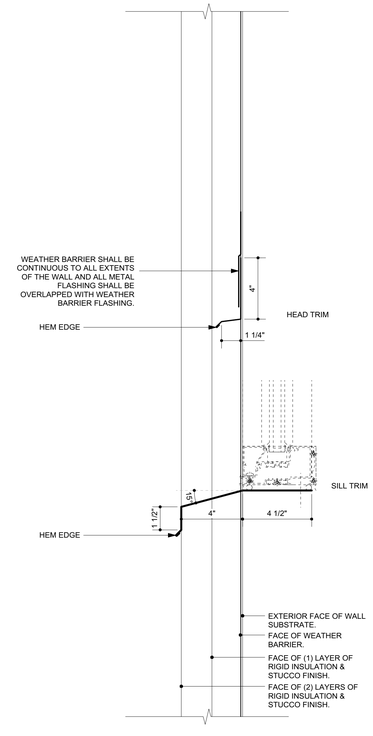


13 A5.2 **Sill Detail @ North Curtain Wall**
Scale: 3" = 1'-0"



PLAN VIEW
CORNICE JOINT @ ROOF

15 A5.2 **GFRC Cornice @ Roof**
Scale: 1" = 1'-0"



16 A5.2 **Metal Trim Details**
Scale: 3" = 1'-0"

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Revisions:

Details

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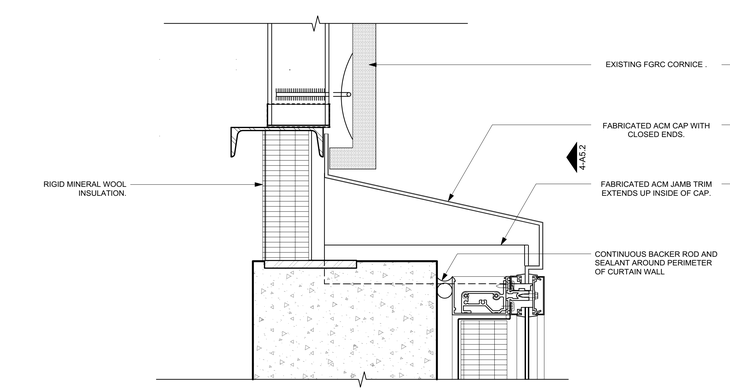
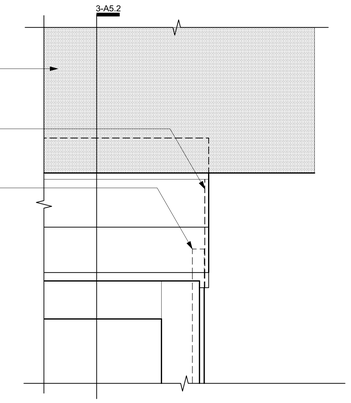
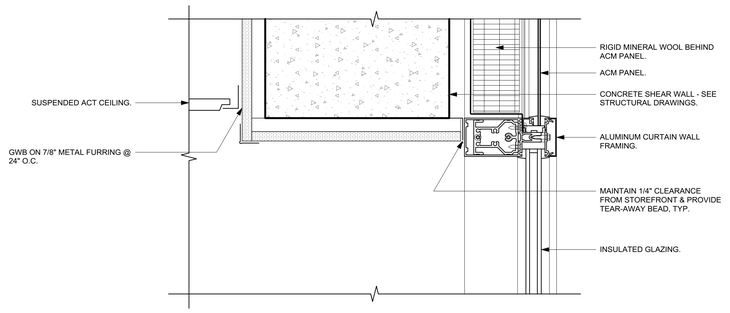


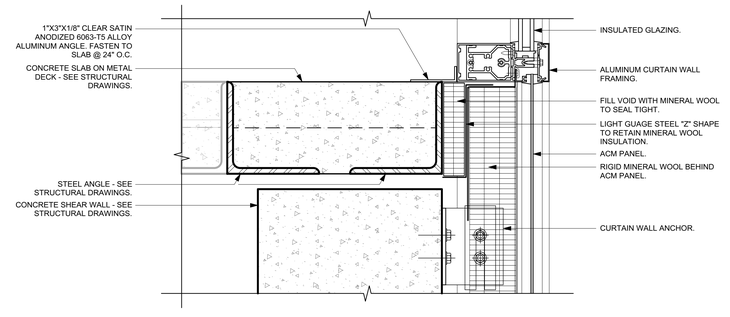
3 A5.3 Head Detail @ South Curtain Wall
Scale: 3" = 1'-0"



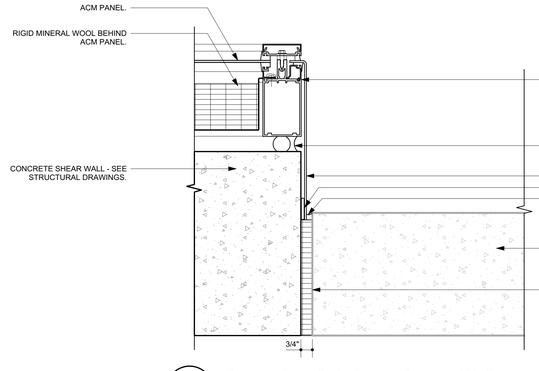
4 A5.3 Head Elevation @ South Curtain Wall
Scale: 3" = 1'-0"



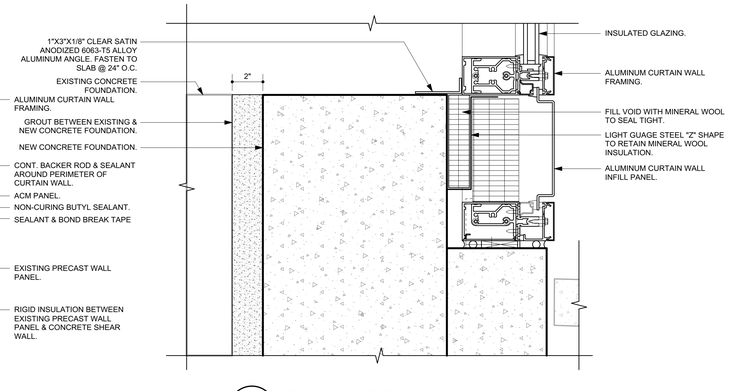
7 A5.3 Ceiling Detail @ South Curtain Wall
Scale: 3" = 1'-0"



11 A5.3 Floor Detail @ South Curtain Wall
Scale: 3" = 1'-0"



14 A5.3 Corner Detail @ South Curtain Wall
Scale: 3" = 1'-0"



15 A5.3 Sill Detail @ South Curtain Wall
Scale: 3" = 1'-0"

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Revisions:

Alternate Bid
South Wall
Details

A5.3

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Finish Schedule

ID	ROOM NAME	FLOOR FINISH	BASE MATERIAL	NORTH WALL FINISH	EAST WALL FINISH	SOUTH WALL FINISH	WEST WALL FINISH	CEILING	CEILING HT	REMARKS
1000	Main Entrance	New & Exist.Terrazo & Entrance Mat*	Wood	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ETR	See A1.4	*see plans for extents
1000A	Security	New & Existing Terrazo	Wood	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ETR	See A1.4	
1001	Elevator Lobby	LVT	Wood	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.4	
1002	Courtroom Lobby	LVT & CPT*	Wood	Painted GWB	Painted GWB	Painted GWB	Painted GWB	GWB & EG-ACT	See A1.4	*see plans for extents
1003	Payment	CPT	Wood	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.4	
1004	Records	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.4	
1006	Cashiers	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.4	
1007	Open Office	ETR	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.4	
1019	Corridor	LVT	Wood	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.4	
1020	Exit Stair	RSF, Resilient Treads,Risers & Landing	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT & GWB	See A1.4	Acoustic Ceiling Panels; Paint Stair Structure & Rails
1020A	Exit Vestibule	RSF	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.4	
1021	Vending	LVT	Wood	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.4	
1023	Corridor	LVT	Wood	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.4	
1024	Courtroom Lobby	LVT	Wood	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.4	
1030	Courtroom #3	CPT	Wood	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT,ACT, EXIST. GWB	See A1.4	Add Crown Moulding at New Const.; Paint Existing
1032	Corridor	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.4	
1033	Corridor	ETR	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.4	
1042	Holding	Concrete	-	Painted CMU	Painted CMU	Painted CMU	Painted CMU	GWB	See A1.4	
1045	Corridor	Concrete	RB	Painted CMU	-	Painted CMU	Painted CMU	GWB	See A1.4	
1064	Toilet	ETR & CT	ETR & CT	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT & EG-ACT	See A1.4	PT Wainscot
1065	Patrol Office	VCT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT & EG-ACT	See A1.4	
1068	Vestibule	ETR	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.4	
1069	Corridor	ETR & VCT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT & EG-ACT	See A1.4	
1070	Courtroom #1	CPT	Wood	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT & EG-ACT	See A1.4	Add Crown Moulding at New Const.; Paint Existing
1071	Open Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.4	
1072	Break Room	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.4	
1073	Storage	VCT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.4	
1074	Open Office	CPT & VCT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.4	
1075	Magistrate	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.4	
1076	Magistrate	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.4	
1077	Waiting	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.4	
1078	Toilet	ETR & CT	ETR & CT	Painted GWB	Painted GWB	Painted GWB	Painted GWB	GWB	See A1.4	PT Wainscot
1080	Exit Stair	RSF, Resilient Treads,Risers & Landing	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT & GWB	See A1.4	Acoustic Ceiling Panels, Paint Stair Structure & Rails
1081	Hearing Room Lobby	LVT	Wood	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT & EG-ACT	See A1.4	
1083	Probation Waiting Area	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.4	
1083A	Alcove	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.4	
1084	Corridor	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT & EG-ACT	See A1.4	
1086	Officer	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.4	
1087	Corridor	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.4	
1091	Vestibule	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.4	
1092	Intake Officer	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.4	
1093	Intake Officer	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.4	
1094	Intake Officer	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.4	
1096	Open Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.4	
1096A	Break Area	VCT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.4	
1098	TASC Officer	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.4	
1099	TASC Officer	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.4	
1100	Elevator Equipment	Concrete	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	Open to Structure	See A1.4	
1101	Court Security	CPT & VCT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.4	
1102	Corridor	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.4	
1105	Storage	VCT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.4	
1108	TASC Officer	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.4	
1112	Conference Room	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.4	
1117	Conference Room	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.4	
1118	Evidence	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	GWB	See A1.4	
1120	Courtroom #2	CPT	Wood	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT,ACT, EXIST. GWB	See A1.4	Add Crown Moulding at New Const.; Paint Existing
1120A	Circulation	CPT	Wood	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.4	
1122	Corridor	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.4	
1200	Courtroom #4	CPT	Wood	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT & GWB	See A1.4	
1200A	Evidence	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	Open		
1201	Courtroom Lobby	LVT & CPT	Wood	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.4	
1202	Corridor	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.4	
1203	Mechanical	Concrete	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	Open to Structure	See A1.4	
1204	Custodial	Concrete	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	Open to Structure	See A1.4	
1205	Judge	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.4	
1206	Toilet	PT	PT	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.4	PT Wainscot
1207	Data	Concrete	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	Open to Structure	See A1.4	
1208	Conference Room	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.4	
1209	Attorney Lounge	CPT & VCT	Wood	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.4	
1210	Toilet	PT	PT	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.4	PT Wainscot
1211	Toilet	PT	PT	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.4	PT Wainscot
1212	Conference Room	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.4	
2001	Elevator Lobby	LVT	Wood	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.5	
2002	Public Waiting	LVT	Wood	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT & GWB	See A1.5	
2004	Reception	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.5	
2005	Open Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT & EG-ACT	See A1.5	
2006	Corridor	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.5	
2008	Toilet	ETR	ETR	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.5	PT Wainscot
2014	AOC	VCT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	Open	See A1.5	
2017	Custodial	PT	PT	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.5	
2018	Toilet	ETR	ETR	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.5	PT Wainscot
2019	Corridor	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.5	
2020	Exit Stair	RSF, Resilient Treads,Risers & Landing	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.5	Acoustic Ceiling Panels: Paint Stair Structure & Rails
2021	50B Intake	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.5	
2021A	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.5	
2021B	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.5	
2023	Corridor	LVT	Wood	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.5	
2024	Corridor	LVT	Wood	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.5	
2030	Courtroom #7	CPT	Wood	Painted GWB	Painted GWB	Painted GWB	Painted GWB	*EG-ACT,ACT, EXIST. GWB	See A1.5	Add Crwn Mldg @ New Const.; Paint Existing; *see plan
2032	Corridor	VCT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.5	
2042	Corridor	VCT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.5	
2058	Corridor	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT & EG-ACT	See A1.5	
2061	Corridor	ETR	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.5	
2062	Conference Room	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.5	
2063	Chambers	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.5	
2064	Juvenile Court Waiting	CPT	Wood	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.5	
2065	Data	Concrete	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	Open	See A1.5	
2070	Courtroom #5	CPT	Wood	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT & GWB	See A1.5	Add Crown Moulding at New Const.; Paint Existing
2071	Evidence	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.5	
2073	Conference Room	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT & EG-ACT	See A1.5	
2074	Conference Room	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.5	
2076	Break	VCT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.5	PT Wainscot
2080	Exit Stair	RSF, Resilient Treads,Risers & Landing	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.5	Acoustic Ceiling Panels, Paint Stair Structure & Rails
2082	Corridor	RSF	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.5	
2083	Corridor	LVT	Wood	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT & EG-ACT	See A1.5	
2084	Guardian ad Litem	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.5	
2084A	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.5	
2084B	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.5	
2084C	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.5	
2084D	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.5	
2084E	Conference Room	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.5	
2087	Break Room	RSF	ETR	ETR	ETR	ETR	ETR	ETR	See A1.5	
2088	Open Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT & EG-ACT	See A1.5	
2092	US Congress Administration	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.5	
2093	US Congress Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.5	
2093A	Toilet	PT	PT	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.5	PT Wainscot
2094	Vending	LVT	Wood	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.5	
2100	Courtroom #6	CPT	Wood	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT & GWB	See A1.5	Add Crown Moulding at New Const.; Paint Existing
2100A	Conference	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.5	
2100B	Conference	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.5	
2100C	Vestibule	CPT	WOOD	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.5	
2100D	Evidence	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	Open	See A1.5	
2102	Corridor	LVT	Wood	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.5	
2105	Conference Room	ETR	RB	Painted CMU	Painted CMU	Painted CMU	Painted CMU	EG-ACT	See A1.5	
2114	Conference Room	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	GWB	See A1.5	
2115	Vestibule	VCT	RB	Painted GWB	Painted GWB	Painted GWB	Painted CMU	GWB	See A1.5	
2117	Vestibule	VCT	RB	Painted CMU	Painted CMU	Painted CMU	Painted CMU	EG-ACT	See A1.5	
2128	Chamber	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT & EG-ACT	See A1.5	
2128A	Closet	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.5	
2128B	Data	Concrete	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	Open to Structure	See A1.5	
2131	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT & EG-ACT	See A1.5	
2131A	Closet	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.5	
2134	Waiting Area	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT & EG-ACT	See A1.5	
2200	Jury Assembly	CPT	Wood	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.5	
2201	Data	Concrete	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	Open to Structure	See A1.5	
2202	Open Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.5	
2203	Break Area	VCT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.5	
2204	Jury Lounge	LVT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.5	
2205	Mechanical	Concrete	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	Open to Structure	See A1.5	

Door Schedule

Door				Frame			
ID #	Size WxH	Type	Material	Type	Material	Jamb Depth	Remarks
1000A	2-10 x 7-0 PR	C	Alum	AL4	Alum	6"	Automatic Opener
1000B	2-10 x 7-0 PR	C	Alum	AL4	Alum	6"	Egress Only
1000C	3-0 x 7-0	C	Alum.	AL3	Alum.	6"	Egress Only
1003A	-	-	-	-	-	-	Existing Door & Frame to receive new door hardware
1020A	3-0 x 7-0	C	Alum.	AL2	Alum.	6"	
1020B	3-0 x 7-0	B	Wood	HM1	HM	8 1/4"	45 Minute Rated Door & Frame
1020C	-	-	-	-	-	-	Existing Door & Frame to receive new door hardware
1025A	-	-	-	-	-	-	Existing Door & Frame to receive new door hardware
1030A	3-0 x 7-0 PR	B	Wood	HM1	HM	5 7/8"	45 Minute Rated Door & Frame
1030B	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	45 Minute Rated Door & Frame
1032A	-	-	-	-	-	-	Existing Door & Frame to receive new door hardware
1033A	3-0 x 7-0	D	HM	HM2	HM	8 5/8"	
1033B	-	-	-	-	-	-	Existing Door & Frame to receive new door hardware
1036A	-	-	-	-	-	-	Existing Door & Frame to receive new door hardware
1036B	-	-	-	-	-	-	Existing Door & Frame to receive new door hardware
1040A	-	-	-	-	-	-	Existing Door & Frame to receive new door hardware
1042A	3-0 x 7-0	D	HM	HM5	HM	8 5/8"	Laminated Safety Glass
1054A	-	-	-	-	-	-	Existing Door & Frame to receive new door hardware
1060B	-	-	-	-	-	-	Existing Door & Frame to receive new door hardware
1064A	3-0 x 7-0	A	Wood	HM1	HM	8 1/4"	
1064B	-	-	-	HM1	HM	8 1/4"	Cased Opening
1065A	3-0 x 7-0	B	Wood	HM1	HM	8 1/4"	
1065B	-	-	-	-	-	-	Existing Door & Frame to receive new door hardware
1066A	3-0 x 7-0	A	Wood	HM1	HM	8 1/4"	
1069A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
1070A	3-0 x 7-0 PR	B	Wood	HM1	HM	5 7/8"	
1070B	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
1070C	3-0 x 7-0	B	Wood	HM1	HM	8 1/4"	
1071A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
1072A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
1073A	3-0 x 7-0	A	Wood	HM1	HM	5 7/8"	
1074A	3-0 x 7-0	B	Wood	HM1	HM	6 1/4"	
1075A	3-0 x 7-0	B	Wood	HM1	HM	6 1/4"	
1076A	3-0 x 7-0	B	Wood	HM1	HM	6 1/4"	
1077A	3-0 x 7-0	A	Wood	HM6	HM	5 7/8"	
1078A	3-0 x 7-0	A	Wood	HM1	HM	8 1/4"	
1080A	3-0 x 7-0	B	Wood	HM1	HM	8 1/4"	45 Minute Rated Door & Frame
1080C	-	-	-	-	-	-	Existing Door & Frame to receive new door hardware
1083A	3-0 x 7-0	A	Wood	HM4	HM	5 7/8"	
1083B	3-0 x 7-0	B	Wood	HM1	HM	6 1/4"	
1091A	3-0 x 7-0	A	Wood	HM4	HM	5 7/8"	
1092A	3-0 x 7-0	B	Wood	HM1	HM	8 1/4"	
1093A	3-0 x 7-0	B	Wood	HM1	HM	6 1/4"	
1094A	3-0 x 7-0	B	Wood	HM1	HM	8 1/4"	
1096A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
1098A	3-0 x 7-0	B	Wood	HM1	HM	6 1/4"	
1099A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
1100A	3-0 x 7-0	A	Wood	HM1	HM	5 7/8"	45 Minute Rated Door & Frame
1101A	3-0 x 7-0	A	Wood	HM6	HM	5 7/8"	
1101B	-	-	-	-	-	-	Existing Door & Frame to receive new door hardware
1102A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
1102B	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
1105A	3-0 x 7-0	A	Wood	HM1	HM	6 1/4"	
1112A	3-0 x 7-0	B	Wood	HM1	HM	8 1/4"	
1117A	3-0 x 7-0	B	Wood	HM1	HM	8 3/4"	
1118A	2-6 x 7-0	A	Wood	HM1	HM	9 1/2"	
1119A	3-0 x 7-0	B	Wood	HM1	HM	8 1/4"	
1120A	3-0 x 7-0 PR	B	Wood	HM1	HM	5 7/8"	45 Minute Rated Door & Frame
1120B	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	45 Minute Rated Door & Frame
1120C	-	-	-	-	-	-	Existing Door & Frame to receive new door hardware
1120D	-	-	-	-	-	-	Existing Door & Frame to receive new door hardware
1122A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
1122C	-	-	-	-	-	-	Existing Door & Frame to receive new door hardware
1135A	3-0 x 7-0	A	Wood	HM1	HM	6 1/4"	
1200A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
1200B	3-0 x 7-0 PR	B	Wood	HM1	HM	5 7/8"	45 Minute Rated Door & Frame
1200C	1-6 x 7-0 PR	A	Wood	HM1	HM	5 7/8"	
1202A	3-0 x 7-0 & 1-4 x 7-0	A & B	Wood	HM1	HM	5 7/8"	45 Minute Rated Door & Frame
1202B	-	-	-	HM1	HM	5 7/8"	Cased Opening
1203A	2-6 x 7-0 PR	A	Wood	HM1	HM	5 7/8"	45 Minute Rated Door & Frame
1204A	3-0 x 7-0	A	Wood	HM1	HM	5 7/8"	45 Minute Rated Door & Frame
1205A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	45 Minute Rated Door & Frame
1205B	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	45 Minute Rated Door & Frame
1206A	3-0 x 7-0	A	Wood	HM1	HM	5 7/8"	
1207A	3-0 x 7-0	A	Wood	HM1	HM	5 7/8"	
1208A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
1209A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
1210A	3-0 x 7-0	A	Wood	HM1	HM	5 7/8"	
1211A	3-0 x 7-0	A	Wood	HM1	HM	5 7/8"	
1212A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
2003A	-	-	-	-	-	-	Existing Door & Frame to receive new door hardware
2004B	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
2008A	3-0 x 7-0	A	Wood	HM1	HM	6 1/4"	
2013A	-	-	-	-	-	-	Existing Door & Frame to receive new door hardware
2014A	3-0 x 7-0	A	Wood	HM1	HM	5 7/8"	
2017A	3-0 x 7-0	A	Wood	HM1	HM	5 7/8"	
2018A	3-0 x 7-0	A	Wood	HM1	HM	6 1/4"	
2020A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	45 Minute Rated Door & Frame
2020B	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	45 Minute Rated Door & Frame
2021A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
2021B	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
2030A	3-0 x 7-0 PR	B	Wood	HM1	HM	5 7/8"	45 Minute Rated Door & Frame
2032A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
2040A	-	-	-	-	-	-	Existing Door & Frame to receive new door hardware
2042A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
2043B	-	-	-	-	-	-	Existing Door & Frame to receive new door hardware
2048B	-	-	-	-	-	-	Existing Door & Frame to receive new door hardware
2056B	-	-	-	-	-	-	Existing Door & Frame to receive new door hardware
2060A	-	-	-	-	-	-	Existing Door & Frame to receive new door hardware
2062A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
2062B	-	-	-	-	-	-	Existing Door & Frame to receive new door hardware
2063A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
2064A	3-0 x 7-0	A	Wood	HM4	HM	5 7/8"	45 Minute Rated Door & Frame
2065A	3-0 x 7-0	A	Wood	HM1	HM	5 7/8"	45 Minute Rated Door & Frame
2066A	-	-	-	-	-	-	Existing Door & Frame to receive new door hardware
2067A	-	-	-	-	-	-	Existing Door & Frame to receive new door hardware
2070A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	45 Minute Rated Door & Frame
2070B	3-0 x 7-0	B	Wood	HM1	HM	10 5/8"	45 Minute Rated Door & Frame
2070C	3-0 x 7-0	A	Wood	HM7	HM	5 7/8"	
2071A	3-0 x 7-0	A	Wood	HM1	HM	5 7/8"	
2073A	3-0 x 7-0	B	Wood	HM1	HM	6 1/4"	
2076A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	45 Minute Rated Door & Frame
2080A	3-0 x 7-0	B	Wood	HM1	HM	6 1/4"	45 Minute Rated Door & Frame
2080C	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	45 Minute Rated Door & Frame
2082A	-	-	-	-	-	-	Existing Door & Frame to receive new door hardware
2084A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
2084B	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
2084C	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
2084D	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
2084E	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
2084G	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
2084H	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
2088A	3-0 x 7-0	B	Wood	HM1	HM	6 1/4"	
2088A	-	-	-	-	-	-	Existing Door & Frame to receive new door hardware
2092A	3-0 x 7-0	A	Wood	HM4	HM	5 7/8"	
2093A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
2093B	3-0 x 7-0	A	Wood	HM1	HM	5 7/8"	
2100A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
2100B	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	

SIGNAGE LEGEND:

*	Room #
+	Room # & Media Slot
^	Room # & Room Name

Notes:
-See A7.# for sign details.
-Provide ADA signage at all doors to restroom & stairs.
-Final Room Names to be determined at a later date.

FINISH SCHEULE LEGEND:

GWB - Gypsum Wall Board
ACT - New Acoustical Ceiling Grid & Tile
EG-ACT - Exist. Acoustical Ceiling Grid, New Tile
LVT - Luxury Vinyl Tile
PT - Porcelain Tile - See Tile Spec
CT - Ceramic Tile
CPT - Carpet Tile
RB - Rubber Base
RSF - Resilient Sheet Flooring
ETR - Existing to Remain

Note:
-See Detail 4/A7.5 for Typical Wood Base and Crown Moulding Profiles

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Brunswick County Courthouse Addition & Renovations

Bolivia, NC

Construction Drawings
September 23, 2019

Revisions:

Finish & Door Schedules

A6.0

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Finish Schedule

ID	ROOM NAME	FLOOR FINISH	BASE MATERIAL	NORTH WALL FINISH	EAST WALL FINISH	SOUTH WALL FINISH	WEST WALL FINISH	CEILING	CEILING HT	REMARKS
2206	Toilet	PT	PT	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.5	PT Wainscot
2207	Toilet	PT	PT	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.5	PT Wainscot
2208	Toilet	PT	PT	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.5	PT Wainscot
3000	Elevator Lobby	LVT	Wood	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT & EG-ACT	See A1.6	
3002	Reception	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT & GWB	See A1.6	
3014	Work Room	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3015	Women's Restroom	PT	PT	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3016	Men's Restroom	PT	PT	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3018	Records	VCT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3019	Corridor	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3020	Exit Stair	RSF, Resilient Treads,Risers & Landing	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	Paint Stair Structure and Rails
3021	Break Room	VCT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3022	Corridor	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3023	Corridor	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3027	Corridor	ETR	ETR	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3030	Corridor	CPT	Wood	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3031	Corridor	ETR	ETR	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT & EG-ACT	See A1.6	
3032A	Judge Assistant	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3032B	Judge Lobby	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3034	Corridor	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3035	Break Area	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3036	Break Room	VCT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3039	Judge Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3041	Judge Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3042	Judge Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3044	Judge Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT & EG-ACT	See A1.6	
3046A	Conference Room	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT & EG-ACT	See A1.6	
3046B	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT & EG-ACT	See A1.6	
3046C	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT & EG-ACT	See A1.6	
3046D	Work Room	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT & EG-ACT	See A1.6	
3047A	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3047B	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3053	Storage	ETR	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3056	Corridor	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT & EG-ACT	See A1.6	
3058	Corridor	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT & EG-ACT	See A1.6	
3059	Records	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3060	Storage	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3061	Open Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3061A	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3061B	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3061C	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3061D	Conference Room	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3061E	Storage	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3061F	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3061G	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3063	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3064	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3065	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3066	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3067	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3068	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3069	Children's Play Room	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT & EG-ACT	See A1.6	
3072	Waiting Room	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3073	Corridor	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3074	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3075	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3076	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3077	Work Room	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3078	Clerk	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3079	Reception	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3080	Exit Stair	RSF, Resilient Treads,Risers & Landing	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	Paint Stair Structure & Rails
3082	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3083	Corridor	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3084	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3086	Conference Room	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3087	Vestibule	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3088	Reception	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3089	District Attorney	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3090	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3091	Records	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3092	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3093	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3094	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3095	Corridor	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3096	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT & EG-ACT	See A1.6	
3097	Custodial	PT	PT	Painted GWB	Painted GWB	Painted GWB	Painted GWB	Open	See A1.6	
3098	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3099	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3100	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3101	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3102	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3103	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3104	Break Room	RSF	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3108	Corridor	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	EG-ACT	See A1.6	
3200	Special Proceedings	CPT	Wood	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT & GWB	See A1.6	
3201	Control Room	CPT	Wood	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3202	Grand Jury Hearings	CPT	Wood	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT & GWB	See A1.6	
3203	Courtroom Lobby	CPT	Wood	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3204	Toilet	PT	PT	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	PT Wainscot
3205	Toilet	PT	PT	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	PT Wainscot
3206	Break Area	VCT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3207	Data	Concrete	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	Open	See A1.6	
3208	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3209	Break Area	VCT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3210	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3211	Toilet	PT	PT	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	PT Wainscot
3212	Toilet	PT	PT	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	PT Wainscot
3213	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3214	Conference Room	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3215	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3216	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3217	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3218	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3219	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3220	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3221	Work Room	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3222	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3223	Office	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	
3224	Corridor	CPT	RB	Painted GWB	Painted GWB	Painted GWB	Painted GWB	ACT	See A1.6	

Door Schedule

Door ID #	Size WxH	Type	Material	Frame Type	Material	Jamb Depth	Remarks
2100C	3-0 x 7-0 PR	B	Wood	HM1	HM	5 7/8"	
2100D	2-8 x 7-0	A	Wood	HM1	HM	5 7/8"	
2100E	3-0 x 7-0 PR	B	Wood	HM1	HM	5 7/8"	45 Minute Rated Door & Frame
2114A	3-0 x 7-0	A	Wood	HM4	HM	5 7/8"	
2115A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	45 Minute Rated Door & Frame
2117A	3-0 x 7-0	B	Wood	HM1	HM	10 5/8"	45 Minute Rated Door & Frame
2117C	3-0 x 7-0	B	Wood	HM1	HM	10 5/8"	45 Minute Rated Door & Frame
2128A	3-0 x 7-0	A	Wood	HM1	HM	5 7/8"	
2128B	3-0 x 7-0	A	Wood	HM1	HM	6 1/4"	
2131A	3-0 x 7-0	A	Wood	HM1	HM	5 7/8"	
2134A	3-0 x 7-0	A	Wood	HM7	HM	5 7/8"	
2134B	-	-	-	-	-	-	Existing Door & Frame to receive new door hardware
2200A	3-0 x 7-0	A	Wood	HM7	HM	5 7/8"	45 Minute Rated Door & Frame
2200B	3-0 x 7-0	A	Wood	HM3	HM	6"	45 Minute Rated Door & Frame
2201A	3-0 x 7-0	A	Wood	HM1	HM	8 1/4"	
2202A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	45 Minute Rated Door & Frame
2203A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
2205A	2-2 x 7-0 PR	A	Wood	HM1	HM	6"	
2206A	3-0 x 7-0	A	Wood	HM1	HM	5 7/8"	
2207A	2-8 x 7-0	A	Wood	HM1	HM	5 7/8"	
2208A	2-8 x 7-0	A	Wood	HM1	HM	5 7/8"	
3002A	3-0 x 7-0	A	Wood	HM8	HM	5 7/8"	
3002B	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
3003A	3-0 x 7-0	A	Wood	HM1	HM	6 1/4"	
3003B	3-0 x 7-0	A	Wood	HM1	HM	6 1/4"	
3014A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
3014B	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
3015A	3-0 x 7-0	A	Wood	HM1	HM	5 7/8"	
3016A	3-0 x 7-0	A	Wood	HM1	HM	5 7/8"	
3018A	3-0 x 7-0	B	Wood	HM1	HM	6 1/4"	
3019A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
3023A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
3023B	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
3027B	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
3029A	-	-	-	-	-	-	Existing Door & Frame to receive new door hardware
3032B	3-0 x 7-0	A	Wood	HM7	HM	5 7/8"	
3032C	3-0 x 7-0	B	Wood	HM1	HM	6 1/4"	
3032D	3-0 x 7-0	B	Wood	HM1	HM	6 1/4"	
3034A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
3044A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
3046A	3-0 x 7-0	B	Wood	HM1	HM	6 1/4"	
3046B	3-0 x 7-0	B	Wood	HM1	HM	6 1/4"	
3046C	-	-	-	HM1	HM	6 1/4"	Cased Opening
3047A	3-0 x 7-0	B	Wood	HM1	HM	6 1/4"	
3051A	-	-	-	-	-	-	Existing Door & Frame to receive new door hardware
3052A	-	-	-	-	-	-	Existing Door & Frame to receive new door hardware
3056A	-	-	-	-	-	-	Existing Door & Frame to receive new door hardware
3059A	3-0 x 7-0	B	Wood	HM1	HM	6 1/4"	
3061A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
3061B	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
3061C	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
3061D	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
3061E	3-0 x 7-0	A	Wood	HM1	HM	5 7/8"	
3061F	3-0 x 7-0	B	Wood	HM1	HM	6 1/4"	
3061H	3-0 x 7-0	B	Wood	HM1	HM	6 1/4"	
3068A	3-0 x 7-0	B	Wood	HM1	HM	6 1/4"	
3069A	3-0 x 7-0	A	Wood	HM4	HM	6 1/4"	
3072A	-	-	-	-	-	-	Existing Door & Frame to receive new door hardware
3080A	3-0 x 7-0	B	Wood	HM1	HM	6 1/4"	45 Minute Rated Door & Frame
3080B	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	45 Minute Rated Door & Frame
3083A	-	-	-	-	-	-	Existing Door & Frame to receive new door hardware
3104A	3-0 x 7-0	A	Wood	HM4	HM	6 1/4"	
3200A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
3200B	3-0 x 7-0	A	Wood	HM1	HM	5 7/8"	
3201A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
3201B	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
3202A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
3204A	2-8 x 7-0	A	Wood	HM1	HM	5 7/8"	
3205A	3-0 x 7-0	A	Wood	HM1	HM	5 7/8"	
3207A	3-0 x 7-0	A	Wood	HM1	HM	5 7/8"	
3208A	3-0 x 7-0	A	Wood	HM3	HM	6"	
3208B	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
3209A	3-0 x 7-0	B	Wood	HM1	HM	6"	
3210A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
3211A	2-8 x 7-0	A	Wood	HM1	HM	5 7/8"	
3212A	3-0 x 7-0	A	Wood	HM1	HM	5 7/8"	
3213A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
3214A	3-0 x 7-0	A	Wood	HM1	HM	5 7/8"	
3214B	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
3215A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
3217A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
3218A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
3219A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
3220A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
3222A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	
3223A	3-0 x 7-0	B	Wood	HM1	HM	5 7/8"	

SIGNAGE LEGEND:

*	Room #
+	Room # & Media Slot
^	Room # & Room Name

Notes:
-See A7.# for sign details.
-Provide ADA signage at all doors to restroom & stairs.
-Final Room Names to be determined at a later date.

FINISH SCHEULE LEGEND:

GWB - Gypsum Wall Board
ACT - New Acoustical Ceiling Grid & Tile
EG-ACT - Exist. Acoustical Ceiling Grid, New Tile
LVT - Luxury Vinyl Tile
PT - Porcelain Tile - See Tile Spec
CT - Ceramic Tile
CPT - Carpet Tile
RB - Rubber Base
RSF - Resilient Sheet Flooring
ETR - Existing to Remain

Note:
-See Detail 4/A7.5 for Typical Wood Base and Crown Moulding Profiles

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JOHN R. SAWYER REGISTERED ARCHITECT 3428 NORTH CAROLINA WILMINGTON, N.C.

Brunswick County Courthouse Addition & Renovations

Bolivia, NC

Construction Drawings
September 23, 2019

Revisions:

Finish & Door Schedules

A6.1

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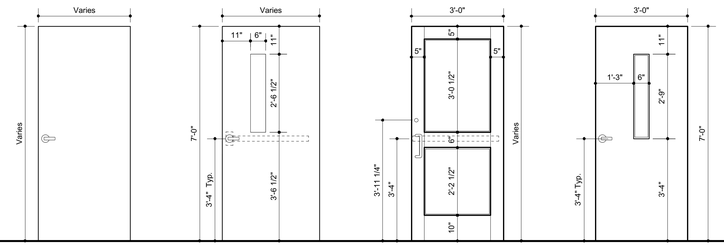
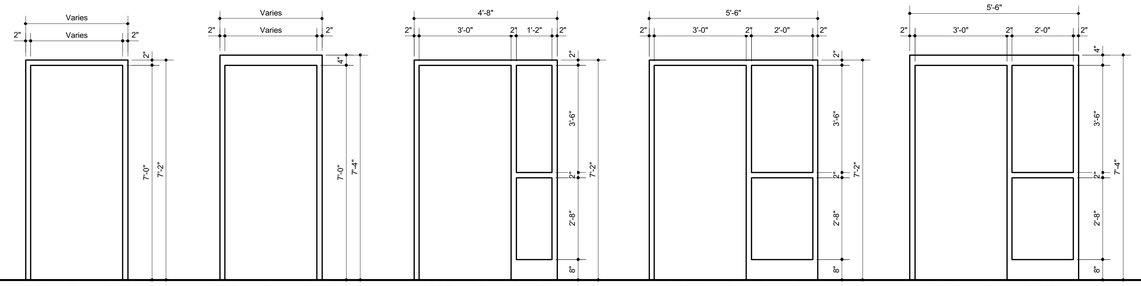
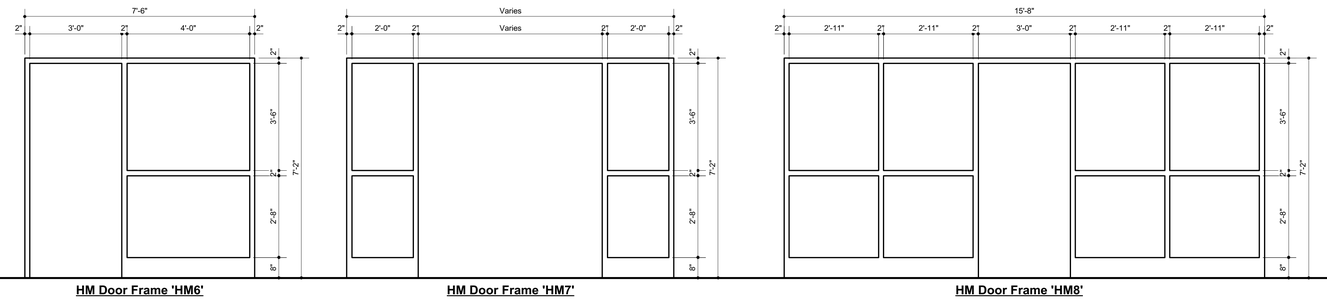


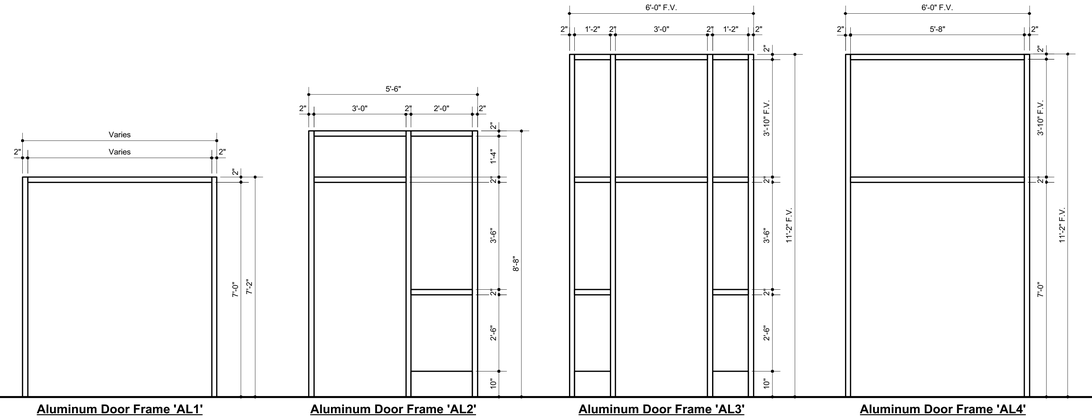
Door Type 'A' | **Door Type 'B'** | **Door Type 'C'** | **Door Type 'D'**
Security HM



HM Door Frame 'HM1' | **HM Door Frame 'HM2'** | **HM Door Frame 'HM3'** | **HM Door Frame 'HM4'** | **HM Door Frame 'HM5'**



HM Door Frame 'HM6' | **HM Door Frame 'HM7'** | **HM Door Frame 'HM8'**



Aluminum Door Frame 'AL1' | **Aluminum Door Frame 'AL2'** | **Aluminum Door Frame 'AL3'** | **Aluminum Door Frame 'AL4'**

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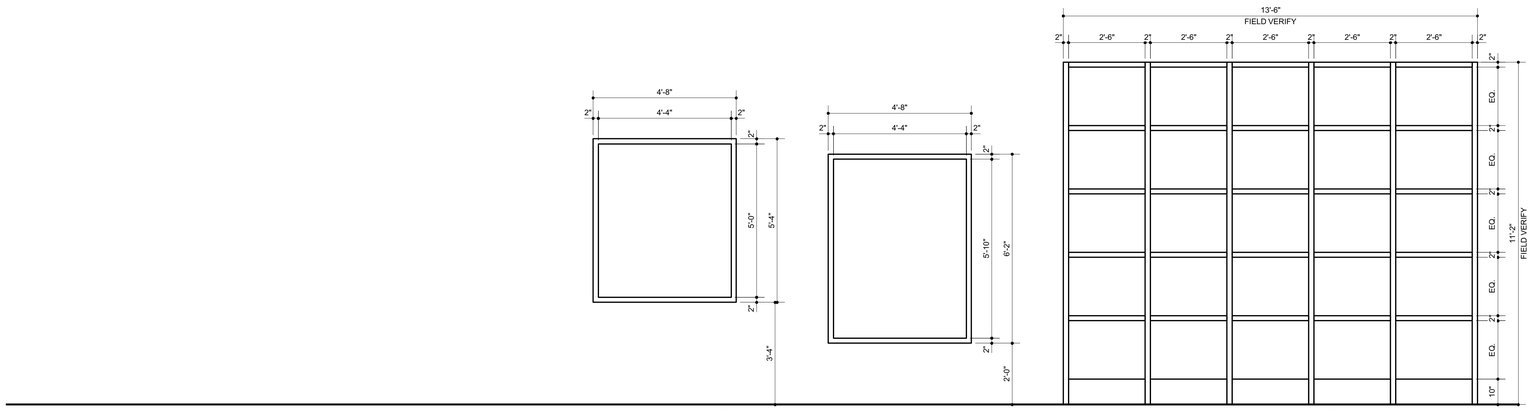
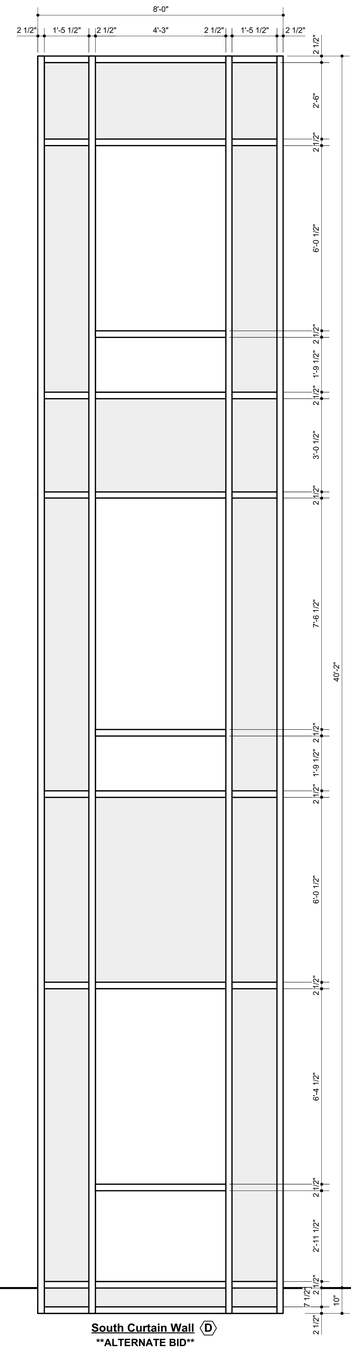
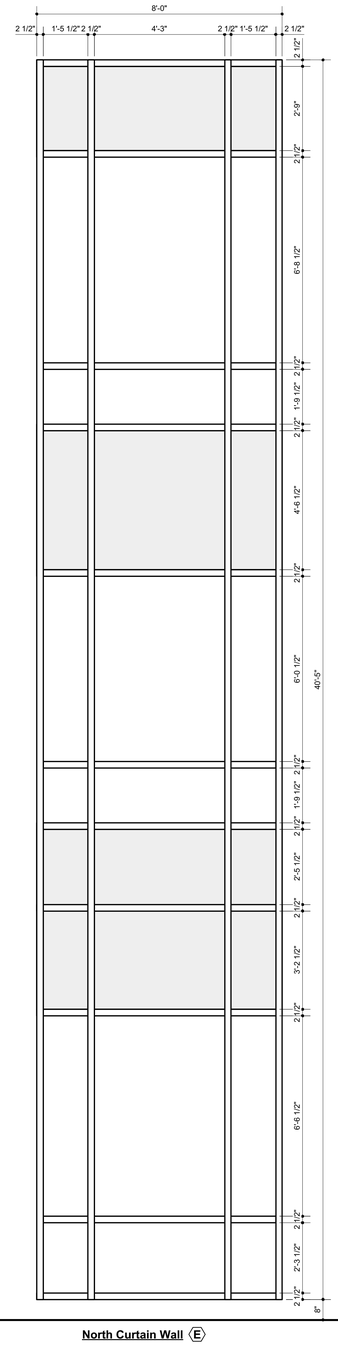


Storefront Window (A) **Storefront Window (B)** **Storefront Window (C)**



South Curtain Wall (D)
****ALTERNATE BID****



North Curtain Wall (E)

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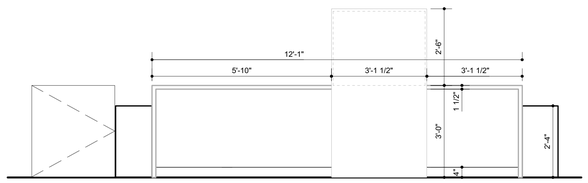

1 A7.0 Security 1000A
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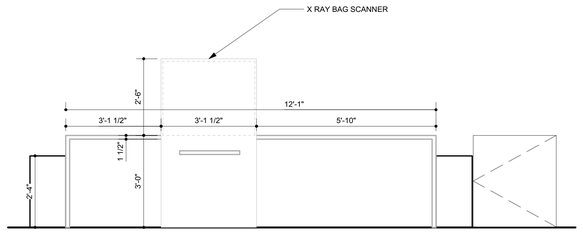

2 A7.0 Security 1000A
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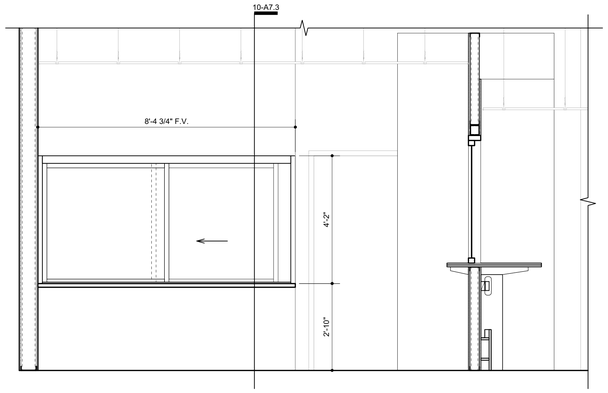

3 A7.0 Payment 1003 Casework
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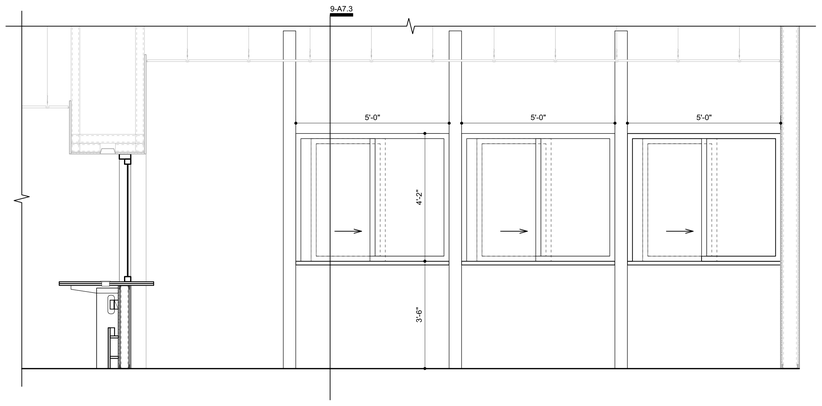

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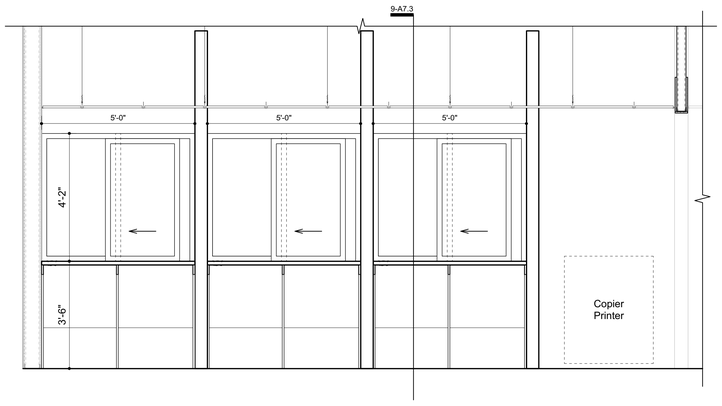
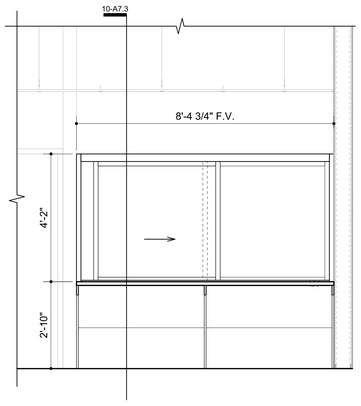


5 A7.0 Cashier 1006 Casework
Scale: 1/2" = 1'-0"



6 A7.0 Cashier 1006 Casework
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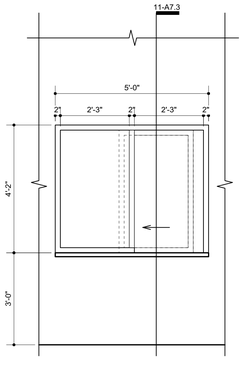
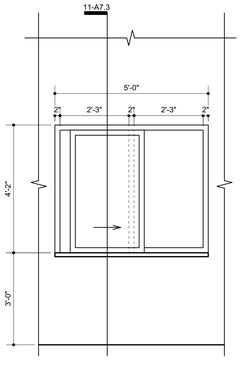
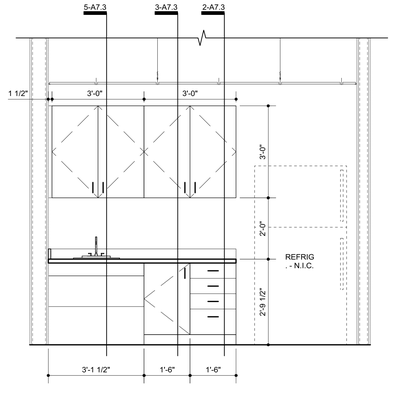


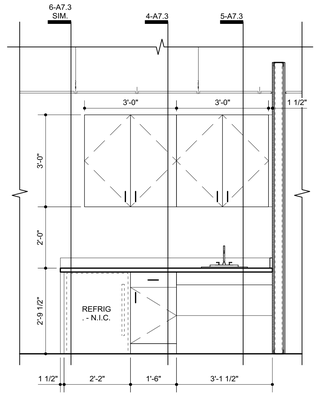
7 A7.0 Transaction Window
Scale: 1/2" = 1'-0"



8 A7.0 Transaction Window
Scale: 1/2" = 1'-0"



9 A7.0 Break Room 1096A Casework
Scale: 1/2" = 1'-0"



10 A7.0 Court Security 1101 Casework
Scale: 1/2" = 1'-0"

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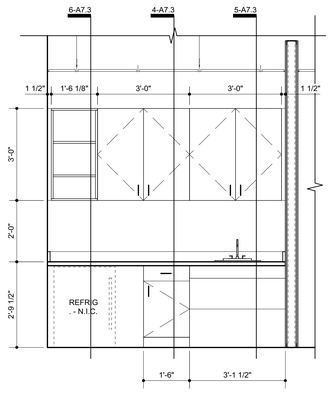
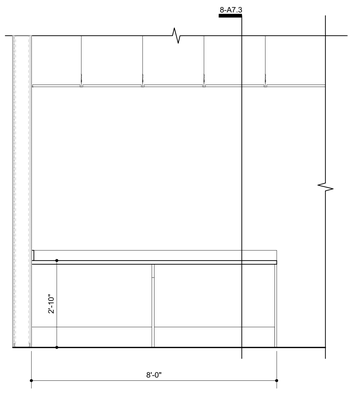
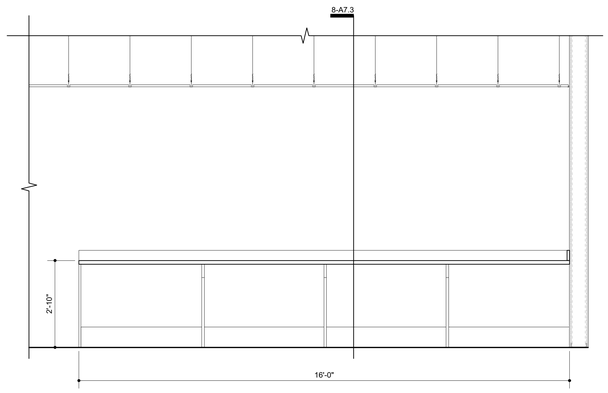


1 A7.1 Attorney Lounge 1209 Casework
Scale: 1/2" = 1'-0"



2 A7.1 Patrol Office 1065 Casework
Scale: 1/2" = 1'-0"



3 A7.1 Patrol Office 1065 Casework
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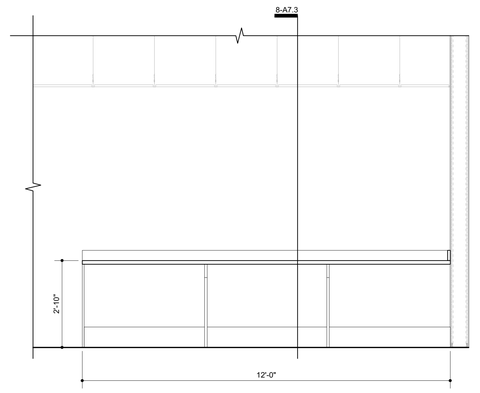

4 A7.1 Patrol Office 1065 Casework
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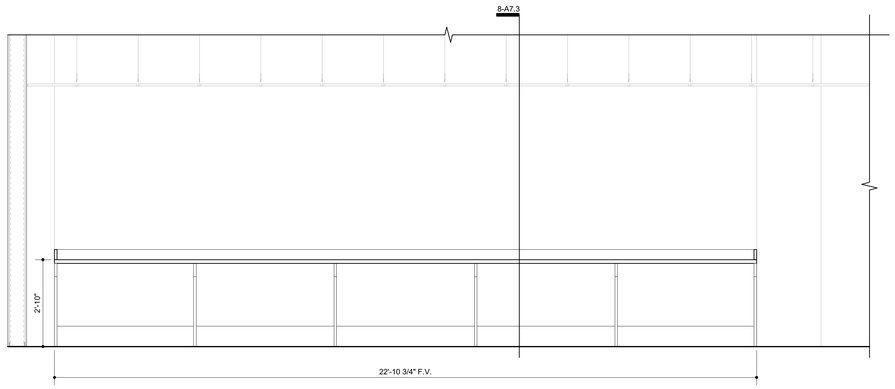
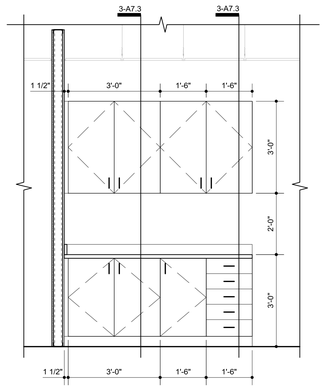
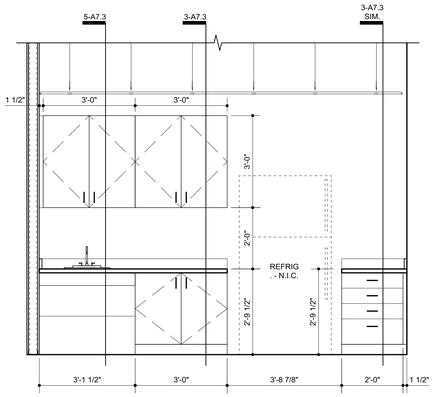


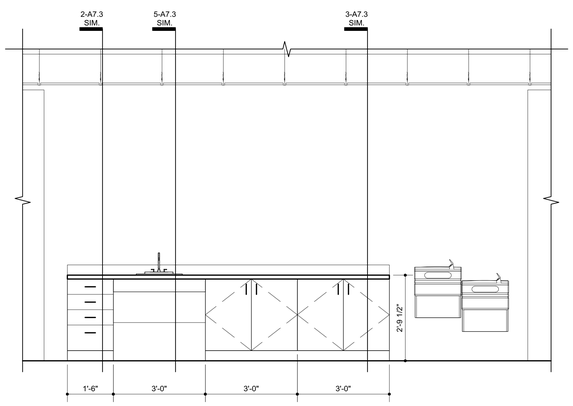
5 A7.1 Patrol Office 1065 Casework
Scale: 1/2" = 1'-0"



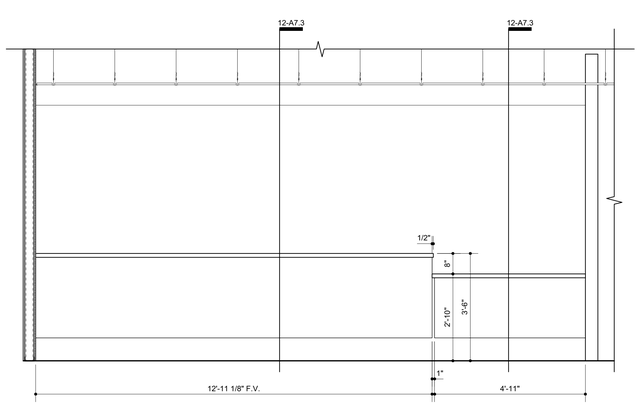
6 A7.1 Guardian ad Litem 2084 Casework
Scale: 1/2" = 1'-0"



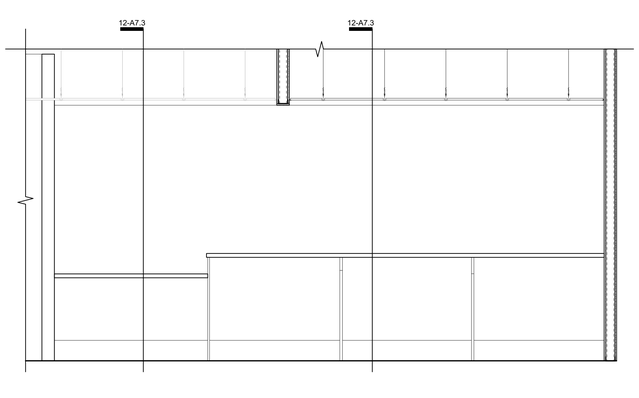
7 A7.1 Break Area 2203 Casework
Scale: 1/2" = 1'-0"



8 A7.1 Jury Lounge 2204 Casework
Scale: 1/2" = 1'-0"



9 A7.1 Reception 3002 Casework
Scale: 1/2" = 1'-0"



10 A7.1 Open Office 3003 Casework
Scale: 1/2" = 1'-0"

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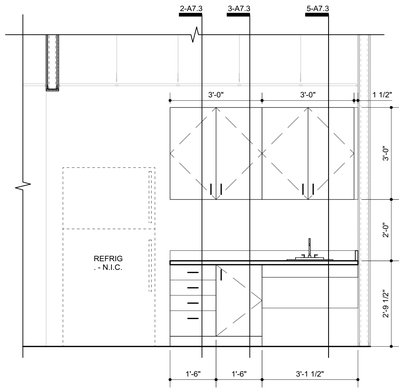
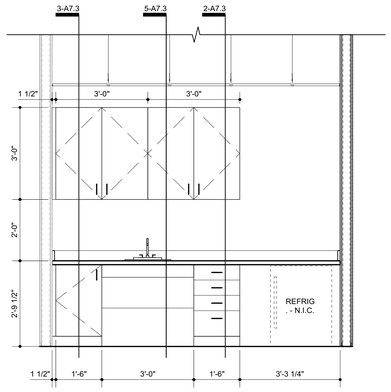
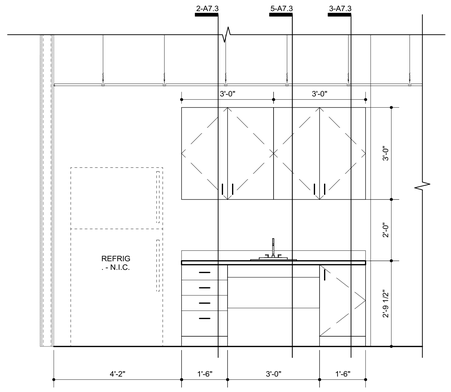


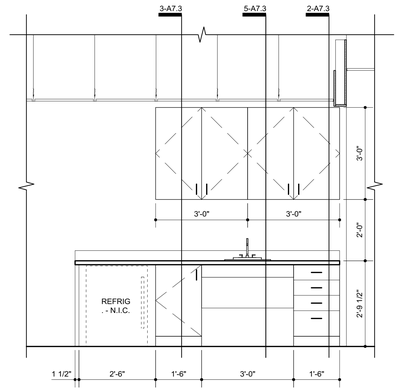
1 A7.2 Break Room 3021 Casework
Scale: 1/2" = 1'-0"



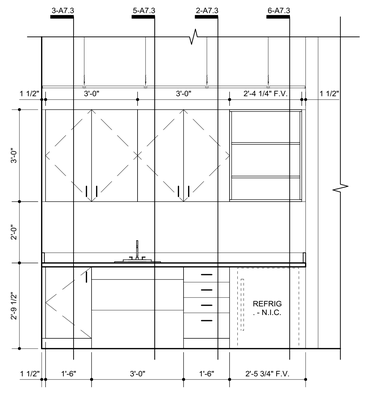
2 A7.2 Break Room 3036 Casework
Scale: 1/2" = 1'-0"



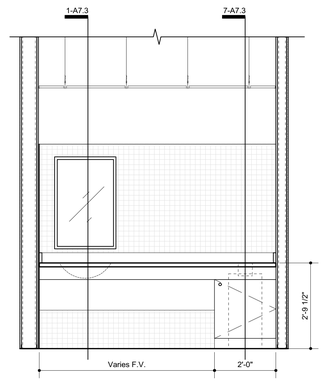
3 A7.2 Break Room 3104 Casework
Scale: 1/2" = 1'-0"



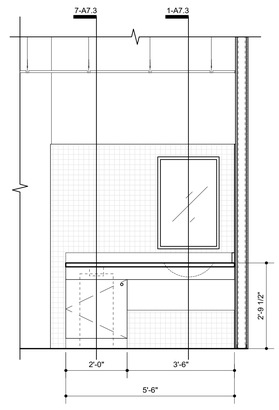
4 A7.2 Break Room 3206 Casework
Scale: 1/2" = 1'-0"



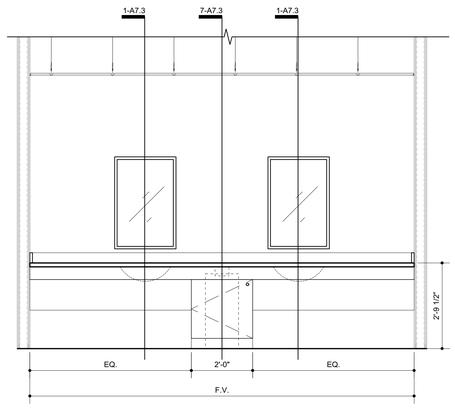
5 A7.2 Break Room 3209 Casework
Scale: 1/2" = 1'-0"



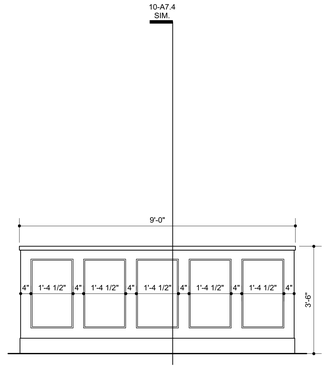
6 A7.2 Typ. Single-Use Toilet Casework
Scale: 1/2" = 1'-0"
(2) SIDE WALLS



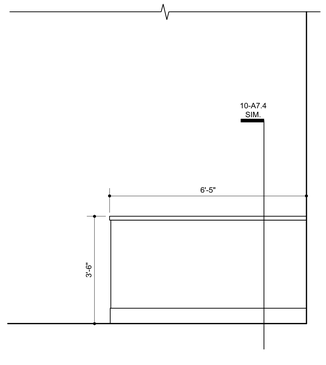
7 A7.2 Typ. Single-Use Toilet Casework
Scale: 1/2" = 1'-0"
(1) SIDE WALL



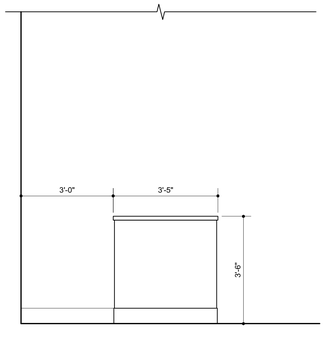
8 A7.2 Women's Restroom 3003B Casework
Scale: 1/2" = 1'-0"



9 A7.2 Courtroom #1 1070 Casework
Scale: 1/2" = 1'-0"



10 A7.2 Courtroom #1 1070 Casework
Scale: 1/2" = 1'-0"



11 A7.2 Courtroom #1 1070 Casework
Scale: 1/2" = 1'-0"

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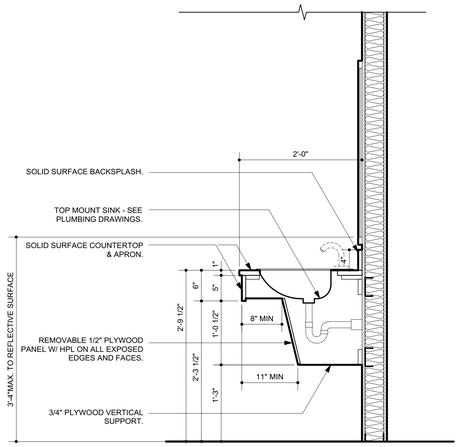
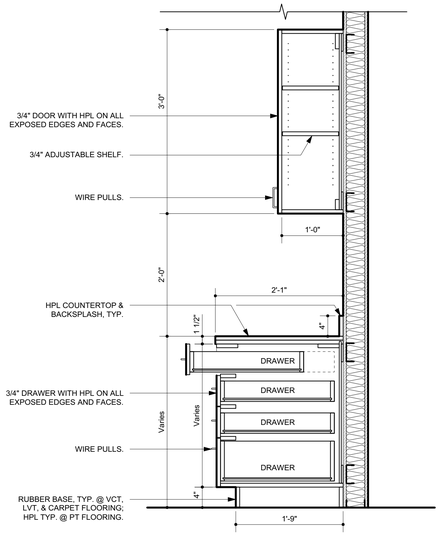
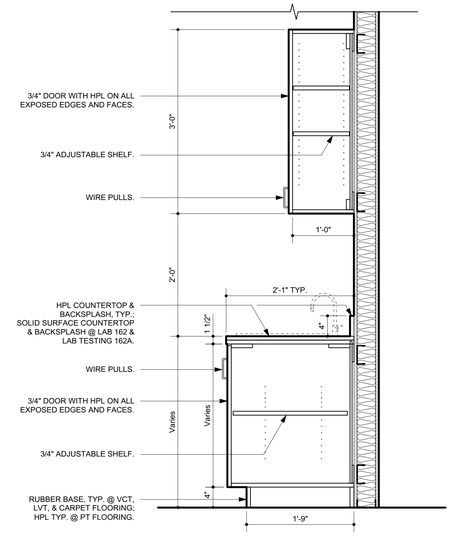


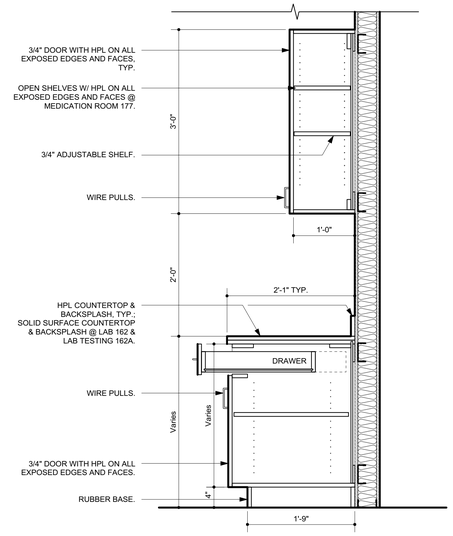
1 A7.3 Typ. Toilet & Restroom Casework Section
Scale: 1" = 1'-0"



2 A7.3 Typical Casework Section
Scale: 1" = 1'-0"



3 A7.3 Typical Casework Section
Scale: 1" = 1'-0"



4 A7.3 Typical Casework Section
Scale: 1" = 1'-0"

5 A7.3 Typical Casework Section
Scale: 1" = 1'-0"

6 A7.3 Typical Casework Section
Scale: 1" = 1'-0"

7 A7.3 Waste Chute Casework Section
Scale: 1" = 1'-0"

8 A7.3 Typical Worksurface Casework Section
Scale: 1" = 1'-0"

9 A7.3 Cashier 1006 Casework Section
Scale: 1" = 1'-0"

10 A7.3 Cashier 1006 Casework Section
Scale: 1" = 1'-0"

11 A7.3 Typ. Service Window Section
Scale: 1" = 1'-0"

12 A7.3 Typ. Reception Casework Section
Scale: 1" = 1'-0"

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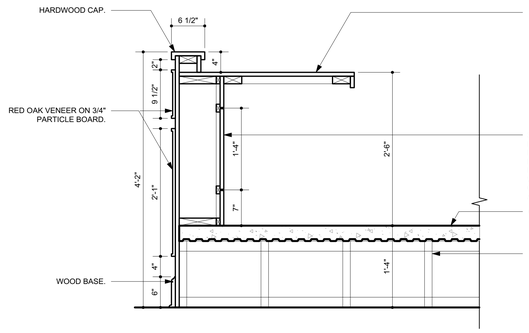
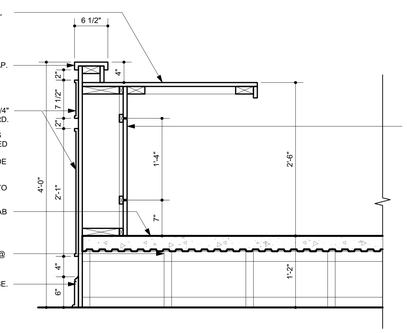
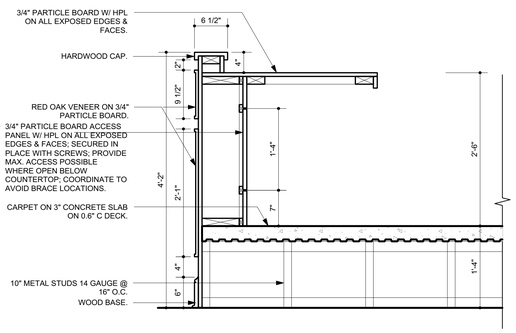


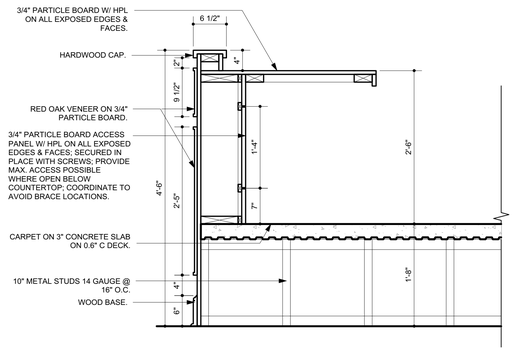
1 A7.4 Courtroom #2 & #3 Judge Casework Section
Scale: 1" = 1'-0"



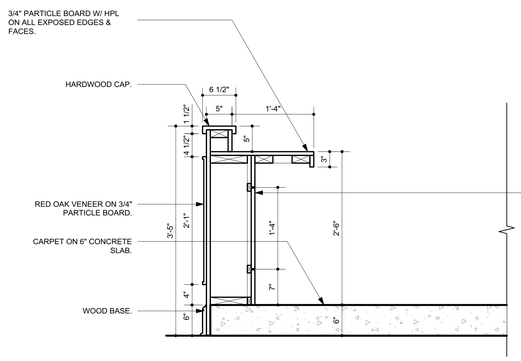
2 A7.4 Courtroom #4 & #5 Judge Casework Section
Scale: 1" = 1'-0"



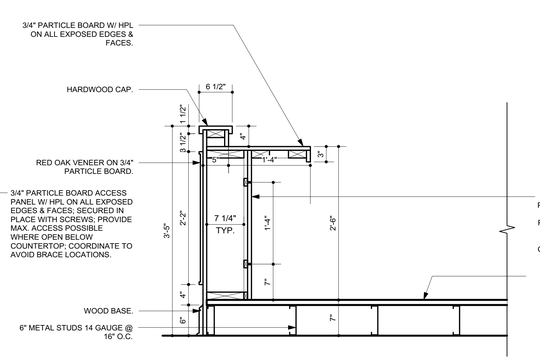
4 A7.4 Courtroom #6 Judge Casework Section
Scale: 1" = 1'-0"



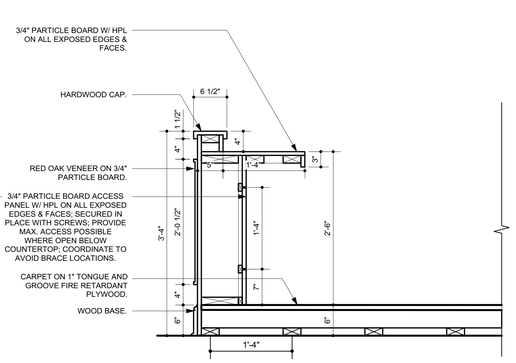
5 A7.4 Courtroom #7 Judge Casework Section
Scale: 1" = 1'-0"



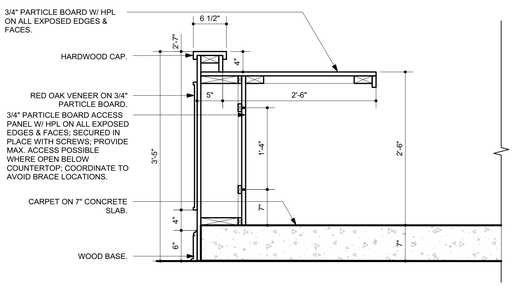
6 A7.4 Courtroom #4 Witness Casework Section
Scale: 1" = 1'-0"



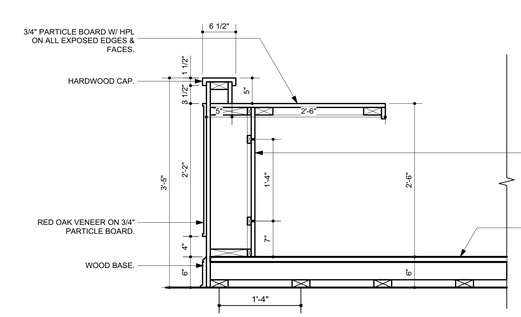
7 A7.4 Courtroom #5 Witness Casework Section
Scale: 1" = 1'-0"



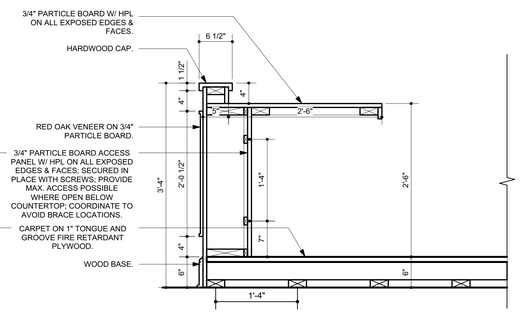
8 A7.4 Courtroom #6 Witness Casework Section
Scale: 1" = 1'-0"



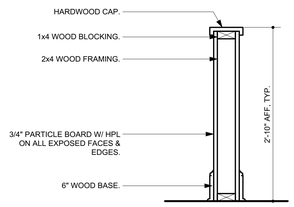
9 A7.4 Courtroom #4 Clerk Casework Section
Scale: 1" = 1'-0"



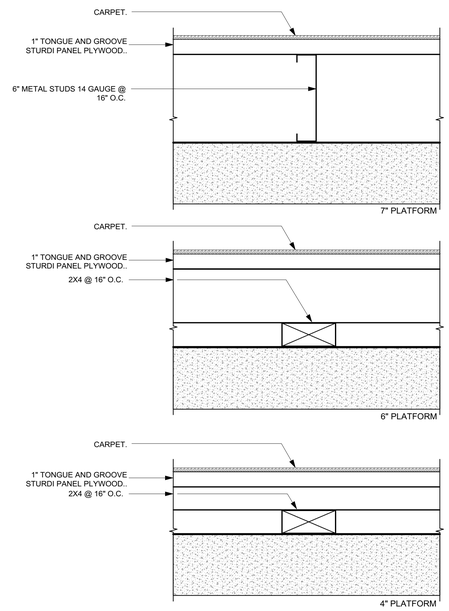
10 A7.4 Courtroom #5 Clerk Casework Section
Scale: 1" = 1'-0"



11 A7.4 Courtroom #6 Clerk Casework Section
Scale: 1" = 1'-0"



12 A7.4 Typ. Jury Casework Section
Scale: 1" = 1'-0"



13 A7.4 Typical Platform Base Details
Scale: 3" = 1'-0"

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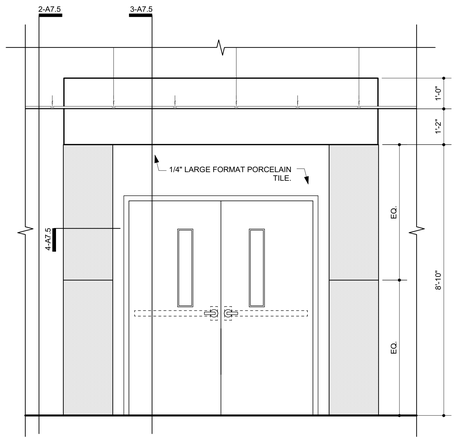
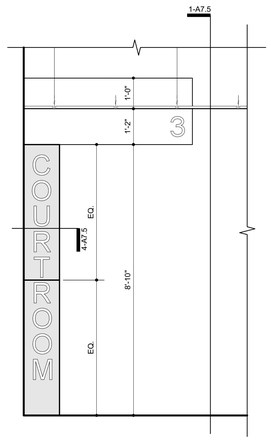
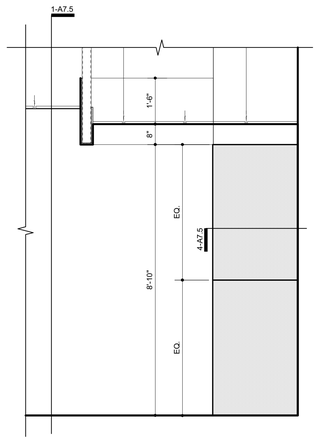


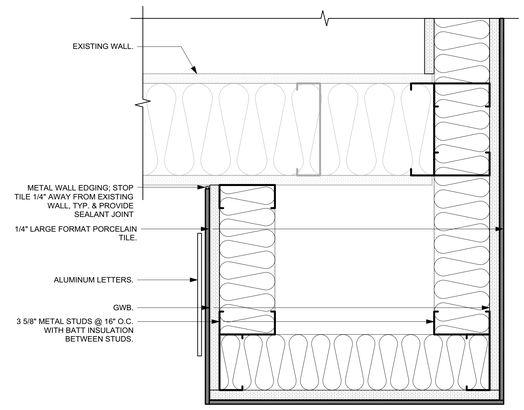
1 A7.5 Typ. Courtroom Entrance Elevation
Scale: 1/2" = 1'-0"



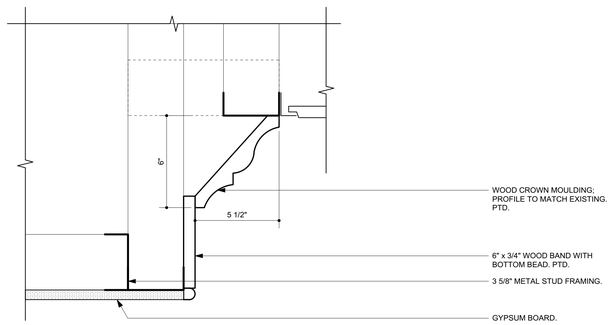
2 A7.5 Typ. Courtroom Entrance Elevation
Scale: 1/2" = 1'-0"



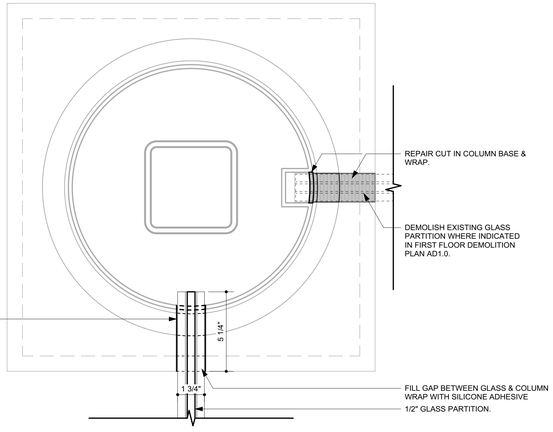
3 A7.5 Typ. Courtroom Entrance Elevation
Scale: 1/2" = 1'-0"



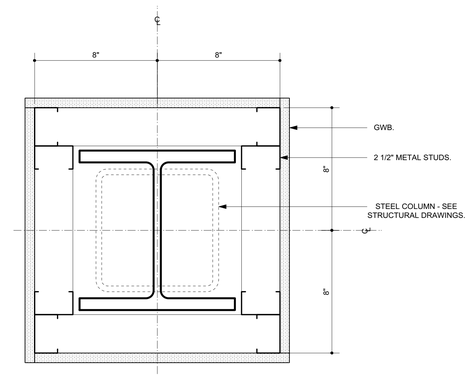
4 A7.5 Courtroom Entrance Detail
Scale: 3" = 1'-0"



5 A7.5 Crown Moulding & Wood Base Profile
Scale: 3" = 1'-0"



6 A7.5 Typ. Security 1000A Column Wrap Detail
Scale: 3" = 1'-0"

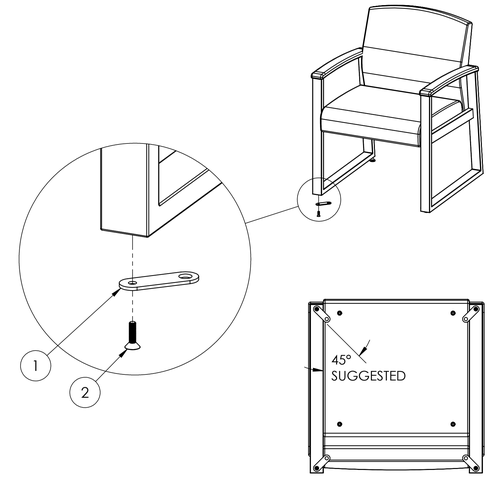


7 A7.5 Typ. Interior Column Wrap Detail
Scale: 3" = 1'-0"

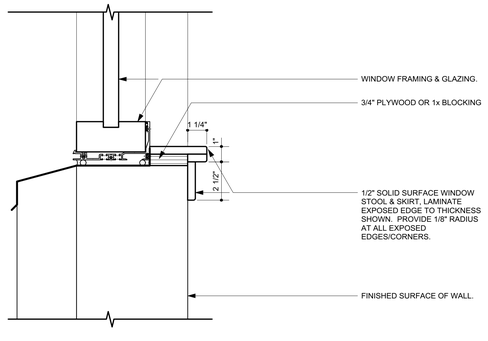
NOTE: PROVIDE SIMILAR DETAIL WHERE COLUMN WRAP ABUTS ADJACENT WALL.

NOTE: WHRE COLUMN WRAP IS ENLARGED TO PROVIDE A CHASE FOR UTILITIES, MATCH ENLARGED DIMENSION ON ADJACENT COLUMN WRAPS AS INDICATED ON PLANS.

PARTS LIST			
ITEM	QTY.	PART NUMBER	DESCRIPTION
1	4	011-049	BRACKET PLATE, BOLT DOWN, SHORT, TONIK, PEDESTAL AC LAMP
2	4	021-077	Screw, Machine 1/4"-20 X 1", FH, Pin in Torx® T-27, Zinc



8 A7.5 Jury Assembly Fixed Seating Detail
NOT TO SCALE



9 A7.5 Typ. Window Stool Detail
Scale: 3" = 1'-0"

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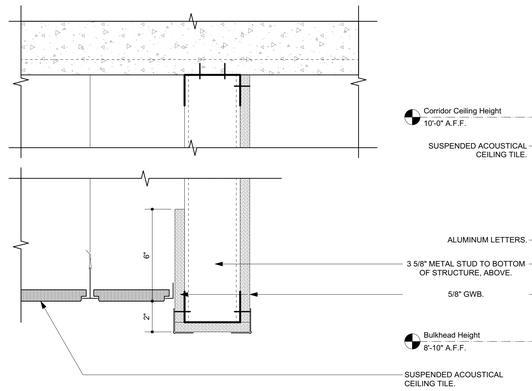
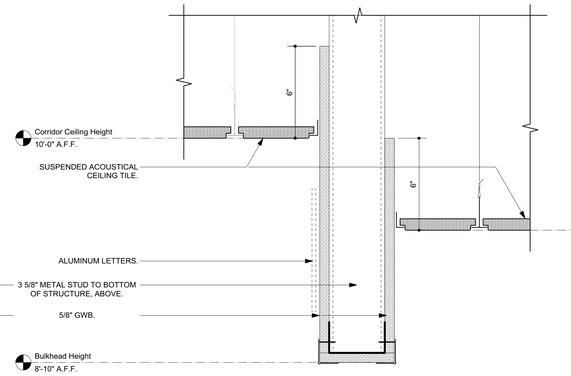
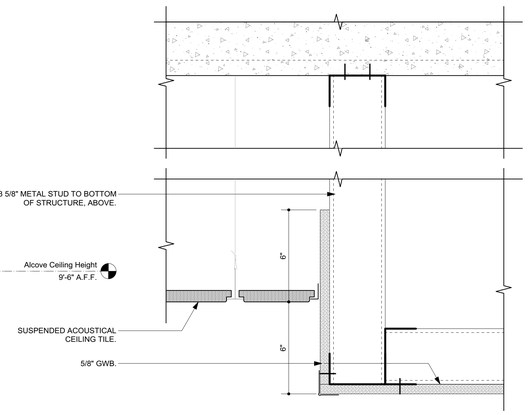


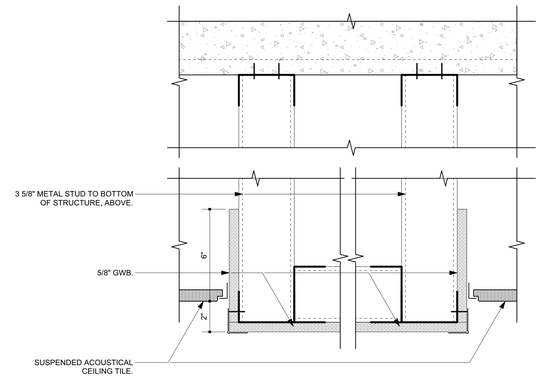
1 A7.6 ACT to Exposed Structure Ceiling Transition
Scale: 3" = 1'-0"



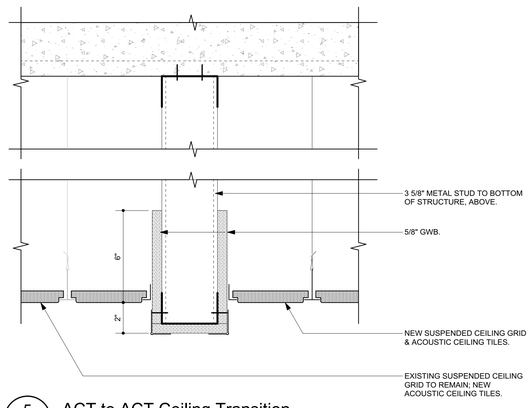
2 A7.6 ACT to ACT Ceiling Transition
Scale: 3" = 1'-0"



3 A7.6 ACT to GWB Ceiling Transition
Scale: 3" = 1'-0"



4 A7.6 Wide GWB Bulkhead Detail
Scale: 3" = 1'-0"



5 A7.6 ACT to ACT Ceiling Transition
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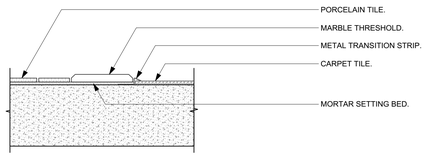
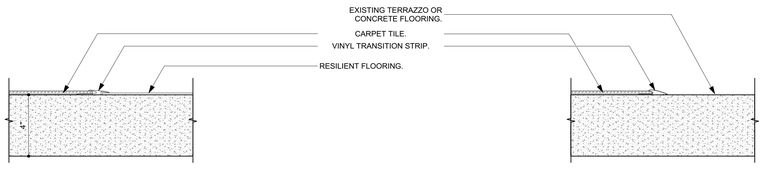
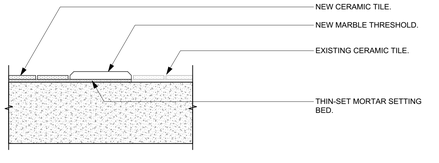


6 A7.6 Porcelain Tile @ Toilets to Carpet Tile
Scale: 3" = 1'-0"

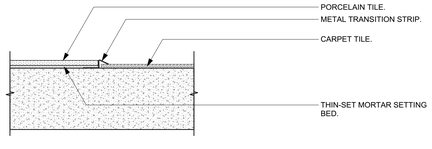


7 A7.6 Carpet Tile to Resilient Flooring Transition
Scale: 3" = 1'-0"

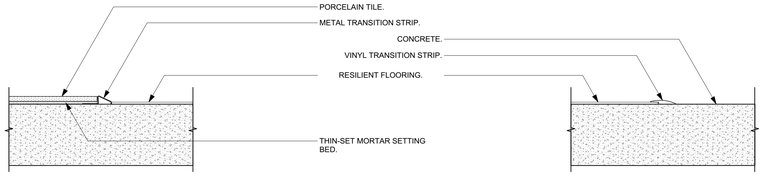
8 A7.6 Carpet Tile to Existing Terrazzo or Concrete Transition
Scale: 3" = 1'-0"



9 A7.6 Ceramic Tile to Existing Ceramic Tile Transition
Scale: 3" = 1'-0"



10 A7.6 Porcelain Tile to Carpet Tile Transition
Scale: 3" = 1'-0"



11 A7.6 Porcelain Tile to Resilient Flooring Transition
Scale: 3" = 1'-0"

12 A7.6 Resilient Flooring to Existing Terrazzo or Concrete Transition
Scale: 3" = 1'-0"

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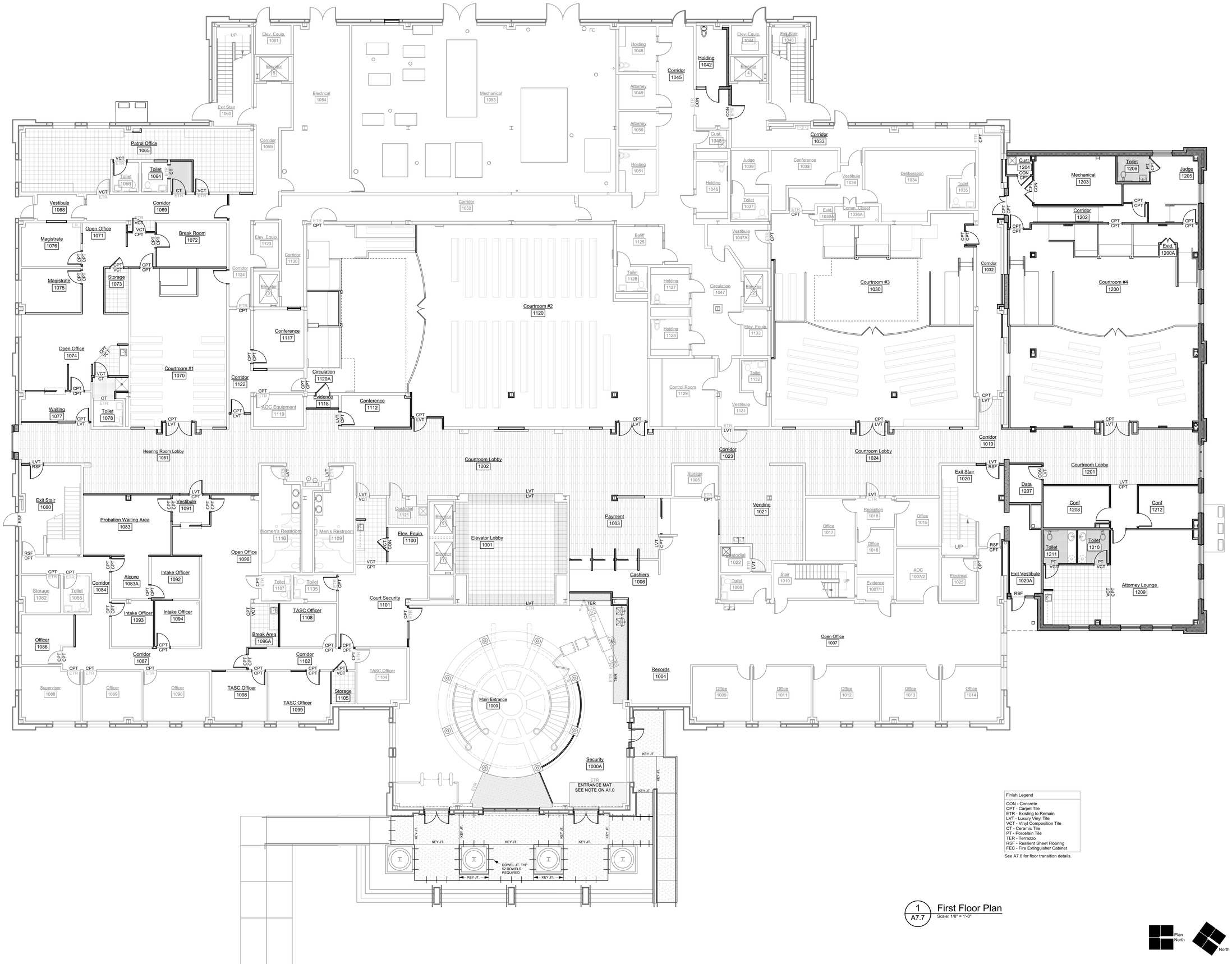

Finish Legend
CON - Concrete
CPT - Carpet Tile
ETR - Existing to Remain
LVT - Luxury Vinyl Tile
VCT - Vinyl Composition Tile
CT - Ceramic Tile
PT - Porcelain Tile
TER - Terrazzo
RSF - Resilient Sheet Flooring
FEC - Fire Extinguisher Cabinet

See A7.6 for floor transition details.

1 / A7.7 First Floor Plan
Scale: 1/8" = 1'-0"

Plan North

North

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Finish Floor Plan First Floor

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CPT - Carpet Tile
ETR - Existing to Remain
LVT - Luxury Vinyl Tile
VCT - Vinyl Composition Tile
CT - Ceramic Tile
PT - Porcelain Tile
TER - Terrazzo
RSF - Resilient Sheet Flooring
FEC - Fire Extinguisher Cabinet

See A7.5 for floor transition details.

1 / A7.8 Second Floor Plan
Scale: 1/8" = 1'-0"

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JOHN R. SAWYER SEAL 3428 REGISTERED ARCHITECT NORTH CAROLINA WILMINGTON, N. C.

Brunswick County Courthouse Addition & Renovations

Bolivia, NC

Construction Drawings
September 23, 2019

Revisions:

Finish Floor Plan Second Floor

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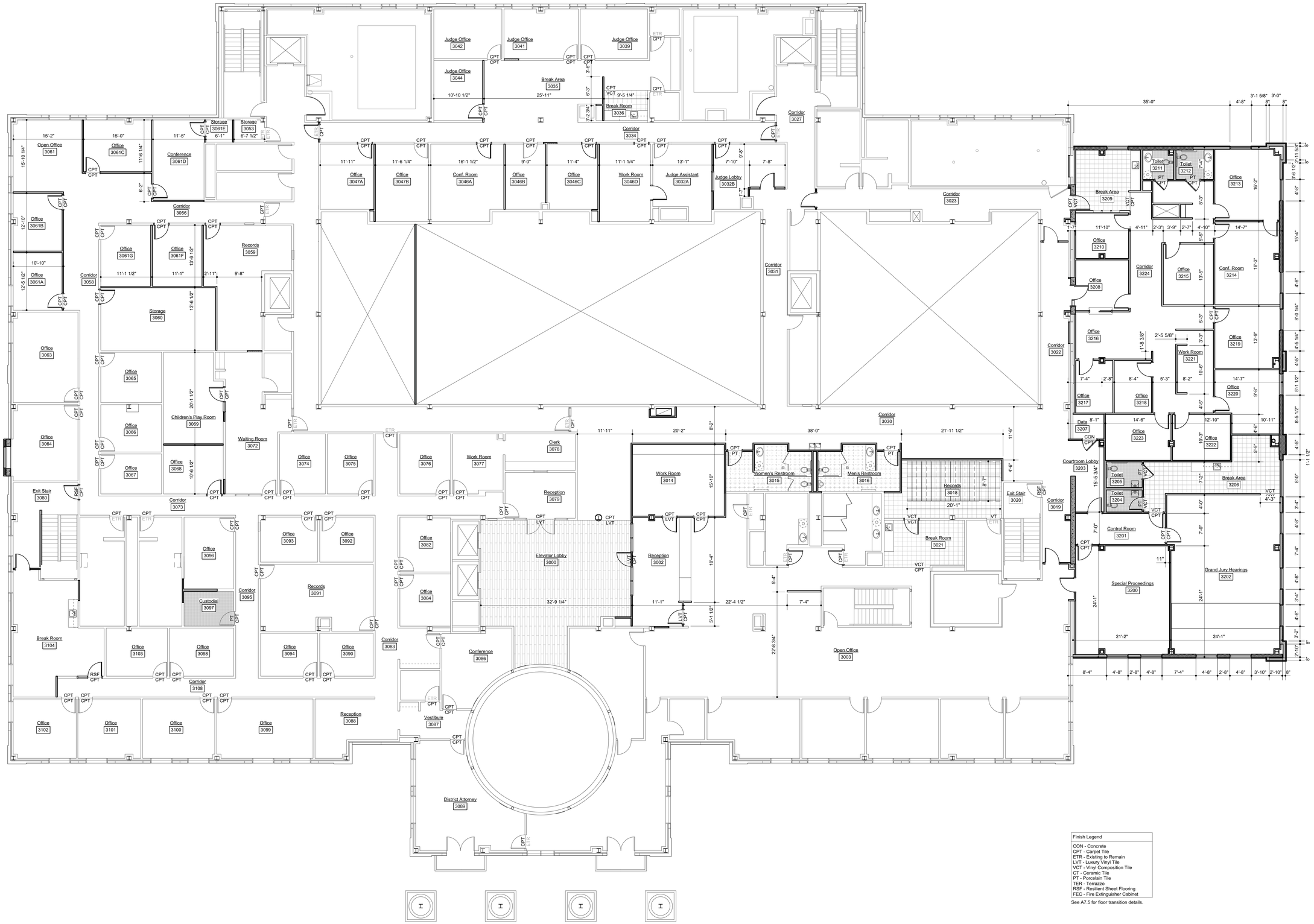

Finish Legend
CON - Concrete
CPT - Carpet Tile
ETR - Existing to Remain
LVT - Luxury Vinyl Tile
VCT - Vinyl Composition Tile
CT - Ceramic Tile
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TER - Terrazzo
RSF - Resilient Sheet Flooring
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See A7.5 for floor transition details.

1 / A7.9 **Third Floor Plan**
Scale: 1/8" = 1'-0"

Plan North

North

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Brunswick County Courthouse Addition & Renovations

Bolivia, NC

Construction Drawings
September 23, 2019

Revisions:

Finish Floor Plan Third Floor

A7.9

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STRUCTURAL NOTES:

GENERAL:

1. THIS STRUCTURE(S) HAS BEEN DESIGNED IN ACCORDANCE WITH THE PROVISION OF THE 2018 NC STATE BUILDING CODE.
2. DESIGN GRAVITY LOADS:

ROOF:

DEAD LOADS:

1–1/2" x 20 GA TYPE B GALV. METAL DECK	2.1 PSF
ROOF SYSTEM (60 MIL PVC, 3/4" PLYWOOD, 4 1/2" RIGID INSULATION)	10.0 PSF
SUSPENDED CEILING	1.8 PSF
SPRINKLERS	2.0 PSF
MECHANICAL/ELECTRICAL	2.0 PSF
MISCELLANEOUS	0.5 PSF
FRAMING	(ACTUAL)
	18.4 PSF USE 20.0 PSF
LIVE LOAD:	20 PSF

EQUIPMENT FLOORS

DEAD LOADS:

3" x 20 GA VLI COMPOSITE DECKING:	2.1 PSF
6" (TOTAL) LW. CONCRETE SLAB:	41.9 PSF
FLOORING ALLOWANCE:	4.0 PSF
SUSPENDED CEILING:	1.8 PSF
SPRINKLERS:	2.0 PSF
MECHANICAL/ELECTRICAL:	2.0 PSF
MISCELLANEOUS:	0.5 PSF
STEEL FRAMING:	(ACTUAL)
	54.3 PSF
FILE STORAGE SYSTEM:	250 PSF

LIVE LOADS:	UNIFORM	CONCENTRATED
LOBBIES/FIRST FLOOR CORRIDORS	100 PSF	2,000 LBS.
OFFICE	50 PSF	2,000 LBS.
PARTITION (ADD'L TO OFFICE)	15 PSF	N/A
ASSEMBLIES (ABOVE FIRST FLOOR/FIXED SEATS)	60 PSF	N/A
MECHANICAL/ELECTRICAL/STORAGE	150 PSF	N/A
CORRIDORS ABOVE FIRST FLOOR	80 PSF	N/A

3. WIND VELOCITY (ASCE/SEI 7–10):
   - A. ULTIMATE DESIGN WIND SPEED: 147 MPH
   - B. RISK CATEGORY: II
   - C. EXPOSURE CATEGORY: C
   - D. INTERNAL PRESSURE COEFFICIENT: +/–0.18 (ENCLOSED BUILDINGS)
   - E. DIRECTIONALITY FACTOR (Kd): 0.85
   - F. DESIGN BASE SHEAR (ADDITION): Vx=146.6; Vy=94.4 KIPS
4. SNOW DESIGN (ASCE/SEI 7–10):
   - A. GROUND SNOW LOAD: Pg = 10.0 PSF
   - B. IMPORTANCE FACTOR: Is = 1.0
   - C. EXPOSURE FACTOR: Ce = 0.9
   - D. THERMAL FACTOR: Ct = 1.1
   - E. BALANCED SNOW LOAD: 6.9 PSF
   - F. DESIGN UNIFORM SNOW LOAD:
     - Pf (S > 15'): 6.9 PSF
     - Pf (S < 15')= Pm: 10.0 PSF
5. SEISMIC DESIGN (ASCE/SEI 7–10):
   - A. RISK CATEGORY: II
   - B. SITE CLASSIFICATION: D (PER GEOTECHNICAL REPORT)
   - C. SEISMIC DESIGN CATEGORY: C
   - D. MCE_R GROUND MOTION (PERIOD = 0.2s & 1.0s): Ss=34.0%g; S1=10.8%g
   - E. NUMERIC SEISMIC DESIGN VALUES: Sds=34.5%g; Sd1=17.1%g
   - F. BASIC STRUCTURAL SYSTEM: BUILDING FRAME SYSTEM (EXISTING BUILDING & ADDITION).
   - G. SEISMIC RESISTING SYSTEM: ORDINARY REINFORCED CONCRETE SHEARWALLS R=1½ (EXISTING BUILDING); ORDINARY REINFORCED MASONRY SHEARWALLS, R = 2 (ADDITION).
   - H. Cs = 0.231 (EXISTING BUILDING); Cs = 0.173 (ADDITION)
   - I. EQUIVALENT LATERAL FORCE PROCEDURE.
   - J. NONSTRUCTURAL COMPONENT ANCHORAGE – ALL ARCHITECTURAL, ELECTRICAL, MECHANICAL, AND PLUMBING COMPONENTS ARE TO BE ATTACHED AS REQUIRED BY ASCE 7 CHAPTER 13, "SEISMIC DESIGN REQUIREMENTS FOR NONSTRUCTURAL COMPONENTS". EACH INDIVIDUAL CONTRACTOR RESPONSIBLE FOR THE COMPONENT MUST PROVIDE PROJECT SPECIFIC DESIGN AND DOCUMENTATION PREPARED BY AN ENGINEER LICENSED IN THE STATE OF NORTH CAROLINA. CHAPTER 13 DEFINES THE FORCE REQUIRED TO SUPPORT THE COMPONENT FOR THE ANCHORAGE AND BRACING. THE COST OF PREPARING THIS INFORMATION AND DESIGN SHALL BE INCLUDED IN EACH CONTRACTOR'S BID THAT IS PROVIDING THE COMPONENT.
   - K. DESIGN BASE SHEAR (ADDITION): Vx=Vy= 223 KIPS
6. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND SHOP DRAWINGS AND SPECIFICATIONS. THE CONTRACTOR SHALL VERIFY THE REQUIREMENTS OF OTHER TRADES AS TO SLEEVES, CHASES, HANGERS, INSERTS, ANCHORS, HOLES AND ADDITIONAL ITEMS TO BE PLACED OR SET IN THE STRUCTURAL WORK.
7. FOR DIMENSIONS NOT SHOWN ON THE DRAWINGS, REFER TO THE ARCHITECTURAL DRAWINGS. SEE ARCHITECTURAL FOR VERIFICATION OF ALL WALL LOCATIONS AND DIMENSIONS.
8. STRUCTURAL FRAME AND MASONRY WALLS (LOAD BEARING AND NON–LOAD BEARING) SHALL BE BRACED BY CONTRACTOR AGAINST WIND, CONSTRUCTION LOADS, AND OTHER TEMP. FORCES UNTIL ERECTION IS COMPLETE.
9. NO OPENING SHALL BE MADE IN ANY STRUCTURAL MEMBER WITHOUT THE WRITTEN APPROVAL OF THE ARCHITECT.
10. NO CHANGES IN SIZE OR DIMENSION OF STRUCTURAL MEMBERS SHALL BE MADE WITHOUT THE WRITTEN APPROVAL OF THE ARCHITECT.
11. OPENINGS 1'–4" AND LESS ON A SIDE ARE GENERALLY NOT SHOWN ON THE STRUCTURAL DRAWINGS. REFER TO ARCHITECTURAL AND MECHANICAL DRAWINGS FOR SUCH OPENINGS.
12. THE CONTRACTOR IS RESPONSIBLE FOR LIMITING THE AMOUNT OF CONSTRUCTION LOAD IMPOSED UPON STRUCTURAL FRAMING. CONSTRUCTION LOADS SHALL NOT EXCEED THE DESIGN CAPACITY OF THE AT THE TIME THE LOADS ARE IMPOSED.
13. WALLS (LOAD BEARING AND NON–LOAD BEARING) ARE TO BE BRACED UNTIL ERECTION IS COMPLETE.
14. CONTRACTOR SHALL PROVIDE ALL LAYOUT REQUIRED TO CONSTRUCT HIS WORK.
15. UNLESS OTHERWISE NOTED, FIRE PROOFING METHODS AND MATERIALS FOR STRUCTURAL MEMBERS ARE NOT SHOWN ON STRUCTURAL DRAWINGS. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR FIRE RATING REQUIREMENTS, FIRE PROOFING METHODS AND MATERIALS.
16. DO NOT SCALE THESE DRAWINGS, USE DIMENSIONS.
17. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL SAFETY PRECAUTIONS AND REGULATIONS DURING THE WORK. THE ENGINEER WILL NOT ADVISE ON, OR ISSUE DIRECTION AS TO SAFETY PRECAUTIONS AND PROGRAMS.
18. THE STRUCTURAL DRAWINGS HEREIN REPRESENT THE FINISHED STRUCTURE. CONTRACTOR SHALL PROVIDE ALL TEMPORARY GUYING AND BRACING REQUIRED TO ERECT AND HOLD THE STRUCTURE IN PROPER ALIGNMENT UNTIL ALL STRUCTURAL WORK AND CONNECTIONS HAVE BEEN COMPLETED. THE INVESTIGATION, DESIGN, SAFETY, ADEQUACY AND INSPECTION OF ERECTION BRACING, SHORING, TEMPORARY SUPPORTS, ETC. IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
19. FUTURE LOADS: UNLESS SPECIFICALLY NOTED, THERE ARE NO PROVISIONS MADE FOR FUTURE FLOOR, ROOFS, OR OTHER LOADS. FOUNDATION & FRAMING AT BUILDING END SHOWN FOR FUTURE BUILDING EXPANSION.
20. SHOP DRAWINGS AND OTHER ITEMS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION. ALL SHOP DRAWINGS SHALL BE REVIEWED BY THE CONTRACTOR BEFORE SUBMITTAL. THE ENGINEER'S REVIEW IS TO BE FOR CONFORMANCE WITH THE DESIGN CONCEPT AND GENERAL COMPLIANCE WITH RELEVANT CONTRACT DOCUMENTS. THE ENGINEER'S REVIEW DOES NOT RELIEVE THE CONTRACTOR OF THE SOLE RESPONSIBILITY TO REVIEW, CHECK AND COORDINATE THE SHOP DRAWINGS PRIOR TO SUBMISSION. THE CONTRACTOR REMAINS SOLELY RESPONSIBLE FOR ERRORS AND OMISSIONS ASSOCIATED WITH THE PREPARATION OF SHOP DRAWINGS AS THEY PERTAIN TO MEMBER SIZES, DETAILS, DIMENSIONS, ETC.
21. NO STRUCTURAL MEMBER MAY BE CUT, NOTCHES OR OTHERWISE REDUCED IN STRENGTH WITHOUT WRITTEN DIRECTION FROM THE ENGINEER OF RECORD.
22. WHEN MODIFICATIONS ARE PROPOSED TO STRUCTURAL ELEMENTS UNDER THE DESIGN AND CERTIFICATION OF A SPECIALTY ENGINEER, WRITTEN AUTHORIZATION BY THE SPECIALTY ENGINEER MUST BE OBTAINED AND SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW, PRIOR TO PERFORMING THE PROPOSED MODIFICATION.

FOUNDATION

1. FOUNDATION, SLAB–ON–GRADE, AND SEISMIC DESIGN BASED ON RECOMMENDATIONS IN REPORT OF GEOTECHNICAL EXPLORATION BY ECS SOUTHEAST LLP (ECS PROJ. NO. 22:26823), DATED MAY 7, 2018.
   - A. DEEP FOUNDATIONS: 14" AUGERCAST PILES, MIN. 40" EMBED. SEE AUGER CAST PILES SECTION.
   - B. SITE CLASS D.
2. UNSUITABLE MATERIALS UNDER ALL FLOOR SLABS, FOOTINGS AND 10'–0" BEYOND BUILDING WALLS SHALL BE REMOVED AND BACKFILLED AS REQUIRED WITH CLEAN SELECTED FILL, COMPACTED IN 8–INCH TO 10–INCH LIFTS TO A MINIMUM OF 95 PERCENT OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT IN ALL LAYERS UP TO THE UPPER ONE FOOT. FILL TO BE PLACED WITHIN 12 INCHES OF THE DESIGN SUBGRADE ELEVATION IS TO BE COMPACTED TO 98 PERCENT OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT. COMPACT UPPER 8–INCH TO 12–INCH OF EXISTING SUBGRADE TO 95 PERCENT.
3. AFTER STRIPPING, DENSIFY EXPOSED SANDS BY PROOFROLLING WITH A FULLY–LOADED TANDEM–AXLED DUMP TRUCK OR SIMILAR EQUIPMENT ANY SOFT, OR UNSUITABLE SURFACE CONDITIONS, WHICH PUMPS OR RUTS EXCESSIVELY, SHALL BE BROUGHT TO THE ARCHITECT'S ATTENTION. THESE UNSUITABLE SURFACES SHALL BE UNDERCUT & REPLACED WITH GRANULAR BACKFILL SUCH AS #57 STONE.
4. CLEAN SELECT SAND FILL SHALL MEET UNIFIED SOIL CLASSIFICATION OF SP, SP–SM OR SP–SC AND SHALL HAVE A MINIMUM STANDARD PROCTOR DRY DENSITY OF 110 PCF.
5. CONTRACTOR SHALL NOTIFY ARCHITECT FOR GEOTECHNICAL INSPECTION OF SUBGRADE PRIOR TO POURING ANY CONCRETE.
6. CONTRACTOR SHALL DEWATER AS NECESSARY PRIOR TO EXCAVATING. SEE GEOTECHNICAL REPORT FOR FURTHER RECOMMENDATIONS IN MAINTAINING WATER LEVEL BELOW EXCAVATION.
7. CONTRACTOR SHALL PROTECT ALL FOUNDATION EXCAVATIONS FROM DETERIORATION DUE TO EXPOSURE TO MOISTURE UNTIL FOUNDATIONS AND BACK FILLING HAVE BEEN COMPLETED.

CONCRETE

1. CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS:
   - FOUNDATIONS, WALLS & SLAB–ON–GRADE: 4,000 PSI NORMAL WT.
   - ELEVATED SLABS: 4,000 PSI LIGHT WT.
2. REINFORCING STEEL: ASTM A615, GRADE 60.
3. WELDED WIRE REINFORCEMENT: ASTM A1064 (FLAT SHEETS).
4. MINIMUM CLEAR CONCRETE COVER ON REINFORCING:
   - CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH: 3 INCHES
   - CONCRETE EXPOSED TO EARTH OR WEATHER: 2 INCHES (U.N.O.)
   - CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:
     - SLABS, WALLS, JOISTS: 3/4 INCH (U.N.O)
     - BEAMS, COLUMNS: 1–1/2" INCHES
5. DOWELS, CONTINUOUS REINFORCING, AND ALL SPICES SHALL BE CLASS "B" TENSION LAP SPLICES, BUT SHALL NOT BE LESS THAN 24 INCHES, UNLESS NOTED OTHERWISE.
6. PROVIDE AIR ENTRAINMENT: SEE SPECIFICATIONS.
7. CONCRETE FINISH: FLOORS – STEEL TROWEL; WALLS – WOOD FLOAT; SEE SPECIFICATIONS.
8. CURING COMPOUND: SEE SPECIFICATIONS.
9. EXPANSION JOINT FILLER BOND BREAKER: SEE SPECIFICATIONS.
10. SHEET VAPOR BARRIER: SEE SPECIFICATIONS
11. WATER SHOULD NOT BE ADDED TO CONCRETE AT THE JOB SITE BEYOND THE MIX DESIGN AMOUNT. ADDITIONAL WATER SERIOUSLY REDUCES CONCRETE STRENGTH AND INCREASES SHRINKAGE. REQUEST A "HIGH RANGE WATER REDUCER" (SUPERPLASTICIZER) FOR MORE WORKABLE CONCRETE.
12. CONTRACTOR SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF ACI 305 "HOT WEATHER CONCRETING" AND ACI 306 "RECOMMENDED PRACTICE FOR COLD WEATHER CONCRETING".
13. UNLESS OTHERWISE NOTED, ALL DETAILING, FABRICATION AND PLACING OF REINFORCING STEEL SHALL CONFORM TO THE MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES–ACI 315.
14. WELDED WIRE REINFORCEMENT SHALL CONFORM TO ASTM A1064, LATEST REVISION. FURNISH IN FLATSHEETS OR MATS. ROLLS WILL NOT BE ALLOWED.
15. WELDED WIRE REINFORCING SHALL LAP 2 FULL MESHES AND BE SECURELY WIRED AT EACH SIDE AND END.
16. REINFORCING BARS AND WELDED WIRE REINFORCEMENT SHALL BE SUPPORTED WITH STANDARD BAR CHAIRS AND SPACERS AS REQUIRED TO MAINTAIN THE CONCRETE PROTECTION SPECIFIED.
17. UNLESS OTHERWISE NOTED, CHAMFER ALL EXPOSED CONCRETE CORNERS WITH A 3/4" x 45 DEGREE CHAMFER.
18. REFER TO DRAWINGS OF OTHER TRADES AND VENDOR DRAWINGS FOR PENETRATIONS IN SLABS REQUIRING SLEEVES, EMBEDMENTS, AND RECESSED ITEMS NOT SHOWN.
19. CONTRACTOR SHALL VERIFY ALL SIZES AND LOCATIONS OF ALL MECHANICAL AND ELECTRICAL OPENINGS AND EQUIPMENT PADS WITH MECHANICAL AND ELECTRICAL EQUIPMENT DETAILS AND SHOP DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL OPENINGS AND SLEEVES FOR PROPER DISTRIBUTION FOR ALL UTILITY LINES THROUGHOUT THE BUILDING.
20. UNLESS NOTED OTHERWISE, SLABS SHALL BE FINISHED TO THE TOLERANCES IN ACCORDANCE WITH ASTM E1155 AS SHOWN IN THE SPECIFICATIONS.
21. ALL EMBEDDED STEEL SHALL CONFORM TO ASTM A36.
22. PROVIDE 2 – #4 BARS x 3'–0" LONG DIAGONAL IN THE TOP FACE OF SLAB ON GRADE AT ALL RE–ENTRANT CORNERS. PLACE 1" CLEAR OF CORNER.
23. EXTEND REINFORCING BARS PAST RE–ENTRANT CORNERS A MINIMUM OF TENSION DEVELOPMENT LENGTH (Ld).
24. PROVIDE 2– #4 BARS IN TOP OF WALL FOOTINGS SUPPORTING MASONRY WALLS WHERE OPENINGS OF DOORS OCCUR. EXTEND BARS 2'–0" BEYOND EDGE OF OPENINGS.
25. SAW CUT ALL SLABS ON GRADE AS SOON AS POSSIBLE AFTER FINISHING OPERATIONS HAVE BEEN COMPLETED WITHOUT DISLODGING AGGREGATES. CONSTRUCTION JOINTS MAY BE SUBSTITUTED FOR SAW CUT JOINTS.
26. LOCALLY DEPRESS BOTTOM OF FOOTINGS AS REQUIRED AT ANCHOR BOLTS TO PROVIDE 3 INCH MINIMUM COVER TO BOTTOM OF ANCHOR BOLTS.
27. REFER TO ELECTRICAL DRAWINGS FOR GROUNDING DETAILS.
28. CONCRETE DESIGN SHALL BE IN ACCORDANCE WITH ACI 318–14. BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE. & ACI 301–14 SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS.

AUGER CAST PILES

1. PILE TYPE: PILES SHALL BE AUGER–CAST (OR CONTINUOUS FIGHT AUGER) PILES MADE BY DRILLING TO A SPECIFIED DEPTH WITH A HOLLOW–SHAFT AUGER AND THEN PRESSURE INJECTING CONCRETE GROUT INTO THE DRILLED HOLE AS THE AUGER IS BEING WITHDRAWN.
2. AUGER CAST PILE DESIGN SHALL BE DELEGATED. PILE CONTRACTOR SHALL RETAIN A QUALIFIED PROFESSIONAL ENGINEER DULY REGISTERED IN THE STATE OF NORTH CAROLINA TO PREPARE SHOP DRAWINGS, CALCULATIONS, AND OTHER STRUCTURAL DATA FOR AUGER CAST PILES CONFORMING TO THE SPECIFICATIONS AND REQUIREMENTS LISTED IN THE CONTRACT DOCUMENTS. PILE ENGINEER SHALL AFFIX THEIR SEAL TO THE DRAWINGS AND CALCULATIONS PRIOR TO THE SUBMITTAL OF SHOP DRAWINGS.
3. INSTALLATION SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL DATA DEVELOPED FOR THIS PROJECT UNLESS APPROVED OTHERWISE BY A REGISTERED GEOTECHNICAL ENGINEER.
4. PILE SIZE: ALL PILES 14" DIAMETER.
5. PILE CAPACITY: 31.0 TONS COMPRESSION; 12.5 TONS TENSION; 7 TONS HORIZONTAL
6. PILE LENGTH: MIN. LENGTH 45 FT. BELOW CUT–OFF UNLESS OTHERWISE SUBSTANTIATED BY A TEST.
7. PILE MATERIALS:
   - A. GROUT MIX: 5000 PSI COMPRESSIVE STRENGTH AT 28 DAYS. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
   - B. GROUT CONTENTS: SEE SPECIFICATION
   - C. FLUIDIFIER: SEE SPECIFICATION
8. PILE LOAD TEST: SEE SPECIFICATION
9. ADJACENT PILES: ALLOW AT LEAST 24 HOURS BETWEEN INSTALLATION OF PILES WITHIN 7 FEET, CENTER TO CENTER.
10. INSTALLATION: DRILL HOLES AND INJECT GROUT IN ACCORDANCE WITH GOOD PRACTICE AND PROJECT SPECIFICATION'S PLACEMENT RATE/PLACEMENT VOLUME AS REQUIRED TO ASSURE THAT NO VOID OR INTRUSION OF FOREIGN MATERIALS OCCURS. TOTAL VOLUME SHALL BE 115 PERCENT OF PILE VOLUME. PLACE REINFORCING BARS WHILE GROUT IS FLUID, USING METHOD TO *ASSURE CENTERING* WITHIN THE PILE.
11. TOP CASING: PROVIDE A TOP CASING OF AT LEAST 18 INCHES BELOW CUTOFF & IN AREAS OF LOOSE MATERIAL TO ASSURE CLEAN TOP EDGES.
12. OBSTRUCTIONS: IF NON–AUGERABLE MATERIALS ARE ENCOUNTERED, COMPLETE THE PILE TO THE DEPTH OF THE NON–AUGERABLE MATERIAL AND NOTIFY THE ENGINEER.
13. PILES SHALL LOCATED IN PLAN VIEW TO AN ACCURACY OF ± 3". PILE CUT–OFF ELEVATION SHALL BE ±1".
14. DURING AUGER FLIGHTING A MINIMUM GROUT HEAD OF 10 FEET SHALL BE MAINTAINED.

MASONRY

1. COMPRESSIVE STRENGTH OF MASONRY UNITS: CONCRETE UNITS – NORMAL WEIGHT, ASTM C90, f'm = 1,900 PSI (MINIMUM), CLAY UNITS – f'm = 2,500 PSI
2. COMPRESSIVE STRENGTH OF MORTAR AT 28 DAYS TO BE 1,900 PSI MINIMUM, TYPE "S"
3. TIE WYTHES WITH MINIMUM HORIZONTAL REINFORCING CONSISTING OF TWO (2) WIRES OF W1.7 AT 16" O.C. MAX. TERMINATE AT VERTICAL CONTROL JOINTS.
4. MASONRY GROUT: ASTM C476 GROUT, f'm = 2,000 PSI, COARSE TYPE; SLUMP: 8" TO 11". ANY REFERENCE TO BOND BEAMS / LINTELS / CORES FILLED WITH "CONCRETE" SHALL MEAN MASONRY GROUT.
5. ALL BLOCK LINTELS SHALL HAVE A MINIMUM BEARING OF 8 INCHES ON SOLID MASONRY OR GROUTED CONCRETE BLOCK AT EACH END.
6. PROVIDE FULL HEIGHT VERTICAL BARS OF SIZE SHOWN ON PLAN, EXTENDING FROM THE FOUNDATION (AND FROM LINTELS) TO THE TOP OF THE WALL WITH A STANDARD 90° HOOK INTO THE UPPER BOND BEAM & PROVIDE SAME SIZE VERTICAL BARS AT THE FOLLOWING LOCATIONS:
   - A. TWO (2) ADD'L BARS WITHIN 4" OF ALL WALL CORNERS & CONTROL JOINTS.
   - B. TWO (2) ADD'L BARS WITHIN 16" MAX. OF EACH SIDE OF ALL WALL OPENINGS.
   - C. TWO (2) ADD'L BARS WITHIN 8" MAX. OF ALL WALL ENDS.
   - D. BARS AT SPACING OR QUANTITY AS SHOWN ON PLANS.
7. EXTEND LINTEL/BARS A MINIMUM OF 24" PAST CLEAR MASONRY OPENINGS.
8. MASONRY SHEAR PLATES SHALL BE FIELD ADJUSTED TO PREVENT ADHESIVE ANCHOR LOCATIONS FROM BEING WITHIN 1" OF A VERTICAL MORTAR JOINT AND PLACE NO MORE THAN ONE ANCHOR PER BLOCK CELL/CORE.
9. UNLESS NOTED OTHERWISE ON DRAWINGS PROVIDE MASONRY LINTELS PER LINTEL SCHEDULE FOR ALL MASONRY OPENINGS AND AS SHOWN ON DRAWINGS.
10. EXTEND CONTINUOUS BOND BEAM REINFORCING ACROSS VERTICAL CONTROL JOINTS.
11. CMU CONSTRUCTION SHALL BE COORDINATED WITH THE ARCHITECTURAL AND STRUCTURAL DRAWINGS AND SPECIFICATION SECTION 42000.
12. PIPE SLEEVES, MISCELLANEOUS OPENINGS, ETC., NOT SHOWN ON THE ARCHITECTURAL DRAWINGS SHALL BE SIZED AND LOCATED AS NOTED ON DRAWINGS BY OTHER DISCIPLINES. COORDINATE ALL REINFORCING FOR ALL OPENINGS PRIOR TO CONSTRUCTION.
13. ALL MASONRY MATERIALS, CONSTRUCTION, INSPECTION, AND TESTING SHALL CONFORM TO THE NORTH CAROLINA STATE BUILDING CODE, BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES (ACI 530–13/ASCE 5–13/TMS 402–13), AND SPECIFICATION FOR MASONRY STRUCTURES (ACI 530.1–13/ASCE 6–13/TMS 602–13).
14. LAP SPLICES FOR BARS SHALL BE 50 BAR DIAMETERS MINIMUM.
15. FILL REINFORCED CORES ONLY WITH MASONRY GROUT, UNLESS NOTED OTHERWISE. PROVIDE CLEANOUTS AT BOTTOM OF WALL TO ENSURE CELLS ARE FULLY GROUTED FOR CELLS WITH REINFORCED BARS.
16. PROVIDE VERTICAL BAR POSITIONERS FOR REINFORCEMENT AS NOTED IN THE PROJECT SPECIFICATIONS.
17. PLACE GROUT IN LIFTS NOT EXCEEDING 5 FEET.
18. PROVIDE HORIZONTAL JOINT REINFORCEMENT AT 16" OC VERTICALLY (SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION).
19. BOND BEAM REINFORCEMENT AND HORIZONTAL WALL REINFORCEMENT SHALL BE CONTINUOUS AT CORNERS. PROVIDE CORNER REINFORCEMENT TO LAP WITH TYPICAL REINFORCEMENT.

STRUCTURAL STEEL

1. ALL DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE ALLOWABLE STRESS PROVISIONS OF THE AISC 360–10 "SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS".
2. ALL STRUCTURAL STEEL SHALL BE DESIGNED TO THE ALLOWABLE STRESS PROVISIONS OF THE AISC STEEL CONSTRUCTION MANUAL, FOURTEENTH EDITION.
3. STRUCTURAL STEEL: BEAMS/COLUMNS – A572 OR A992 GR. 50; HSS SECTIONS – A500, GR. B (46 ksi MIN.); PIPE A53, TYPE E or S, GR. B (35 ksi MIN.); PLATES, CHANNELS, & ANGLES – A36.
4. BOLTS: A325–N 3/4" DIAMETER H.S. BOLTS, UNO
5. ANCHOR RODS: A1554, GRADE 36 OR 55, WELDABLE STRAIGHT W/ A563 HEAVY HEX NUTS, F436 WASHERS, H.D. GALVANIZED.
6. WELDING ELECTRODES: E–70XX SERIES
7. STRUCTURAL STEEL CLEANING: STEEL STRUCTURES PAINTING COUNCIL, SP3 – LATEST EDITION (POWER TOOL).
8. OIL OR GREASE REMOVAL: SSPC–SP1–LATEST EDITION
9. NO SHOP PAINTING ALLOWED WITHIN 3 INCHES OF FIELD WELDS.
10. ALL ERECTION WORK FOR STRUCTURAL STEEL SHALL BE CARRIED OUT IN STRICT ACCORDANCE WITH LATEST OSHA REQUIREMENTS.
11. CONNECTIONS:
    - A. DESIGN CONNECTIONS FOR UNFACTORED REACTIONS AS SHOWN ON FRAMING PLANS.
    - B. WHERE REACTIONS ARE NOT SHOWN, CONNECTION BE DESIGNED TO SUPPORT A MINIMUM UNFACTORED LOAD OF 6 KIPS.
    - C. FIELD CONNECTIONS SHALL BE BOLTED UNLESS WELDED CONNECTIONS ARE SPECIFIED ON THE DRAWING & SHALL UTILIZE DOUBLE–ANGLE, SEATED OR SINGLE SHEAR PLATE SHEAR CONNECTIONS.
    - D. HOWEVER, IN NO CASE SHALL THE LENGTH OF THE SHEAR CONNECTION BE LESS THAN ONE–HALF OF THE "T" DISTANCE OF THE BEAM WEB.
    - E. SHOP CONNECTIONS MAY BE BOLTED OR WELDED.
    - F. ALL CONNECTIONS SHALL BE AISC TYPE 2 "STANDARD FRAMED BEAM CONNECTIONS".
    - G. WHERE NOTED AND NOT OTHERWISE DETAILED ON DRAWINGS, FABRICATOR'S ENGINEER SHALL DESIGN MOMENT CONNECTIONS FOR THE VALUES PROVIDED. FABRICATOR SHALL SUBMIT THE PROPOSED CONNECTION TYPE FOR EACH CONDITION TO THE ENGINEER FOR APPROVAL OF SAID TYPE PRIOR TO THE START OF DETAILING AND DESIGN OF THESE CONNECTIONS. (ENGINEER RESERVES THE RIGHT TO REQUEST AN ALTERNATIVE CONNECTION TYPE).
    - H. USE SNUG–TIGHT CONNECTIONS U.N.O., USING THE TURN–OF–THE–NUT METHOD OR TWIST–OFF TYPE TENSION–CONTROL BOLT TENSIONING.
12. PAINT ALL STRUCTURAL STEEL AND MISCELLANEOUS STEEL WHICH IS NOT GALVANIZED. CLEAN & PRIME WITH ZINC CHROMATE PRIMER AS SPECIFIED IN PAINTING SPECIFICATIONS. TOUCH UP AS REQ'D IN FIELD AFTER ERECTION.
13. STEEL SCHEDULED TO RECEIVE SPAYED–ON FIREPROOFING SHALL NOT BE PRIME PAINTED.
14. WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1, LATEST EDITION.
15. CONTRACTOR SHALL RETAIN A FABRICATOR WHO UTILIZES A QUALIFIED PROFESSIONAL ENGINEER DULY REGISTERED IN THE STATE OF NORTH CAROLINA TO PREPARE SHOP DRAWINGS, CALCULATIONS, AND OTHER STRUCTURAL DATA FOR STRUCTURAL STEEL CONNECTIONS. FABRICATOR'S ENGINEER SHALL AFFIX HIS SEAL TO THE DRAWINGS AND CALCULATIONS PRIOR TO THE SUBMITTAL OF SHOP DRAWINGS.
16. THE FABRICATOR SHALL BE RESPONSIBLE FOR THE DESIGN AND DETAILING OF ALL CONNECTIONS NOT FULLY DETAILED ON THE CONTRACT DOCUMENTS. TYPICAL CONNECTION DETAILS ARE INDICATED ON THE DRAWINGS FOR DESIGN INTENT ONLY.
17. GUSSET PLATES SHALL BE 3/8" MINIMUM.
18. UNLESS SHOWN OTHERWISE ON THE DRAWINGS, ALL BRACING CONNECTIONS SHALL BE DESIGNED & DETAILED SO THAT ALL FORCE COMPONENTS CAN BE DELIVERED DIRECTLY TO THE CENTERLINE OF INTERSECTING MEMBERS. WHERE THIS IS NOT DONE, CONNECTIONS SHALL BE DESIGNED FOR RESULTING ECCENTRICITIES.

    (+) INDICATES TENSION IN MEMBER; (–) INDICATES COMPRESSION IN MEMBER; FORCES SHOWN ON THE DESIGN DRAWINGS SHALL NOT BE REDUCED.
19. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT ACCIDENTAL FIRE DURING ALL FIELD WELDING. PRECAUTIONS MAY INCLUDE, BUT NOT BE LIMITED TO, POSTING A FIRE WATCH WITH A FIRE EXTINGUISHER, THE USE OF PROTECTIVE WELDING BLANKETS, OR ANY OTHER METHOD OR COMBINATION OF METHODS USED TO PREVENT FIRE.
20. UNLESS OTHERWISE NOTED, ALL COLUMN ANCHOR BOLT HOLES SHALL BE OVERSIZED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE "AISC MANUAL FOR DETAILING FOR STEEL CONSTRUCTION".
21. OPEN ENDS OF ALL HSS AND PIPE SHAPES SHALL BE CLOSED WITH A 3/16" (MIN) CLOSURE PLATE SEAL WELDED ALL AROUND (UNO).
22. UNLESS NOTED OTHERWISE, PROVIDE 1/4" BENT PLATE POURSTOP AT ALL FLOOR OPENINGS AND EDGES.
23. UNLESS NOTED OTHERWISE, ALL HSS BEAM SECTIONS SHALL BE ORIENTED LONG SIDE VERTICAL (LSV).

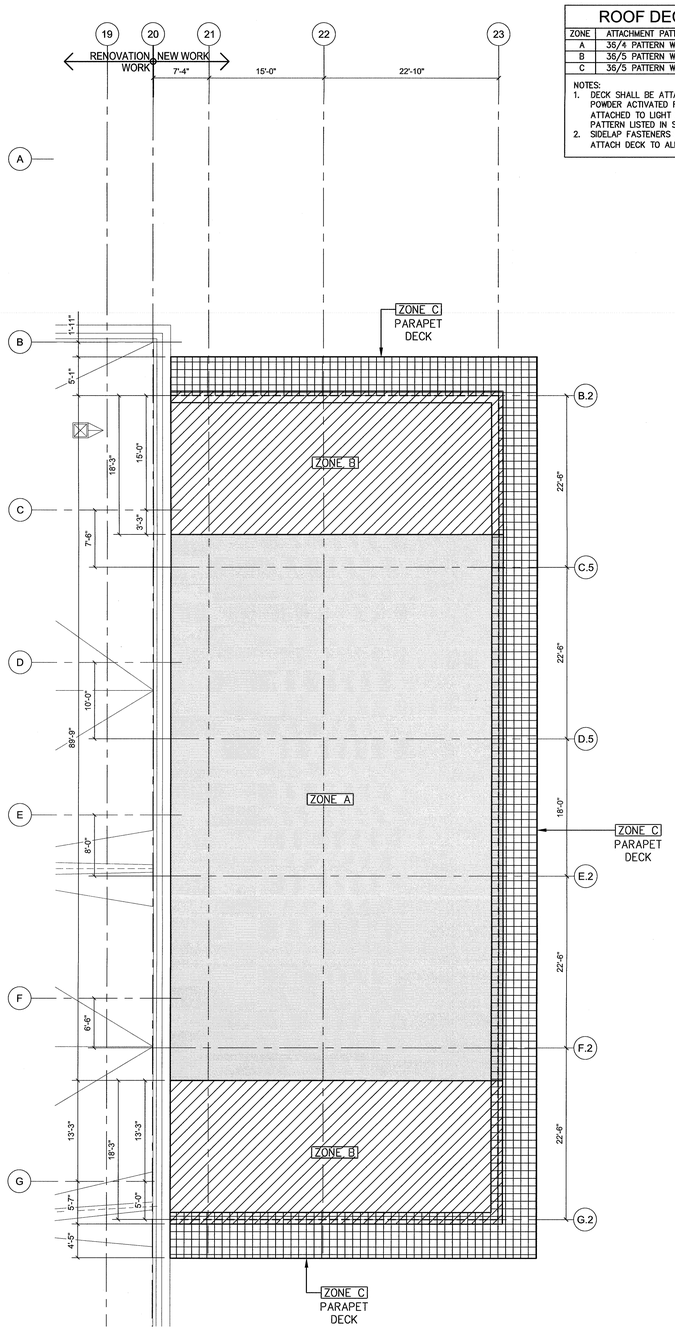
STEEL JOISTS

1. STEEL DESIGN, DETAILING, FABRICATION AND ERECTION SHALL CONFORM TO THE STEEL JOIST INSTITUTE (SJI) STANDARD SPECIFICATIONS, LATEST EDITION.
2. STEEL JOISTS DESIGNATED "SP" ON PLANS ARE SPECIAL JOISTS, WHICH SHALL BE DESIGNED FOR THE SPECIAL CRITERIA INDICATED. SEALED CALCULATIONS SHALL ACCOMPANY THE SHOP DRAWING SUBMITTAL.
3. BOTTOM CHORD OF JOISTS SHALL BE ANGLES.
4. JOIST BRIDGING AND SPACING SHALL CONFORM TO SJI SPECIFICATIONS, INCLUDING BRIDGING REQUIRED FOR JOISTS SUBJECTED TO UPLIFT LOADS. PROVIDE CROSS–BRIDGING AT ENDS OF BRIDGING LINES AND CHANGES IN JOIST DEPTHS. ANY BRIDGING SHOWN SHALL BE PROVIDED, IN ADDITION TO THE REQUIRED STANDARD BRIDGING. ENDS OF ALL BRIDGING LINES SHALL BE ANCHORED TO WALLS OR BEAMS.
5. WELD JOISTS TO STEEL SUPPORTS WITH 2 INCH MIN. OF 1/8 INCH FILLET WELD EACH SIDE OF JOIST. ALL WELDING TO BE MADE BY CERTIFIED WELDERS.
6. JOISTS SHALL BE BUILT TO FIT AS INDICATED ON THE FRAMING PLANS. MAXIMUM DEFLECTION DUE TO LIVE LOAD SHALL BE LIMITED TO L/360. JOIST SUPPLIER SHALL SUBMIT ANY REQUIRED DESIGN CALCULATIONS AND STRUCTURAL DATA TO ENGINEER OF RECORD FOR REVIEW.
7. SECURE METAL DECKING TO JOISTS PER SPECIFICATIONS.
8. WHERE JOIST BRIDGING IS INTERRUPTED FOR ANY REASON, PROVIDE X–BRIDGING ON EITHER SIDE IN ADDITION TO THE STANDARD BRIDGING.
9. ROOF JOISTS SHALL BE DESIGNED FOR A NET UPLIFT AS SHOWN.
10. ALL JOISTS SHALL BE DESIGNED TO ACCOMMODATE A MINIMUM CONCENTRATED LOAD OF 200 LBS. HUNG FROM THE JOIST TOP OR BOTTOM CHORD AT ANY POINT ALONG THE SPAN.
11. STEEL JOISTS SCHEDULED TO RECEIVE SPRA

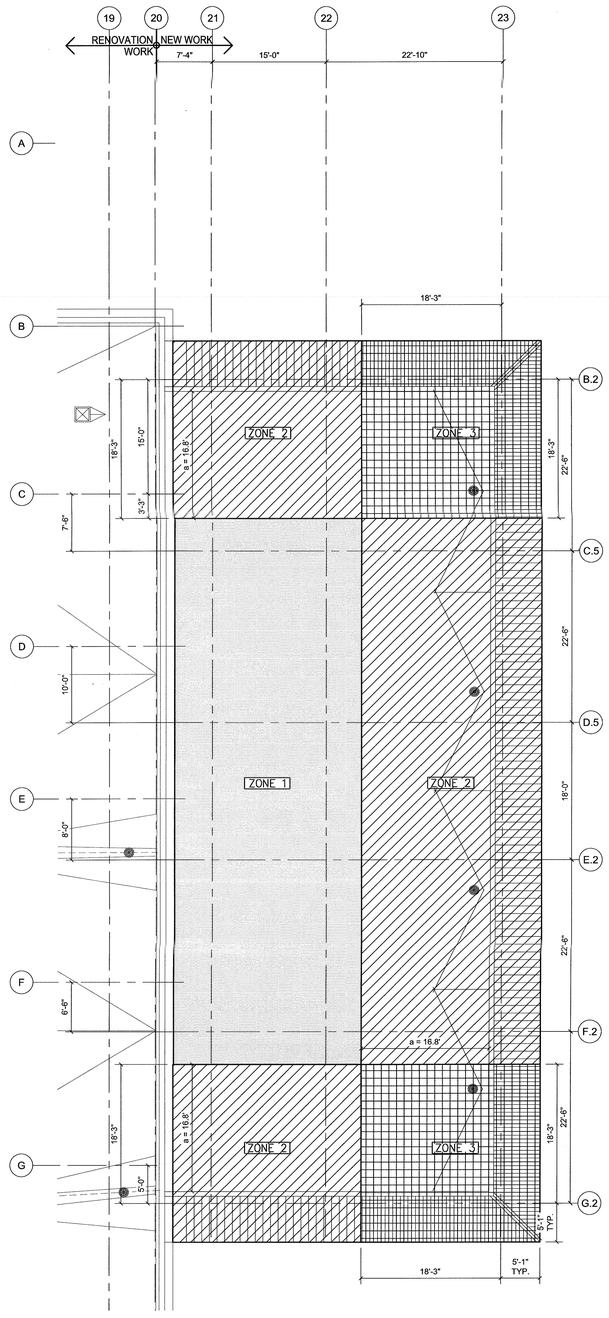
ROOF DECK ATTACHMENT SCHEDULE

ZONE	ATTACHMENT PATTERN
A	36/4 PATTERN W/ (2) SIDELAP FASTENERS PER SPAN (EQUALLY SPACED)
B	36/5 PATTERN W/ (3) SIDELAP FASTENERS PER SPAN (EQUALLY SPACED)
C	36/5 PATTERN W/ NO SIDELAP FASTENERS

NOTES:
1. DECK SHALL BE ATTACHED TO STEEL JOISTS & BEAMS USING HILTI X-HSN 24 POWDER ACTIVATED FASTENERS, EXCEPT AT ZONE C. ZONE C DECK SHALL BE ATTACHED TO LIGHT GAUGE FRAMING W/ HILTI HWH #12 DRILL SCREWS PER PATTERN LISTED IN SCHEDULE.
2. SIDELAP FASTENERS SHALL BE MADE USING #12 GALVANIZED SCREWS. ALSO ATTACH DECK TO ALL PERIMETER STEEL @ 6" OC MAX.



1 S0.2 Roof Deck Attachment Diagram Plan
Scale: 1/8" = 1'-0"
NOTE: SEE ROOF DECK ATTACHMENT SCHEDULE



2 S0.2 Joist Wind Uplift Diagram Plan
Scale: 1/8" = 1'-0"
NOTE: SEE COMPONENTS & CLADDING WIND PRESSURE CHART

COMPONENTS & CLADDING WIND PRESSURES UNFACTORED GROSS (PSF)

ROOF AREA	SURFACE PRESSURES (PSF)		
	ZONE 1	ZONE 2	ZONE 3
ROOFING	+14.3/−35.1	+32.2/−58.9	+32.2/−58.9
ROOF DECK	+14.3/−35.1	+32.2/−58.9	+32.2/−58.9
ROOF JOIST (L < 7')	+12.9/−33.8	+30.0/−49.4	+30.0/−49.4
ROOF JOIST (L ≥ 15')	+11.7/−32.5	+28.0/−40.7	+28.0/−40.7
OVERHANG FRAMING		+9.6/−41.4	+9.6/−68.2

WALL AREA	SURFACE PRESSURES (PSF)	
	ZONE 4	ZONE 5
METAL STUDS / CMU	+28.6/−31.3	+28.6/−35.7
BRICK VENEER / EFIS	+32.1/−34.8	+32.1/−42.8
PARAPET	±81.7	±81.7
FASCIA		+32.1/−42.8
PARAPET CAP		+32.1/−42.8
WINDOW	+30.3/−33.0	+30.3/−39.2
SINGLE DOOR	+30.6/−33.3	

WIND ZONE WIDTH, a = 16.8 FT

NOTES:
A. PLUS AND MINUS SIGNS SIGNIFY PRESSURES ACTING TOWARD AND AWAY FROM BUILDING SURFACES, RESPECTIVELY.
B. LOADS MAY BE INTERPOLATED BETWEEN THE WIND AREAS.
C. REFER TO FIGURES 6-11A THROUGH 6-17 IN ASCE 7 FOR COMPONENT AND CLADDING WIND LOAD DIAGRAMS AND DEFINITIONS OF WIND ZONES 1 THROUGH 5.

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NORTH CAROLINA PROFESSIONAL SEAL 22567 ENGINEER JAMES R. TROUTMAN
10.24.2019

Brunswick County Courthouse Additions & Renovations

Bolivia, NC

Construction Drawings
September 23, 2019

Revisions:

Diagram Plans & Schedules

S0.2

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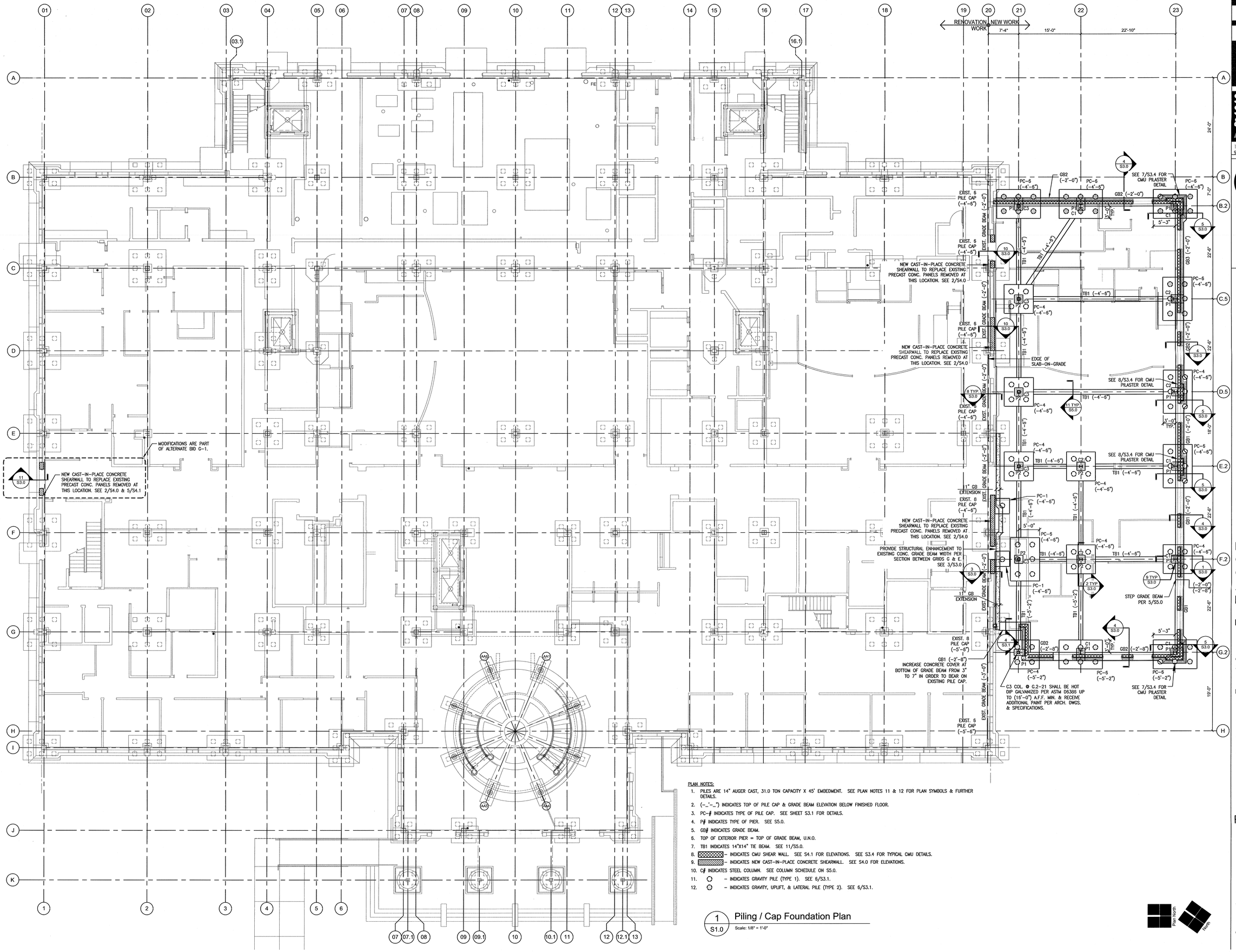

PLAN NOTES:

1. PILES ARE 14" AUGER CAST, 31.0 TON CAPACITY X 45' EMBEDMENT. SEE PLAN NOTES 11 & 12 FOR PLAN SYMBOLS & FURTHER DETAILS.
2. (-_'-_") INDICATES TOP OF PILE CAP & GRADE BEAM ELEVATION BELOW FINISHED FLOOR.
3. PC-# INDICATES TYPE OF PILE CAP. SEE SHEET S3.1 FOR DETAILS.
4. P# INDICATES TYPE OF PIER. SEE S5.0.
5. GB# INDICATES GRADE BEAM.
6. TOP OF EXTERIOR PIER = TOP OF GRADE BEAM, U.N.O.
7. TB1 INDICATES 14"X14" TIE BEAM. SEE 11/S5.0.
8. – INDICATES CMU SHEAR WALL. SEE S4.1 FOR ELEVATIONS. SEE S3.4 FOR TYPICAL CMU DETAILS.
9. – INDICATES NEW CAST-IN-PLACE CONCRETE SHEARWALL. SEE S4.0 FOR ELEVATIONS.
10. C# INDICATES STEEL COLUMN. SEE COLUMN SCHEDULE ON S5.0.
11. – INDICATES GRAVITY PILE (TYPE 1). SEE 6/S3.1.
12. – INDICATES GRAVITY, UPLIFT, & LATERAL PILE (TYPE 2). SEE 6/S3.1.

1 / S1.0 Piling / Cap Foundation Plan

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

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Brunswick County Courthouse Additions & Renovations

Bolivia, NC

Construction Drawings
September 23, 2019

Revisions:

Pile Cap Plan

S1.0

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RENOVATION / NEW WORK
WORK 7'-4" 15'-0" 22'-10"

1'-0" 03.1 1'-0" 16.1

FE

ACCESS FLOOR INFILL:
SEE ARCHITECTURAL DRAWINGS FOR EXTENTS OF ACCESS FLOOR SLAB DEPRESSION INFILL. INFILL W/ 4000 PSI, NORMAL WT. CONCRETE REINFORCED W/ 6X6–W2.9XW2.9 WWR 1" FROM TOP OF SLAB. LINE SLAB DEPRESSION W/ 15# FELT AND ½" EXPANSION JOINT MATERIAL ON SIDES OF EXISTING DEPRESSION. PROVIDE CONTROL JOINTS (C.J.), AS SHOWN PER PLAN NOTE 5.

MODIFICATIONS ARE PART OF ALTERNATE BID G–1.

11 S3.0 NEW CAST–IN–PLACE CONCRETE SHEARWALL TO REPLACE EXISTING PRECAST CONC. PANELS REMOVED AT THIS LOCATION. SEE 2/S4.0 & 5/S4.1

NEW CAST–IN–PLACE CONCRETE SHEARWALL TO REPLACE EXISTING PRECAST CONC. PANELS REMOVED AT THIS LOCATION. SEE 2/S4.0

NEW CAST–IN–PLACE CONCRETE SHEARWALL TO REPLACE EXISTING PRECAST CONC. PANELS REMOVED AT THIS LOCATION. SEE 2/S4.0

ACCESS FLOOR INFILL:
SEE ARCHITECTURAL DRAWINGS FOR EXTENTS OF ACCESS FLOOR SLAB DEPRESSION INFILL. INFILL W/ 4000 PSI, NORMAL WT. CONCRETE REINFORCED W/ 6X6–W2.9XW2.9 WWR 1" FROM TOP OF SLAB. LINE SLAB DEPRESSION W/ 15# FELT AND ½" EXPANSION JOINT MATERIAL ON SIDES OF EXISTING DEPRESSION. PROVIDE CONTROL JOINTS (C.J.), AS SHOWN PER PLAN NOTE 5.

EXIST. PRECAST PANEL TO BE REMOVED. SEE 1/S4.0

NEW CAST–IN–PLACE CONCRETE SHEARWALL TO REPLACE EXISTING PRECAST CONC. PANELS REMOVED AT THIS LOCATION. SEE 2/S4.0

EXIST. PRECAST PANEL TO BE REMOVED. SEE 1/S4.0

EDGE OF GRADE BEAM, BELOW.

E.O.S.= 6" TYP.

E.O.S.= 5" TYP.

4 S3.0

SEE NOTE 8

SEE 7/S3.4 FOR CMU PILASTER DETAIL

4'–0" TYP.

SEE NOTE 9

RAMP DN

RAMP RN

SEE ARCH

12 S3.0

10 S3.0

1 SIM S3.0

8 S3.0

EDGE OF SLAB–ON–GRADE P.J. – SEE 8/S3.0, TYP.

5 S3.0

SEE 8/S3.4 FOR CMU PILASTER DETAIL

ISOLATION JT AROUND COL. SEE 1/S3.0 (TYP.)

ISOLATION JT AROUND COL. SEE 2/S3.0 (TYP.)

1 S3.0

4 S3.1

C.J.

HH

24'–0"
7'–0"
22'–6"
22'–6"
18'–0"
22'–6"
22'–6"
19'–0"
5'–0"
5'–1½"
E.O.S.= 5'–2"

AA1 AA2 AA3 AA4 AA5 AA6

1 S1.1 Foundation & Slab Plan
Scale: 1/8" = 1'–0"

PLAN NOTES:

1. ENTIRE FLOOR SLAB SHALL RECEIVE 4" CONCRETE SLAB–ON–GRADE REINFORCED W/ 6x6 – W2.9xW2.9 WWR ON VAPOR RETARDER OVER 4" POROUS STONE FILL ON COMPACTED SUBGRADE/FILL, U.N.O.
2. TOP OF SLAB = 0'–0" FINISHED FLOOR ELEVATION (F.F.E.).
3. (+_'–_") INDICATED TOP OF CONCRETE AS REFERENCED TO F.F.E.
4. SEE S1.0 FOR COLUMN INFORMATION.
5. PROVIDE CONTROL JOINTS (CJ) AS INDICATED ON PLAN. USING KEYED JOINTS (KJ) OR SAWED JOINTS (SJ) AS REQUIRED BY CONCRETE PLACEMENT, (DETAILS 6/S3.0 & 7/S3.0, RESPECTIVELY). LAYOUT IS SUGGESTED & MAY BE MODIFIED AS REQUIRED BY THE CONTRACTOR TO SUIT HIS CONSTRUCTION METHOD WITH THE APPROVAL OF THE ENGINEER.
6. – INDICATES CMU SHEAR WALL. SEE S4.1 FOR ELEVATIONS. SEE S3.4 FOR TYPICAL CMU DETAILS.
7. – INDICATES NEW CAST–IN–PLACE CONCRETE SHEARWALL. SEE S4.0 FOR ELEVATIONS.
8. – INDICATES ELEVATED PLATFORM. 3" L.W. CONCRETE SLAB W/ 6x6 x W2.9xW2.9 WWR OVER 0.6C28 DECK ON LIGHT GAUGE FRAMING (DESIGN BY OTHERS).
9. – INDICATES L.W. CONCRETE TOPPING SLAB. SEE ARCH. FOR EXTENTS & HEIGHT. MAX. HEIGHT ON SLAB–ON–GRADE IS 14". MAX. HEIGHT ON ELEVATED FLOOR IS 6". PLACE ONLY WHERE INDICATED. SEE 13/S3.0 FOR SLAB & 12/S3.0 FOR RAMP.

Plan North

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22958 JOHN R. TROUTMAN 10.24.2019

Brunswick County Courthouse Additions & Renovations

Bolivia, NC

Construction Drawings
September 23, 2019

Revisions:

Foundation & Slab Plan

S1.1

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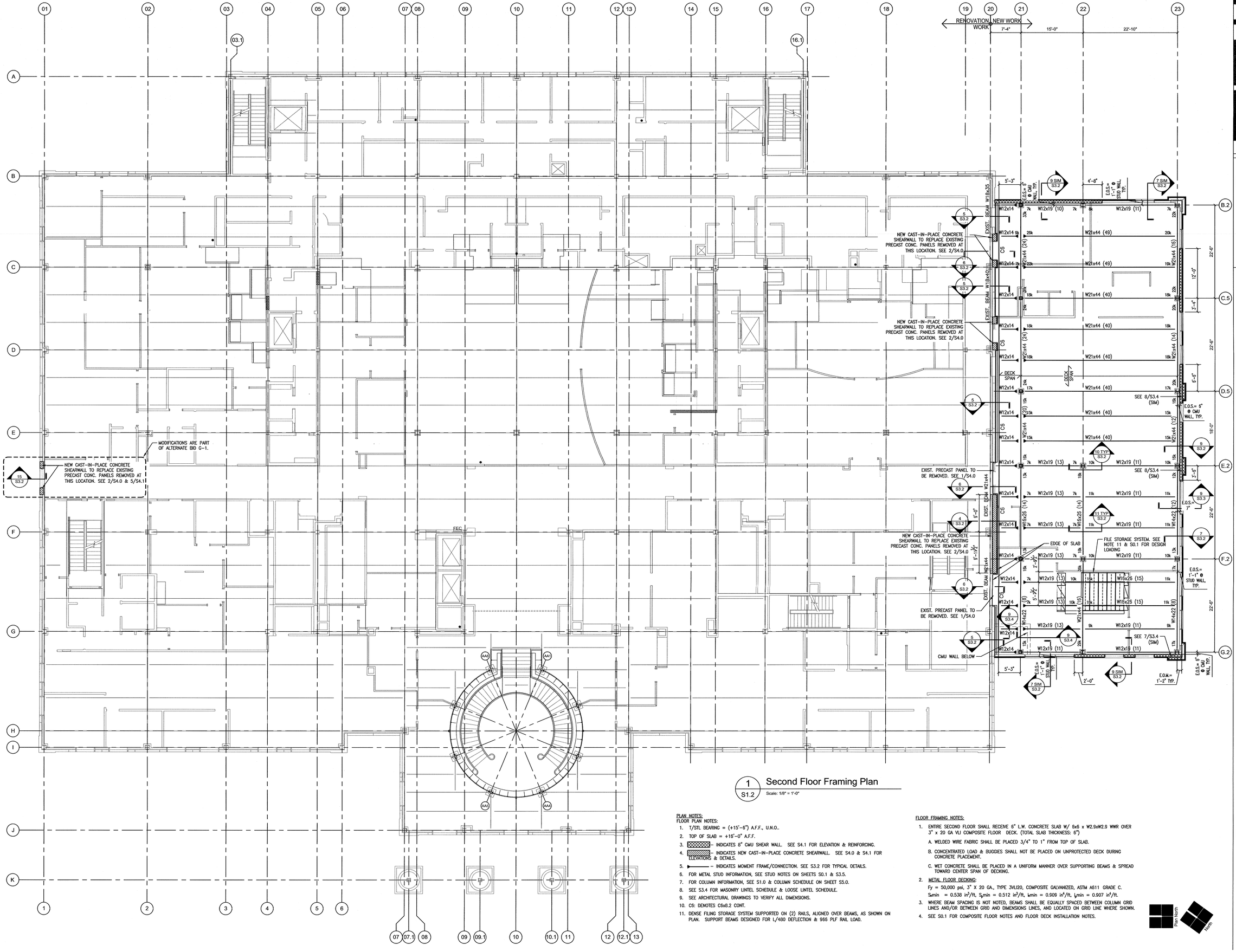

1 S1.2 Second Floor Framing Plan

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

PLAN NOTES:
FLOOR PLAN NOTES:

1. T/STL BEARING = (+15'-6") A.F.F., U.N.O..
2. TOP OF SLAB = +16'-0" A.F.F.
3. – INDICATES 8" CMU SHEAR WALL. SEE S4.1 FOR ELEVATION & REINFORCING.
4. – INDICATES NEW CAST-IN-PLACE CONCRETE SHEARWALL. SEE S4.0 & S4.1 FOR ELEVATIONS & DETAILS.
5. – INDICATES MOMENT FRAME/CONNECTION. SEE S3.2 FOR TYPICAL DETAILS.
6. FOR METAL STUD INFORMATION, SEE STUD NOTES ON SHEETS S0.1 & S3.5.
7. FOR COLUMN INFORMATION, SEE S1.0 & COLUMN SCHEDULE ON SHEET S5.0.
8. SEE S3.4 FOR MASONRY LINTEL SCHEDULE & LOOSE LINTEL SCHEDULE.
9. SEE ARCHITECTURAL DRAWINGS TO VERIFY ALL DIMENSIONS.
10. C6: DENOTES C6x8.2 CONT.
11. DENSE FILING STORAGE SYSTEM SUPPORTED ON (2) RAILS, ALIGNED OVER BEAMS, AS SHOWN ON PLAN. SUPPORT BEAMS DESIGNED FOR L/480 DEFLECTION & 966 PLF RAIL LOAD.

FLOOR FRAMING NOTES:

1. ENTIRE SECOND FLOOR SHALL RECEIVE 6" L.W. CONCRETE SLAB W/ 6x6 x W2.9xW2.9 WWR OVER 3" x 20 GA VLI COMPOSITE FLOOR DECK. (TOTAL SLAB THICKNESS: 6")
   A. WELDED WIRE FABRIC SHALL BE PLACED 3/4" TO 1" FROM TOP OF SLAB.
   B. CONCENTRATED LOAD & BUGGIES SHALL NOT BE PLACED ON UNPROTECTED DECK DURING CONCRETE PLACEMENT.
   C. WET CONCRETE SHALL BE PLACED IN A UNIFORM MANNER OVER SUPPORTING BEAMS & SPREAD TOWARD CENTER SPAN OF DECKING.
2. METAL FLOOR DECKING:
   Fy = 50,000 psi, 3" X 20 GA., TYPE 3VLI20, COMPOSITE GALVANIZED, ASTM A611 GRADE C.
   S_{min} = 0.538 in^3/ft, S_{pmin} = 0.512 in^3/ft, I_{pmin} = 0.909 in^4/ft, I_{pmin} = 0.907 in^4/ft.
3. WHERE BEAM SPACING IS NOT NOTED, BEAMS SHALL BE EQUALLY SPACED BETWEEN COLUMN GRID LINES AND/OR BETWEEN GRID AND DIMENSIONS LINES, AND LOCATED ON GRID LINE WHERE SHOWN.
4. SEE S0.1 FOR COMPOSITE FLOOR NOTES AND FLOOR DECK INSTALLATION NOTES.

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10-24-2019

Brunswick County Courthouse Additions & Renovations

Bolivia, NC

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September 23, 2019

Revisions:

2nd Floor Framing Plan

S1.2

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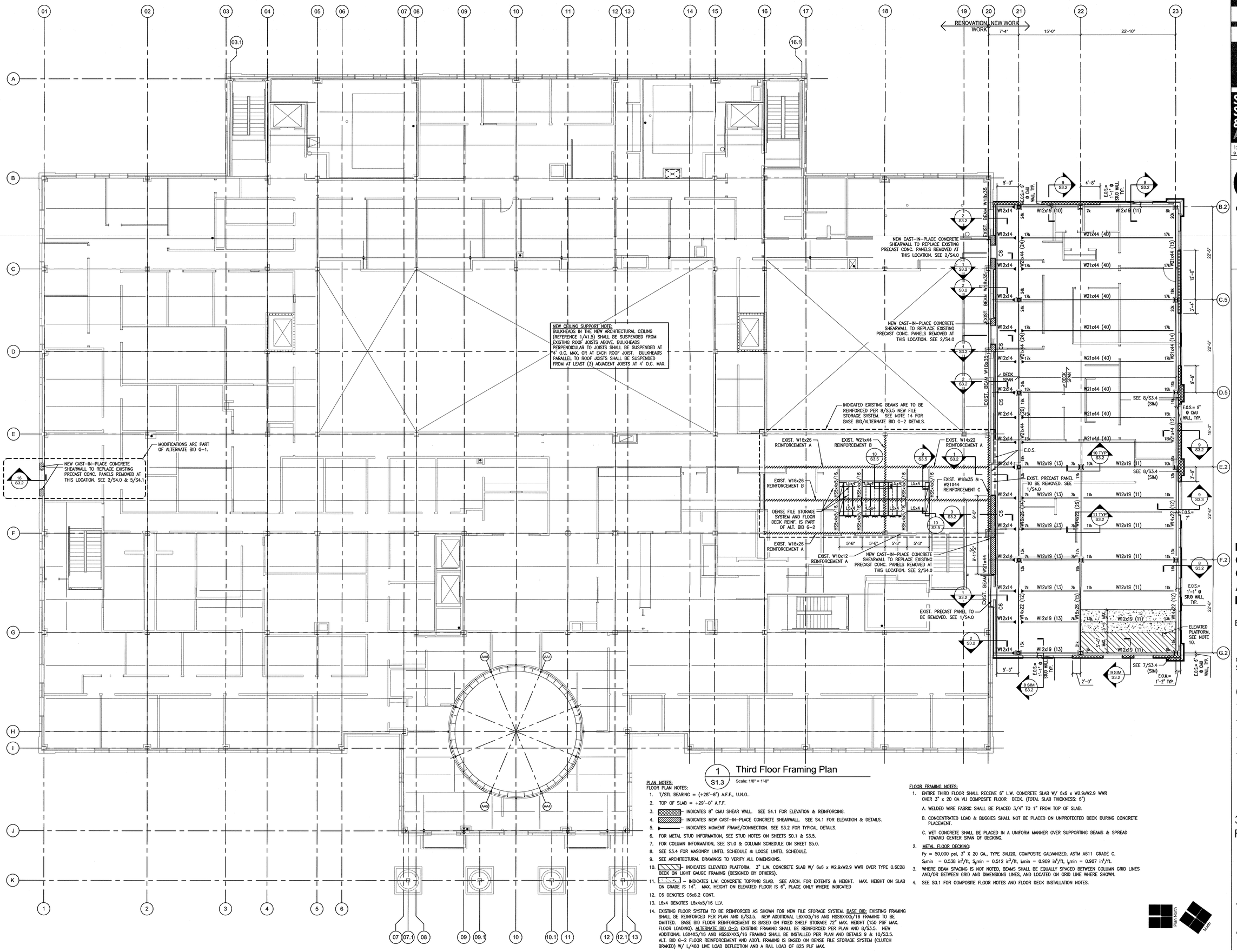

Third Floor Framing Plan

1 / S1.3 — Scale: 1/8" = 1'-0"

PLAN NOTES:
FLOOR PLAN NOTES:

1. T/STL BEARING = (+28'-6") A.F.F., U.N.O..
2. TOP OF SLAB = +29'-0" A.F.F.
3. ▨ INDICATES 8" CMU SHEAR WALL. SEE S4.1 FOR ELEVATION & REINFORCING.
4. ▨ INDICATES NEW CAST-IN-PLACE CONCRETE SHEARWALL. SEE S4.1 FOR ELEVATION & DETAILS.
5. ▶—— INDICATES MOMENT FRAME/CONNECTION. SEE S3.2 FOR TYPICAL DETAILS.
6. FOR METAL STUD INFORMATION, SEE STUD NOTES ON SHEETS S0.1 & S3.5.
7. FOR COLUMN INFORMATION, SEE S1.0 & COLUMN SCHEDULE ON SHEET S5.0.
8. SEE S3.4 FOR MASONRY LINTEL SCHEDULE & LOOSE LINTEL SCHEDULE.
9. SEE ARCHITECTURAL DRAWINGS TO VERIFY ALL DIMENSIONS.
10. ▨ INDICATES ELEVATED PLATFORM. 3" L.W. CONCRETE SLAB W/ 6x6 x W2.9xW2.9 WWR OVER TYPE 0.6C28 DECK ON LIGHT GAUGE FRAMING (DESIGNED BY OTHERS).
11. ⋱ INDICATES L.W. CONCRETE TOPPING SLAB. SEE ARCH. FOR EXTENTS & HEIGHT. MAX. HEIGHT ON SLAB ON GRADE IS 14". MAX. HEIGHT ON ELEVATED FLOOR IS 6", PLACE ONLY WHERE INDICATED
12. C6 DENOTES C6x8.2 CONT.
13. L6x4 DENOTES L6x4x5/16 LLV.
14. EXISTING FLOOR SYSTEM TO BE REINFORCED AS SHOWN FOR NEW FILE STORAGE SYSTEM. BASE BID: EXISTING FRAMING SHALL BE REINFORCED PER PLAN AND 8/S3.5. NEW ADDITIONAL L6X4X5/16 AND HSS6X4X5/16 FRAMING TO BE OMITTED. BASE BID FLOOR REINFORCEMENT IS BASED ON FIXED SHELF STORAGE 72" MAX. HEIGHT (150 PSF MAX. FLOOR LOADING). ALTERNATE BID G-2: EXISTING FRAMING SHALL BE REINFORCED PER PLAN AND 8/S3.5. NEW ADDITIONAL L6X4X5/16 AND HSS6X4X5/16 FRAMING SHALL BE INSTALLED PER PLAN AND DETAILS 9 & 10/S3.5. ALT. BID G-2 FLOOR REINFORCEMENT AND ADD'L FRAMING IS BASED ON DENSE FILE STORAGE SYSTEM (CLUTCH BRAKED) W/ L/480 LIVE LOAD DEFLECTION AND A RAIL LOAD OF 825 PLF MAX.

FLOOR FRAMING NOTES:

1. ENTIRE THIRD FLOOR SHALL RECEIVE 5" L.W. CONCRETE SLAB W/ 6x6 x W2.9xW2.9 WWR OVER 3" x 20 GA VLI COMPOSITE FLOOR DECK. (TOTAL SLAB THICKNESS: 5")
   A. WELDED WIRE FABRIC SHALL BE PLACED 3/4" TO 1" FROM TOP OF SLAB.
   B. CONCENTRATED LOAD & BUGGIES SHALL NOT BE PLACED ON UNPROTECTED DECK DURING CONCRETE PLACEMENT.
   C. WET CONCRETE SHALL BE PLACED IN A UNIFORM MANNER OVER SUPPORTING BEAMS & SPREAD TOWARD CENTER SPAN OF DECKING.
2. METAL FLOOR DECKING:
   Fy = 50,000 psi, 3" X 20 GA., TYPE 3VLI20, COMPOSITE GALVANIZED, ASTM A611 GRADE C.
   S_{min} = 0.538 in^3/ft, S_{min} = 0.512 in^3/ft, I_{min} = 0.909 in^4/ft, I_{min} = 0.907 in^4/ft.
3. WHERE BEAM SPACING IS NOT NOTED, BEAMS SHALL BE EQUALLY SPACED BETWEEN COLUMN GRID LINES AND/OR BETWEEN GRID AND DIMENSIONS LINES, AND LOCATED ON GRID LINE WHERE SHOWN.
4. SEE S0.1 FOR COMPOSITE FLOOR NOTES AND FLOOR DECK INSTALLATION NOTES.

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NORTH CAROLINA PROFESSIONAL SEAL 23459 ENGINEER JOSEPH R. TROUTMAN 10-24-19

Brunswick County Courthouse Additions & Renovations

Bolivia, NC

Construction Drawings
September 23, 2019

Revisions:

3rd Floor Framing Plan

S1.3

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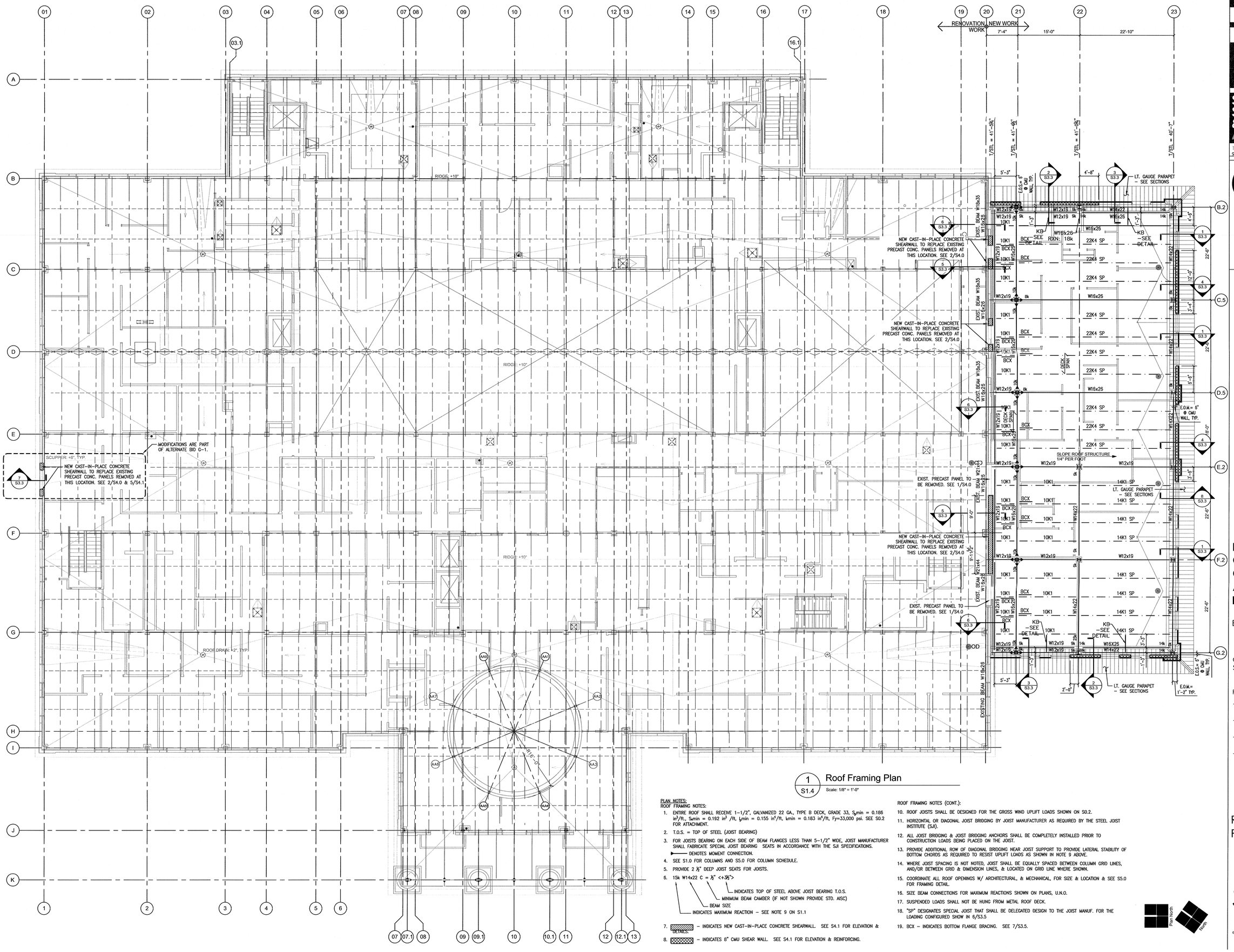

1 S1.4 Roof Framing Plan

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

PLAN NOTES:

ROOF FRAMING NOTES:

1. ENTIRE ROOF SHALL RECEIVE 1–1/2", GALVANIZED 22 GA., TYPE B DECK, GRADE 33, $S_p$min = 0.186 in^3/ft., $S_n$min = 0.192 in^3 /ft, $I_p$min = 0.155 in^4/ft, $I_n$min = 0.183 in^4/ft, Fy=33,000 psi. SEE S0.2 FOR ATTACHMENT.
2. T.O.S. = TOP OF STEEL (JOIST BEARING)
3. FOR JOISTS BEARING ON EACH SIDE OF BEAM FLANGES LESS THAN 5–1/2" WIDE, JOIST MANUFACTURER SHALL FABRICATE SPECIAL JOIST BEARING SEATS IN ACCORDANCE WITH THE SJI SPECIFICATIONS.
   ►—— DENOTES MOMENT CONNECTION.
4. SEE S1.0 FOR COLUMNS AND S5.0 FOR COLUMN SCHEDULE.
5. PROVIDE 2 ½" DEEP JOIST SEATS FOR JOISTS.
6. 15k W14x22 C = ½" <+3½">
   - 15k – INDICATES MAXIMUM REACTION – SEE NOTE 9 ON S1.1
   - W14x22 – BEAM SIZE
   - C – MINIMUM BEAM CAMBER (IF NOT SHOWN PROVIDE STD. AISC)
   - +3½" – INDICATES TOP OF STEEL ABOVE JOIST BEARING T.O.S.
7. ▨ – INDICATES NEW CAST–IN–PLACE CONCRETE SHEARWALL. SEE S4.1 FOR ELEVATION & DETAILS.
8. ▩ – INDICATES 8" CMU SHEAR WALL. SEE S4.1 FOR ELEVATION & REINFORCING.

ROOF FRAMING NOTES (CONT.):

10. ROOF JOISTS SHALL BE DESIGNED FOR THE GROSS WIND UPLIFT LOADS SHOWN ON S0.2.
11. HORIZONTAL OR DIAGONAL JOIST BRIDGING BY JOIST MANUFACTURER AS REQUIRED BY THE STEEL JOIST INSTITUTE (SJI).
12. ALL JOIST BRIDGING & JOIST BRIDGING ANCHORS SHALL BE COMPLETELY INSTALLED PRIOR TO CONSTRUCTION LOADS BEING PLACED ON THE JOIST.
13. PROVIDE ADDITIONAL ROW OF DIAGONAL BRIDGING NEAR JOIST SUPPORT TO PROVIDE LATERAL STABILITY OF BOTTOM CHORDS AS REQUIRED TO RESIST UPLIFT LOADS AS SHOWN IN NOTE 9 ABOVE.
14. WHERE JOIST SPACING IS NOT NOTED, JOIST SHALL BE EQUALLY SPACED BETWEEN COLUMN GRID LINES, AND/OR BETWEEN GRID & DIMENSION LINES, & LOCATED ON GRID LINE WHERE SHOWN.
15. COORDINATE ALL ROOF OPENINGS W/ ARCHITECTURAL, & MECHANICAL, FOR SIZE & LOCATION & SEE S5.0 FOR FRAMING DETAIL.
16. SIZE BEAM CONNECTIONS FOR MAXIMUM REACTIONS SHOWN ON PLANS, U.N.O.
17. SUSPENDED LOADS SHALL NOT BE HUNG FROM METAL ROOF DECK.
18. "SP" DESIGNATES SPECIAL JOIST THAT SHALL BE DELEGATED DESIGN TO THE JOIST MANUF. FOR THE LOADING CONFIGURED SHOW IN 5/S3.5
19. BCX – INDICATES BOTTOM FLANGE BRACING. SEE 7/S3.5.

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NORTH CAROLINA PROFESSIONAL SEAL 22955 ENGINEER JEFFREY R. TROUTMAN 10.24.19

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S1.4

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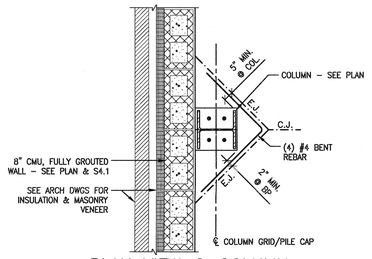
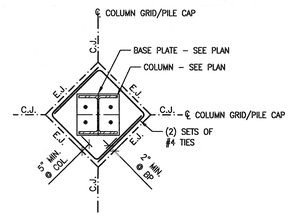
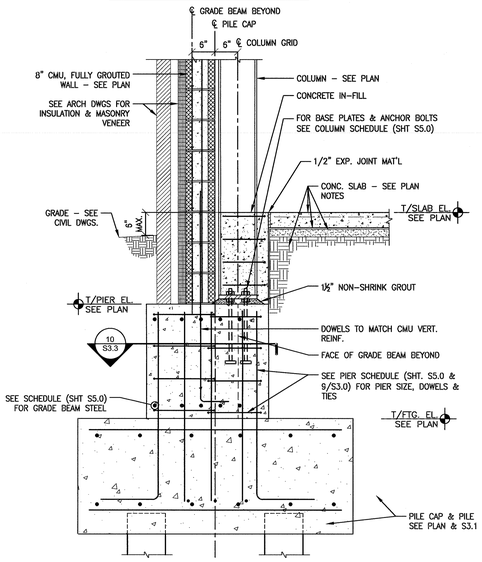
Plan North



PLAN VIEW @ COLUMN

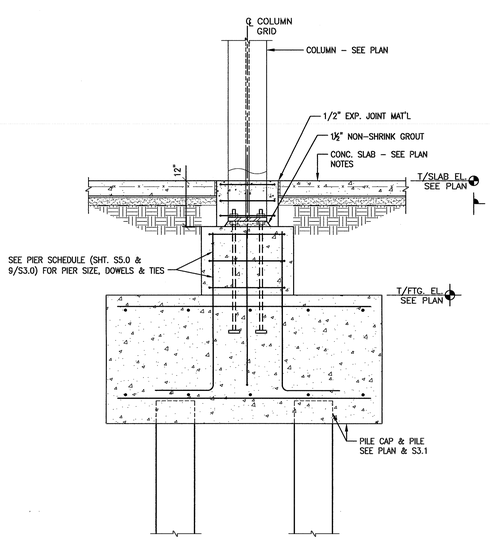


PLAN VIEW @ COLUMN



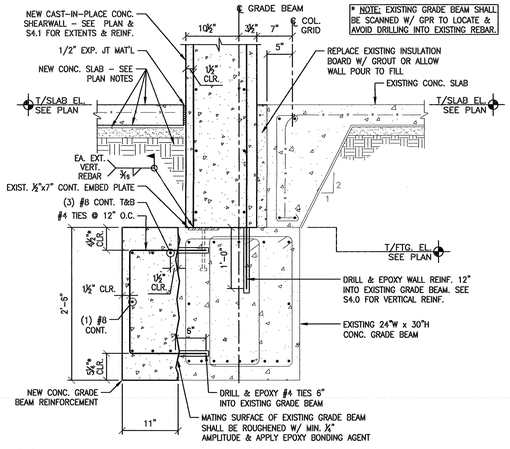
1 S3.0 Section - Typical Exterior Column

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



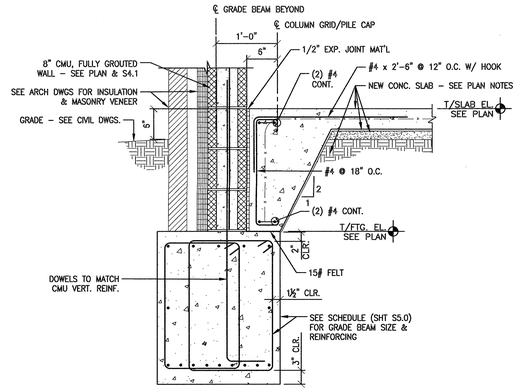
2 S3.0 Section - Typical Interior Column

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



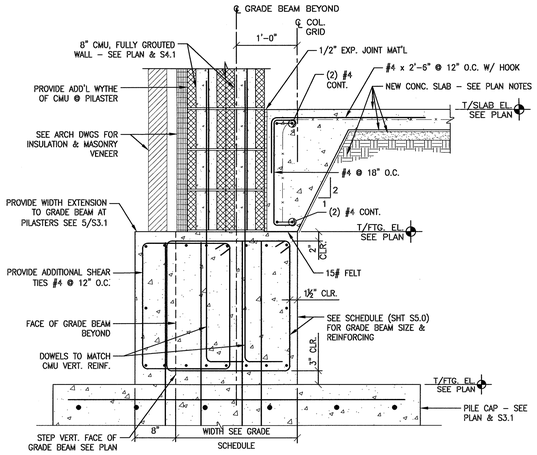
3 S3.0 Section - Existing Grade Beam Structural Enhancement

Scale: 1" = 1'-0"



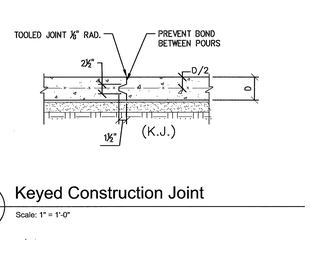
4 S3.0 Section - Panel Connection @ Base

Scale: 1" = 1'-0"



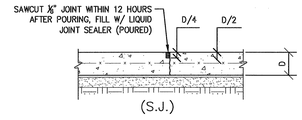
5 S3.0 Section - Exterior

Scale: 1" = 1'-0"



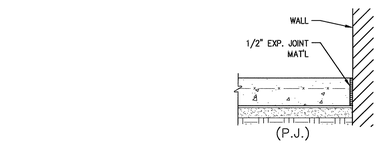
6 S3.0 Keyed Construction Joint

Scale: 1" = 1'-0"



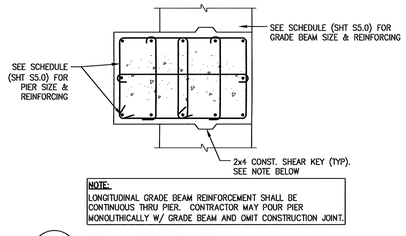
7 S3.0 Sawed Control Joint

Scale: 1" = 1'-0"



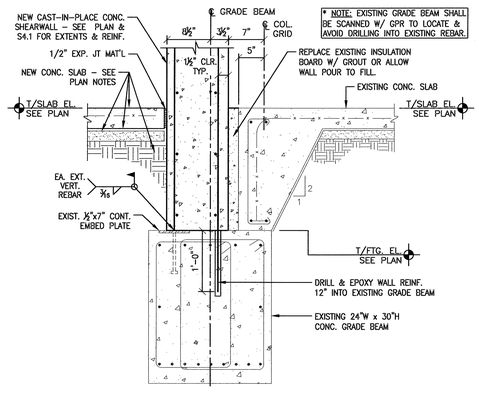
8 S3.0 Perimeter Expansion Joint

Scale: 1" = 1'-0"



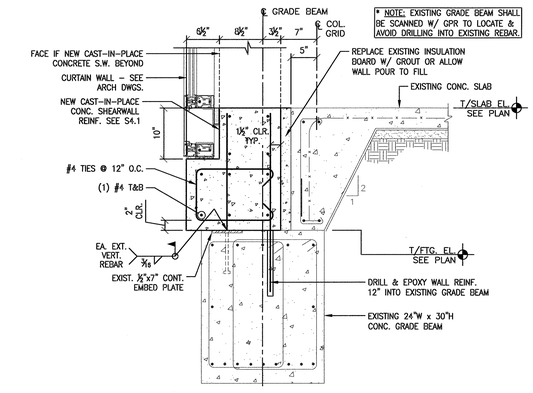
9 S3.0 Plan - Exterior Pier

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



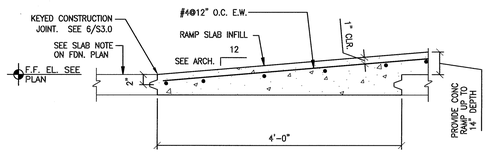
10 S3.0 Section - Existing Grade Beam @ New Concrete Shearwall

Scale: 1" = 1'-0"



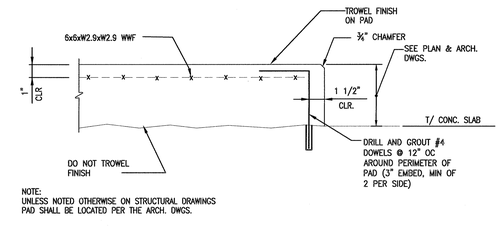
11 S3.0 Section - South Wall New Concrete Shearwall

Scale: 1" = 1'-0"



12 S3.0 Section - Slab-on-Grade Concrete Ramp

Scale: 1" = 1'-0"



13 S3.0 Section - Typical Concrete Topping Slab

Scale: 1" = 1'-0"

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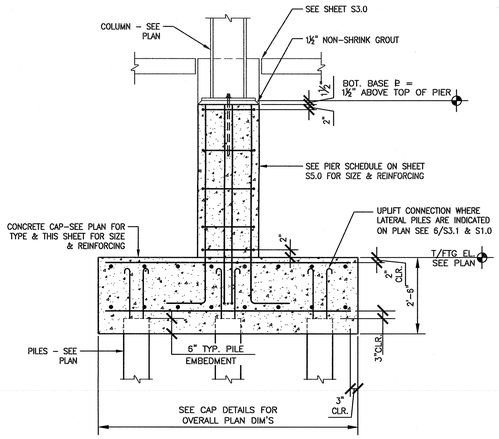
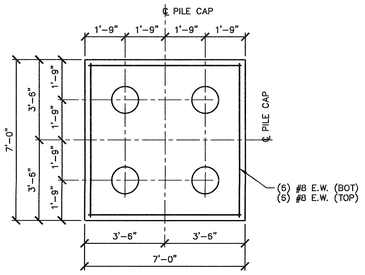


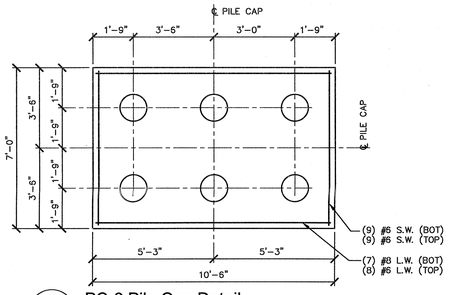
1 S3.1 **Typical Pile Cap Detail**

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



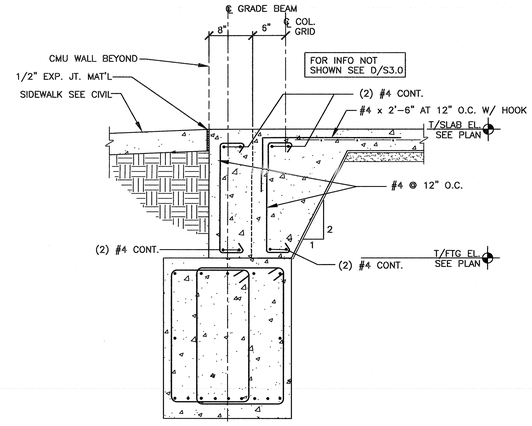
2 S3.1 **PC-4 Pile Cap Detail**

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



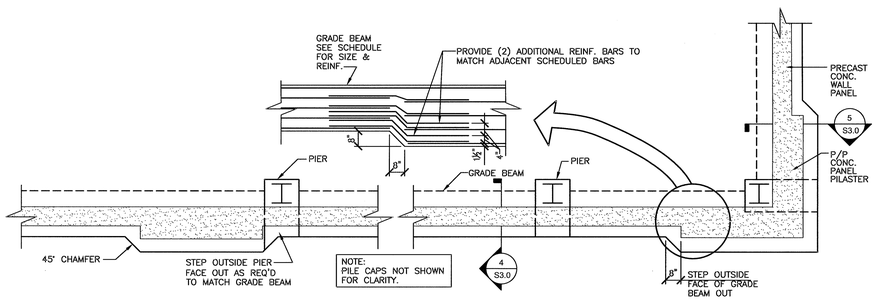
3 S3.1 **PC-6 Pile Cap Detail**

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



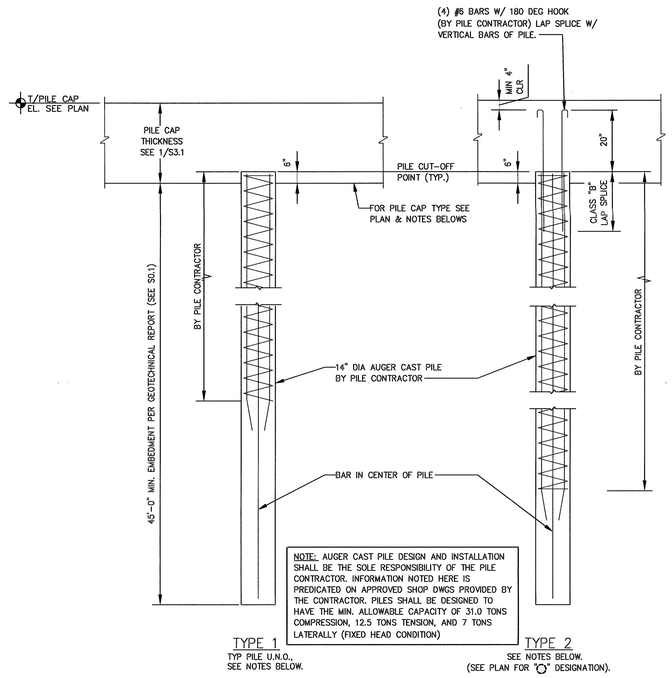
4 S3.1 **Section @ Doorway**

Scale: 1" = 1'-0"



5 S3.1 **Plan - Panel Pilasters**

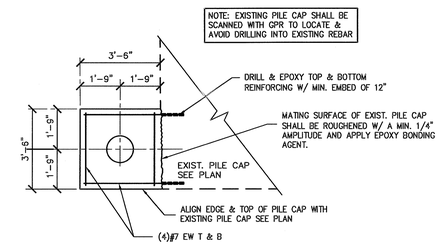
Scale: 1/2" = 1'-0"



6 S3.1 **Typical Pile Details**

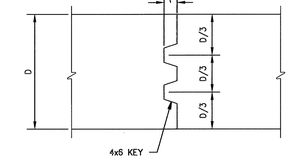
Scale: 3/8" = 1'-0"

NOTE:
PROVIDE TYPE 2 (GRAVITY, UPLIFT, & LATERAL) PILE AT PILE CAPS DENOTED BY "⬡" ON PLANS.
PROVIDE TYPE 1 (GRAVITY ONLY) PILE AT ALL OTHER LOCATIONS.



7 S3.1 **PC-1 Pile Cap Detail**

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



8 S3.1 **Typical Grade Beam Joint Detail**

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

NOTE:
1. REINFORCEMENT IS TO BE CONTINUOUS THROUGH CONSTRUCTION JOINT.
2. LOCATE CONSTRUCTION JOINT AT MIDSPAN OF GRADE BEAMS.
3. GRADE BEAMS AND PIERS TO BE PLACED MONOLITHICALLY.

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NORTH CAROLINA PROFESSIONAL SEAL 22567 ENGINEER JAMES R. TROUTMAN
10-4-2019

Brunswick County Courthouse Additions & Renovations

Bolivia, NC

Construction Drawings
September 23, 2019

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S3.1

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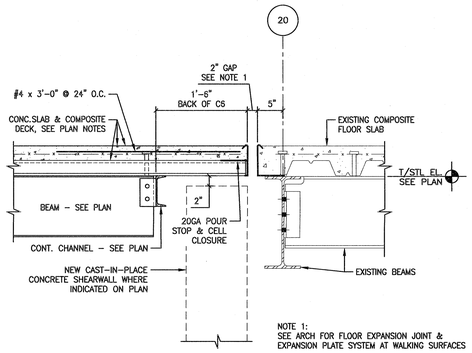
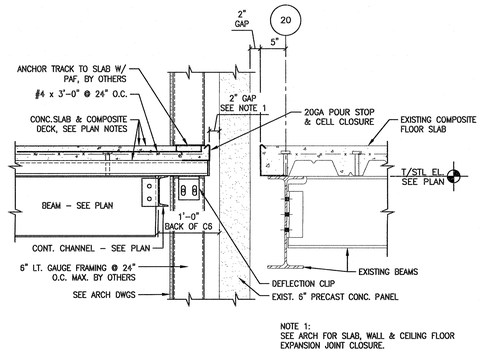


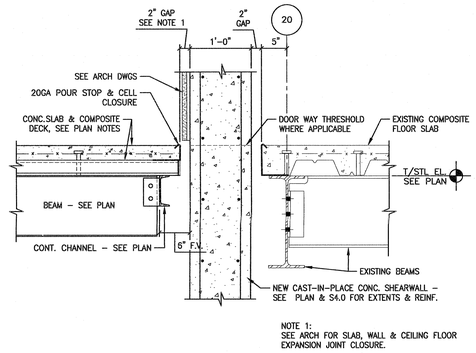
1 S3.2 Slab Edge @ Opening - 3rd Floor

Scale: 1" = 1'-0"



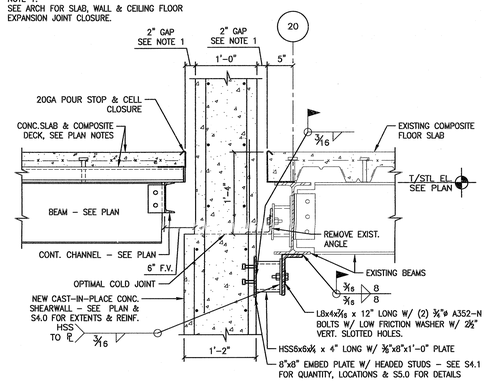
2 S3.2 3rd Floor @ Existing Precast

Scale: 1" = 1'-0"



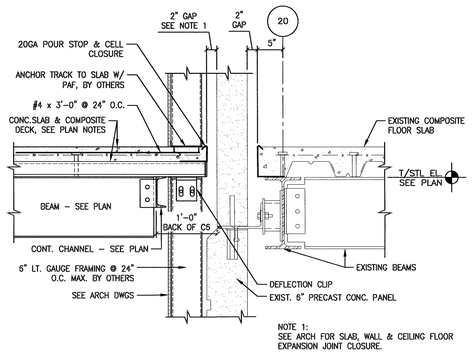
3 S3.2 3rd Floor @ Concrete Shearwall

Scale: 1" = 1'-0"



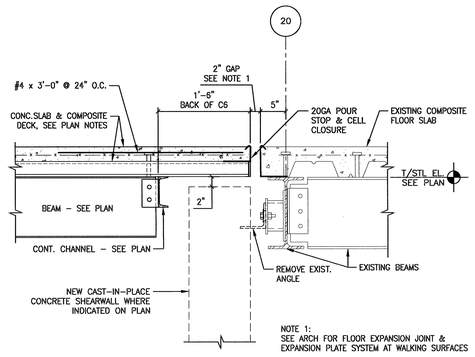
4 S3.2 2nd Floor @ Concrete Shearwall

Scale: 1" = 1'-0"



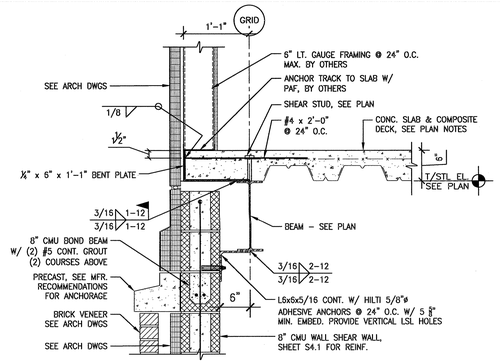
5 S3.2 2nd Floor @ Existing Precast

Scale: 1" = 1'-0"



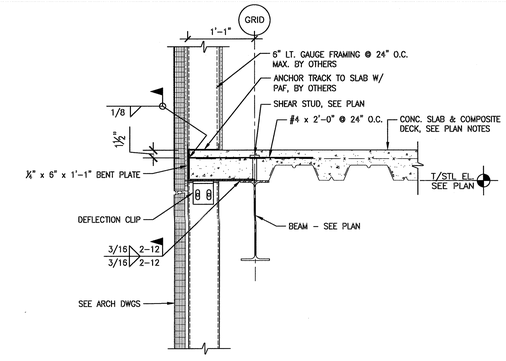
6 S3.2 Slab Edge @ Opening - 2nd Floor

Scale: 1" = 1'-0"



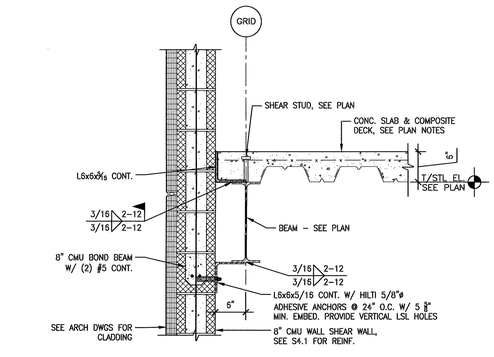
7 S3.2 Section - 2nd Floor Exterior

Scale: 1" = 1'-0"



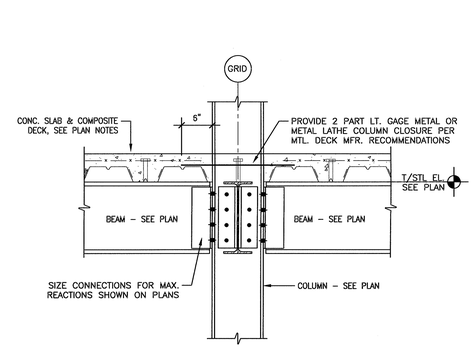
8 S3.2 Section - Exterior Stud Wall @ Floor

Scale: 1" = 1'-0"



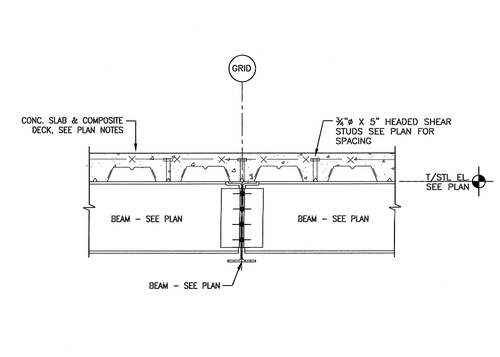
9 S3.2 Section - Masonry CMU Shearwall

Scale: 1" = 1'-0"



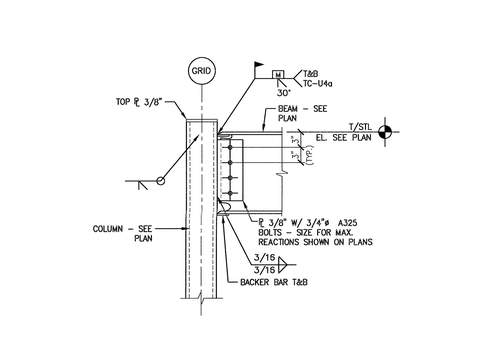
10 S3.2 Typical Section - Composite Floor @ Column

Scale: 1" = 1'-0"



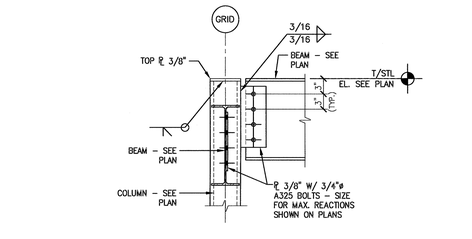
11 S3.2 Typical Section - Composite Floor

Scale: 1" = 1'-0"



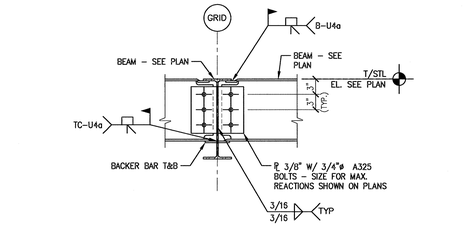
12 S3.2 Typical Section - Moment Connection @ Column

Scale: 1" = 1'-0"



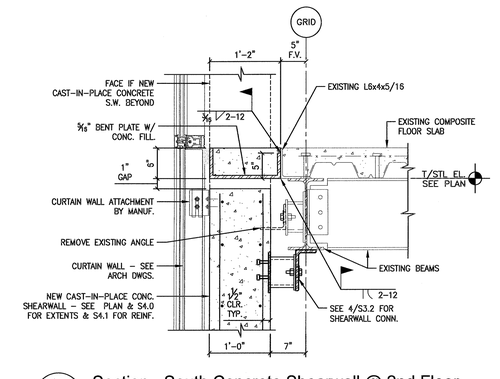
13 S3.2 Typical Section - Beam to Column Connection

Scale: 1" = 1'-0"



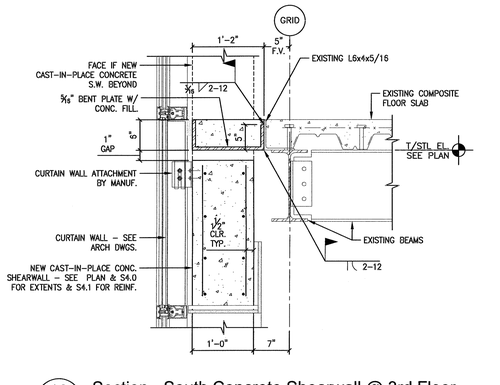
14 S3.2 Typical Section - Moment Connection @ Beam

Scale: 1" = 1'-0"



15 S3.2 Section - South Concrete Shearwall @ 2nd Floor

Scale: 1" = 1'-0"



16 S3.2 Section - South Concrete Shearwall @ 3rd Floor

Scale: 1" = 1'-0"

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NORTH CAROLINA PROFESSIONAL SEAL 26967 ENGINEER JOHN R. TROUTMAN
10-23-19

Brunswick County Courthouse Additions & Renovations

Bolivia, NC

Construction Drawings
September 23, 2019

Revisions:

Framing Sections & Details

S3.2

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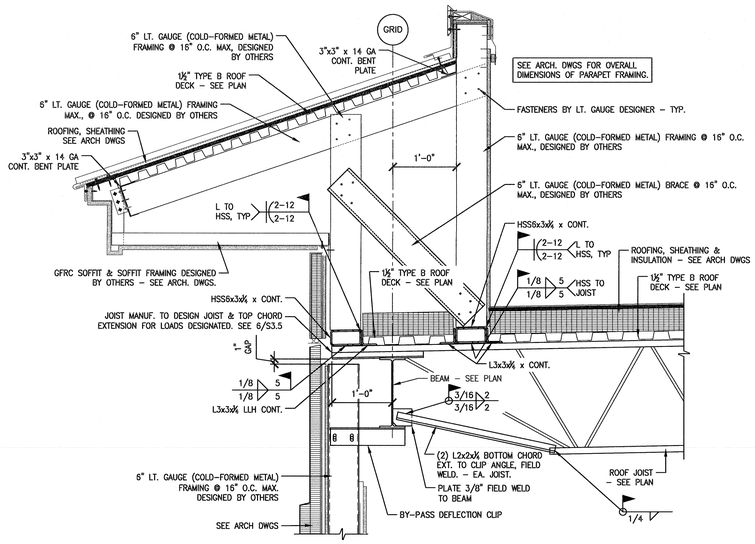
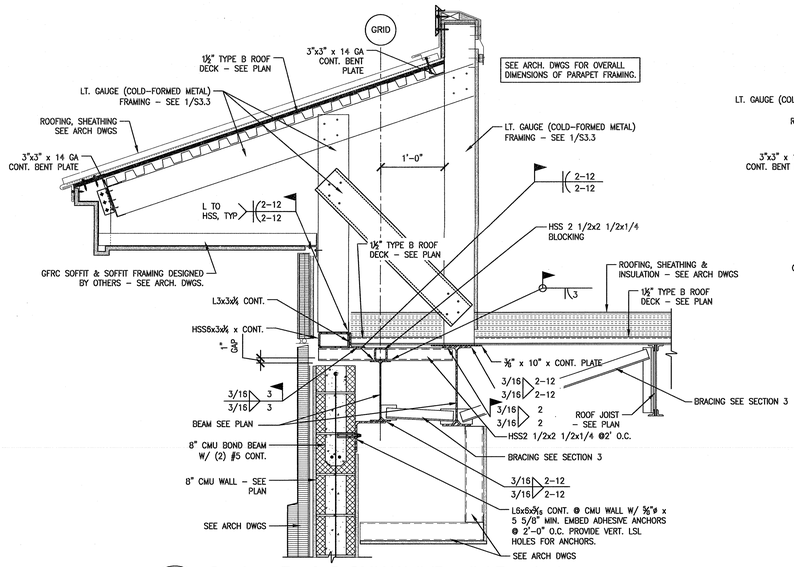


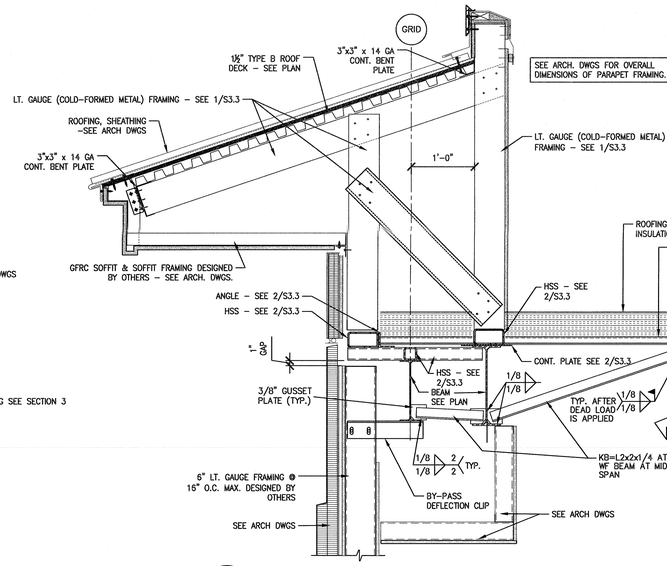
1 S3.3 Section - Roof @ Stud Wall (Perpendicular Framing)

Scale: 1" = 1'-0"



2 S3.3 Section - Roof @ CMU Wall (Parallel Framing)

Scale: 1" = 1'-0"



3 S3.3 Section - Roof @ Stud Wall (Parallel Framing)

Scale: 1" = 1'-0"

4 S3.3 Section - Roof @ CMU Wall (Perpendicular Framing)

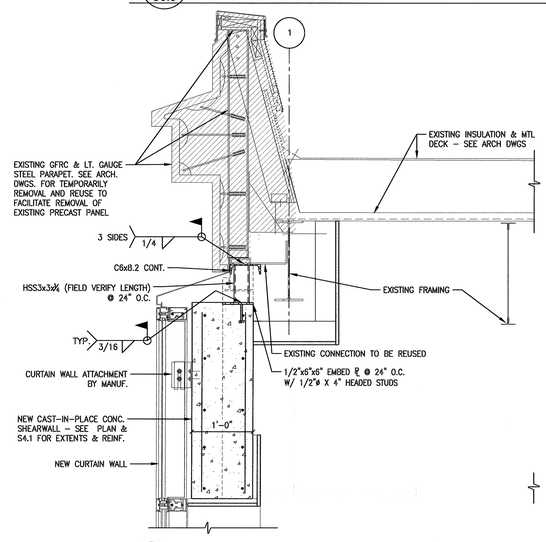
Scale: 1" = 1'-0"

5 S3.3 Section - Roof Existing to New @ New Conc. S.W.

Scale: 1" = 1'-0"

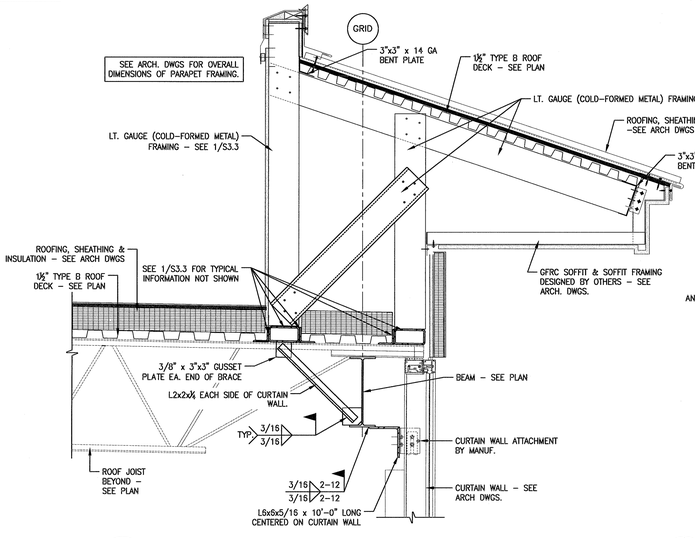
6 S3.3 Section - Roof Existing to New @ Existing Precast

Scale: 1" = 1'-0"



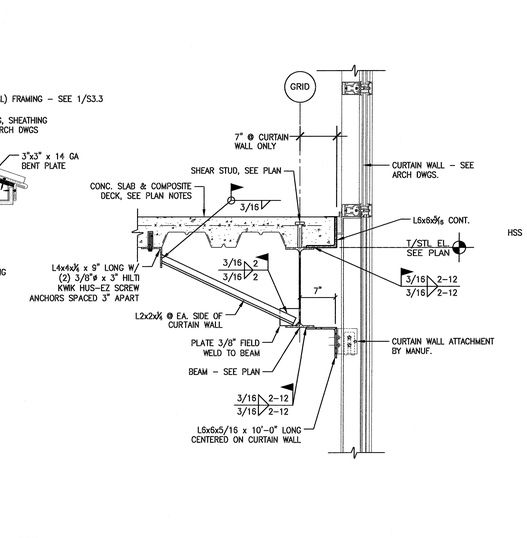
7 S3.3 Section - Roof @ Curtain Wall - Grid 1

Scale: 1" = 1'-0"



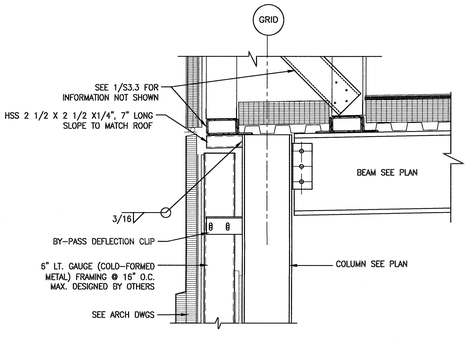
8 S3.3 Section - Curtain Wall @ Roof Grid 23

Scale: 1" = 1'-0"



9 S3.3 Section - Curtain Wall @ 2nd & 3rd Floor Grid 23

Scale: 1" = 1'-0"



10 S3.3 Section - HSS Stub At Col. Grid 23

Scale: 1" = 1'-0"

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NORTH CAROLINA PROFESSIONAL SEAL 29781 ENGINEER CHRISTOPHER R. TROUTMAN
10-24-2019

Brunswick County Courthouse Additions & Renovations

Bolivia, NC

Construction Drawings
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Revisions:

Framing Sections & Details

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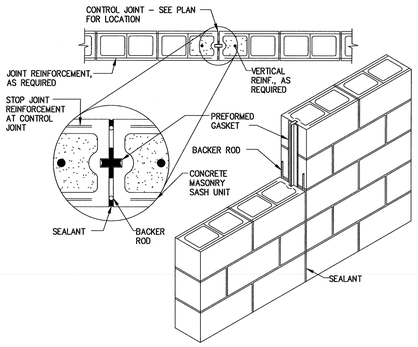
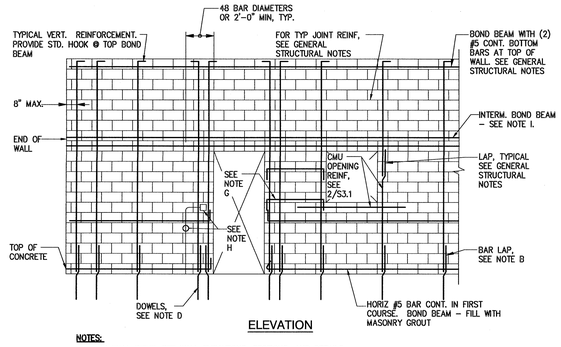


1 S3.4 CMU Wall Control Joint Detail

Not To Scale



ELEVATION

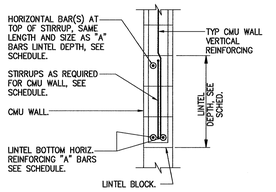
NOTES:

A. FOR WALL REINF, SEE WALL ELEVATIONS, SECTIONS, AND DETAILS.
FOR MINIMUM REINF REQUIREMENTS, SEE GENERAL STRUCTURAL NOTES.
B. LAP VERTICAL REINF WITH WALL DOWELS. LAP LENGTH FOR VERT BARS SHALL BE PER GENERAL NOTES, UNO & LAP SPLICES SCHEDULE 5/S3.4.
C. STAGGER SPLICES IN ADJACENT HORIZONTAL BARS IN THE SAME COURSE BY 2'-0".
D. PROVIDE DOWEL BARS IN FOUNDATION TO MATCH ALL VERTICAL REINF.
E. FOR REINFORCING AT WALL INTERSECTIONS AND CORNERS, SEE DETAIL 4/S3.4.
F. SEE 3/S3.4 FOR LINTEL SCHEDULE & OPENING REINF.
G. PROVIDE A STANDARD 90° HOOK EACH END ON ANY HORIZ BAR BETWEEN OPENINGS, CONTROL JOINTS, OR CORNERS LESS THAN 6'-0" IN LENGTH.
H. DO NOT PLACE VERTICAL CONDUIT IN THE SAME CELL AS VERTICAL REINFORCING.
I. PROVIDE 8" INTERMEDIATE BOND BEAMS AT 4'-0" O.C. VERTICALLY, MAX. W/ (1) #5 CONT. BOT.; FILL WITH MASONRY GROUT. HOOK BAR ENDS AT INTERSECTING OPENINGS.

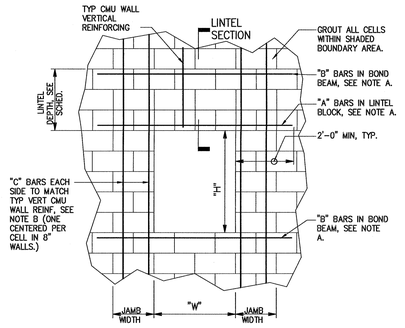
2 S3.4 CMU Wall Reinf. Elevation

Not To Scale

CMU OPENING LINTEL REINF SCHEDULE						
CMU WALLS						
W	LINTEL DEPTH	STIRRUP SIZE, SPG	"A" BARS	"B" BARS	"C" BARS	JAMB WIDTH
< 2'-8"	8"	-	2-#5	-	1	8"
>2'-8"< 4'-0"	8"	-	2-#5	1-#5	1	8"
>4'-0"< 6'-0"	8"	-	2-#5	1-#5	4	16"
>6'-0"< 8'-6"	24"	-	2-#6	2-#5	4	16"



LINTEL SECTION



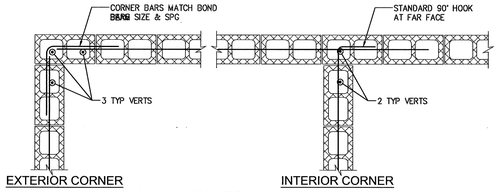
LINTEL ELEVATION

NOTES:

A. USE BAR QUANTITIES AND SIZES GIVEN IN LINTEL SCHEDULE UNLESS OTHER WISE NOTED ON DRAWINGS.
B. EXTEND "C" BARS 48 BAR DIAMETERS OR 2'-0" MINIMUM BEYOND TOP AND BOTTOM OF OPENING EXCEPT THAT WHEN "H" OR "W" EXCEEDS 2'-0", LAP LENGTH FOR VERT BARS SHALL BE PER GENERAL NOTES, UNO.
C. STAGGER SPLICES IN ADJACENT HORIZONTAL BARS IN THE SAME COURSE BY '-0".
D. PROVIDE DOWEL BARS IN FOUNDATION TO MATCH ALL VERTICAL REINF.

3 S3.4 CMU Wall Reinf. Lintel Detail

Not To Scale



SINGLE MAT PLAN

NOTES:

A. SEE GENERAL STRUCTURAL NOTES FOR LAP REQUIREMENTS.
B. PROVIDE A STANDARD 90° HOOK EACH END ON ANY HORIZONTAL BAR BETWEEN OPENINGS, CONTROL JOINTS, OR CORNERS LESS THAN 6'-0" IN LENGTH.

4 S3.4 CMU Wall Reinf. Typ. Wall Corners

Not To Scale

CMU REINFORCING LAP SPLICE & DEVELOPMENT LENGTHS							
SIZE	BAR SIZE						
	#3	#4	#5	#6	#7	#8	#9
8" CMU	12"	12"	19"	37"	51"	M	M

NOTES:

A. f'm = 2000 psi.
B. REBAR IS ASSUMED TO BE UNCOATED (NO EPOXY COATING).
C. REBAR IS LOCATED IN CENTER OF CELL.
D. 'M' DENOTED MECHANICAL BAR SPLICE IS REQUIRED. SPLICE SHALL DEVELOP 125% OF THE SPECIFIED YIELD STRENGTH OF THE BAR IN TENSION OR COMPRESSION.

5 S3.4 CMU Lap Splice Schedule

Not To Scale

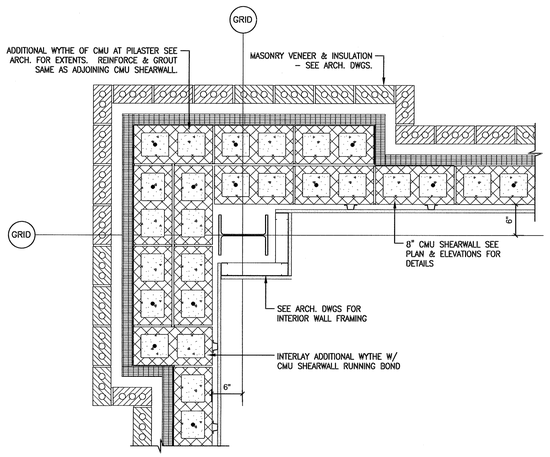
LOOSE LINTEL SCHEDULE			
NO SUPERIMPOSED LOADS	SYM	SECTION	DESCRIPTION
	L1	BRICK; LOOSE LINTEL (H.D. GALV.)	L4 X 3 1/2 X 5/16 (LLV) 0'-0" TO 4'-0"
	L2	BRICK; LOOSE LINTEL (H.D. GALV.)	L5 X 3 1/2 X 5/16 (LLV) 4'-0" TO 8'-0"
	L3	BRICK; LOOSE LINTEL (H.D. GALV.)	L6 X 4 X 3/8 (LLV) 8'-0" TO 10'-0"

NOTES:

1. ALL ANGLES SHALL SPAN MASONRY VENEER OPENING + 8" SIDE.
2. COORDINATE LOCATION, MASONRY VENEER W/ ARCHITECTURAL PLAN. SIZE LINTELS BY THIS SCHEDULE.
3. FOR OPENINGS LARGER THAN 10'-0" SEE STRUCTURAL FRAMING PLAN FOR SIZE.

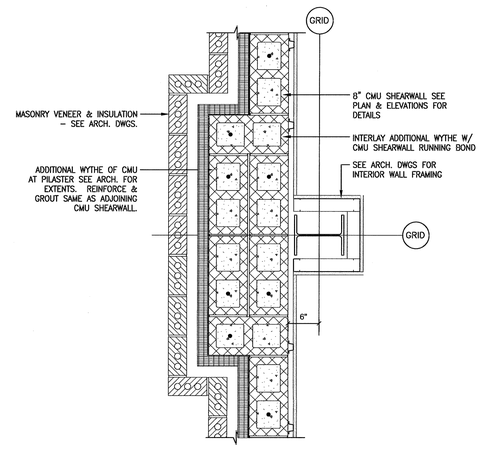
6 S3.4 Loose Lintel Schedule

Not To Scale



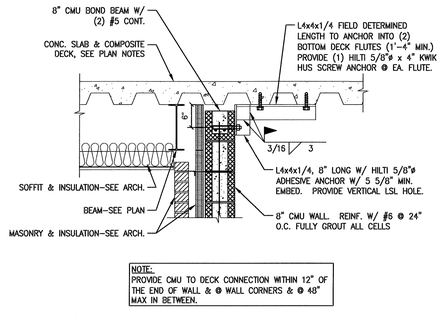
7 S3.4 CMU Pilaster Corner Detail

Not To Scale



8 S3.4 CMU Pilaster Straight Wall Detail

Not To Scale



NOTE:
PROVIDE CMU TO DECK CONNECTION WITHIN 12" OF THE END OF WALL & @ WALL CORNERS & @ 48" MAX IN BETWEEN.

9 S3.4 CMU To Deck Connection @ Entrance

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

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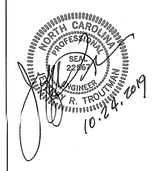

Brunswick County Courthouse Additions & Renovations

Bolivia, NC

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September 23, 2019

Revisions:

Masonry Section & Details

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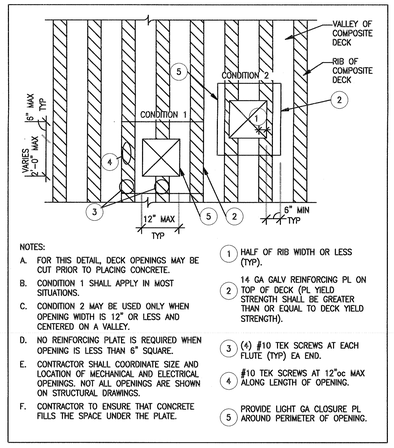


NOTES:

A. FOR THIS DETAIL, DECK OPENINGS MAY BE CUT PRIOR TO PLACING CONCRETE.

B. CONDITION 1 SHALL APPLY IN MOST SITUATIONS.

C. CONDITION 2 MAY BE USED ONLY WHEN OPENING WIDTH IS 12" OR LESS AND CENTERED ON A VALLEY.

D. NO REINFORCING PLATE IS REQUIRED WHEN OPENING IS LESS THAN 6" SQUARE.

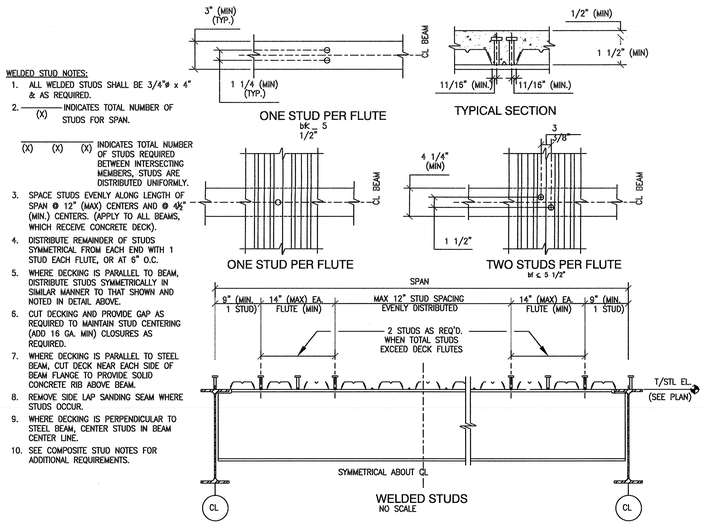
E. CONTRACTOR SHALL COORDINATE SIZE AND LOCATION OF MECHANICAL AND ELECTRICAL OPENINGS. NOT ALL OPENINGS ARE SHOWN ON STRUCTURAL DRAWINGS.

F. CONTRACTOR TO ENSURE THAT CONCRETE FILLS THE SPACE UNDER THE PLATE.

1. HALF OF RIB WIDTH OR LESS (TYP).
2. 14 GA GALV REINFORCING PL ON TOP OF DECK (PL YIELD STRENGTH SHALL BE GREATER THAN OR EQUAL TO DECK YIELD STRENGTH).
3. (4) #10 TEK SCREWS AT EACH FLUTE (TYP) EA END.
4. #10 TEK SCREWS AT 12"oc MAX ALONG LENGTH OF OPENING.
5. PROVIDE LIGHT GA CLOSURE PL AROUND PERIMETER OF OPENING.

1 S3.5 Unframed Composite Floor Openings

Not To Scale



WELDED STUD NOTES:

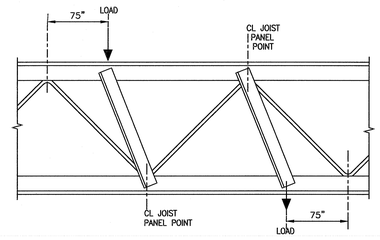
1. ALL WELDED STUDS SHALL BE 3/4"ø x 4" & AS REQUIRED.
2. (X) — INDICATES TOTAL NUMBER OF STUDS FOR SPAN.

(X) (X) (X) INDICATES TOTAL NUMBER OF STUDS REQUIRED BETWEEN INTERSECTING MEMBERS, STUDS ARE DISTRIBUTED UNIFORMLY.

3. SPACE STUDS EVENLY ALONG LENGTH OF SPAN @ 12" (MAX) CENTERS AND @ 4½" (MIN.) CENTERS. (APPLY TO ALL BEAMS, WHICH RECEIVE CONCRETE DECK).
4. DISTRIBUTE REMAINDER OF STUDS SYMMETRICAL FROM EACH END WITH 1 STUD EACH FLUTE, OR AT 6" O.C.
5. WHERE DECKING IS PARALLEL TO BEAM, DISTRIBUTE STUDS SYMMETRICALLY IN SIMILAR MANNER TO THAT SHOWN AND NOTED IN DETAIL ABOVE.
6. CUT DECKING AND PROVIDE GAP AS REQUIRED TO MAINTAIN STUD CENTERING (ADD 16 GA. MIN) CLOSURES AS REQUIRED.
7. WHERE DECKING IS PARALLEL TO STEEL BEAM, CUT DECK NEAR EACH SIDE OF BEAM FLANGE TO PROVIDE SOLID CONCRETE RIB ABOVE BEAM.
8. REMOVE SIDE LAP SANDING SEAM WHERE STUDS OCCUR.
9. WHERE DECKING IS PERPENDICULAR TO STEEL BEAM, CENTER STUDS IN BEAM CENTER LINE.
10. SEE COMPOSITE STUD NOTES FOR ADDITIONAL REQUIREMENTS.

2 S3.5 Composite Beam Stud Connection Detail and Notes

Not To Scale



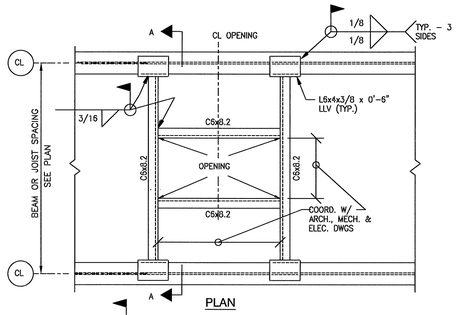
NOTES:

1. IF A CONCENTRATED LOAD OF 100 POUNDS OR MORE IS LOCATED 5" OR MORE FROM A PANEL POINT, WELD ANGLE 1-1/2"x1-1/2"x1/8" TO EACH SIDE OF TOP AND BOTTOM CHORDS.
2. THE TRADE CONTRACTOR REQUIRING SUPPORT FOR THE LOAD SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING THE REQUIRED ANGLES AT THE DIRECTION OF THE GENERAL CONTRACTOR.

JOIST REINFORCEMENT - POINT LOADS

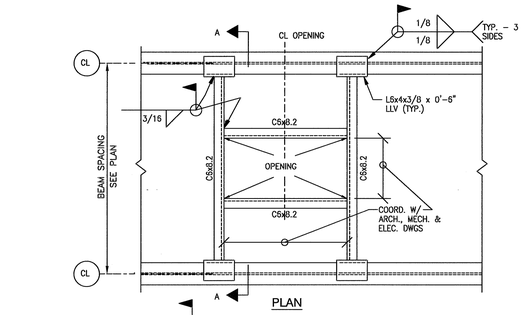
3 S3.5 Typical Joist Reinforcement

Not To Scale



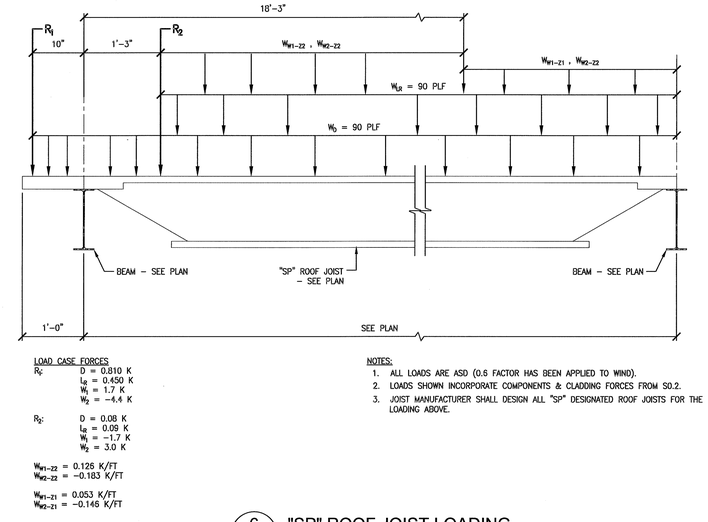
4 S3.5 Typical Opening Detail @ Roof

Not To Scale



5 S3.5 Typical Opening Detail @ Floor

Not To Scale



LOAD CASE FORCES

R_1: D = 0.810 K, L_R = 0.450 K, W_1 = 1.7 K, W_2 = -4.4 K

R_2: D = 0.08 K, L_R = 0.09 K, W_1 = -1.7 K, W_2 = 3.0 K

W_{W1-Z2} = 0.125 K/FT, W_{W2-Z2} = -0.183 K/FT

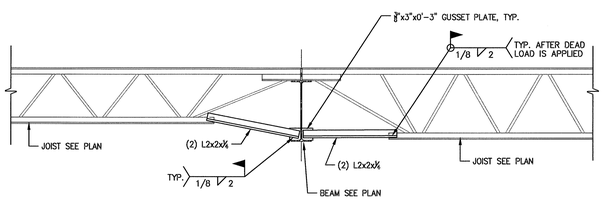
W_{W1-Z1} = 0.053 K/FT, W_{W2-Z1} = -0.145 K/FT

NOTES:

1. ALL LOADS ARE ASD (0.6 FACTOR HAS BEEN APPLIED TO WIND).
2. LOADS SHOWN INCORPORATE COMPONENTS & CLADDING FORCES FROM S0.2.
3. JOIST MANUFACTURER SHALL DESIGN ALL "SP" DESIGNATED ROOF JOISTS FOR THE LOADING ABOVE.

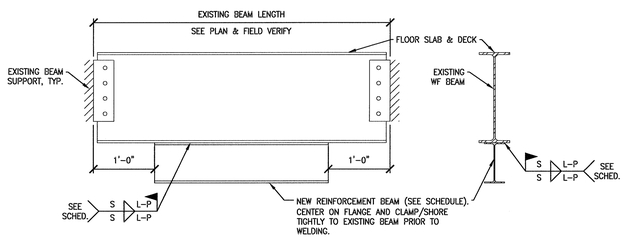
6 S3.5 "SP" ROOF JOIST LOADING

Not To Scale



7 S3.5 Bottom Flange Brace Detail (BCX)

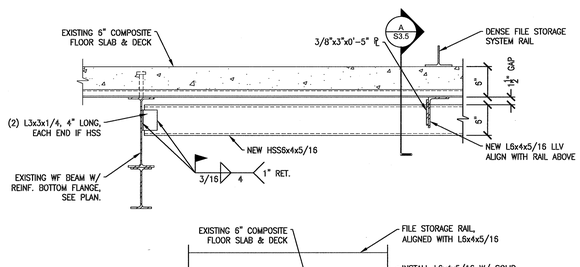
Not To Scale



BEAM REINFORCEMENT SCHEDULE			
REINFORCING DESIGNATION (SEE PLANS)	REINFORCEMENT BEAM	WELD	
		S	L–P
A	W5x15	3/16	2–12
B	W5X20	3/16	3–12
C	W4X13	3/16	3–12

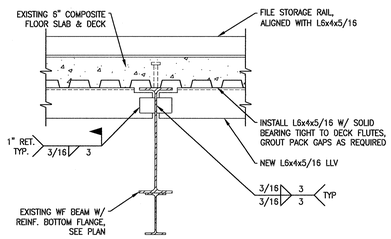
8 S3.5 WF Beam Reinforcement

Not To Scale



9 S3.5 Floor Deck Reinforcement

Not To Scale



10 S3.5 Floor Deck Reinf. Connection Detail

Not To Scale

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 27567 ENGINEER JAMES R. TROUTMAN 10-24-2019

Brunswick County Courthouse Additions & Renovations

Bolivia, NC

Construction Drawings
September 23, 2019

Revisions:

Misc Framing Sections & Details

S3.5

13 of 16

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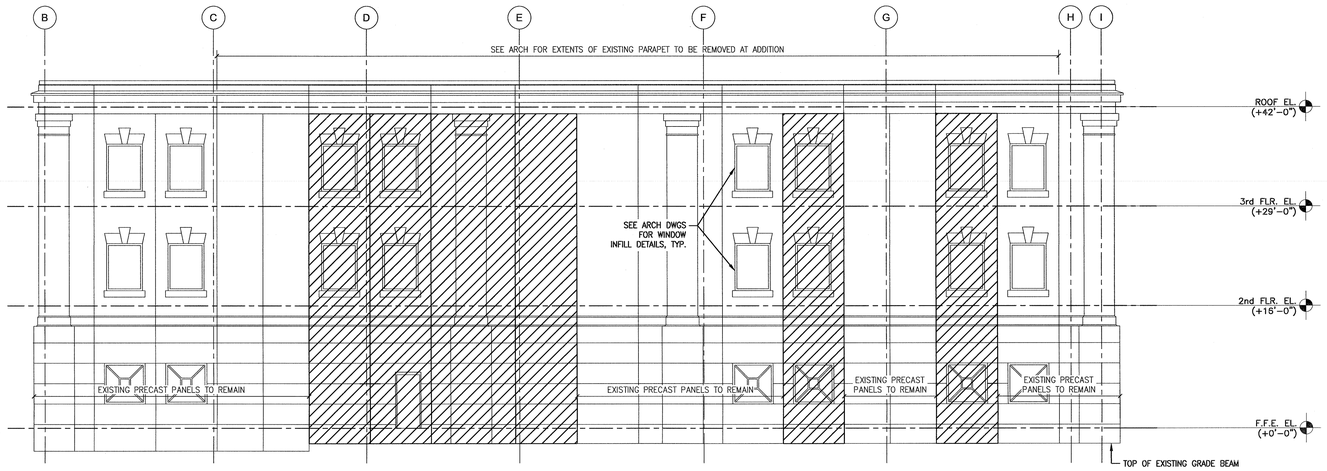
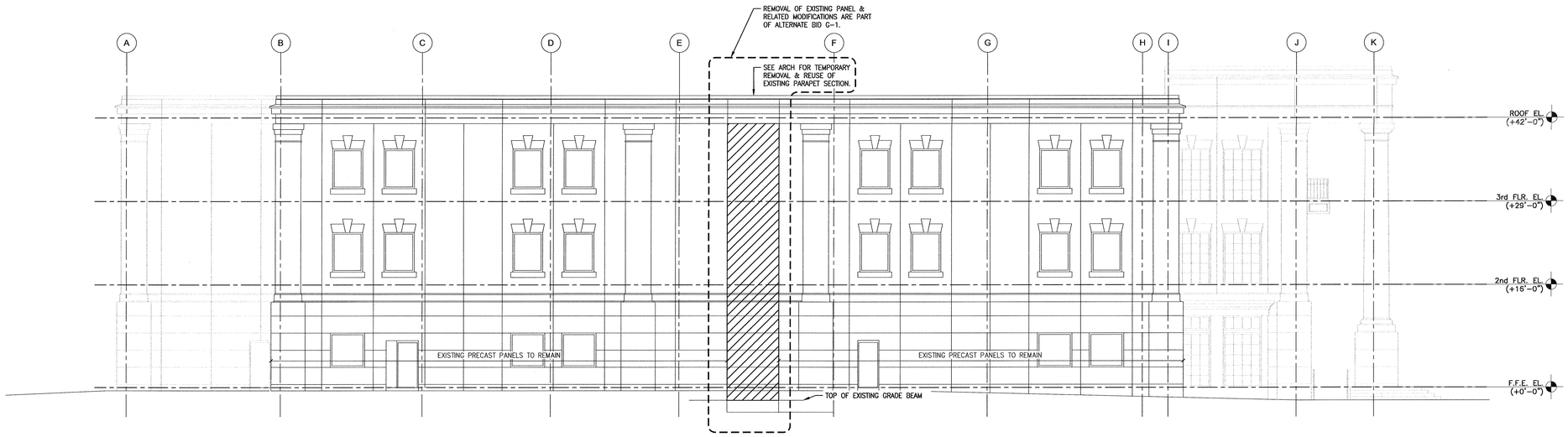


1 / S4.0 Grid 20 - Existing Precast Elevation - Panel Removal

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

INDICATES EXISTING PRESTRESSED PRECAST CONCRETE PANEL TO BE REMOVED – SEE ARCH.



2 / S4.0 Grid 1 - Existing Precast Elevation - Panel Removal

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

INDICATES EXISTING PRESTRESSED PRECAST CONCRETE PANEL TO BE REMOVED – SEE ARCH.

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NORTH CAROLINA PROFESSIONAL SEAL 22567 ENGINEER CASEY A. TROUTMAN 10.24.2019

Brunswick County Courthouse Additions & Renovations

Bolivia, NC

Construction Drawings
September 23, 2019

Revisions:

Existing Precast Panel Elevations

S4.0

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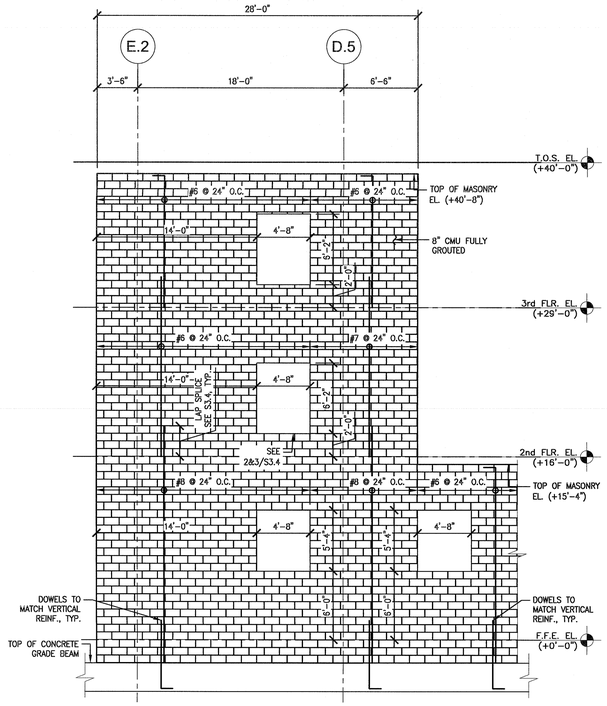
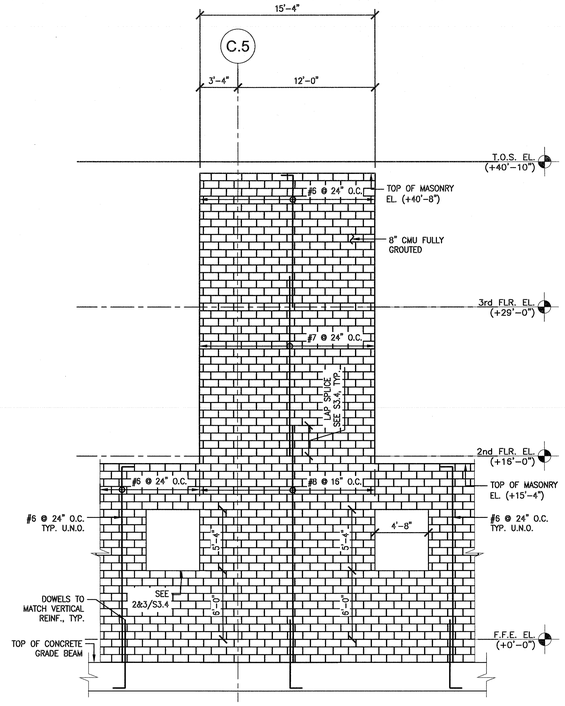


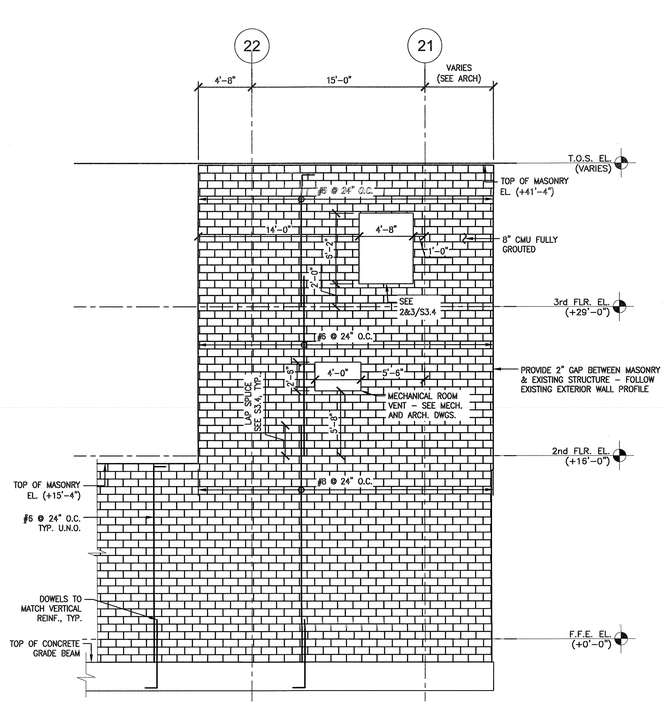
1 S4.1 Elevation Grid 23 - SW1 - Multistory CMU Shearwall

Scale: 3/16" = 1'-0"



2 S4.1 Elevation Grid 23 - SW2 - Multistory CMU Shearwall

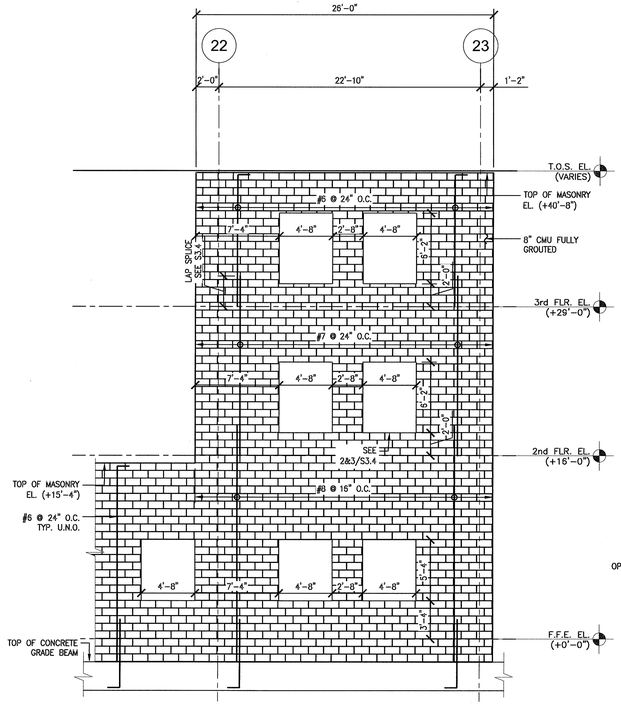
Scale: 3/16" = 1'-0"



3 S4.1 Elevation Grid B.2 - SW3 - Multistory CMU Shearwall

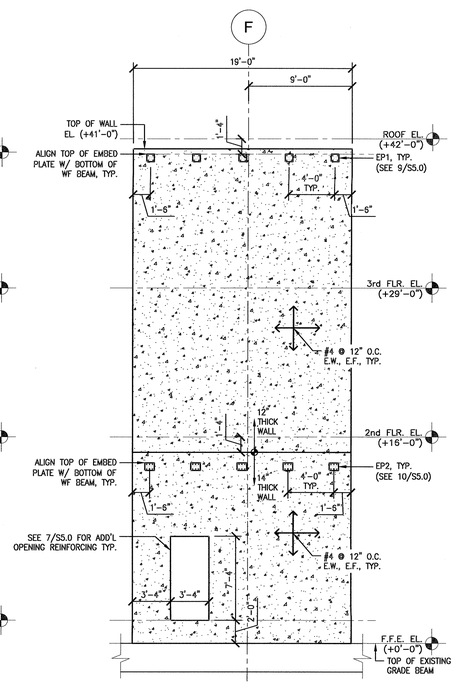
Scale: 3/16" = 1'-0"

CONCRETE & MASONRY SHEARWALL NOTE: CONTRACTOR SHALL VERIFY & COORDINATE ALL OPENING LOCATIONS & DIMENSIONS W/ ARCHITECTURAL DRAWINGS PRIOR TO SHOP DRAWING PREPARATION & ORDERING MATERIALS. NOTIFY ARCHITECT & ENGINEER OF RECORD OF ANY DISCREPANCY.



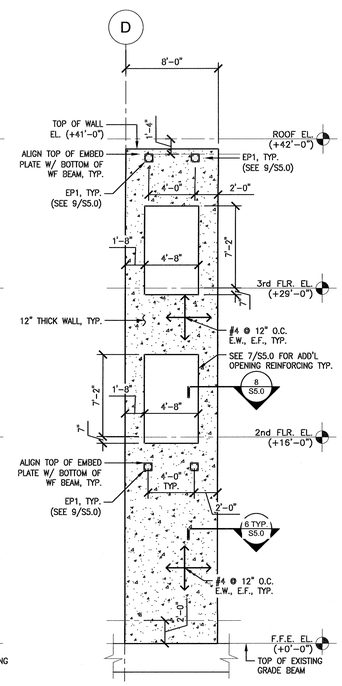
4 S4.1 Elevation Grid G.2 - SW4 - Multistory CMU Shearwall

Scale: 3/16" = 1'-0"



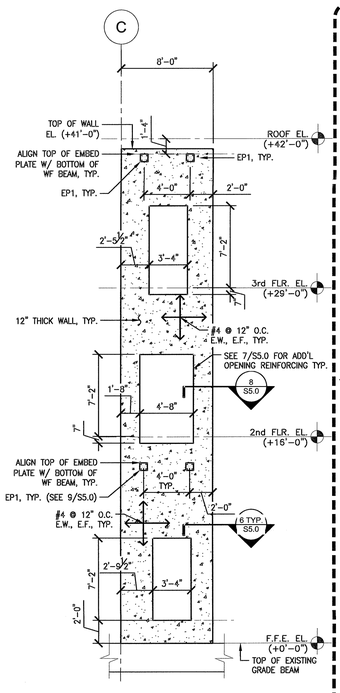
5 S4.1 Elevation Grid 20 - SW5 - Concrete Shearwall

Scale: 3/16" = 1'-0"



6 S4.1 Elevation Grid 20 - SW6 - Concrete Shearwall

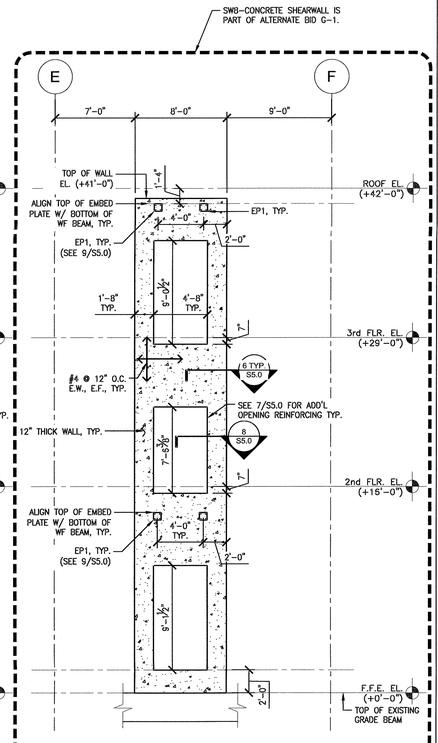
Scale: 3/16" = 1'-0"



7 S4.1 Elevation Grid 20 - SW7 - Concrete Shearwall

Scale: 3/16" = 1'-0"

SW8-CONCRETE SHEARWALL IS PART OF ALTERNATE BID G-1.



5 S4.1 Elevation Grid 1 - SW8 - Concrete Shearwall

Scale: 3/16" = 1'-0"

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NORTH CAROLINA PROFESSIONAL SEAL 24561 ENGINEER JEFFREY R. TROUTMAN
10.24.19

Brunswick County Courthouse Additions & Renovations

Bolivia, NC

Construction Drawings
September 23, 2019

Revisions:

Shearwall Elevations

S4.1

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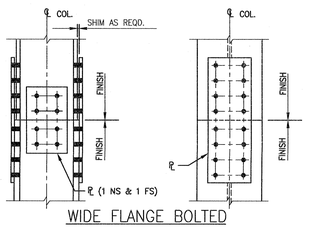
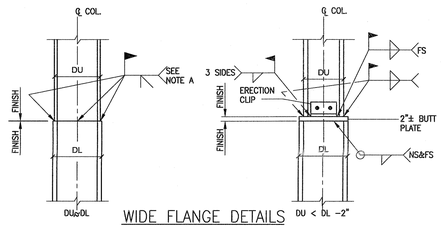
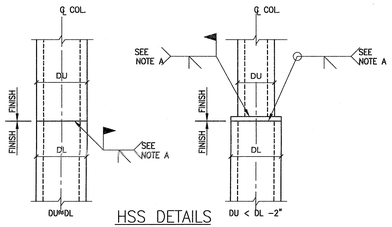


WIDE FLANGE BOLTED



WIDE FLANGE DETAILS

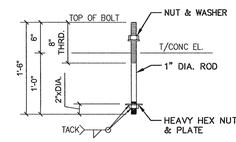


HSS DETAILS

1 S5.0 Detail - Column Splices

Not To Scale

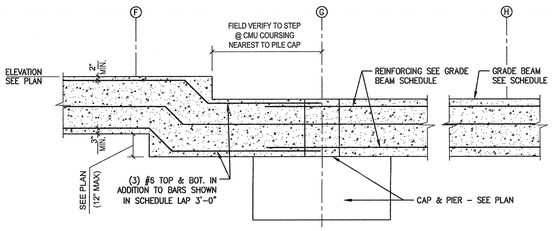
NOTE:
A. USE FILLET WELDS OR PARTIAL PENETRATIONS WELD WHENEVER POSSIBLE.



TYPE 1

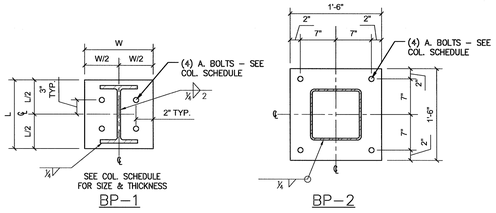
2 S5.0 Detail - Anchor Bolt

Scale: 1" = 1'-0"



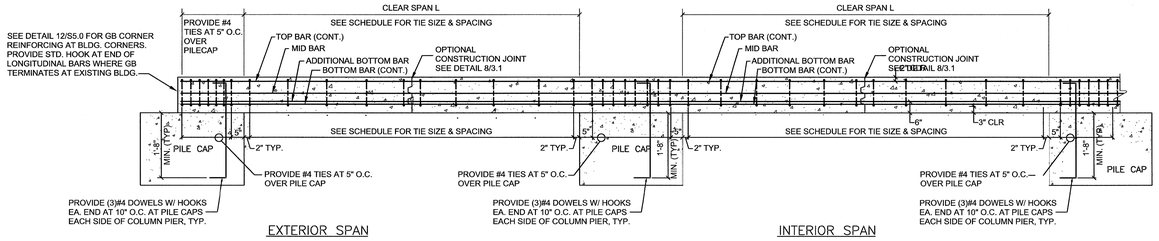
3 S5.0 Elevation - Grade Beam Step

Not To Scale



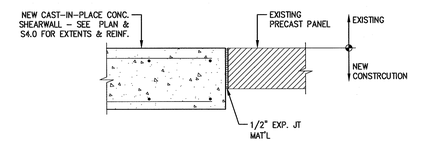
4 S5.0 Detail - Base Plates

Scale: 1" = 1'-0"



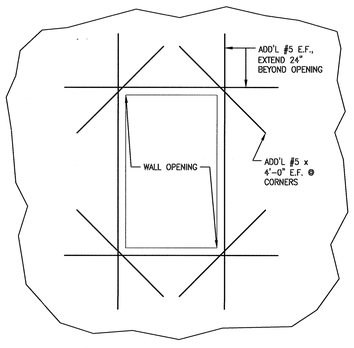
5 S5.0 Detail - Typical Grade Beam Elevation

Not To Scale



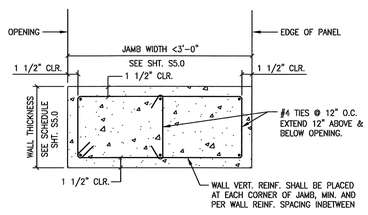
6 S5.0 New Concrete Shearwall @ Existing Precast

Scale: 1" = 1'-0"



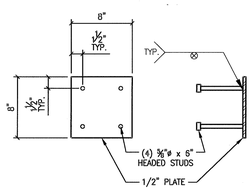
7 S5.0 Concrete Wall Opening Additional Reinf.

Scale: 1" = 1'-0"



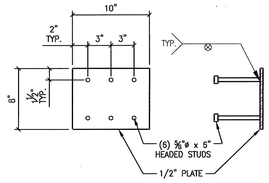
8 S5.0 Concrete Shearwall Jamb Detail

Scale: 1" = 1'-0"



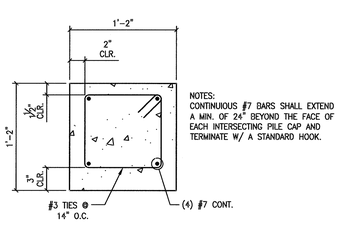
9 S5.0 EP1 - Embed Plate Detail

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



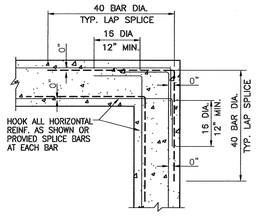
10 S5.0 EP2 - Embed Plate Detail

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



11 S5.0 Tie Beam (TB-1) - Detail

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



12 S5.0 Concrete Grade Beam Corner Bar Detail

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

PIER SCHEDULE		
MARK	P1	P2
SIZE	2'-0" x 3'-0"	2'-0" x 2'-0"
DOWELS	(12) #8	(8) #8
PIER TIES	#4 @ 8" O.C.	#4 @ 8" O.C.

GRADE BEAM SCHEDULE												
MARK	SIZE (INCHES)		BOTTOM BARS				TOP BARS		MID BARS		#4 STIRRUPS SPACED @ EACH END
			CONTIN.		ADDITIONAL		CONTIN.		CONTIN.		
	B	D	NO.	SIZE	NO.	SIZE	NO.	SIZE	NO.	SIZE	
GB1	24	30	6	#6	–	–	(4)	#6	2	#7	13" O.C.
GB2	24	30	6	#7	–	–	(6)	#9	2	#7	13" O.C.
GB3	24	30	6	#8	6	#9	(6)	#9	2	#7	5" O.C.

COLUMN SCHEDULE			
MARK	C1	C2	C3
COORDINATE TOP OF COLUMN WITH T/STL. SEE S1.4			
3RD FLOOR TOS EL. 28'-6" AFF	W10x33	W10x33	HSS8x8x3/8
SPLICE LOCATIONS ARE SUGGESTED ONLY, & SHOULD BE LOCATED BY FABRICATOR/ CONTRACTOR AS REQ'D FOR ERECTION. 17'-0" AFF	W10x33	W10x33	HSS8x8x3/8
2ND FLOOR TOS EL. 15'-6" AFF	W10x33	W10x39	HSS8x8x3/8
1ST FLOOR FIN. FLR. EL. 0'-0" AFF			
BOTTOM OF BASE PLATE (BELOW FIN. FL. EL.) *	•	•	•
BASE PLATES	℄1"x12"x12" BP-1	℄1"x12"x12" BP-1	℄1"x18"x18" BP-2
ANCHOR BOLTS	TYPE 1	TYPE 1	TYPE 1

* COORDINATE WITH SHEET S1.0 TO BE 1 1/2" ABOVE PIER ELEVATION.

NOTE: WORK THIS DRAWING W/ ALL STRUCTURAL DRAWINGS IN SET.

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NORTH CAROLINA PROFESSIONAL SEAL 22567 ENGINEER JEFFREY R. TROUTMAN
10.24.2019

Brunswick County Courthouse Additions & Renovations

Bolivia, NC

Construction Drawings
September 23, 2019

Revisions:

Column Schedule, Lintel Schedule, & Details

S5.0

16 of 16

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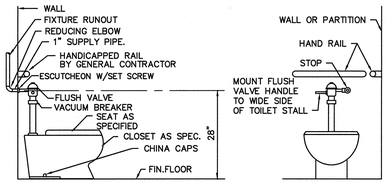
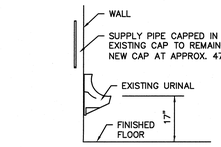
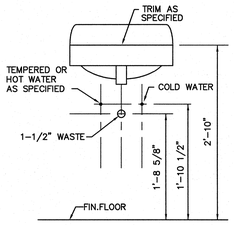


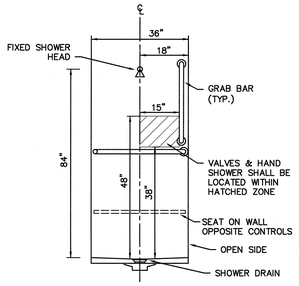
A P0.1 ADULT ADA WATER CLOSET (WC–1) DETAIL
NO SCALE



B P0.1 ADULT ADA URINAL (U–1) ROUGH–IN DETAIL
NO SCALE



C P0.1 ADULT ADA LAVATORY (L–1) ROUGH–IN ELEVATION
NO SCALE



D P0.1 ADULT ADA TRANSFER SHOWER (SH–1) DETAIL
NO SCALE

PLUMBING FIXTURE SCHEDULE

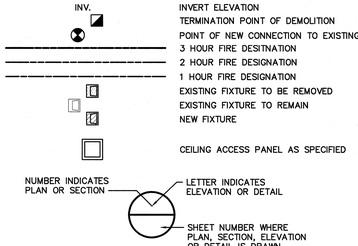
SYMBOL	DESCRIPTION	ROUGH–IN SIZES			REMARKS
		WASTE	C.W.	H.W.	
WC–1	WATER CLOSET–ADA	4"	1–1/4"	–	DETAIL A/P0.1
WC–2	WATER CLOSET–STANDARD	4"	1–1/4"	–	
WC–3	WATER CLOSET/LAVATORY–PENAL	4"	1–1/4"	–	
U–1	URINAL–ADA	2"	–	–	DETAIL B/P0.1
L–1	LAVATORY–ADA	1–1/2"	1/2"	1/2"	DETAIL C/P0.1
L–2	COUNTER LAVATORY	1–1/2"	1/2"	1/2"	
SH–1	ADA SHOWER	2"	1/2"	1/2"	SEE ARCH DETAIL/DET. D/P0.1
EWC–1	ELECTRIC WATER COOLER	1–1/2"	1/2"	–	DUAL HEIGHT/DETAIL E/P0.1
EWC–2	ELECTRIC WATER COOLER	1–1/2"	1/2"	–	DUAL HEIGHT/BOTTLE FILLER/DET. E/P0.1
SK–1	BREAK ROOM SINK	1–1/2"	1/2"	1/2"	
MR–1	MOP RECEPTOR	3"	1/2"	1/2"	DETAIL F/P0.1
CB–1	ICE MAKER CONNECTION BOX	–	1/2"	–	
HB–1	HOSE BIBB	–	1/2"		MOUNT 12" AFF
HB–2	HOSE BIBB IN BOX	–	1/2"		MOUNT 12" AFF
HB–3	WALL HYDRANT	–	3/4"	–	MOUNT 24" AFG
FD–1	FLOOR DRAIN	4"	–	–	
FD–2	FLOOR DRAIN	2"	–	–	
HD–1	HUB DRAIN	3"	–	–	DETAIL G/P0.1

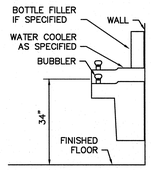
WATER HEATER SCHEDULE

SYMBOL	DESCRIPTION	ROUGH–IN SIZES		TEMP. SETTING	STORAGE CAPACITY	RECOVERY	FUEL	LOAD	ELEC.	LOCATION
		CW	HW							
WH–1	TANK TYPE–ELECTRIC	1–1/4"	1–1/4"	105°F	150 GAL	189 GPH	ELECTRIC	30 kW	480V, 3Ø	MECH 1053

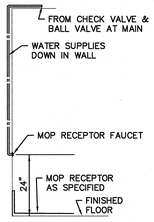
LEGEND

X X X	PIPING TO BE REMOVED (LINE SYMBOL INDICATES SERVICE)
EW E E	EXISTING WASTE PIPING TO REMAIN
EV E E E E	EXISTING VENT PIPING TO REMAIN
ERDL ESD ESD ESD	EXISTING ROOF DRAIN LEADER PIPING TO REMAIN
ECW E E E	EXISTING COLD WATER PIPING TO REMAIN
EHW E	EXISTING HOT WATER PIPING TO REMAIN
EHWR E	EXISTING HOT WATER RETURN PIPING TO REMAIN
EC EC	EXISTING PUMPED CONDENSATE
W	WASTE PIPING BELOW FINISHED FLOOR
V	VENT PIPING
RDL	ROOF DRAIN LEADER
ORDL R R R	OVERFLOW ROOF DRAIN LEADER
CW	COLD WATER PIPING
HW	HOT WATER PIPING
HWR	HOT WATER RETURN PIPING
C C C C C C	CONDENSATE
	BALL/BUTTERFLY VALVE
	BALL/BUTTERFLY VALVE IN VALVE BOX FLUSH WITH GRADE
	BALANCING VALVE
	CHECK VALVE
	SOLENOID VALVE
	VALVE IN RISE
	PIPE ELBOW TURNED DOWN
	PIPE ELBOW TURNED UP
	PIPE TEE TURNED DOWN
	PIPE TEE TURNED UP
	CAP
	UNION
	STRAINER
	DOUBLE CHECK VALVE BACKFLOW PREVENTER
	REDUCED PRESSURE BACKFLOW PREVENTER
'A'	SHOCK ARRESTER, 'A' INDICATES PLUMBING DRAINAGE INSTITUTE STANDARD SIZE
	ASME PRESSURE TEMPERATURE RELIEF VALVE
VTR	VENT THRU ROOF
CO	CLEANOUT
ECO	EXTERIOR CLEANOUT
WCO	WALL CLEANOUT
FCO	FLOOR CLEANOUT
RD	ROOF DRAIN
ORD	OVERFLOW ROOF DRAIN
EXFCO	EXISTING FLOOR CLEANOUT
EXECO	EXISTING EXTERIOR CLEANOUT
EXRD	EXISTING ROOF DRAIN
AFF	ABOVE FINISHED FLOOR
BFF	BELOW FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
BFG	BELOW FINISHED GRADE
INV.	INVERT ELEVATION
	TERMINATION POINT OF DEMOLITION
	POINT OF NEW CONNECTION TO EXISTING
	3 HOUR FIRE DESITNATION
	2 HOUR FIRE DESIGNATION
	1 HOUR FIRE DESIGNATION
	EXISTING FIXTURE TO BE REMOVED
	EXISTING FIXTURE TO REMAIN
	NEW FIXTURE
	CEILING ACCESS PANEL AS SPECIFIED

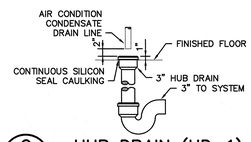




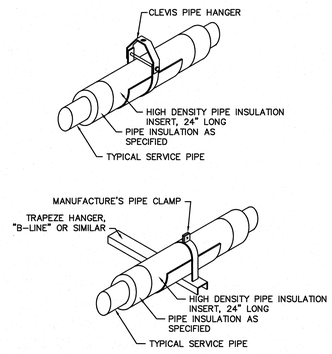
E P0.1 ADULT DUAL HEIGHT ELECTRIC WATER COOLER (EWC–1 & 2) DETAIL
NO SCALE



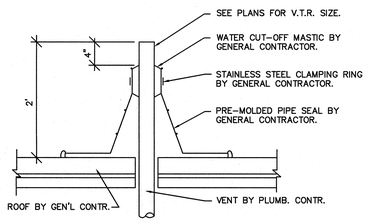
F P0.1 MOP RECEPTOR (MR–1) DETAIL
NO SCALE



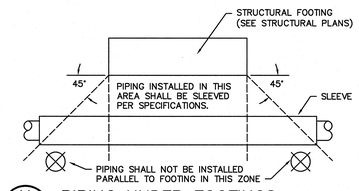
G P0.1 HUB DRAIN (HD–1) DETAIL
NO SCALE



H P0.1 PIPE HANGER DETAILS
NO SCALE



J P0.1 VENT THRU ROOF DETAIL (FLAT ROOF)
NO SCALE



K P0.1 PIPING UNDER FOOTINGS
NO SCALE

GENERAL NOTES:

1. EXISTING INFORMATION IS BASED ON A FIELD SURVEY AND EXISTING PLANS. SOME INFORMATION PRESENTED IS ESTIMATED OR ASSUMED BASED ON EXPERIENCE. CONTRACTOR SHALL FIELD VERIFY CONDITIONS DURING THE COURSE OF WORK AND ALERT THE ARCHITECT AND/OR ENGINEER OF DIFFERENCES BETWEEN FIELD CONDITIONS AND THE DEMOLITION DRAWINGS THAT WILL PREVENT ANY PORTIONS OF THE PLUMBING SCOPE OF WORK FROM BEING INSTALLED AS DESIGNED.

TOTAL CONNECTED LOAD	
WASTE FIXTURE UNITS =	497 F.U.
COLD WATER DEMAND =	127 GPM
HOT WATER DEMAND =	52.5 GPM

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11/1/19

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PLUMBING LEGEND, SCHEDULES, & DETAILS

P0.1

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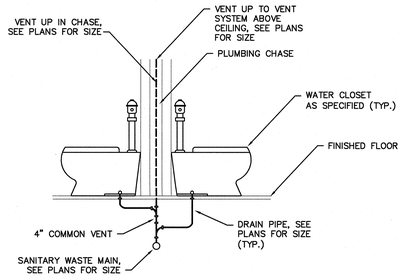
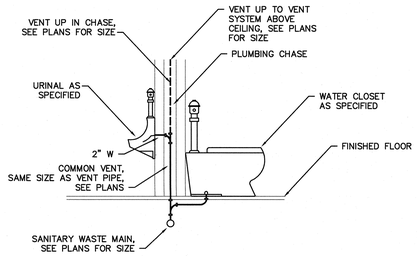
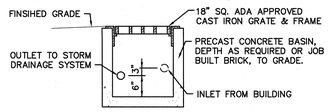
PLUMBING DETAILS



A P0.2 BACK TO BACK WATER CLOSET DETAIL
NO SCALE



B P0.2 BACK TO BACK URINAL & WATER CLOSET VENT DETAIL
NO SCALE



C P0.2 CONDENSATE RELIEF BASIN
NO SCALE

P0.2

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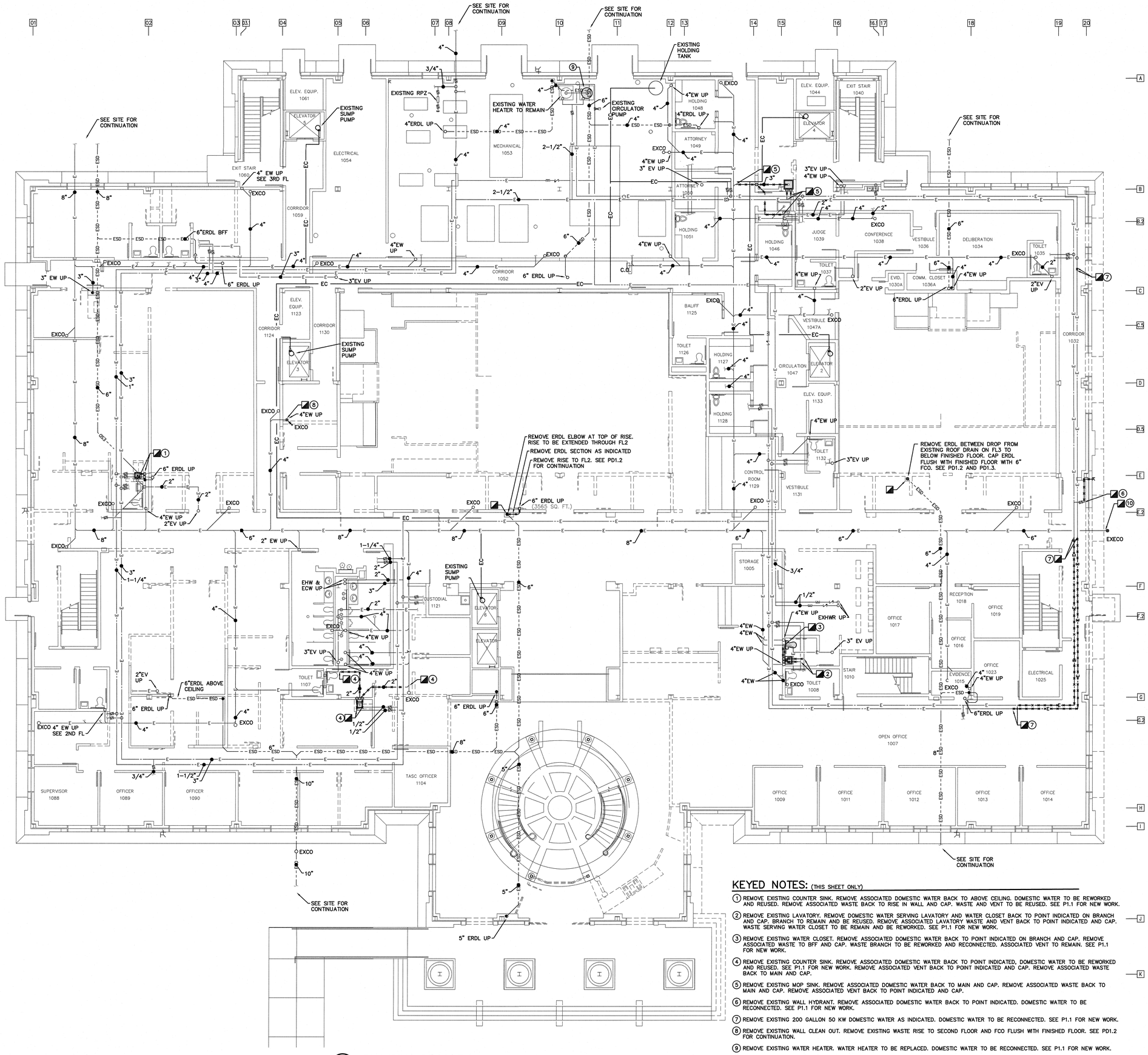

1 PD1.1 PLUMBING DEMOLITION PLAN FIRST FLOOR
SCALE: 1/8" = 1'-0"

KEYED NOTES: (THIS SHEET ONLY)

1. REMOVE EXISTING COUNTER SINK. REMOVE ASSOCIATED DOMESTIC WATER BACK TO ABOVE CEILING. DOMESTIC WATER TO BE REWORKED AND REUSED. REMOVE ASSOCIATED WASTE BACK TO RISE IN WALL AND CAP. WASTE AND VENT TO BE REUSED. SEE P1.1 FOR NEW WORK.
2. REMOVE EXISTING LAVATORY. REMOVE DOMESTIC WATER SERVING LAVATORY AND WATER CLOSET BACK TO POINT INDICATED ON BRANCH AND CAP. BRANCH TO REMAIN AND BE REUSED. REMOVE ASSOCIATED LAVATORY WASTE AND VENT BACK TO POINT INDICATED AND CAP. WASTE SERVING WATER CLOSET TO BE REMAIN AND BE REWORKED. SEE P1.1 FOR NEW WORK.
3. REMOVE EXISTING WATER CLOSET. REMOVE ASSOCIATED DOMESTIC WATER BACK TO POINT INDICATED ON BRANCH AND CAP. REMOVE ASSOCIATED WASTE TO BFF AND CAP. WASTE BRANCH TO BE REWORKED AND RECONNECTED. ASSOCIATED VENT TO REMAIN. SEE P1.1 FOR NEW WORK.
4. REMOVE EXISTING COUNTER SINK. REMOVE ASSOCIATED DOMESTIC WATER BACK TO POINT INDICATED, DOMESTIC WATER TO BE REWORKED AND REUSED. SEE P1.1 FOR NEW WORK. REMOVE ASSOCIATED VENT BACK TO POINT INDICATED AND CAP. REMOVE ASSOCIATED WASTE BACK TO MAIN AND CAP.
5. REMOVE EXISTING MOP SINK. REMOVE ASSOCIATED DOMESTIC WATER BACK TO MAIN AND CAP. REMOVE ASSOCIATED WASTE BACK TO MAIN AND CAP. REMOVE ASSOCIATED VENT BACK TO POINT INDICATED AND CAP.
6. REMOVE EXISTING WALL HYDRANT. REMOVE ASSOCIATED DOMESTIC WATER BACK TO POINT INDICATED. DOMESTIC WATER TO BE RECONNECTED. SEE P1.1 FOR NEW WORK.
7. REMOVE EXISTING 200 GALLON 50 KW DOMESTIC WATER AS INDICATED. DOMESTIC WATER TO BE RECONNECTED. SEE P1.1 FOR NEW WORK.
8. REMOVE EXISTING WALL CLEAN OUT. REMOVE EXISTING WASTE RISE TO SECOND FLOOR AND FCO FLUSH WITH FINISHED FLOOR. SEE PD1.2 FOR CONTINUATION.
9. REMOVE EXISTING WATER HEATER. WATER HEATER TO BE REPLACED. DOMESTIC WATER TO BE RECONNECTED. SEE P1.1 FOR NEW WORK.
10. REMOVE EXISTING EXTERIOR CLEANOUT. CLEANOUT TO BE REPLACED.

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SEPTEMBER 23, 2019

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PLUMBING DEMOLITION PLAN FIRST FLOOR

PD1.1

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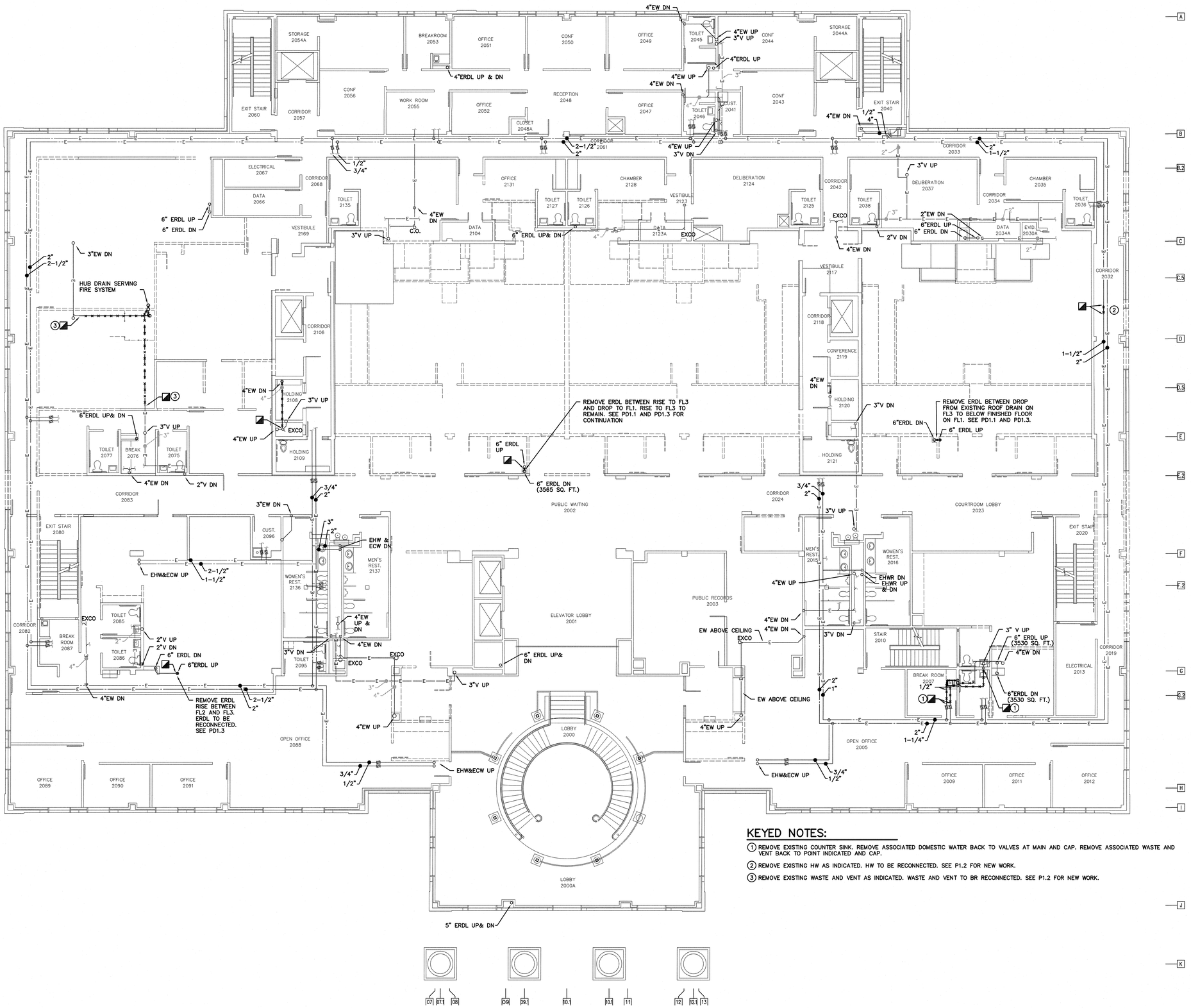

KEYED NOTES:

1. REMOVE EXISTING COUNTER SINK. REMOVE ASSOCIATED DOMESTIC WATER BACK TO VALVES AT MAIN AND CAP. REMOVE ASSOCIATED WASTE AND VENT BACK TO POINT INDICATED AND CAP.
2. REMOVE EXISTING HW AS INDICATED. HW TO BE RECONNECTED. SEE P1.2 FOR NEW WORK.
3. REMOVE EXISTING WASTE AND VENT AS INDICATED. WASTE AND VENT TO BR RECONNECTED. SEE P1.2 FOR NEW WORK.

1 PD1.2 PLUMBING DEMOLITION PLAN SECOND FLOOR
SCALE: 1/8" = 1'-0"

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PLUMBING DEMOLITION PLAN SECOND FLOOR

PD1.2

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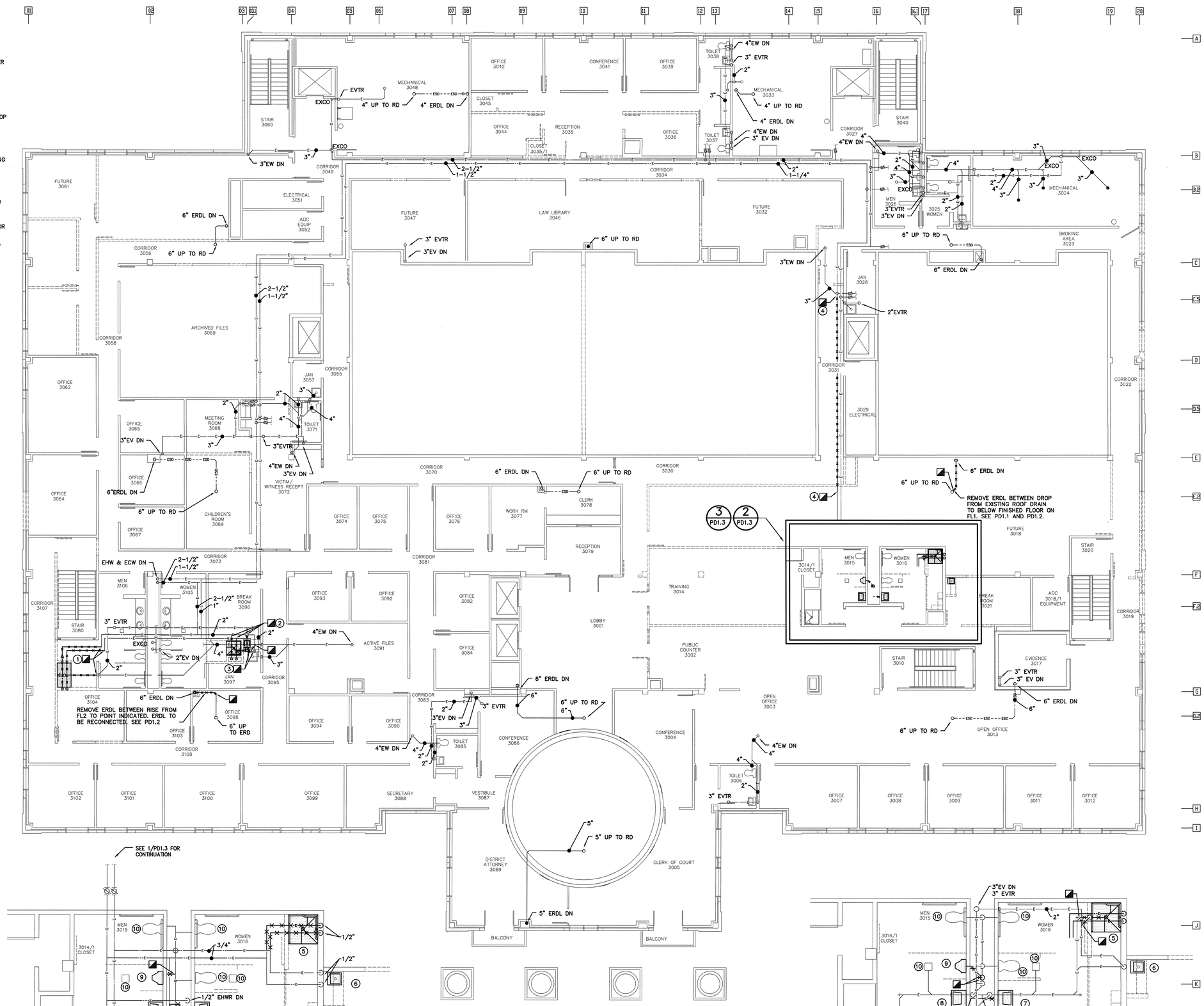
KEYED NOTES:

1. REMOVE EXISTING SHOWER AND ALL ASSOCIATED COMPONENTS. REMOVE ASSOCIATED DOMESTIC WATER BACK TO POINT INDICATED. DOMESTIC WATER TO BE REUSED. REMOVE ASSOCIATED WASTE AND VENT BACK TO POINT INDICATED. WASTE AND VENT TO BE REUSED. SEE P1.3 FOR NEW WORK.
2. REMOVE EXISTING SHOWER AND ALL ASSOCIATED COMPONENTS. REMOVE ASSOCIATED DOMESTIC WATER BACK TO MAIN AND CAP. REMOVE ASSOCIATED WASTE AND VENT BACK TO MAINS AND CAP.
3. REMOVE EXISTING COUNTER SINK. REMOVE ASSOCIATED DOMESTIC WATER BACK TO DROP IN WALL AND CAP. EXISTING DOMESTIC WATER SERVING MOP SINK TO REMAIN.
4. REMOVE EXISTING HW AS INDICATED. HW TO BE RECONNECTED. SEE P1.3 FOR NEW WORK.
5. REMOVE EXISTING SHOWER AND ALL ASSOCIATED COMPONENTS. REMOVE ASSOCIATED WASTE AND VENT BACK TO MAINS AND CAP. REMOVE EXISTING DOMESTIC WATER AS INDICATED AND CAP. SEE P1.3 FOR NEW WORK.
6. REMOVE EXISTING COUNTER SINK. EXISTING WASTE, VENT, AND DOMESTIC WATER TO BE REWORKED AND REUSED. SEE P1.3 FOR NEW WORK.
7. REMOVE EXISTING LAVATORY AND ASSOCIATED CARRIER. REMOVE EXISTING WASTE AND DOMESTIC WATER AS INDICATED AND CAP. SEE P1.3 FOR NEW WORK.
8. REMOVE EXISTING LAVATORY AND ASSOCIATED CARRIER. EXISTING WASTE, VENT, AND DOMESTIC WATER TO BE REWORKED AND REUSED. SEE P1.3 FOR NEW WORK.
9. REMOVE EXISTING URINAL AND ASSOCIATED CARRIER. REMOVE ASSOCIATED WASTE, VENT, AND DOMESTIC WATER BACK TO MAINS AND CAP.
10. EXISTING FIXTURE TO REMAIN. PROTECT FROM DAMAGES DURING CONSTRUCTION.



1 PD1.3 PLUMBING DEMOLITION PLAN THIRD FLOOR
SCALE: 1/8" = 1'-0"

2 PD1.3 ENLARGED DEMOLITION DOMESTIC WATER
SCALE: 1/4" = 1'-0"

3 PD1.3 ENLARGED DEMOLITION WASTE & VENT
SCALE: 1/4" = 1'-0"

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Revisions:

PLUMBING DEMOLITON PLAN THIRD FLOOR

PD1.3

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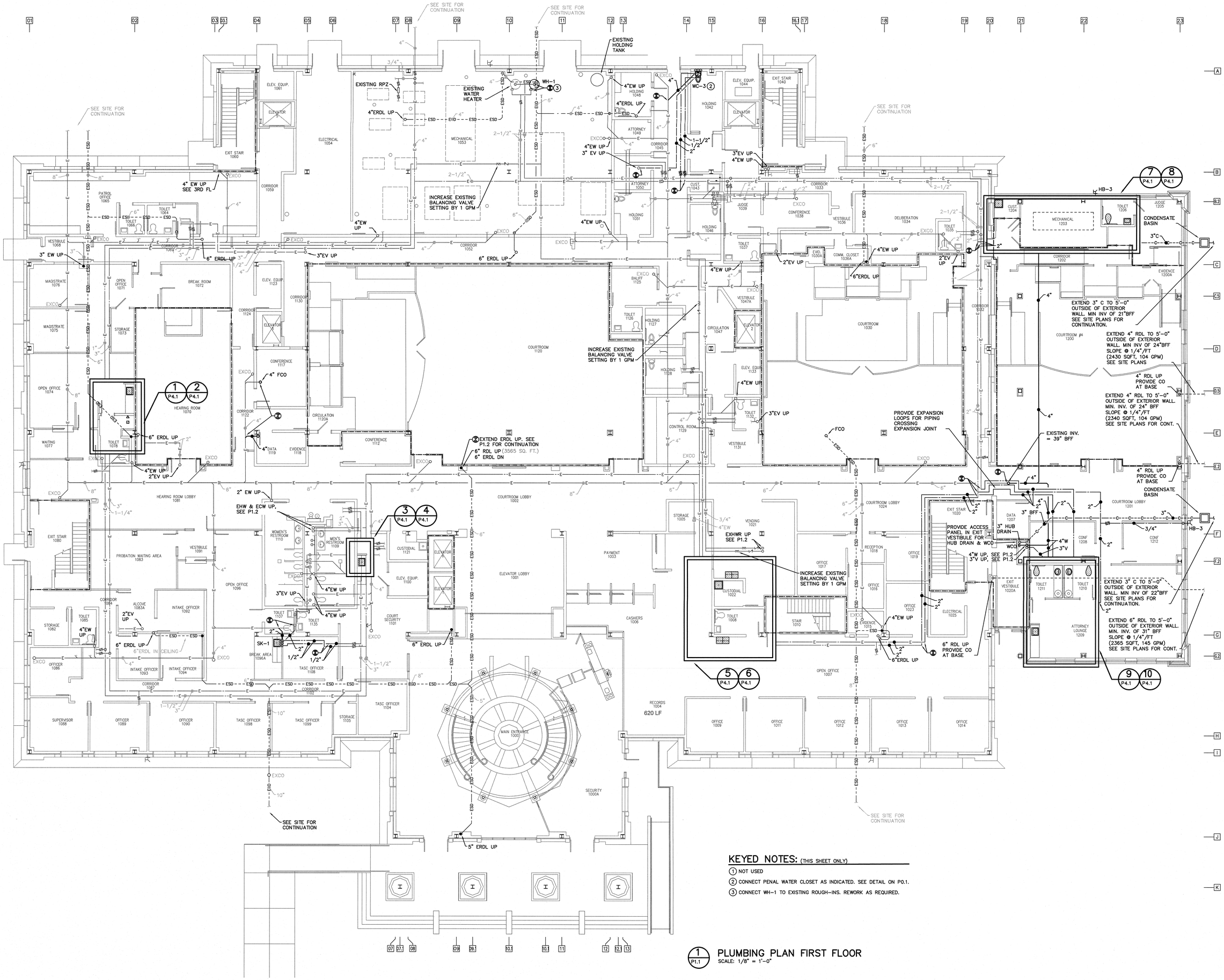

KEYED NOTES: (THIS SHEET ONLY)

1. NOT USED
2. CONNECT PENAL WATER CLOSET AS INDICATED. SEE DETAIL ON P0.1.
3. CONNECT WH-1 TO EXISTING ROUGH-INS. REWORK AS REQUIRED.

1 P1.1 **PLUMBING PLAN FIRST FLOOR**
SCALE: 1/8" = 1'-0"

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PLUMBING PLAN
FIRST FLOOR

P1.1

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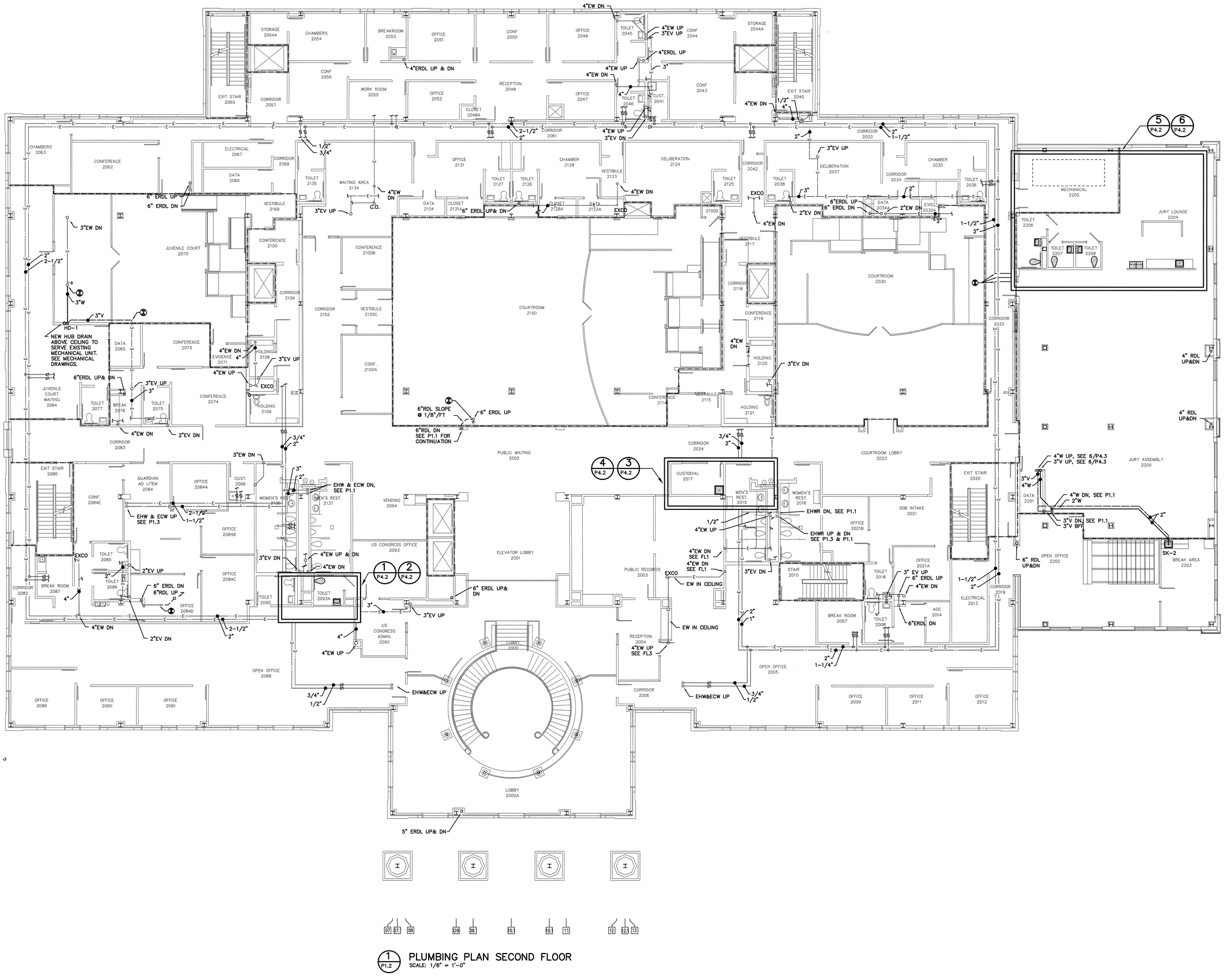

1 P1.2 PLUMBING PLAN SECOND FLOOR
SCALE: 1/8" = 1'-0"

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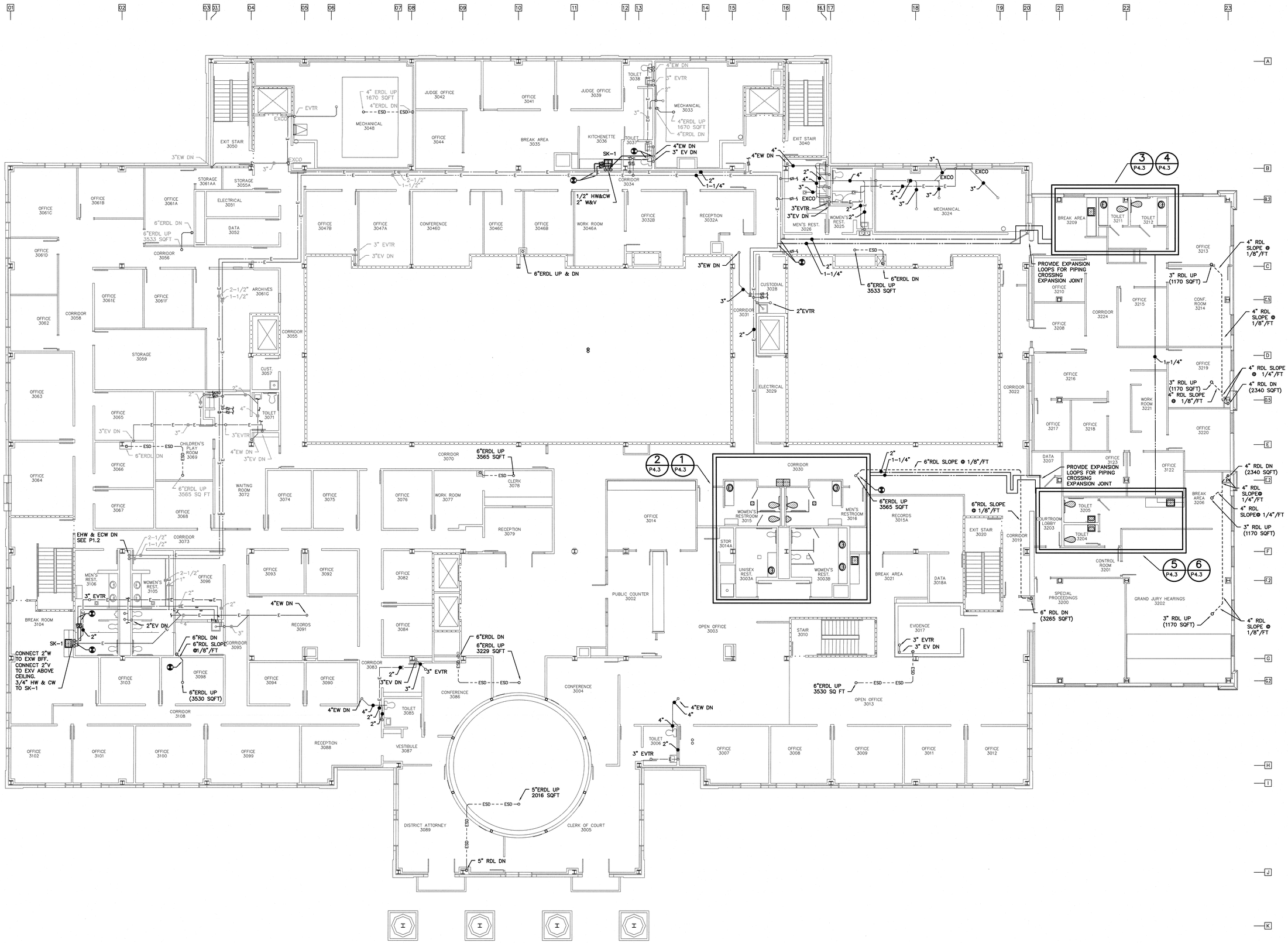

1 P1.3 PLUMBING PLAN THIRD FLOOR
SCALE: 1/8" = 1'-0"

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THIRD FLOOR

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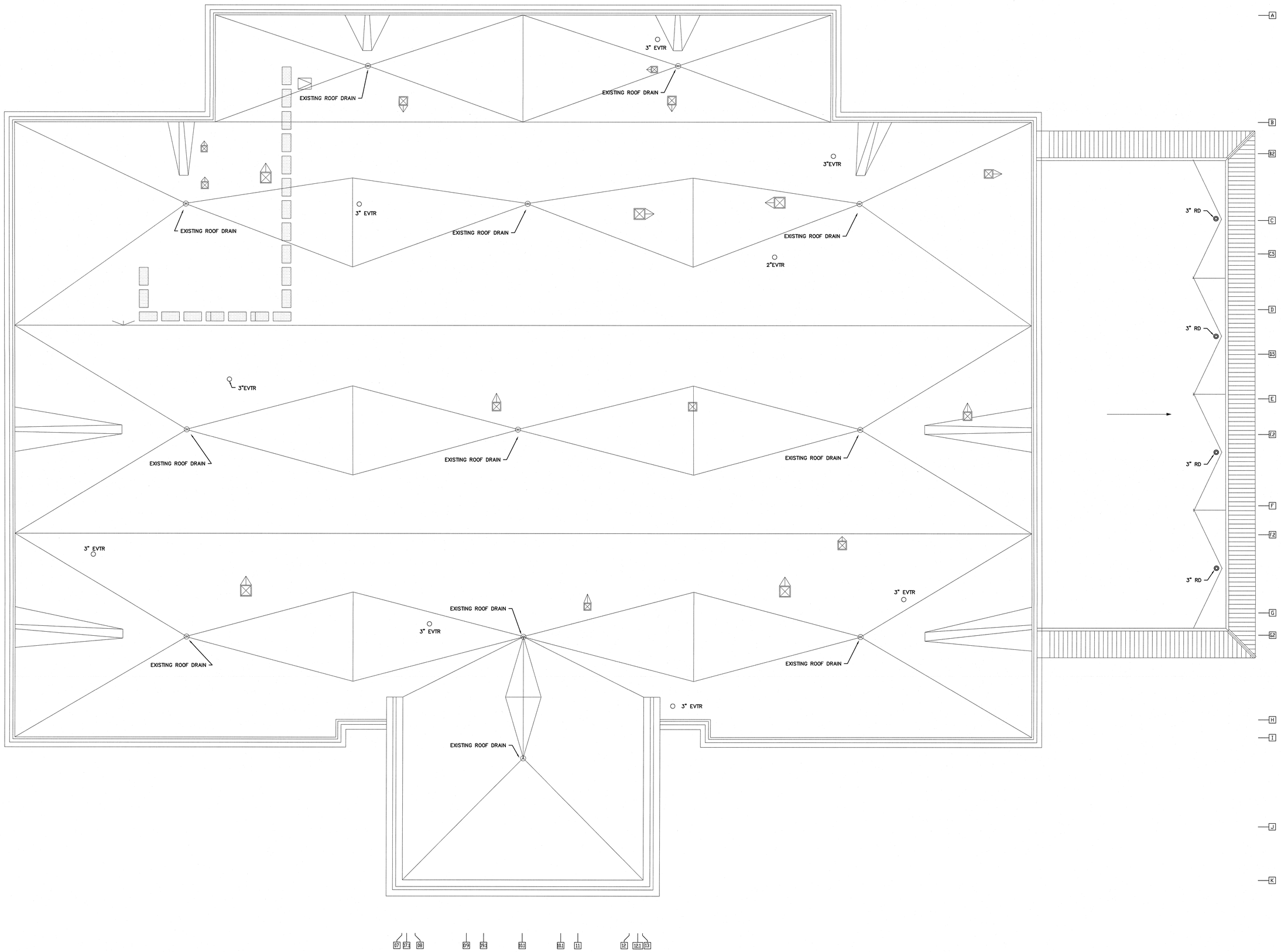

1 P1.4 PLUMBING ROOF PLAN
SCALE: 1/8" = 1'-0"

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PLUMBING PLAN ROOF

P1.4

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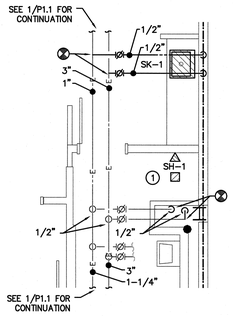
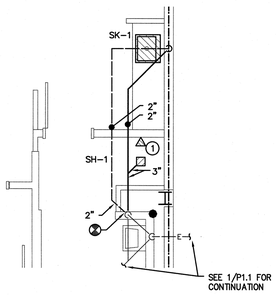
KEYED NOTES: (THIS SHEET ONLY)

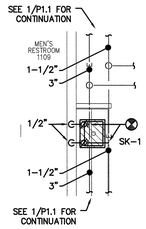
1. EXTEND EXISTING HW AND CW AS REQUIRED TO CONNECT TRANSFER SHOWER PER DETAIL ON P0.1. EXTEND EXISTING WASTE AS INDICATED. EXISTING VENT TO REMAIN.
2. REWORK AND EXTEND EXISTING WASTE TO MR-1 AND EWC-1. EXISTING VENT TO REMAIN. WASTE BRANCH BELOW VENT BRANCH.
3. OFFSET WASTE AND VENT PLANS NORTH AS REQUIRED TO AVOID FOOTING. COORDINATE WITH STRUCTURAL.



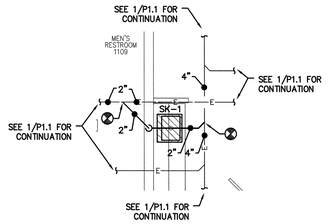
1 P4.1 ENLARGED DOMESTIC WATER PLAN A
SCALE: 1/4" = 1'-0"



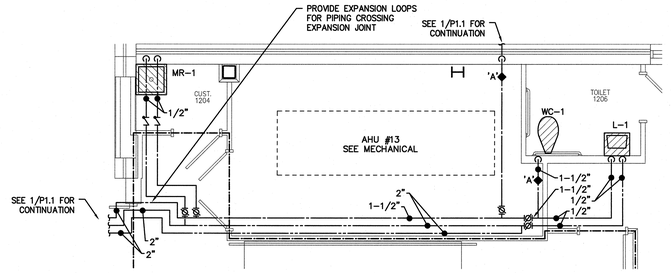
2 P4.1 ENLARGED WASTE & VENT PLAN A
SCALE: 1/4" = 1'-0"



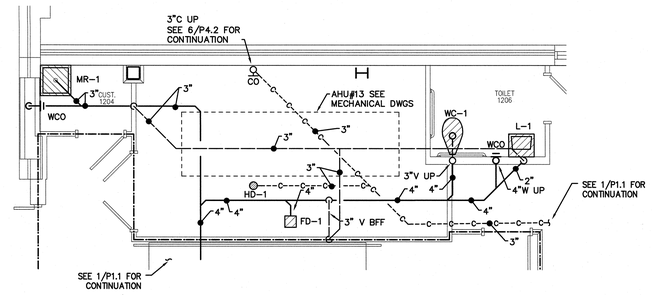
3 P4.1 ENLARGED DOMESTIC WATER PLAN B
SCALE: 1/4" = 1'-0"



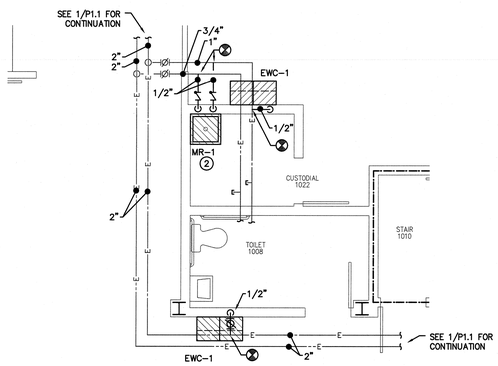
4 P4.1 ENLARGED WASTE & VENT PLAN B
SCALE: 1/4" = 1'-0"



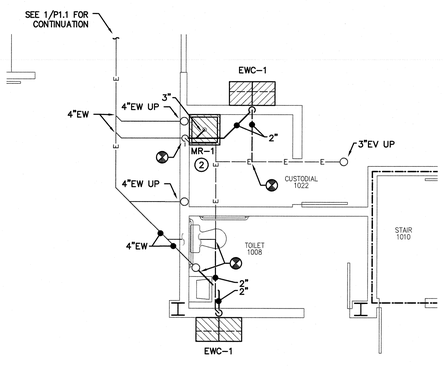
7 P4.1 ENLARGED DOMESTIC WATER PLAN D
SCALE: 1/4" = 1'-0"



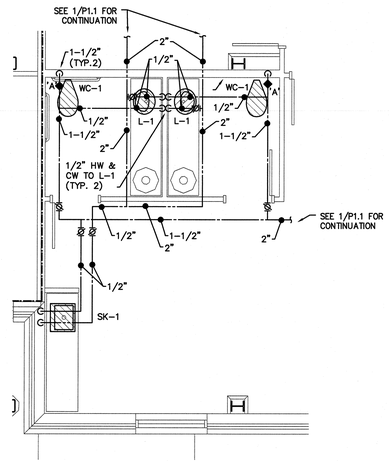
8 P4.1 ENLARGED WASTE & VENT PLAN D
SCALE: 1/4" = 1'-0"



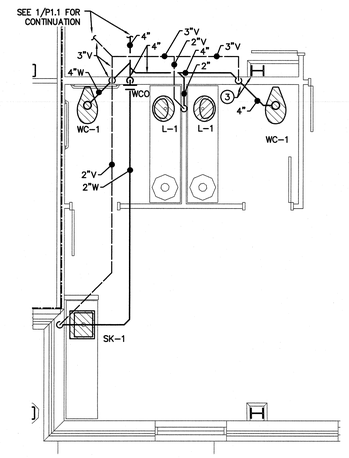
5 P4.1 ENLARGED DOMESTIC WATER PLAN C
SCALE: 1/4" = 1'-0"



6 P4.1 ENLARGED WASTE & VENT PLAN C
SCALE: 1/4" = 1'-0"



9 P4.1 ENLARGED DOMESTIC WATER PLAN E
SCALE: 1/4" = 1'-0"



10 P4.1 ENLARGED WASTE & VENT PLAN E
SCALE: 1/4" = 1'-0"

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CONSTRUCTION DRAWINGS
SEPTEMBER 23, 2019

Revisions:

ENLARGED PLUMBING PLANS FIRST FLOOR

P4.1

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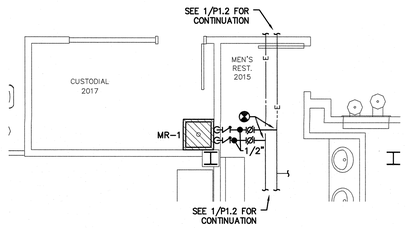
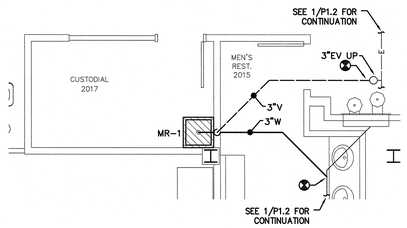
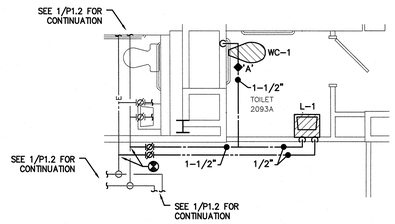


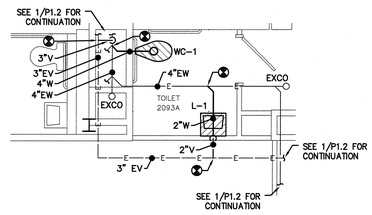
1 / P4.2 ENLARGED DOMESTIC WATER PLAN A
SCALE: 1/4" = 1'-0"



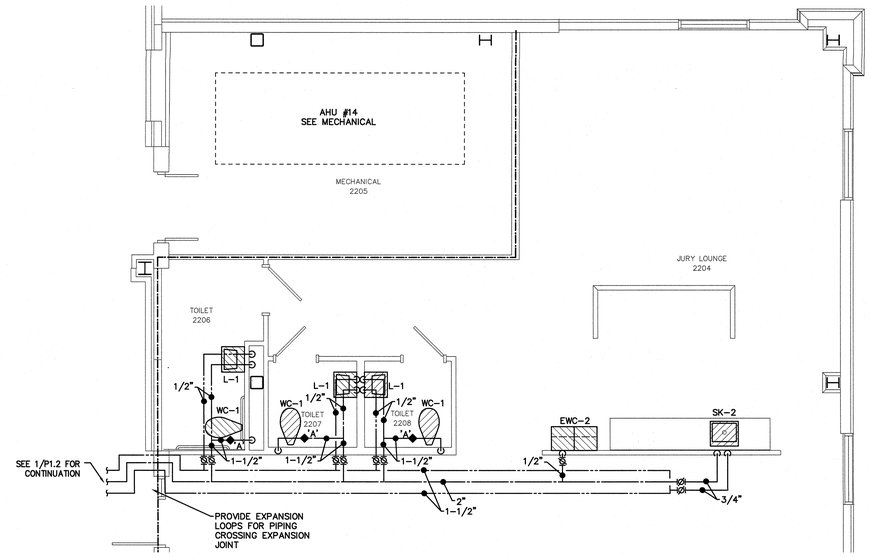
2 / P4.2 ENLARGED WASTE & VENT PLAN A
SCALE: 1/4" = 1'-0"



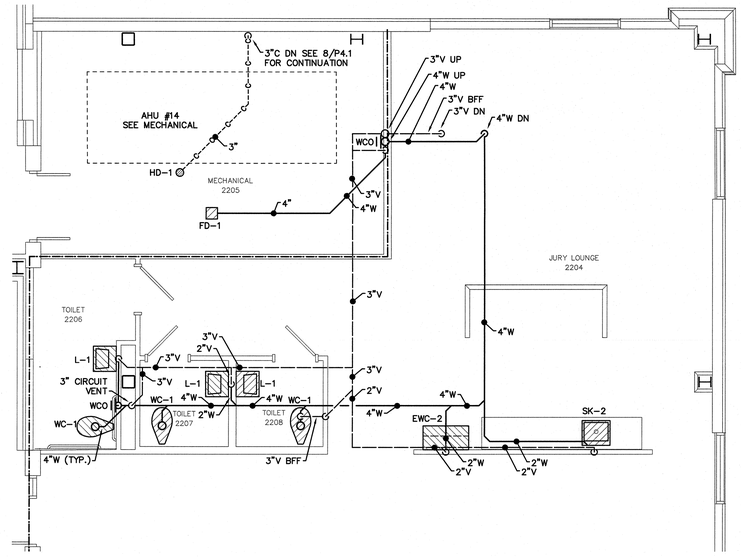
3 / P4.2 ENLARGED DOMESTIC WATER PLAN B
SCALE: 1/4" = 1'-0"



4 / P4.2 ENLARGED WASTE & VENT PLAN B
SCALE: 1/4" = 1'-0"



5 / P4.2 ENLARGED DOMESTIC WATER PLAN C
SCALE: 1/4" = 1'-0"



6 / P4.2 ENLARGED WASTE & VENT PLAN C
SCALE: 1/4" = 1'-0"

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SEPTEMBER 23, 2019

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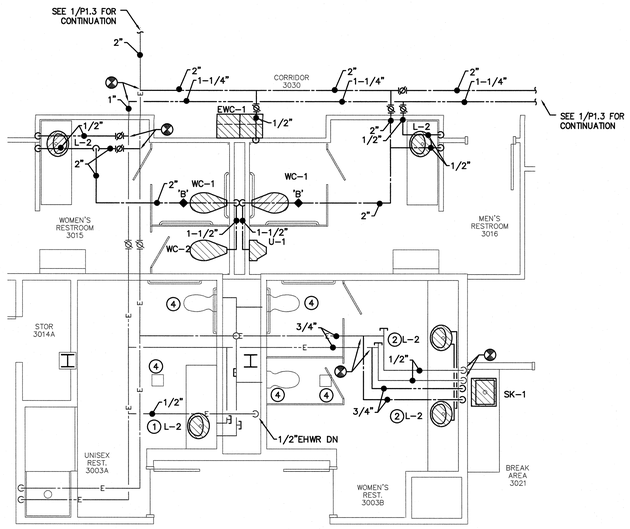
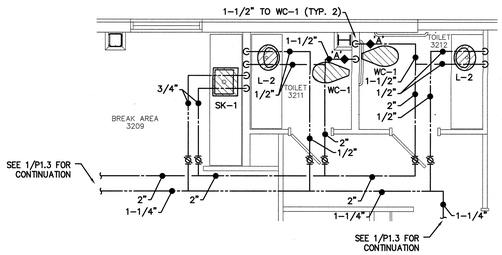
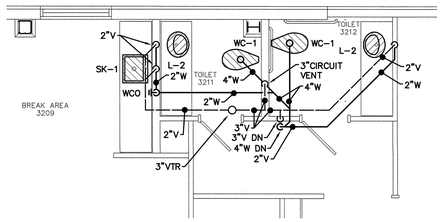


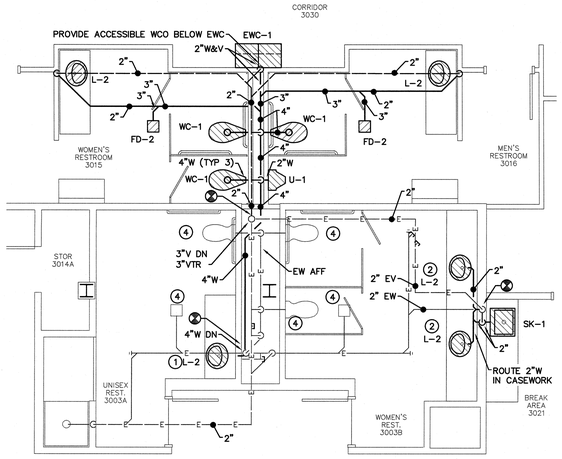
1 P4.3 ENLARGED DOMESTIC WATER PLAN A
SCALE: 1/4" = 1'-0"



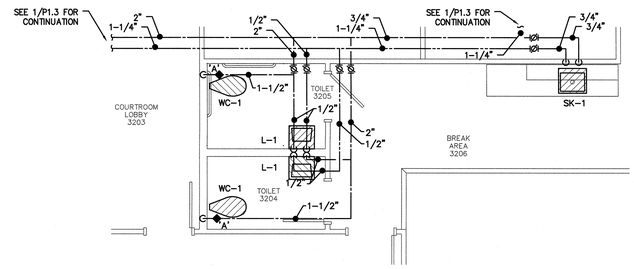
3 P4.3 ENLARGED DOMESTIC WATER PLAN B
SCALE: 1/4" = 1'-0"



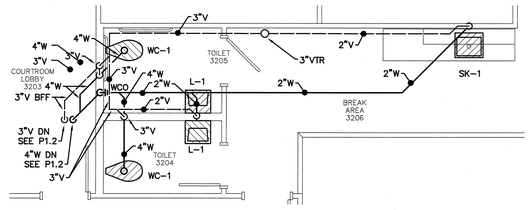
4 P4.3 ENLARGED WASTE & VENT PLAN B
SCALE: 1/4" = 1'-0"



2 P4.3 ENLARGED WASTE & VENT PLAN A
SCALE: 1/4" = 1'-0"



5 P4.3 ENLARGED DOMESTIC WATER PLAN C
SCALE: 1/4" = 1'-0"



6 P4.3 ENLARGED WASTE & VENT PLAN C
SCALE: 1/4" = 1'-0"

KEYED NOTES: (THIS SHEET ONLY)

1. CONNECT LAVATORY TO EXISTING ROUGH-INS. REWORK AS REQUIRED.
2. CONNECT LAVATORY TO EXISTING 1/2" DOMESTIC WATER, WASTE, AND VENT ROUGH-INS. REWORK PIPING IN CASEWORK AS REQUIRED.
3. CONNECT WATER CLOSET TO EXISTING WASTE AS INDICATED.
4. EXISTING FIXTURE TO REMAIN. PROTECT FROM DAMAGES DURING CONSTRUCTION.

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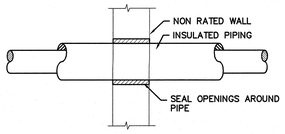
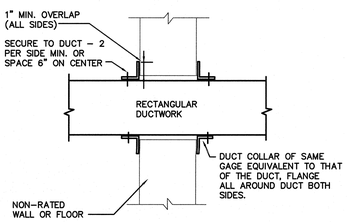


NON-RATED WALLS

A WALL PENETRATION DETAIL

M0.1

NO SCALE

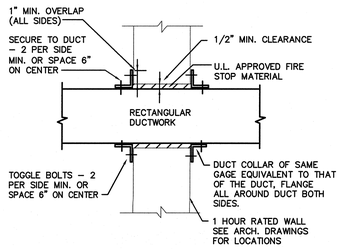


NON-RATED WALLS

B WALL PENETRATION DETAIL

M0.1

NO SCALE

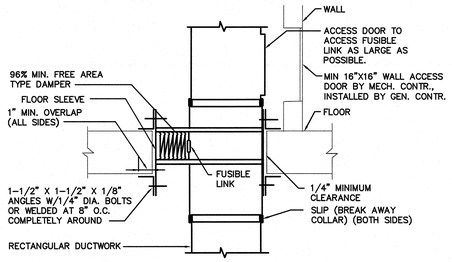


NOTE: DETAIL ONLY FOR THOSE DUCTS 100 SQ. INCHES AND LESS PENETRATING ONE HOUR WALLS THAT ARE NOT INDICATED TO HAVE FIRE DAMPERS.

C 1 HOUR WALL PENETRATION

M0.1

NO SCALE

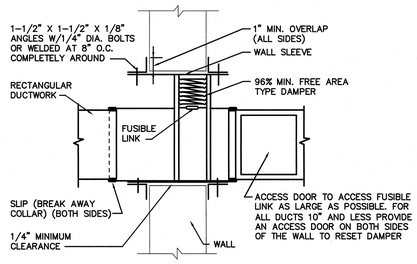


NOTE: DETAIL FOR REFERENCE ONLY. DAMPERS SHALL BE INSTALLED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.

D TYPICAL HORIZONTAL FIRE DAMPER DETAIL

M0.1

NO SCALE



NOTE: DETAIL FOR REFERENCE ONLY. DAMPERS SHALL BE INSTALLED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.

E TYPICAL VERTICAL FIRE DAMPER DETAIL

M0.1

NO SCALE

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT METHOD OF COMPLIANCE

☐ COMPLIANCE PER CHAPTER 4 NORTH CAROLINA ENERGY CONSERVATION CODE – SECTIONS C403.2 (MANDATORY), C403.3 ECONOMIZERS (PRESCRIPTIVE) AND C406 ADDITIONAL EFFICIENCY PACKAGE OPTIONS.
- ☐ C406.2 MORE EFFICIENT HVAC PERFORMANCE
- ☐ C406.3 REDUCED LIGHTING POWER DENSITY
- ☐ C406.4 ENHANCED LIGHTING CONTROLS
- ☐ C406.5 ON-SITE RENEWABLE ENERGY
- ☐ C406.6 DOAS PROVISION FOR CERTAIN HVAC
- ☐ C406.7 HIGH ENERGY SERVICE WATER HEATING

☒ COMPLIANCE PER CHAPTER 4 NORTH CAROLINA ENERGY CONSERVATION CODE – SECTIONS C403.2 (MANDATORY), C403.3 ECONOMIZERS (PRESCRIPTIVE), C403.4 HYDRONIC AND MULTIPLE ZONE (PRESCRIPTIVE) AND C406 ADDITIONAL EFFICIENCY PACKAGE OPTIONS.
- ☒ C406.2 MORE EFFICIENT HVAC PERFORMANCE
- ☒ C406.3 REDUCED LIGHTING POWER DENSITY
- ☐ C406.4 ENHANCED LIGHTING CONTROLS
- ☐ C406.5 ON-SITE RENEWABLE ENERGY
- ☐ C406.6 DOAS PROVISION FOR CERTAIN HVAC
- ☐ C406.7 HIGH ENERGY SERVICE WATER HEATING

☐ COMPLIANCE PER CHAPTER 4 NORTH CAROLINA ENERGY CONSERVATION CODE – SECTIONS C402.5, C403.2, C404, C405.2, C405.3, C405.5, C405.6 AND C407 TOTAL BUILDING PERFORMANCE. THE BUILDING ENERGY COST SHALL BE EQUAL TO OR LESS THAT 85 PERCENT OF THE STANDARD REFERENCE DESIGN BUILDING.

☐ COMPLIANCE PER ANSI/ASHRAE/IESNA 90.1–2013.

☐ COMPLIANCE PER NORTH CAROLINA SPECIFIC COMCHECK OR ASHRAE 90.1–2013 COMCHECK.

CLIMATE ZONE 3A

EXTERIOR DESIGN CONDITIONS
winter dry bulb: 28°F
summer dry bulb: 92°F DB/76°F WB

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

BUILDING HEATING LOAD: BLOCK LOAD = 245.0 MBH (ADDITION ONLY)

BUILDING COOLING LOAD: BLOCK LOAD = 49.5 TONS (ADDITION ONLY)

MECHANICAL SPACING CONDITIONING SYSTEM
Unitary:
description of unit:
heating efficiency:
cooling efficiency:
heat output of unit:
cooling output of unit:
} SEE SCHEDULES ON SHEET M6.0 AND M6.1

Boiler: N/A
total boiler output. If oversized, state reason.
Chiller: (2) 253 TONS – ONE CHILLER IS 100% STANDBY
total chiller capacity. If oversized, state reason.

LIST EQUIPMENT EFFICIENCIES: SEE SCHEDULES ON SHEET M6.0 AND M6.1

EQUIPMENT SCHEDULES WITH MOTORS (MECHANICAL SYSTEMS)
motor horsepower:
number of phases:
minimum efficiency:
motor type:
# of poles:
} SEE SCHEDULES ON SHEET M6.0 AND M6.1

DESIGNER STATEMENT

To the best of my knowledge and belief, the design of this building complies with the mechanical systems, service systems and equipment requirements of the North Carolina Energy Conservation Code.

SIGNED:

NAME: Kenneth Lynch, P.E.

TITLE: Professional Engineer

GENERAL NOTES:

1. HVAC CONTRACTOR SHALL FIELD VERIFY ALL RELEVANT DIMENSIONS, CLEARANCES, LOCATIONS AND ELEVATIONS WITH NEW AND EXISTING CONDITIONS PRIOR TO ORDERING, FABRICATION, AND INSTALLATION OF HIS WORK. DISCREPANCIES OR INTERFERENCE'S SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER AS SOON AS POSSIBLE. THE DRAWINGS DIAGRAMMATICALLY INDICATE THE GENERAL LOCATION OF DUCTS, PIPING AND EQUIPMENT AND DO NOT SHOW ALL OFFSETS, FITTINGS, SUPPORTS, BOLTS, CONNECTIONS, ETC. REQUIRED FOR A COMPLETE SYSTEM. WHILE THE DRAWINGS ARE TO BE FOLLOWED AS CLOSELY AS POSSIBLE, IF IT IS FOUND NECESSARY TO CHANGE THE LOCATION OF ANY WORK TO ACCOMMODATE THE CONDITIONS AT THE BUILDING, INCLUDING EXISTING UTILITIES TO REMAIN (PIPING, ELECTRICAL CONDUIT, ETC.), SUCH CHANGES SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER, AND AS DIRECTED BY THE ENGINEER. WHILE SOME OFFSETS MAY BE SHOWN ON DRAWING, THE DRAWINGS DO NOT SHOW ALL OFFSETS, SUPPORTS, ETC.
2. ALL SUPPLY AND RETURN CONNECTIONS TO AHU SHALL BE MADE WITH A FLEXIBLE DUCT CONNECTION.
3. PIPING, DUCTWORK, ETC., SHALL NOT BE SUPPORTED FROM BAR JOIST BRIDGING OR ROOFDECK. EQUIPMENT SUPPORTED BY BAR JOISTS SHALL HAVE SUPPORTS ATTACHED AS CLOSE AS POSSIBLE TO BAR JOIST PANEL POINTS.
4. ALL DUCT JOINTS SHALL BE SEALED AS SPECIFIED.
5. IN AREAS WITH GYPBOARD CEILINGS, HVAC CONTRACTOR SHALL INSTALL EQUIPMENT, DUCTWORK AND PIPE HANGERS PRIOR TO GYPBOARD INSTALLATION.
6. HVAC CONTRACTOR/ CONTROLS CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR FOR PROVISIONS OF POWER TO DDC CONTROL SYSTEM CONTROL PANELS, CONTROLLERS, ETC. NOT SHOWN ON M OR E DRAWINGS. ELECTRICAL CONTRACTOR WILL PROVIDE POWER TO GENERAL POINTS, JUNCTION BOXES, ETC., AND POWER WIRING FROM THOSE POINTS TO EQUIPMENT SHALL BE BY THE HVAC CONTRACTOR/CONTROL CONTRACTOR.
7. ALL PIPING PENETRATIONS THROUGH RATED WALLS SHALL BE FIRE STOPPED USING PIPE PENETRATIONS DETAILS AS SPECIFIED. ALL DUCT PENETRATIONS THRU RATED AND NONRATED WALLS SHALL BE PER DETAILS SHOWN ON SHEET M0.1.
8. RETURN AIR DUCTWORK SHALL BE INSTALLED IN SUCH A MANNER THAT DUCT MOUNTED SMOKE DETECTORS ARE NO MORE THAN 24" ABOVE LAY-IN CEILING TILES.
9. ALL THERMOSTATS, SENSORS AND SWITCHES FOR MECHANICAL SYSTEMS AND MIDDLE OF HVAC CONTROL PANEL SHALL BE MOUNTED 44" AFF.
10. PIPING CONNECTIONS TO AIR HANDLING UNITS SHALL BE ON SIDE OPPOSITE FROM FAN AND FILTER ACCESS DOORS.
11. ALL PIPING BRANCHES SHALL BE TAKEN OFF OF THE TOP OF PIPE MAINS.
12. COORDINATE MECHANICAL DUCTWORK AND PIPING TO AVOID ALL ELECTRICAL PANELS. COORDINATE LOCATIONS WITH ELECTRICAL CONTRACTOR.
13. MAINTAIN 7'-0" CLEAR IN ALL MECHANICAL ROOMS.
14. AIR HANDLING UNIT ARRANGEMENT IS SO SERVICING IS TO THE CLEAR INSIDE AISLE.
15. SEE SCHEDULES FOR INDIVIDUAL PIPE SIZES TO EQUIPMENT NOT SHOWN ON DRAWINGS.
16. WHERE INDICATED FOR GRILLES, REGISTERS AND DIFFUSERS ARE TO BE REUSED, CONTRACTOR SHALL PROTECT DURING CONSTRUCTION AND REPLACE ANY THAT ARE DAMAGED OR BENT. FULLY CLEAN BEFORE REINSTALLING.
17. WHERE DUCTWORK CONFIGURATION CAUSES OBSTRUCTIONS FOR SUPPORT PROVISIONS OF OTHER SYSTEMS INSTALLED UNDER DUCTWORK, AS PART OF CONSTRUCTION COORDINATION AMONG CONTRACTORS, MAKE PROVISIONS FOR OTHER CONTRACTORS TO UTILIZE DUCTWORK SUPPORT COMPONENTS. WHERE THIS IS NECESSARY, COORDINATE ADDITIONAL LOADING INTRODUCED BY OTHER SYSTEMS TO INSURE SUPPORT COMPONENTS ARE SUITABLY RATED FOR ALL LOADS TO BE SUPPORTED.
18. HEATING AND AIR CONDITIONING CONTRACTOR SHALL PROVIDE FLUSHING OF NEW PIPING AND EQUIPMENT, CHEMICAL TREATMENT EQUIPMENT, AND CHEMICAL TREATMENT FOR CLOSED HYDRONIC SYSTEMS. CHEMICAL TREATMENT CHEMICALS SHALL BE COORDINATED WITH BRUNSWICK COUNTY AND THEIR CHEMICAL TREATMENT CONTRACTOR.
19. TEST AND BALANCE WORK SHALL INCLUDE:
    A. CHECK AND BALANCE WATER FLOWS TO EACH NEW AND EXISTING AIR HANDLING UNIT, CHILLERS AND ALL EQUIPMENT IN THE MAIN MECHANICAL ROOM 1053.
    B. CHECK AND BALANCE EACH SUPPLY, RETURN, AND EXHAUST DIFFUSER REGISTER AT EACH OF THE EXISTING BOXES THAT HAVE BEEN RELOCATED OR RENOVATED.
    C. CHECK AND BALANCE ALL PORTIONS OF THE EQUIPMENT AND AIR DISTRIBUTION FOR NEW WORK.

LEGEND

	REMOVE EXISTING DUCTWORK
	REMOVE EXISTING PIPING, LINE SYMBOL INDICATES SERVICE
	EXISTING DUCTWORK TO REMAIN
	INTERNALLY INSULATED DUCTWORK
	RECTANGULAR DUCTWORK
	SUPPLY AIR DUCTWORK TURNED DOWN
	SUPPLY AIR DUCTWORK TURNED UP
	RETURN AIR/EXHAUST AIR TURNED DOWN
	RETURN AIR/EXHAUST AIR TURNED UP
	BRANCH TAKEOFF WITH TURNING VANES, SPLITTER DAMPER AND LOCKING QUADRANT
	DUCT TEE WITH TURNING VANES, SPLITTER DAMPER AND LOCKING QUADRANT
	DUCT WITH RUNOUT (SPIN-IN TAKE OFF WITH DAMPER)
	CEILING RETURN AIR/ EXHAUST AIR REGISTER
	CEILING SUPPLY AIR DIFFUSER
ECHS	EXISTING CHILLED WATER SUPPLY
ECHR	EXISTING CHILLED WATER RETURN
ECWS	EXISTING CONDENSER WATER SUPPLY
ECWR	EXISTING CONDENSER WATER RETURN
CHS	CHILLED WATER SUPPLY PIPING
CHR	CHILLED WATER RETURN PIPING
R	REFRIGERANT PIPING
	PUMPED CONDENSATE PIPING
C	AIR CONDITIONING CONDENSATE PIPING
AC	AUXILIARY CONDENSATE DRAIN PIPING
	BALL VALVE
	GLOBE VALVE
	MULTIPURPOSE BALVE
	BUTTERFLY VALVE
	CHECK VALVE
	WATER PRESSURE REDUCING VALVE
	2-WAY CONTROL VALVE
	3-WAY CONTROL VALVE
	SQUARE HEAD COCK
	AUTOMATIC FLOW CONTROL VALVE
	VALVE IN RISE OR DROP
	UNION
	FLANGE
	PIPE ANCHOR
	STRAINER WITH BALL VALVE BLOWDOWN, NIPPLE AND CAP
	1 HOUR WALL DESIGNATION
(S)	SMOKE DETECTOR WITH DUCT ACCESS DOOR, ACCESS DOOR BY THE MECH. CONTR., DETECTOR FURNISHED BY THE ELECT. CONTR. AND INSTALLED BY THE MECH. CONTR. PROVIDE CEILING ACCESS DOOR (16"X16" MIN.) WHERE NECESSARY.
F/D	FIRE DAMPER (1–1/2 HOUR RATED) MOUNTED IN WALL WITH DUCT ACCESS DOOR AND CEILING ACCESS DOOR (16"X16" MIN.) WHERE NECESSARY.
F/D	FIRE DAMPER (1–1/2 HOUR RATED) MOUNTED IN FLOOR WITH DUCT AND WALL ACCESS DOORS. (16"X16" MIN.)
A	REGISTER, GRILLE OR DIFFUSER SYMBOL
T2	HEATING AND COOLING THERMOSTAT WITH # INDICATING UNIT
TS2	HEATING AND COOLING TEMPERATURE SENSOR WITH # INDICATING UNIT
	HEAVY DUTY DISCONNECT SWITCH
1	KEYED NOTE SYMBOL
SA	SUPPLY AIR
RA	RETURN AIR
OA	OUTSIDE AIR
EXA	EXHAUST AIR
NO	NORMALLY OPEN
NC	NORMALLY CLOSED
MD	MANUAL DAMPER
MOD	MOTOR OPERATED DAMPER
AFF	ABOVE FINISHED FLOOR
FIN. FL.	FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
CONC.	CONCRETE
CONT.	CONTINUATION
CONTR.	CONTRACTOR
	TERMINATION POINT OF DEMOLITION
	POINT OF NEW CONNECTION TO EXISTING
VFD	VARIABLE FREQUENCY DRIVE
SPS	STATIC PRESSURE SENSOR
CO2	CARBON DIOXIDE SENSOR
HT	HUMIDITY SENSOR
DPT	DIFFERENTIAL PRESSURE SWITCH

CHILLED WATER PLANT SEQUENCE OF WORK

A. THERE SHALL BE NO OUTAGE FOR THE COOLING SYSTEM DURING CONSTRUCTION OF THIS PROJECT AND ALL CHANGE OVER TIMES SHALL BE COORDINATED WITH THE OWNER TO MAINTAIN NORMAL BUILDING OPERATION.

B. A TEMPORARY CHILLER SHALL BE PROVIDED AS NECESSARY DURING DEMOLITION AND RENOVATION OF THE CHILLER PLANT. COORDINATE WITH THE OWNER THE CHILLER LOCATION.

C. HEAT EXCHANGER AND ASSOCIATED PUMPS P–1 AND P–2 CAN BE DEMOLITIONED.

D. SYSTEM PUMPS P–3 AND P–4 TO BE REPLACED ONE AT A TIME SO THE SYSTEM STAYS IN OPERATION.

E. ONCE TEMPORARY CHILLER IS FULLY FUNCTIONAL, REMOVE WATER COOLED CHILLER, COOLING TOWER, TOWER PUMPS P–1 AND P–2.

F. ONCE NEW AIR COOLED CHILLERS AND CHILLER PUMPS P–1 AND P–2 ARE FULLY FUNCTIONAL, TEMPORARY CHILLER CAN BE REMOVED.

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CONSTRUCTION DRAWINGS
SEPTEMBER 23, 2019

Revisions:

MECHANICAL LEGEND, ENERGY SCHEDULE & FIRE PENTRATION DETAILS

M0.1

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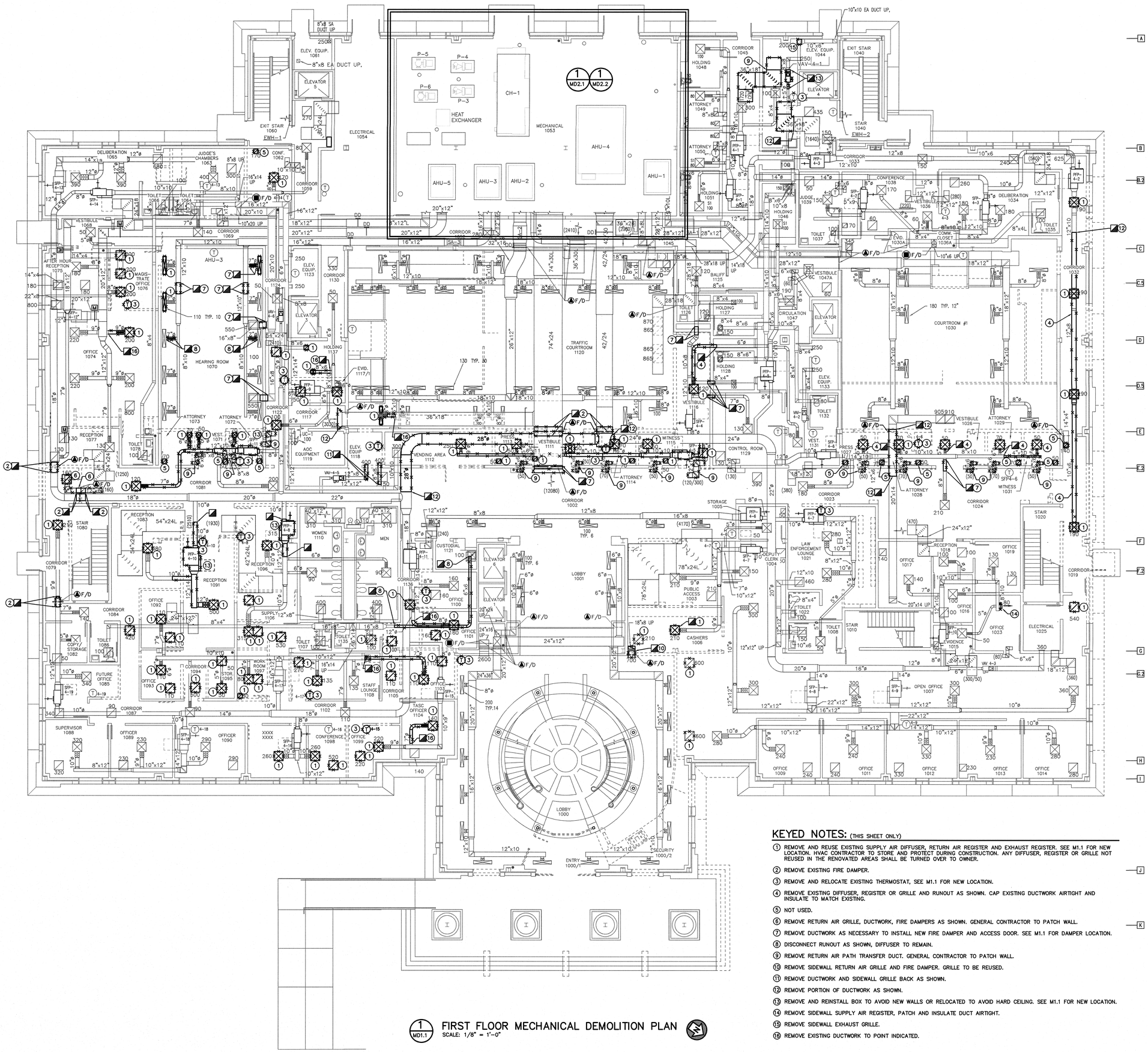

KEYED NOTES: (THIS SHEET ONLY)

1. REMOVE AND REUSE EXISTING SUPPLY AIR DIFFUSER, RETURN AIR REGISTER AND EXHAUST REGISTER. SEE M1.1 FOR NEW LOCATION. HVAC CONTRACTOR TO STORE AND PROTECT DURING CONSTRUCTION. ANY DIFFUSER, REGISTER OR GRILLE NOT REUSED IN THE RENOVATED AREAS SHALL BE TURNED OVER TO OWNER.
2. REMOVE EXISTING FIRE DAMPER.
3. REMOVE AND RELOCATE EXISTING THERMOSTAT, SEE M1.1 FOR NEW LOCATION.
4. REMOVE EXISTING DIFFUSER, REGISTER OR GRILLE AND RUNOUT AS SHOWN. CAP EXISTING DUCTWORK AIRTIGHT AND INSULATE TO MATCH EXISTING.
5. NOT USED.
6. REMOVE RETURN AIR GRILLE, DUCTWORK, FIRE DAMPERS AS SHOWN. GENERAL CONTRACTOR TO PATCH WALL.
7. REMOVE DUCTWORK AS NECESSARY TO INSTALL NEW FIRE DAMPER AND ACCESS DOOR. SEE M1.1 FOR DAMPER LOCATION.
8. DISCONNECT RUNOUT AS SHOWN, DIFFUSER TO REMAIN.
9. REMOVE RETURN AIR PATH TRANSFER DUCT. GENERAL CONTRACTOR TO PATCH WALL.
10. REMOVE SIDEWALL RETURN AIR GRILLE AND FIRE DAMPER. GRILLE TO BE REUSED.
11. REMOVE DUCTWORK AND SIDEWALL GRILLE BACK AS SHOWN.
12. REMOVE PORTION OF DUCTWORK AS SHOWN.
13. REMOVE AND REINSTALL BOX TO AVOID NEW WALLS OR RELOCATED TO AVOID HARD CEILING. SEE M1.1 FOR NEW LOCATION.
14. REMOVE SIDEWALL SUPPLY AIR REGISTER, PATCH AND INSULATE DUCT AIRTIGHT.
15. REMOVE SIDEWALL EXHAUST GRILLE.
16. REMOVE EXISTING DUCTWORK TO POINT INDICATED.

1 / MD1.1 FIRST FLOOR MECHANICAL DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

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FIRST FLOOR MECHANICAL DEMOLITION PLAN

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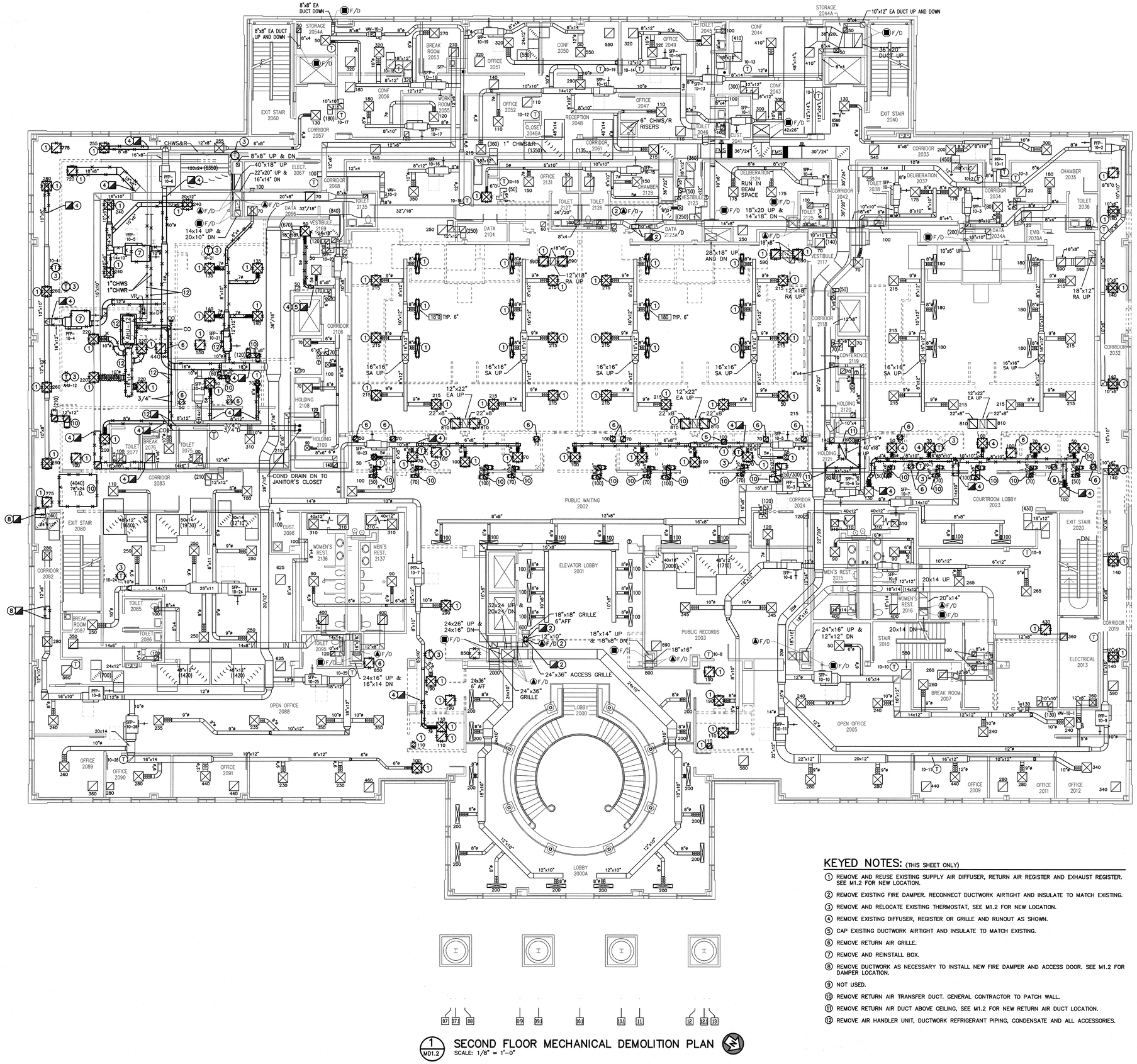

KEYED NOTES: (THIS SHEET ONLY)

1. REMOVE AND REUSE EXISTING SUPPLY AIR DIFFUSER, RETURN AIR REGISTER AND EXHAUST REGISTER. SEE M1.2 FOR NEW LOCATION.
2. REMOVE EXISTING FIRE DAMPER. RECONNECT DUCTWORK AIRTIGHT AND INSULATE TO MATCH EXISTING.
3. REMOVE AND RELOCATE EXISTING THERMOSTAT, SEE M1.2 FOR NEW LOCATION.
4. REMOVE EXISTING DIFFUSER, REGISTER OR GRILLE AND RUNOUT AS SHOWN.
5. CAP EXISTING DUCTWORK AIRTIGHT AND INSULATE TO MATCH EXISTING.
6. REMOVE RETURN AIR GRILLE.
7. REMOVE AND REINSTALL BOX.
8. REMOVE DUCTWORK AS NECESSARY TO INSTALL NEW FIRE DAMPER AND ACCESS DOOR. SEE M1.2 FOR DAMPER LOCATION.
9. NOT USED.
10. REMOVE RETURN AIR TRANSFER DUCT. GENERAL CONTRACTOR TO PATCH WALL.
11. REMOVE RETURN AIR DUCT ABOVE CEILING, SEE M1.2 FOR NEW RETURN AIR DUCT LOCATION.
12. REMOVE AIR HANDLER UNIT, DUCTWORK REFRIGERANT PIPING, CONDENSATE AND ALL ACCESSORIES.

1 / MD1.2 SECOND FLOOR MECHANICAL DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

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SECOND FLOOR MECHANICAL DEMOLITION PLAN

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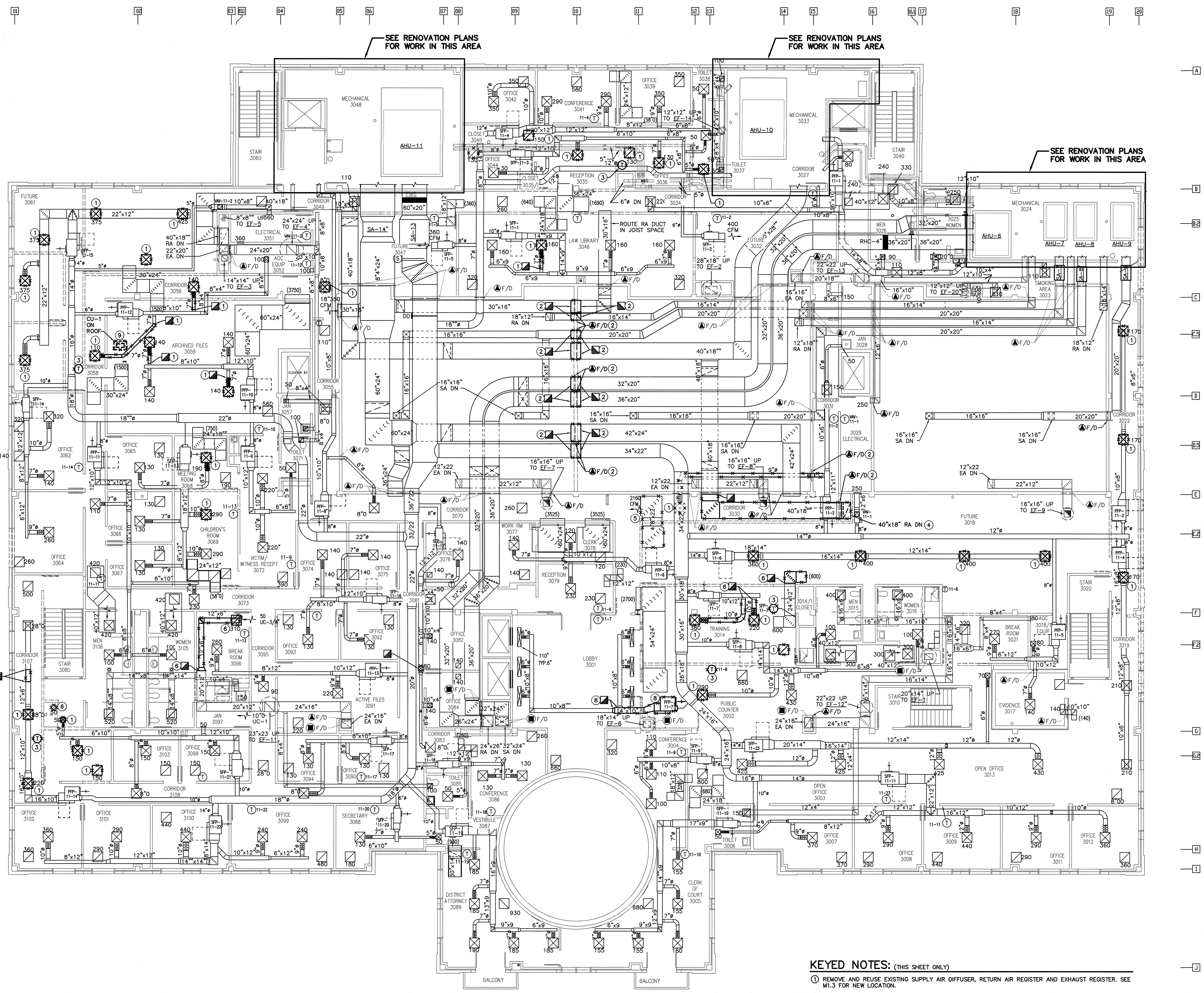

1 MD1.3 THIRD FLOOR MECHANICAL DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

KEYED NOTES: (THIS SHEET ONLY)

1. REMOVE AND REUSE EXISTING SUPPLY AIR DIFFUSER, RETURN AIR REGISTER AND EXHAUST REGISTER. SEE M1.3 FOR NEW LOCATION.
2. REMOVE EXISTING FIRE DAMPER. RECONNECT DUCTWORK AIRTIGHT AND INSULATE TO MATCH EXISTING.
3. REMOVE AND RELOCATE EXISTING THERMOSTAT, SEE 1/M1.3 FOR NEW LOCATION.
4. REMOVE RETURN AIR DUCTWORK AND FIRE DAMPER AS SHOWN. GENERAL CONTRACTOR TO PATCH WALL OR FLOOR.
5. REMOVE RETURN AIR PATH TRANSFER DUCT. GENERAL CONTRACTOR TO PATCH WALLS TO REMAIN.
6. REMOVE EXHAUST AIR DUCT AND GRILLE, CAP DUCT AIRTIGHT AND INSULATE TO MATCH EXISTING.
7. REMOVE DUCTWORK AS NECESSARY TO INSTALL NEW FIRE DAMPER AND ACCESS DOOR. SEE 1/M1.3 FOR DAMPER LOCATION.
8. REMOVE PORTION OF SUPPLY AIR DUCT AND RELOCATE BOX TO AVOID NEW WALL LOCATION.
9. REMOVE CU-2 ON ROOF AND SEAL ALL EXISTING OPENINGS TO ROOF SUPPORTS WEATHERTIGHT. REMOVE REFRIGERANT PIPING, ELECTRICAL BACK TO SOURCE AND ALL ACCESSORIES. SEAL OPENINGS FOR REFRIGERANT PIPING WEATHERTIGHT INTO THE BUILDING. REMOVE ALL REFRIGERANT PIPING BACK TO AHU-12, SUPPORTS AND ALL ACCESSORIES.

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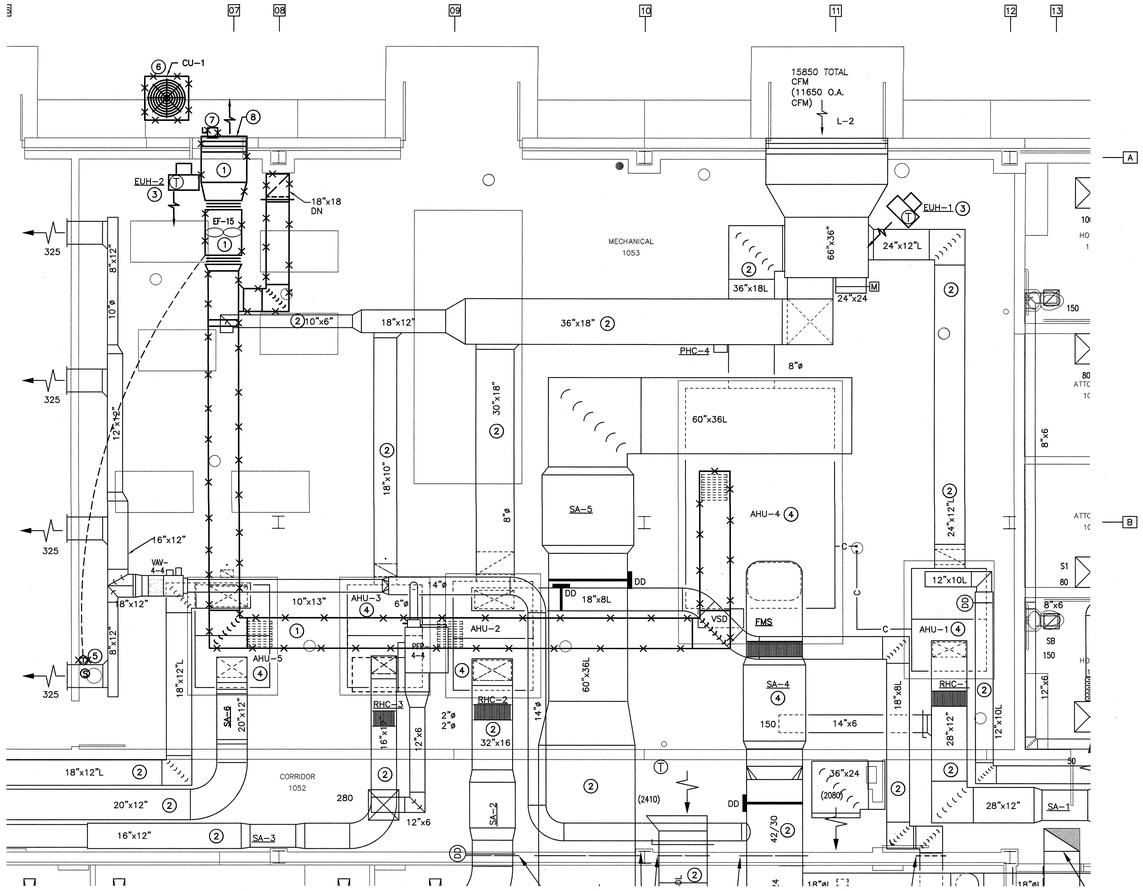

1 / MD2.1 MECHANICAL 1053 – DUCTWORK – DEMOLITION
SCALE: 1/4" = 1'-0"

KEYED NOTES: (THIS SHEET ONLY)

1. REMOVE F-15, RELATED DUCTWORK, HANGERS, GRILLES COMPLETE.
2. EXISTING DUCTWORK TO REMAIN.
3. EXISTING UNIT HEATER TO REMAIN.
4. AHU TO REMAIN.
5. REUSE THERMOSTAT AND CONTROL WIRING FOR NEW F-15, SEE M2.2 FOR NEW FAN.
6. REMOVE CU-1, AND REFRIGERANT PIPING, SEE MD2.2.
7. EXISTING DISCONNECT TO BE RELOCATED, SEE 1/M2.1 FOR NEW LOCATION.
8. REMOVE SIDEWALL 3'-4" X 3'-4" LOUVER, SEE M2.2 FOR NEW WORK IN OPENING.
9. EXISTING DISCONNECT TO BE RELOCATED, SEE 1/M2.1 FOR NEW LOCATION.

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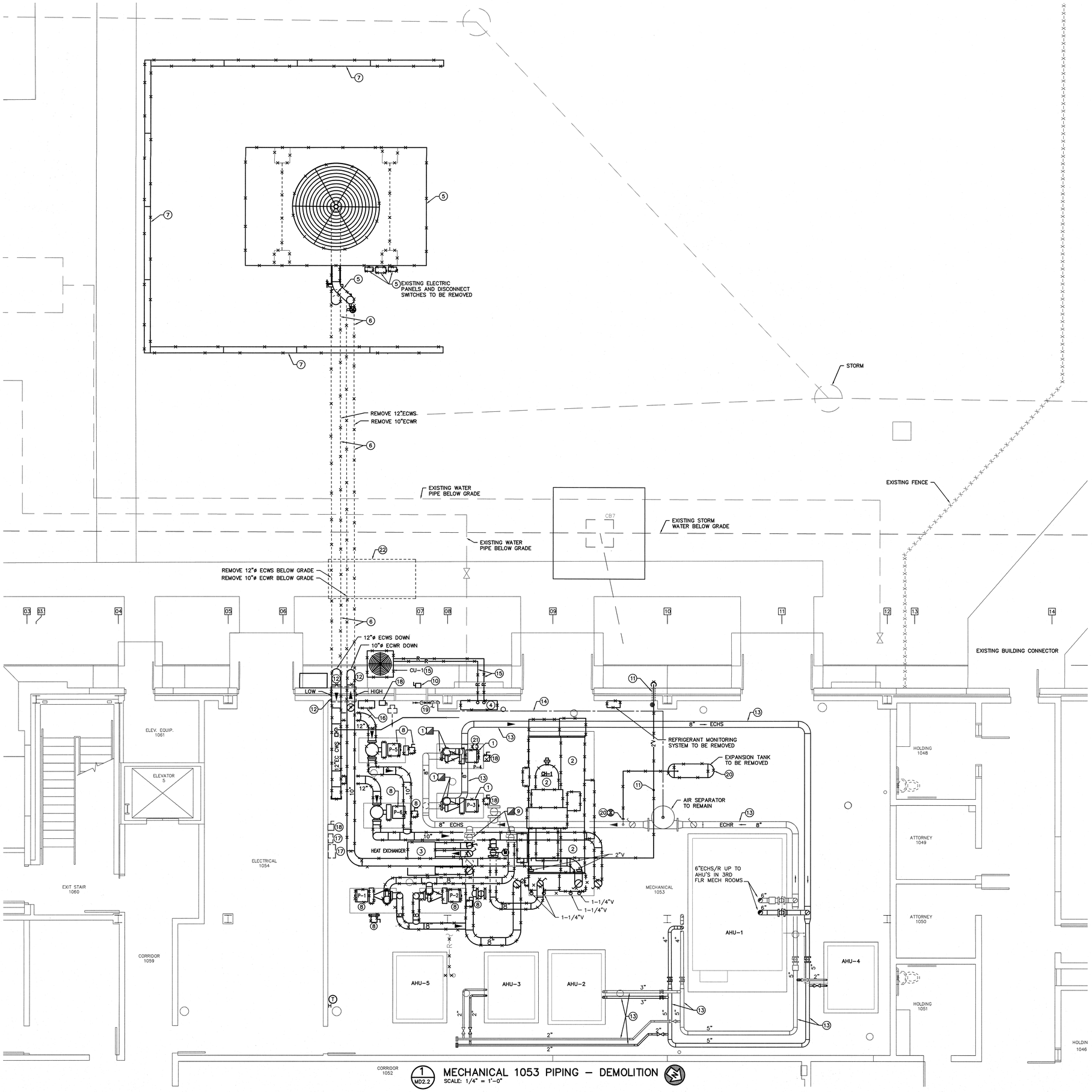

1 MD2.2 MECHANICAL 1053 PIPING – DEMOLITION
SCALE: 1/4" = 1'-0"

KEYED NOTES: (THIS SHEET ONLY)

1. REMOVE AND REPLACE EXISTING PUMP, VALVES AND ACCESSORIES. EXISTING CHILLED WATER PIPING SYSTEM SHALL REMAIN AND BE REUSED. CONCRETE PAD TO REMAIN.
2. REMOVE CHILLER, ELECTRICAL BACK TO SOURCE, PIPING VENT PIPING AND ALL ACCESSORIES. RECOVER REFRIGERANT FROM SYSTEM IN APPROPRIATE CONTAINERS FOR PROPER DISPOSAL AS SPECIFIED.
3. REMOVE HEAT EXCHANGER, PIPING AND ALL ACCESSORIES.
4. COOLING TOWER CHEMICAL FEED STATION AND CHEMICALS TO BE DEMOLITIONED AND REMOVED BY OWNER'S CHEMICAL TREATMENT CONTRACTOR.
5. REMOVE COOLING TOWER, TOWER PIERS, SUPPORT STRUCTURE, POWER, MAKE-UP WATER, COOLING TOWER PIERS, ELECTRICAL BACK TO SOURCE, AND ALL ACCESSORIES COMPLETE.
6. ALL UNDERGROUND CONDENSER PIPING TO BE REMOVED. REGRADING BY GENERAL CONTRACTOR.
7. GENERAL CONTRACTOR TO REMOVE COOLING TOWER WALL AND FOUNDATION COMPLETE.
8. REMOVE PUMP, VALVES, PIPING, ALL ACCESSORIES, AND REMOVE ELECTRICAL AND DISCONNECT SWITCHES BACK TO SOURCE. CONCRETE PAD TO REMAIN.
9. REMOVE PIPING TO POINT INDICATED.
10. RELOCATE DISCONNECT SWITCH. SEE M2.1 FOR NEW LOCATION.
11. REMOVE VENT PIPING THROUGH WALL AND GENERAL CONTRACTOR TO SEAL OPENING WEATHERTIGHT TO MATCH EXISTING.
12. REMOVE CONDENSER WATER PIPING. EXISTING HIGH WALL OPENING TO BE PATCHED TO MATCH ADJACENT BY GENERAL CONTRACTOR. EXISTING LOW WALL OPENING TO BE REUSED, SEE 1/M2.1.
13. EXISTING PIPING TO REMAIN.
14. MAKE-UP WATER TO REMAIN.
15. REMOVE EXISTING CU-1 AND ASSOCIATED REFRIGERANT PIPING.
16. REMOVE TOWER VFD AND TURN OVER TO THE OWNER.
17. EXISTING PUMP VFD TO REMAIN AND BE REUSED.
18. EXISTING DISCONNECT TO BE REUSED.
19. REMOVE AND REPLACE MAKE UP WATER STATION.
20. REMOVE EXPANSION TANK AND PIPING BACK TO ECHR AND CAP WATERTIGHT.
21. REMOVE AND REPLACE EXISTING CHEMICAL FEEDER.
22. CUT AND PATCH EXISTING SIDEWALKS AS NECESSARY FOR DEMOLITION AND INSTALLATION OF MECHANICAL PIPING.

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MECHANICAL 1053 PIPING - DEMOLITION

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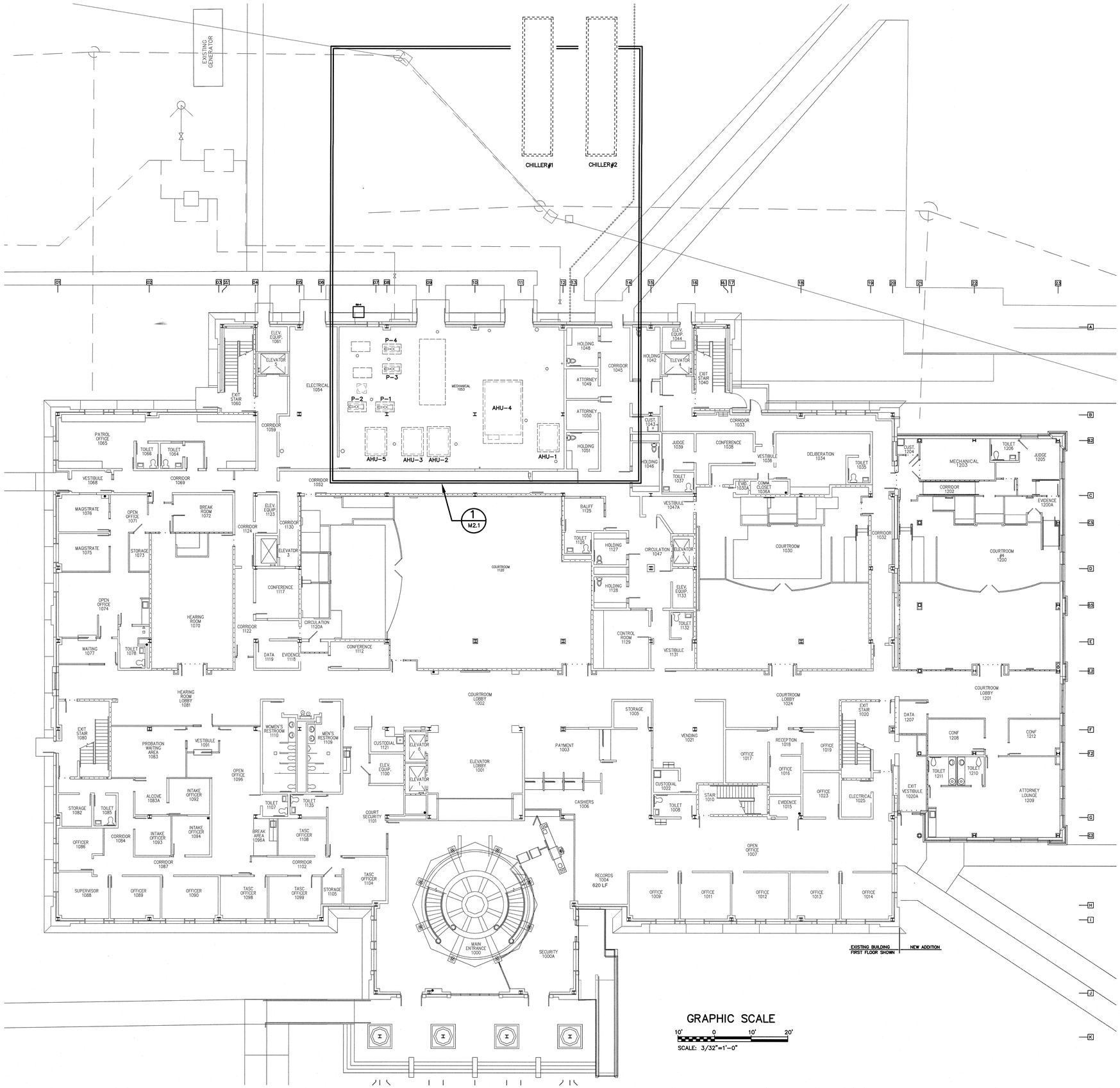

1 M1.0 OVERALL SITE PLAN – RENOVATION
SCALE: 3/32" = 1'-0"

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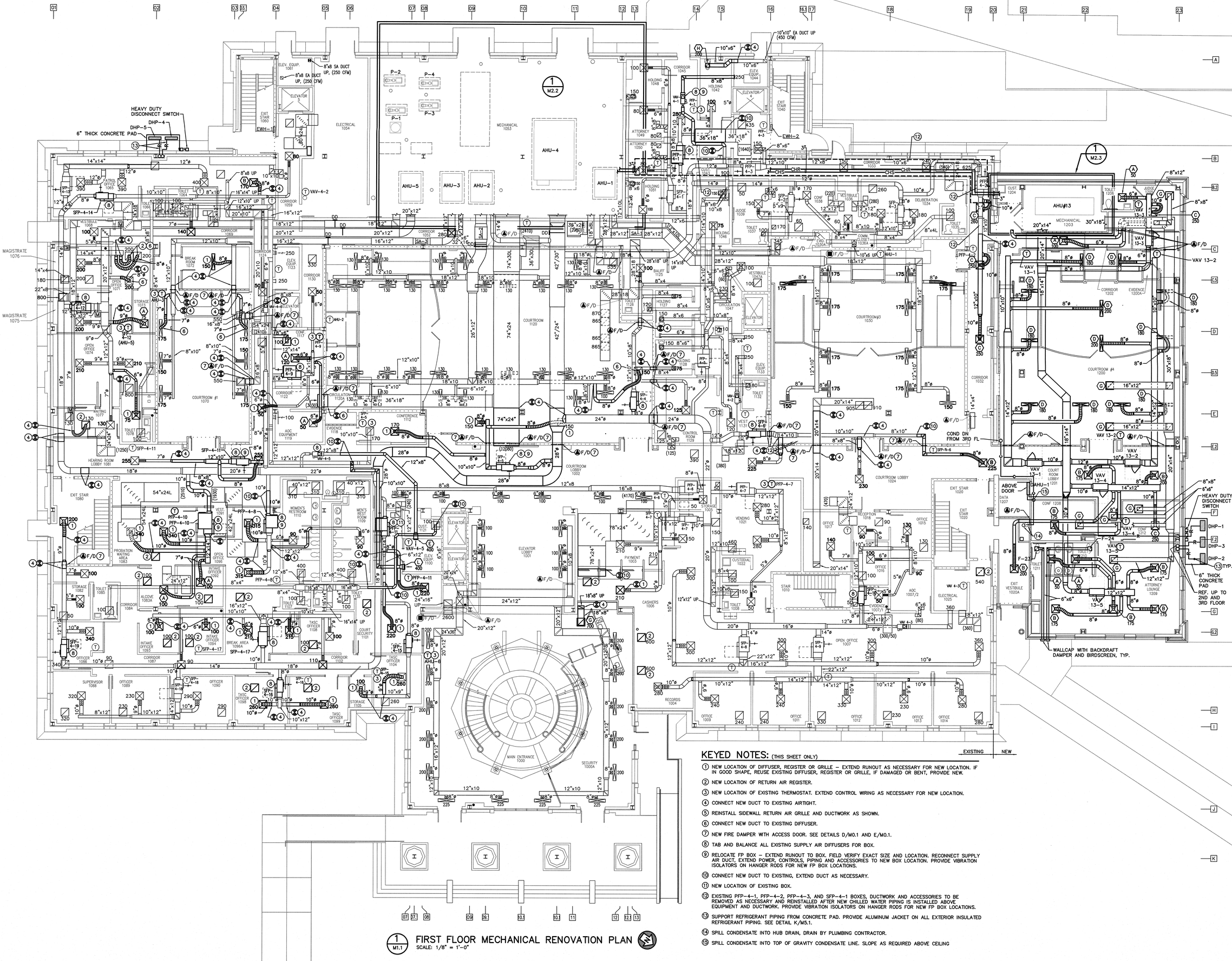

KEYED NOTES: (THIS SHEET ONLY)

EXISTING NEW

1. NEW LOCATION OF DIFFUSER, REGISTER OR GRILLE – EXTEND RUNOUT AS NECESSARY FOR NEW LOCATION. IF IN GOOD SHAPE, REUSE EXISTING DIFFUSER, REGISTER OR GRILLE, IF DAMAGED OR BENT, PROVIDE NEW.
2. NEW LOCATION OF RETURN AIR REGISTER.
3. NEW LOCATION OF EXISTING THERMOSTAT. EXTEND CONTROL WIRING AS NECESSARY FOR NEW LOCATION.
4. CONNECT NEW DUCT TO EXISTING AIRTIGHT.
5. REINSTALL SIDEWALL RETURN AIR GRILLE AND DUCTWORK AS SHOWN.
6. CONNECT NEW DUCT TO EXISTING DIFFUSER.
7. NEW FIRE DAMPER WITH ACCESS DOOR. SEE DETAILS D/M0.1 AND E/M0.1.
8. TAB AND BALANCE ALL EXISTING SUPPLY AIR DIFFUSERS FOR BOX.
9. RELOCATE FP BOX – EXTEND RUNOUT TO BOX. FIELD VERIFY EXACT SIZE AND LOCATION. RECONNECT SUPPLY AIR DUCT, EXTEND POWER, CONTROLS, PIPING AND ACCESSORIES TO NEW BOX LOCATION. PROVIDE VIBRATION ISOLATORS ON HANGER RODS FOR NEW FP BOX LOCATIONS.
10. CONNECT NEW DUCT TO EXISTING, EXTEND DUCT AS NECESSARY.
11. NEW LOCATION OF EXISTING BOX.
12. EXISTING PFP-4-1, PFP-4-2, PFP-4-3, AND SFP-4-1 BOXES, DUCTWORK AND ACCESSORIES TO BE REMOVED AS NECESSARY AND REINSTALLED AFTER NEW CHILLED WATER PIPING IS INSTALLED ABOVE EQUIPMENT AND DUCTWORK. PROVIDE VIBRATION ISOLATORS ON HANGER RODS FOR NEW FP BOX LOCATIONS.
13. SUPPORT REFRIGERANT PIPING FROM CONCRETE PAD. PROVIDE ALUMINUM JACKET ON ALL EXTERIOR INSULATED REFRIGERANT PIPING. SEE DETAIL K/M5.1.
14. SPILL CONDENSATE INTO HUB DRAIN, DRAIN BY PLUMBING CONTRACTOR.
15. SPILL CONDENSATE INTO TOP OF GRAVITY CONDENSATE LINE. SLOPE AS REQUIRED ABOVE CEILING

1 M1.1 FIRST FLOOR MECHANICAL RENOVATION PLAN
SCALE: 1/8" = 1'-0"

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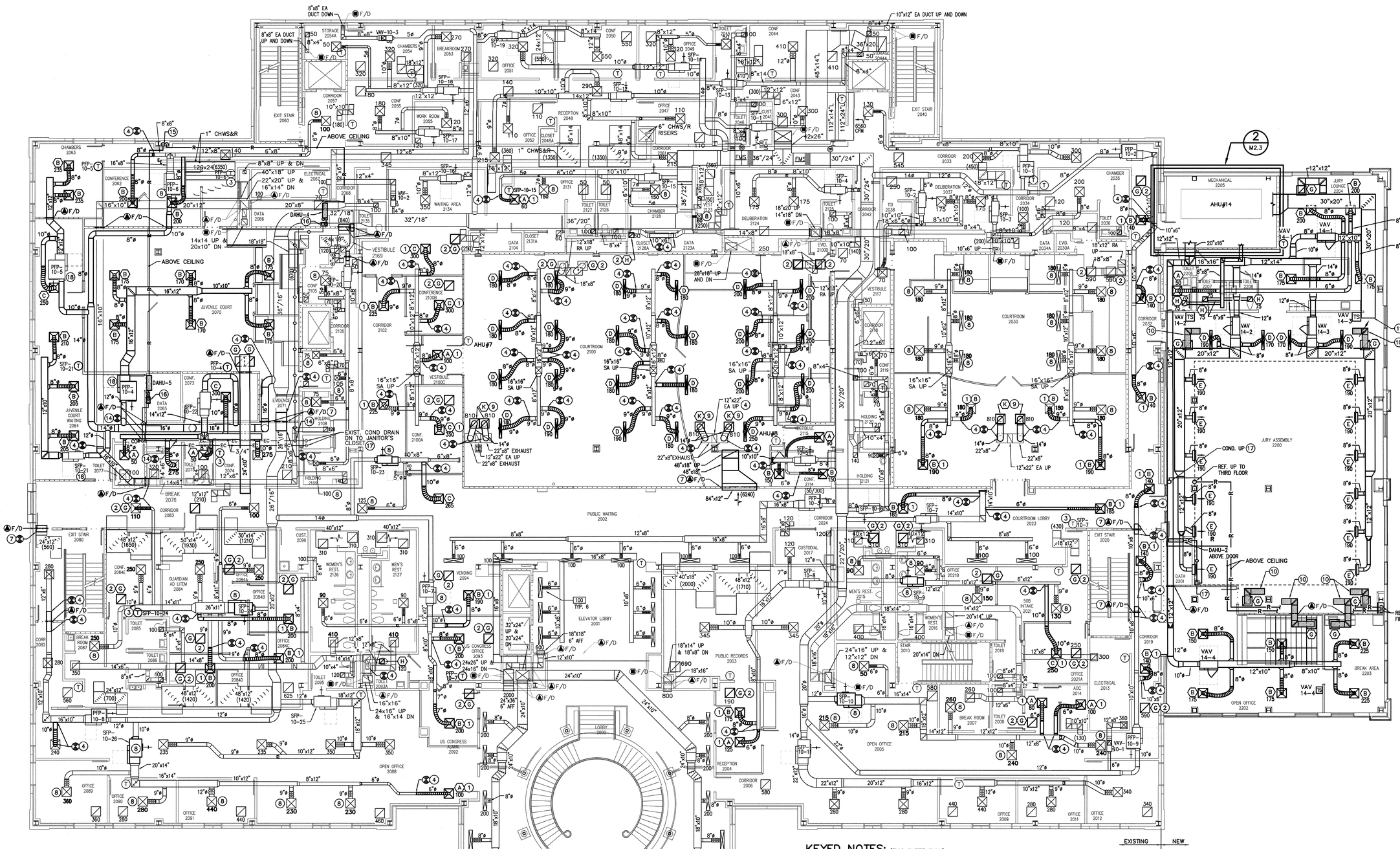

KEYED NOTES: (THIS SHEET ONLY)

1. NEW LOCATION OF DIFFUSER, REGISTER OR GRILLE – EXTEND RUNOUT AS NECESSARY FOR NEW LOCATION. IF IN GOOD SHAPE, REUSE EXISTING DIFFUSER, REGISTER OR GRILLE, IF DAMAGED OR BENT, PROVIDE NEW.
2. NEW LOCATION OF RETURN AIR REGISTER.
3. NEW LOCATION OF EXISTING THERMOSTAT. EXTEND CONTROL WIRING AS NECESSARY FOR NEW LOCATION.
4. CONNECT NEW DUCT TO EXISTING AIRTIGHT.
5. REINSTALL SIDEWALL RETURN AIR GRILLE AND DUCTWORK AS SHOWN.
6. CONNECT NEW DUCT TO EXISTING DIFFUSER.
7. NEW FIRE DAMPER WITH ACCESS DOOR. SEE DETAILS D/M0.1 AND E/M0.1.
8. TAB AND BALANCE ALL EXISTING SUPPLY AIR DIFFUSER FOR BOX.
9. NEW EXHAUST REGISTER. CONNECT TO EXISTING EXHAUST DUCT AIRTIGHT.
10. INTERNALLY LINED RETURN AIR DUCT, SEE DETAIL E/M5.0.
11. COVER OPEN END OF DUCTWORK WITH 1/2"x1/2" WIRE MESH. RETURN AIR DUCT TO ABOVE CEILING.
12. NOT USED.
13. NEW RETURN AIR DUCTWORK ABOVE CEILING.
14. EXTEND EXISTING CONDENSATE PIPING AND PROVIDE CLEANOUT. DROP CONDENSATE FROM DAHU INTO TOP OF OF EXISTING CONDENSATE PIPING. FIELD VERIFY EXISTING SIZE AND LOCATION.
15. REFRIGERANT PIPING DOWN TO FIRST FLOOR. SEE 1/M1.1 FOR CONTINUATION.
16. PROVIDE CONDENSATE PUMP.
17. CONDENSATE DOWN TO FIRST FLOOR.
18. RELOCATE FP BOX – EXTEND RUNOUT TO BOX. FIELD VERIFY EXACT SIZE AND LOCATION. RECONNECT SUPPLY AIR DUCT, EXTEND POWER, CONTROLS, PIPING AND ACCESSORIES TO NEW BOX LOCATION. PROVIDE VIBRATION ISOLATORS ON HANGER RODS FOR NEW FP BOX LOCATIONS.

1 M1.2 SECOND FLOOR MECHANICAL RENOVATION PLAN
SCALE: 1/8" = 1'-0"

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SECOND FLOOR MECHANICAL RENOVATION PLAN

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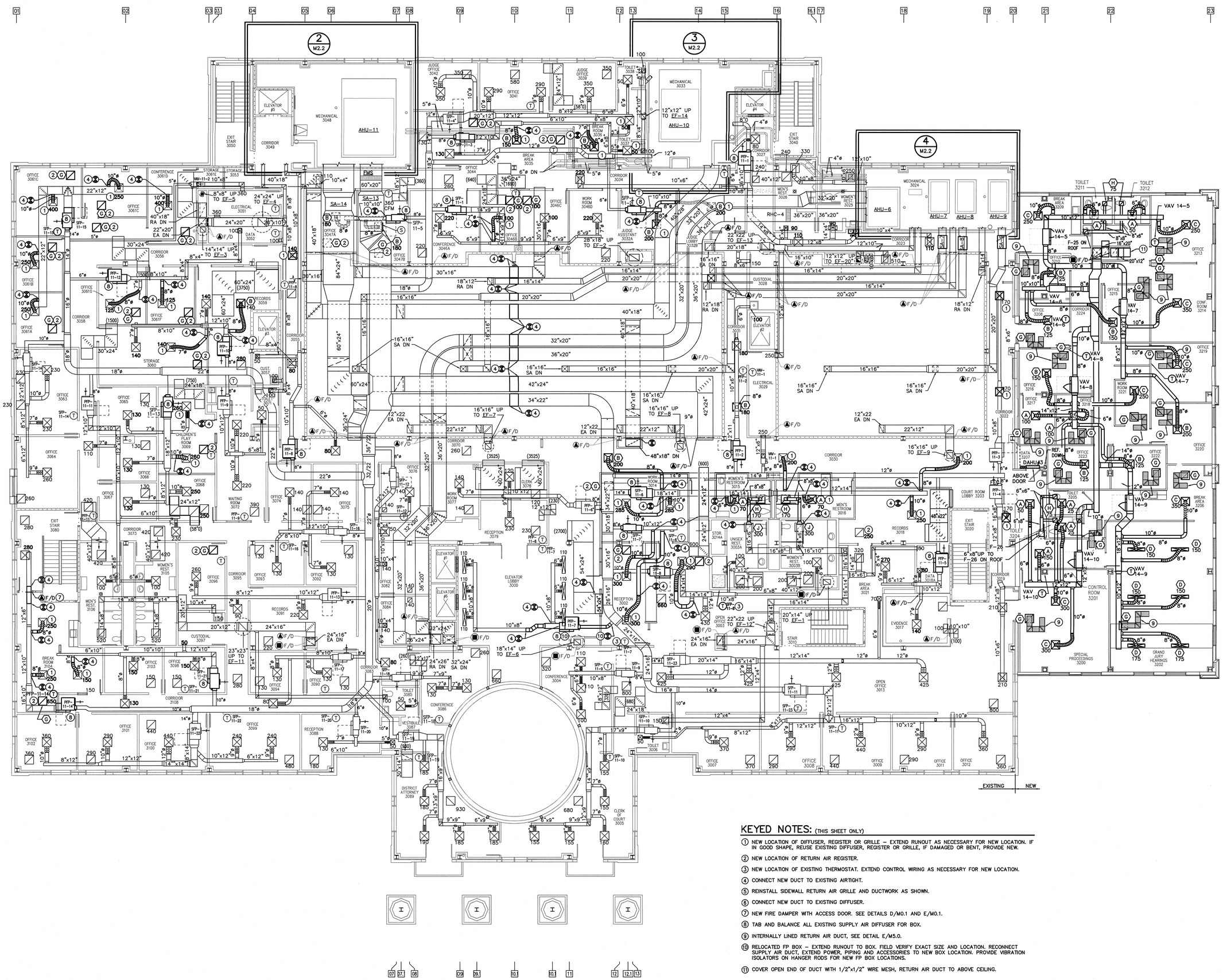

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2. NEW LOCATION OF RETURN AIR REGISTER.
3. NEW LOCATION OF EXISTING THERMOSTAT. EXTEND CONTROL WIRING AS NECESSARY FOR NEW LOCATION.
4. CONNECT NEW DUCT TO EXISTING AIRTIGHT.
5. REINSTALL SIDEWALL RETURN AIR GRILLE AND DUCTWORK AS SHOWN.
6. CONNECT NEW DUCT TO EXISTING DIFFUSER.
7. NEW FIRE DAMPER WITH ACCESS DOOR. SEE DETAILS D/M0.1 AND E/M0.1.
8. TAB AND BALANCE ALL EXISTING SUPPLY AIR DIFFUSER FOR BOX.
9. INTERNALLY LINED RETURN AIR DUCT, SEE DETAIL E/M5.0.
10. RELOCATED FP BOX – EXTEND RUNOUT TO BOX. FIELD VERIFY EXACT SIZE AND LOCATION. RECONNECT SUPPLY AIR DUCT, EXTEND POWER, PIPING AND ACCESSORIES TO NEW BOX LOCATION. PROVIDE VIBRATION ISOLATORS ON HANGER RODS FOR NEW FP BOX LOCATIONS.
11. COVER OPEN END OF DUCT WITH 1/2"x1/2" WIRE MESH, RETURN AIR DUCT TO ABOVE CEILING.

1 / M1.3 THIRD FLOOR MECHANICAL RENOVATION PLAN
SCALE: 1/8" = 1'-0"

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NORTH CAROLINA PROFESSIONAL SEAL 17655 ENGINEER KENNETH LYNCH

Brunswick County Courthouse Addition & Renovations

Bolivia, NC

CONSTRUCTION DRAWINGS
SEPTEMBER 23, 2019

Revisions:

THIRD FLOOR MECHANICAL RENOVATION PLAN

M1.3

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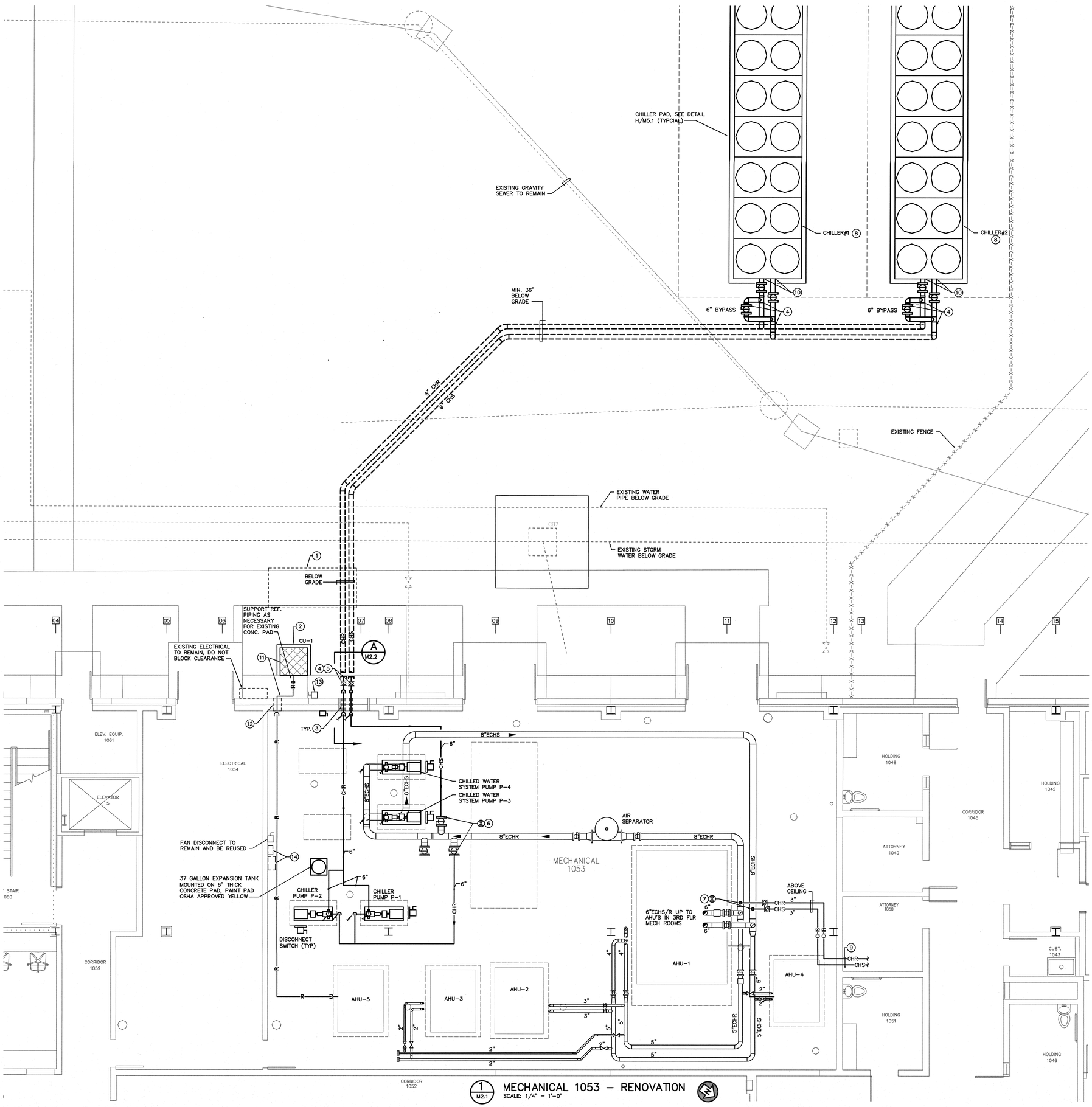

1 M2.1 MECHANICAL 1053 – RENOVATION
SCALE: 1/4" = 1'-0"

KEYED NOTES: (THIS SHEET ONLY)

1. CUT AND PATCH EXISTING SIDEWALKS AS NECESSARY FOR DEMOLITION AND INSTALLATION OF MECHANICAL PIPING.
2. REUSE EXISTING CONCRETE PAD OR PROVIDE 6" THICK CONCRETE PAD FOR NEW CU LOCATION.
3. 6"CHR AND 6"CHS ROUTED THROUGH OPENING OF EXISTING 3'-4" X 3'-4" SIDEWALL LOUVER. REWORK OPENING FOR PIPING AND PROVIDE NEW 24"X34" LOUVER IN REMAINDER OF OPENING. PROVIDE NEAT INSULATED BLANK OFF AROUND PIPING WEATHERTIGHT. SEE DETAIL A/M2.2.
4. HEAT TRACE PIPING ON ALL EXPOSED PIPING, SEE DETAIL G/M5.1
5. 6" EMERGENCY CONNECTION PIPING TO 6" CHS AND 6" CHR., SEE A/M2.2.
6. CONNECT CHS AND CHR TO EXISTING. PROVIDE SIZE TRANSITION AS NECESSARY. FIELD VERIFY EXACT SIZE AND LOCATION.
7. HOT TAP NEW CHS AND CHR TO EXISTING SYSTEM.
8. FIELD VERIFY EXACT CHILLER LOCATION TO AVOID EXISTING UNDERGROUND PIPING AND MAINTAIN PROPER CLEARANCES BETWEEN CHILLERS PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
9. SEE M1.1 FOR CONTINUATION OF PIPING.
10. PIPING CONNECTION TO CHILLER, SEE DETAIL J/M5.1
11. NEW CU-1, RELOCATE TO AVOID NEW CHS AND CHR PIPING. PROVIDE NEW 6" CONCRETE PAD. REUSE EXISTING REFRIGERANT PIPING IF POSSIBLE, PROVIDE NEW IF REQUIRED. PROVIDE NEW INSULATION AS SPECIFIED. COVER EXTERIOR REFRIGERANT PIPING WITH ALUMINUM JACKET.
12. REUSE EXISTING LOW WALL OPENING IN WALL FOR REFRIGERANT PIPING – PROVIDE INSULATED BLANK WEATHERTIGHT TO COVER REMAINDER OF OPENING IN A NEAT WORKMANLIKE MANNER.
13. NEW LOCATION OF EXISTING DISCONNECT. VERIFY WITH ELECTRICAL AND NEW EQUIPMENT FUSE SIZE. SEAL WEATHERTIGHT.
14. REUSE VFD FOR PUMP P-3 AND P-4.

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MECHANICAL 1053 - RENOVATION

M2.1

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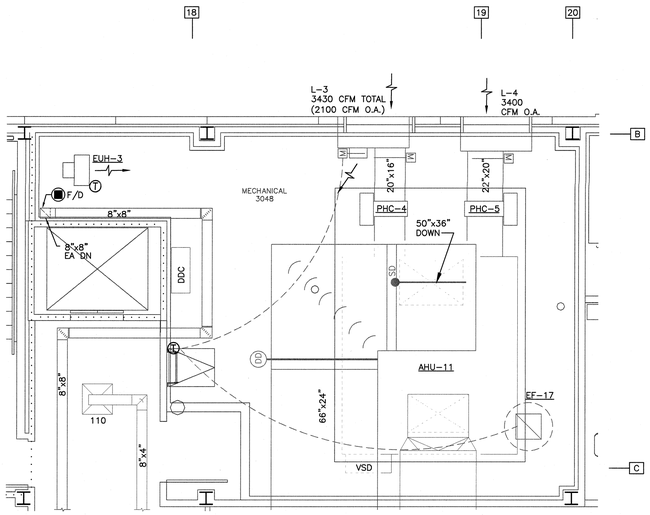
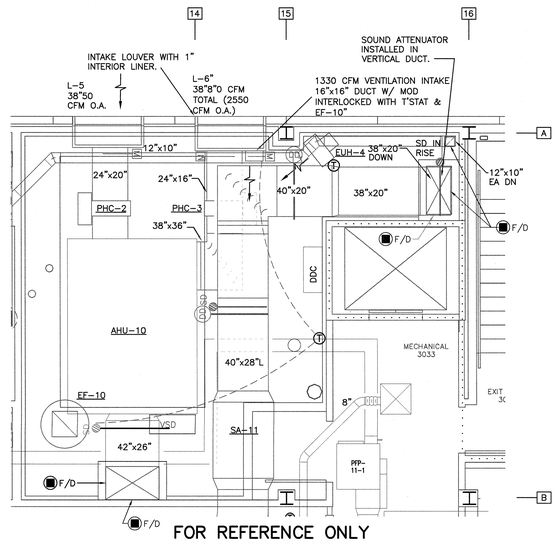


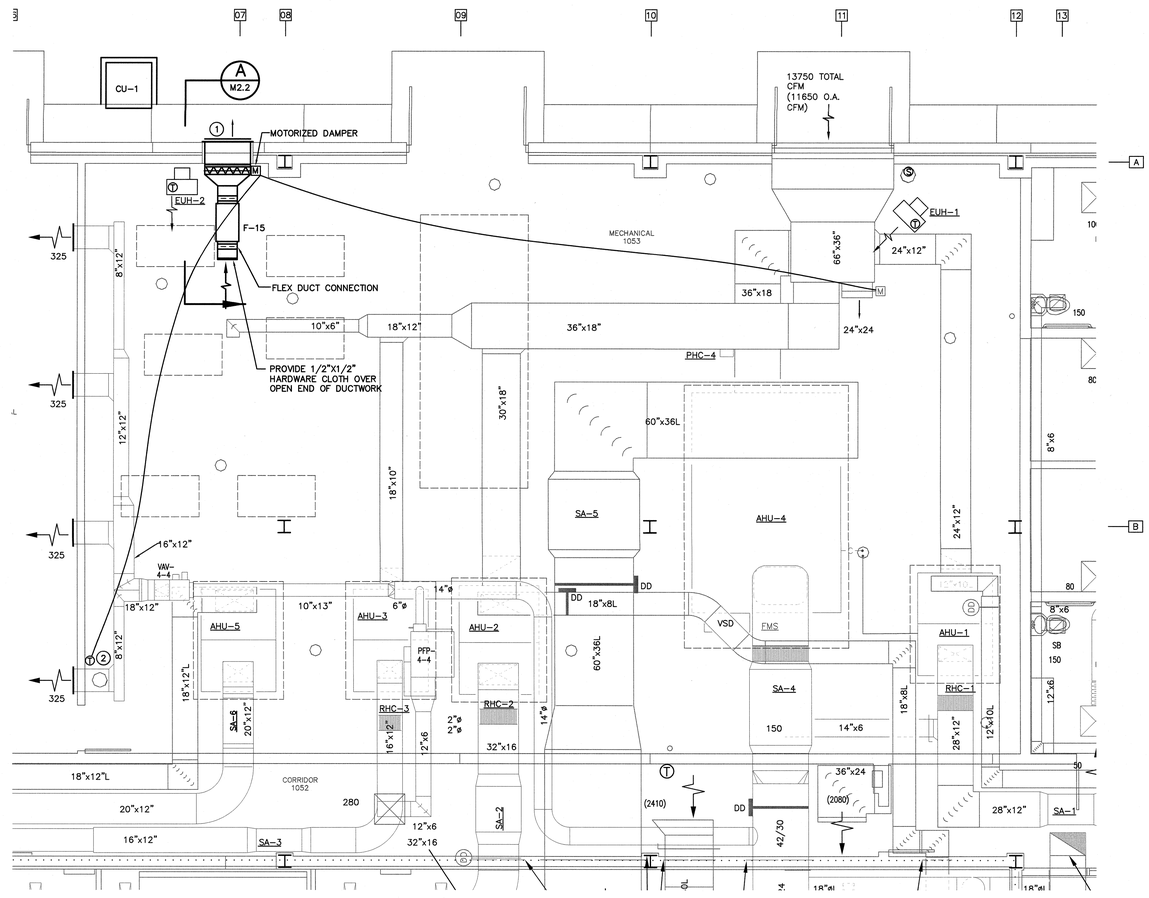
FOR REFERENCE ONLY

2 M2.2 MECHANICAL 3048
SCALE: 1/4" = 1'-0"



FOR REFERENCE ONLY

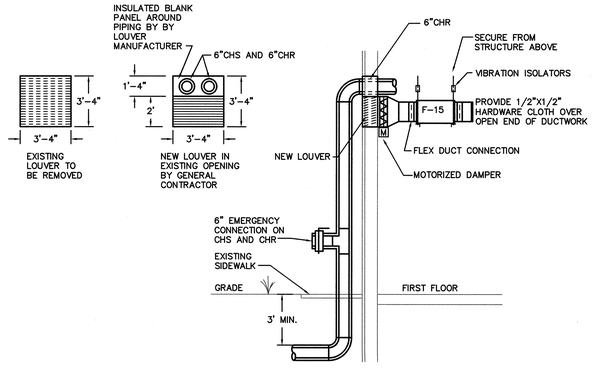
3 M2.2 MECHANICAL 3033
SCALE: 1/4" = 1'-0"



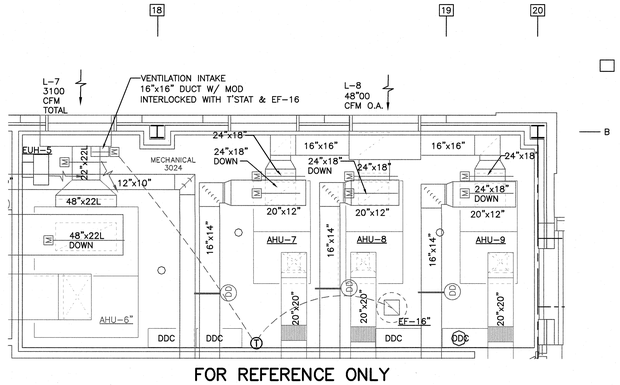
1 M2.2 MECHANICAL 1053
SCALE: 1/4" = 1'-0"

KEYED NOTES: (THIS SHEET ONLY)

1. NEW LOUVER, SEE SECTION A/M2.2.
2. EXISTING THERMOSTAT AND CONTROL WIRING TO BE REUSED FOR NEW FAN F-15.



A M2.2 SECTION
SCALE: NONE



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4 M2.2 MECHANICAL 3024
SCALE: 1/4" = 1'-0"

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ENLARGED MECHANICAI ROOMS - DUCTWORK - RENOVATION

M2.2

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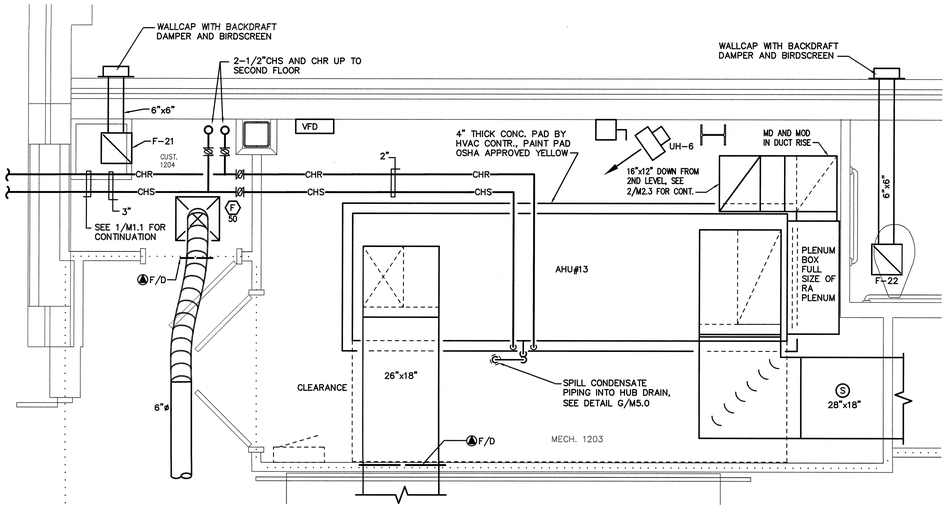
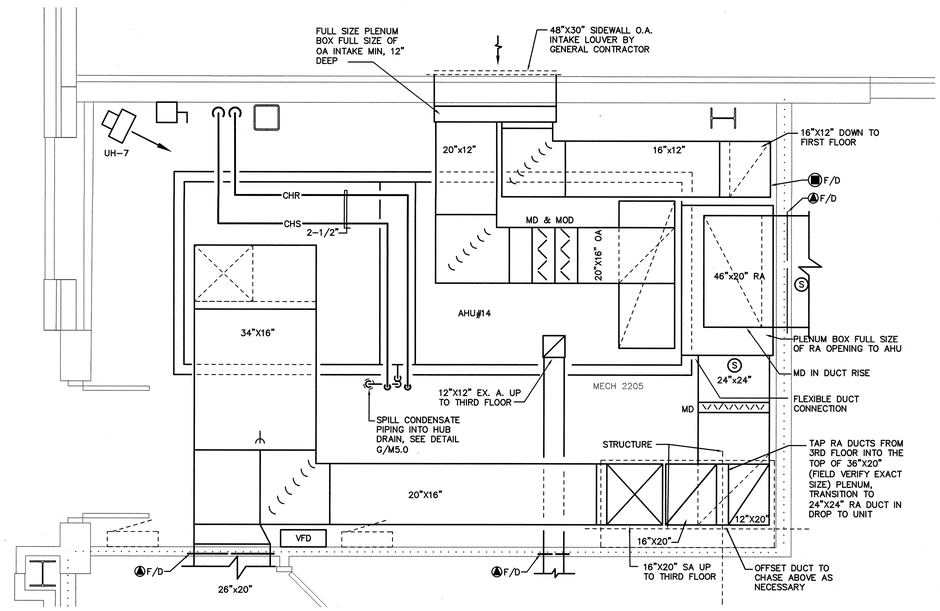


1 M2.3 **MECHANICAL 1203**
SCALE: 1/2" = 1'-0"



2 M2.3 **MECHANICAL 2205**
SCALE: 1/2" = 1'-0"

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ENLARGED MECHANICAL ROOMS 1203 & 2205

M2.3

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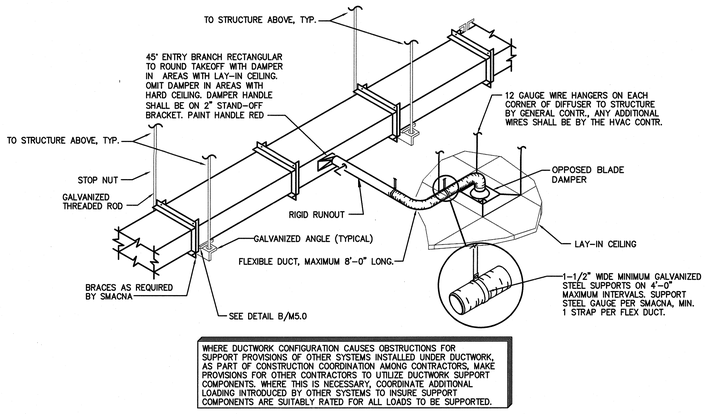
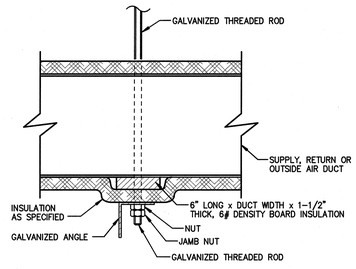
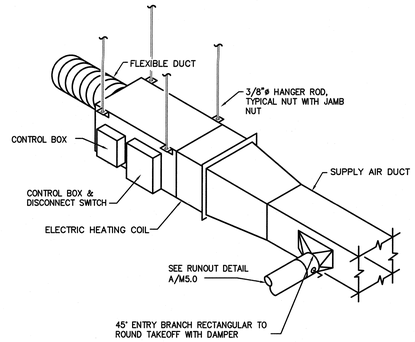


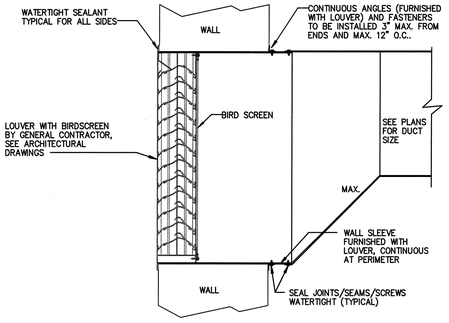
A M5.0 TYPICAL SUPPLY DUCT DETAIL
SCALE: NONE



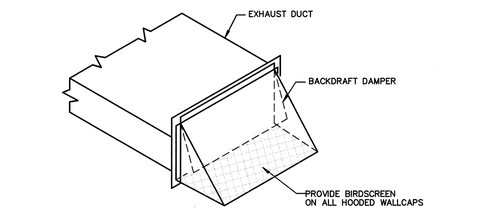
B M5.0 TYPICAL DUCT HANGER DETAIL
SCALE: NONE



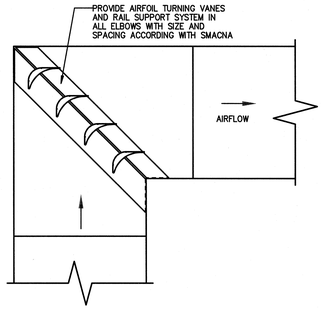
C M5.0 ROOM VAV BOX DETAIL
SCALE: NONE



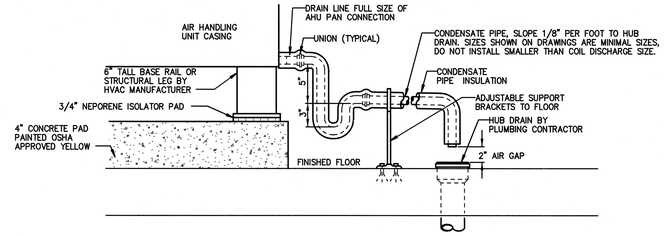
D M5.0 TYPICAL WALL LOUVER DETAIL
SCALE: NONE



E M5.0 RETURN AIR ELBOW DETAIL
SCALE: NONE

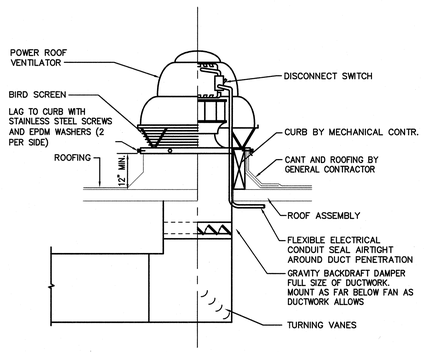


F M5.0 TYPICAL DUCT ELBOW WITH TURNING VANES DETAIL
SCALE: NONE



G M5.0 CONDENSATE TRAP DETAIL
SCALE: NONE

H M5.0 HOODED WALL CAP DETAIL
SCALE: NONE



I M5.0 POWER ROOF VENTILATOR DETAIL
NO SCALE

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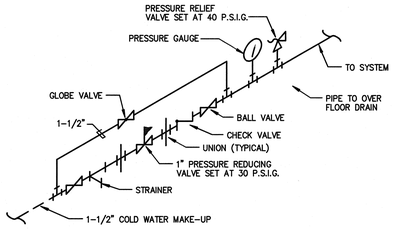
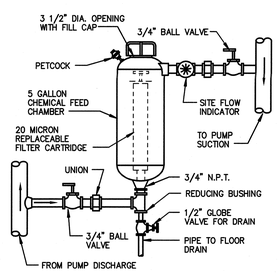
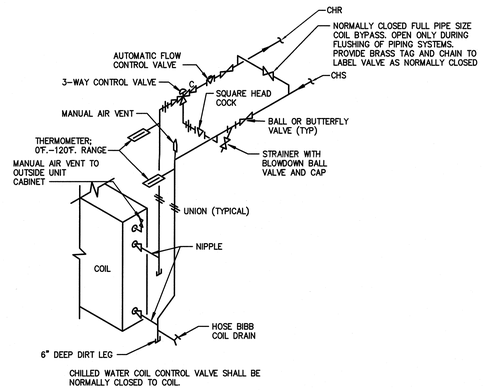


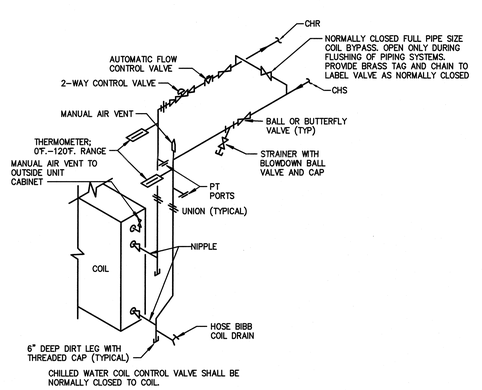
A M5.1 PRESSURE REDUCING STATION DETAIL
SCALE: NONE



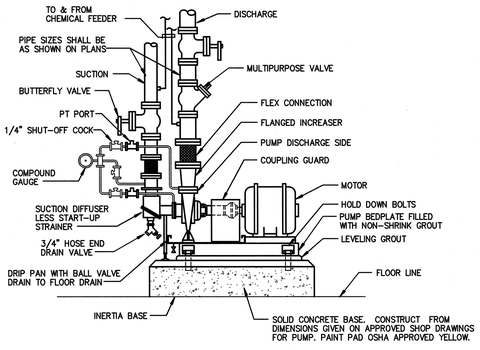
B M5.1 BY-PASS CHEMICAL FEEDER DETAIL
SCALE: NONE



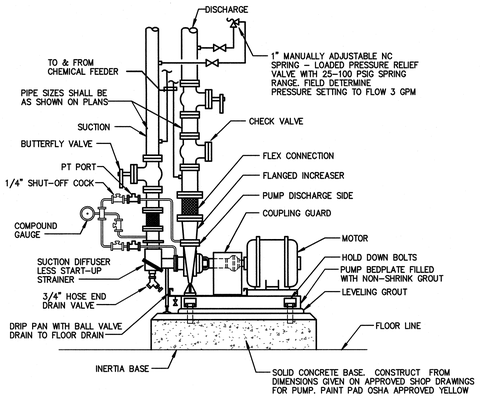
C M5.1 TYPICAL COIL PIPING DETAIL (3-WAY)
SCALE: NONE



D M5.1 TYPICAL COIL PIPING DETAIL (2-WAY)
SCALE: NONE



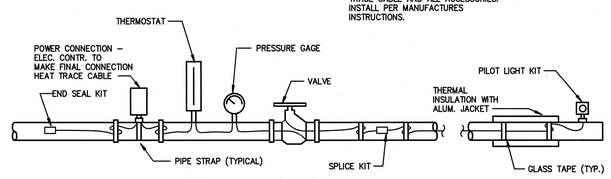
E M5.1 BASE MOUNTED PUMP DETAIL - CONSTANT FLOW
SCALE: NONE



F M5.1 BASE MOUNTED PUMP DETAIL - VARIABLE FLOW
SCALE: NONE

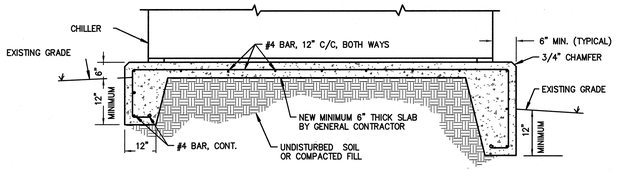
HEAT TRACE CABLE SIZING CHART	
PIPE SIZE	MIN. WATTS PER FOOT
3/4" - 4"	5
5" - 10"	8

HEAT TRACE CABLE: 120V SELF-REGULATING TYPE WITH POWER CONNECTION KIT AND THERMOSTAT SET AT 40°F (# INDICATED WATTS/FOOT FROM CABLE SIZING CHART). HVAC CONTR. TO PROVIDE AND INSTALL HEAT TRACE CABLE AND ALL ACCESSORIES. INSTALL PER MANUFACTURES INSTRUCTIONS.

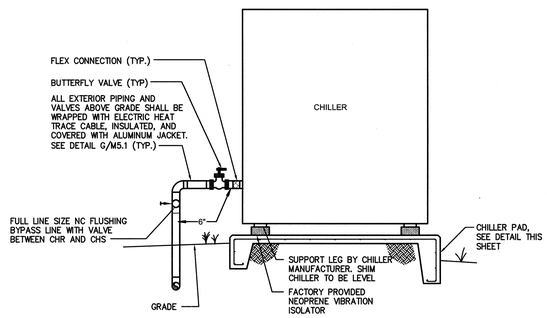


NOTES:
1. PROVIDE A TEE KIT WHEN CONNECTING THREE LENGTHS OF HEAT TRACE CABLE TOGETHER.
2. INSTALL HEAT TRACE CABLE ON ALL DEVICES PER UNIT MFGR. RECOMENDATIONS. THIS INCLUDES BUT IS NOT LIMITED TO PUMP, TEES, ELBOWS, AND SUPPORTS EXPOSED ON EXTERIOR.
3. INSTALL HEAT TRACE CABLE ON EXTERIOR PIPING TO 24" BELOW GRADE.

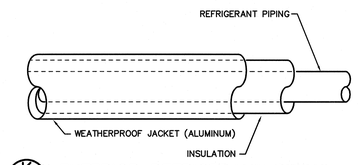
G M5.1 HEAT TRACE DETAIL
SCALE: NONE



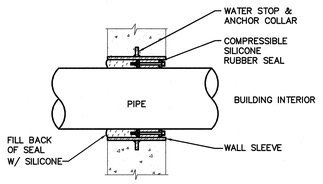
H M5.1 CHILLER PAD DETAIL
SCALE: NONE



J M5.1 CHILLER DETAIL
SCALE: NONE



K M5.1 EXTERIOR REFRIGERANT PIPING
NO SCALE



L M5.1 PIPING SLEEVE DETAIL
NO SCALE

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SERIES FAN POWER TERMINAL UNIT SCHEDULE – FOR REFERENCE ONLY

TERMINAL NUMBER	BOX INLET CFM			BOX INLET SIZE (1)	BOX RUNOUT SIZE	FAN CFM	FAN ELECTRICAL		HEATING COIL				REMARKS
	COOLING MINIMUM	COOLING MAXIMUM	HEATING				HP	VOLTAGE & PHASE	HEATING CAPACITY MBH	KW	STAGES	VOLTAGE & PHASE	
SFP-4-1	180	360	–	8"ø	–	360	1/10	277/1	12830	4.0	–	277/1	EXISTING
SFP-4-2	75	150	–	6"ø	–	150	1/10	277/1	3321	1.0	–	277/1	EXISTING
SFP-4-3	295	590	–	8"ø	–	590	1/4	277/1	13062	4.0	–	277/1	EXISTING RELOCATED (2)
SFP-4-4	225	450	–	8"ø	–	450	1/10	277/1	9963	3.0	–	277/1	EXISTING (2)
SFP-4-5	235	470	–	8"ø	–	470	1/10	277/1	10406	3.0	–	277/1	EXISTING
SFP-4-6	340	680	–	10"ø	–	680	1/4	277/1	15055	4.5	–	277/1	EXISTING (2)
SFP-4-7	310	620	–	10"ø	–	620	1/4	277/1	13727	4.0	–	277/1	EXISTING
SFP-4-8	780	1560	–	14"ø	–	1560	1/2	480/3	34538	10.0	–	480/3	EXISTING
SFP-4-9	800	1600	–	14"ø	–	1600	1/2	480/3	57024	17.0	–	480/3	EXISTING
SFP-4-10	300	600	–	8"ø	–	600	1/4	277/1	13284	4.0	–	277/1	EXISTING (2)
SFP-4-11	255	510	–	8"ø	–	510	1/10	277/1	11291	3.5	–	277/1	EXISTING RELOCATED (2)
SFP-4-12	700	1400	–	12"ø	–	1400	1/2	480/3	49896	15.0	–	480/3	EXISTING (2)
SFP-4-13	590	1180	–	12"ø	–	1180	1/3	480/3	42055	12.5	–	480/3	EXISTING
SFP-4-14	220	440	–	8"ø	–	440	1/10	277/1	9742	3.0	–	277/1	EXISTING (2)
SFP-4-15	180	360	–	8"ø	–	360	1/10	277/1	12830	4.0	–	277/1	EXISTING (2)
SFP-4-16	260	520	–	8"ø	–	520	1/10	277/1	18533	5.5	–	277/1	EXISTING (2)
SFP-4-17	465	930	–	10"ø	–	930	1/3	277/1	20590	6.0	–	277/1	EXISTING (2)
SFP-4-18	420	840	–	10"ø	–	840	1/4	480/3	29938	9.0	–	480/3	EXISTING
SFP-4-19	379	740	–	10"ø	–	740	1/4	480/3	26374	8.0	–	480/3	EXISTING (2)
SFP-10-1	150	300	–	8"ø	–	300	1/10	277/1	10692	3.5	–	277/1	EXISTING
SFP-10-2	210	420	–	8"ø	–	420	1/10	277/1	9299	3.0	–	277/1	EXISTING
SFP-10-3	150	300	–	8"ø	–	300	1/10	277/1	6642	2.0	–	277/1	EXISTING
SFP-10-4	175	350	–	8"ø	–	350	1/10	277/1	7749	2.5	–	277/1	EXISTING
SFP-10-5	195	390	–	8"ø	–	390	1/10	277/1	8634	2.5	–	277/1	EXISTING
SFP-10-6	165	330	–	8"ø	–	330	1/10	277/1	7306	2.5	–	277/1	EXISTING
SFP-10-7	285	570	–	8"ø	–	570	1/4	277/1	12619	4.0	–	277/1	EXISTING (2)
SFP-10-8	555	1110	–	12"ø	–	1110	1/3	480/3	24575	7.5	–	480/3	EXISTING (2)
SFP-10-9	355	710	–	10"ø	–	710	1/4	277/1	15719	5.0	–	277/1	EXISTING (2)
SFP-10-10	700	1400	–	12"ø	–	1400	1/2	480/3	30996	9.0	–	480/3	EXISTING
SFP-10-11	810	1620	–	14"ø	–	1620	1/2	480/3	57736	17.0	–	480/3	EXISTING
SFP-10-12	470	940	–	10"ø	–	940	1/3	277/1	20811	6.0	–	277/1	EXISTING
SFP-10-13	230	460	–	8"ø	–	460	1/10	277/1	10184	3.0	–	277/1	EXISTING
SFP-10-14	345	690	–	10"ø	–	690	1/4	480/3	24591	7.5	–	480/3	EXISTING
SFP-10-15	210	420	–	8"ø	–	420	1/10	277/1	9298	3.0	–	277/1	EXISTING
SFP-10-16	175	350	–	8"ø	–	350	1/10	277/1	7749	2.5	–	277/1	EXISTING
SFP-10-17	150	300	–	8"ø	–	300	1/10	277/1	6642	2.0	–	277/1	EXISTING
SFP-10-18	320	640	–	10"ø	–	640	1/4	480/3	22809	7.0	–	480/3	EXISTING
SFP-10-19	275	550	–	8"ø	–	550	1/10	277/1	19602	6.0	–	277/1	EXISTING
SFP-10-20	215	430	–	8"ø	–	430	1/10	277/1	9520	3.0	–	277/1	EXISTING
SFP-10-21	310	620	–	10"ø	–	620	1/4	277/1	13726	4.0	–	277/1	EXISTING RELOCATED (2)
SFP-10-22	475	950	–	10"ø	–	950	1/3	480/3	21033	6.5	–	480/3	EXISTING (2)
SFP-10-23	195	390	–	8"ø	–	390	1/10	277/1	8634	2.5	–	277/1	EXISTING (2)
SFP-10-24	905	1810	–	14"ø	–	1810	3/4	480/3	40073	12.0	–	480/3	EXISTING (2)
SFP-10-25	585	1170	–	12"ø	–	1170	1/3	480/3	25903	7.5	–	480/3	EXISTING
SFP-10-26	820	1640	–	14"ø	–	1640	1/2	480/3	58449	17.0	–	480/3	EXISTING (2)
SFP-11-1	320	640	–	10"ø	–	640	1/4	277/1	15897	5.0	–	277/1	EXISTING (2)
SFP-11-2	200	400	–	6"ø	–	400	1/10	277/1	9936	3.0	–	277/1	EXISTING
SFP-11-3	280	560	–	8"ø	–	560	1/4	277/1	13910	4.0	–	277/1	EXISTING (2)
SFP-11-4	665	1330	–	12"ø	–	1330	1/2	480/3	47401	14.0	–	480/3	EXISTING
SFP-11-5	180	360	–	8"ø	–	360	1/10	277/1	8942	3.0	–	277/1	EXISTING (2)
SFP-11-6	780	1560	–	14"ø	–	1560	1/2	480/3	38570	11.5	–	480/3	EXISTING (2)
SFP-11-7	300	600	–	8"ø	–	600	1/4	277/1	14904	4.5	–	277/1	EXISTING (2)
SFP-11-8	460	920	–	10"ø	–	920	1/3	480/3	22852	7.0	–	480/3	EXISTING
SFP-11-9	160	320	–	8"ø	–	320	1/10	277/1	7948	2.5	–	277/1	EXISTING
SFP-11-10	390	780	–	10"ø	–	780	1/4	480/3	27799	8.5	–	480/3	EXISTING
SFP-11-11	900	1800	–	14"ø	–	1800	3/4	480/3	64152	19.0	–	480/3	EXISTING
SFP-11-12	275	550	–	8"ø	–	550	1/10	277/1	13662	4.0	–	277/1	EXISTING
SFP-11-13	580	1160	–	12"ø	–	1160	1/3	480/3	28814	8.5	–	480/3	EXISTING (2)
SFP-11-14	360	720	–	10"ø	–	720	1/4	480/3	25660	7.5	–	480/3	EXISTING
SFP-11-15	775	1550	–	14"ø	–	1550	1/2	480/3	55242	16.5	–	480/3	EXISTING (2)
SFP-11-16	270	540	–	8"ø	–	540	1/10	277/1	13413	4.0	–	277/1	EXISTING
SFP-11-17	170	340	–	8"ø	–	340	1/10	277/1	8445	2.5	–	277/1	EXISTING
SFP-11-18	155	310	–	8"ø	–	310	1/10	277/1	15649	2.5	–	277/1	EXISTING
SFP-11-19	465	930	–	10"ø	–	930	1/3	480/3	33145	10.0	–	480/3	EXISTING
SFP-11-20	90	180	–	8"ø	–	180	1/10	277/1	6415	2.0	–	277/1	EXISTING
SFP-11-21	315	630	–	10"ø	–	630	1/4	277/1	15649	4.5	–	277/1	EXISTING (2)
SFP-11-22	765	1570	–	14"ø	–	1570	1/2	480/3	55954	16.5	–	480/3	EXISTING
SFP-11-23	885	1770	–	14"ø	–	1770	3/4	480/3	43966	13.0	–	480/3	EXISTING

(1) BASED ON EXISTING DRAWINGS.
(2) NEW LAYOUT AND/OR GRILLE LOCATIONS. TAB BOX AND SUPPLY AIR CFMS FOR EACH RUNOUT.

PARALLEL FAN POWER TERMINAL UNIT SCHEDULE – FOR REFERENCE ONLY

TERMINAL NUMBER	BOX INLET CFM			BOX INLET SIZE (1)	BOX RUNOUT SIZE	FAN CFM	FAN ELECTRICAL		HEATING COIL				REMARKS
	COOLING MINIMUM	COOLING MAXIMUM	HEATING				HP	VOLTAGE & PHASE	HEATING CAPACITY MBH	KW	STAGES	VOLTAGE & PHASE	
PFP-4-1	95	380	–	8"ø	–	95	1/10	277/1	6771	2.0	–	277/1	EXISTING (2)
PFP-4-2	190	760	–	10"ø	–	190	1/10	277/1	13543	4.0	–	277/1	EXISTING (2)
PFP-4-3	135	540	–	8"ø	–	135	1/10	277/1	9622	3.0	–	277/1	EXISTING
PFP-4-4	70	280	–	6"ø	–	70	1/10	277/1	3099	1.0	–	277/1	EXISTING
PFP-4-5	113	450	–	8"ø	–	113	1/10	277/1	4981	1.5	–	277/1	EXISTING
PFP-4-6	150	600	–	8"ø	–	150	1/10	277/1	6642	2.0	–	277/1	EXISTING
PFP-4-7	153	610	–	10"ø	–	153	1/10	277/1	6752	2.0	–	277/1	EXISTING
PFP-4-8	203	810	–	10"ø	–	203	1/4	277/1	8966	3.0	–	277/1	EXISTING RELOCATED (2)
PFP-4-9	68	270	–	6"ø	–	68	1/10	277/1	2988	1.0	–	277/1	EXISTING (2)
PFP-4-10	220	880	–	10"ø	–	220	1/4	277/1	9741	3.0	–	277/1	EXISTING RELOCATED (2)
PFP-4-11	110	440	–	8"ø	–	110	1/10	277/1	4870	1.5	–	277/1	EXISTING RELOCATED (2)
PFP-10-1	158	630	–	10"ø	–	158	1/10	277/1	11226	3.5	–	277/1	EXISTING
PFP-10-2	105	420	–	8"ø	–	105	1/10	277/1	7484	2.5	–	277/1	EXISTING (2)
PFP-10-3	150	600	–	8"ø	–	150	1/10	277/1	6642	2.0	–	277/1	EXISTING
PFP-10-4	260	1040	–	12"ø	–	260	1/4	277/1	18532	5.5	–	277/1	EXISTING RELOCATED (2)
PFP-10-5	180	720	–	10"ø	–	180	1/10	277/1	7970	2.5	–	277/1	EXISTING RELOCATED (2)
PFP-10-6	160	640	–	10"ø	–	160	1/10	277/1	11404	3.5	–	277/1	EXISTING (2)
PFP-10-7	193	770	–	10"ø	–	193	1/10	277/1	8523	2.5	–	277/1	EXISTING (2)
PFP-10-8	200	800	–	10"ø	–	200	1/4	277/1	14256	4.5	–	277/1	EXISTING
PFP-10-9	105	420	–	8"ø	–	105	1/10	277/1	7970	2.5	–	277/1	EXISTING (2)
PFP-11-1	175	700	–	10"ø	–	175	1/10	277/1	11404	4.0	–	277/1	EXISTING
PFP-11-2	115	460	–	8"ø	–	115	1/10	277/1	8523	2.5	–	277/1	EXISTING (2)
PFP-11-3	85	340	–	6"ø	–	85	1/10	277/1	14256	2.0	–	277/1	EXISTING
PFP-11-4	148	590	–	8"ø	–	148	1/10	277/1	7484	3.5	–	277/1	EXISTING (2)
PFP-11-5	123	490	–	8"ø	–	123	1/10	277/1	12474	2.5	–	277/1	EXISTING
PFP-11-6	123	490	–	8"ø	–	123	1/10	277/1	8197	2.5	–	277/1	EXISTING
PFP-11-7	165	660	–	10"ø	–	165	1/10	277/1	6058	3.5	–	277/1	EXISTING RELOCATED (2)
PFP-11-8	115	460	–	8"ø	–	115	1/10	277/1	10832	2.5	–	277/1	EXISTING
PFP-11-9	123	490	–	8"ø	–	123	1/10	277/1	8731	2.5	–	277/1	EXISTING
PFP-11-10	140	560	–	8"ø	–	140	1/10	277/1	9979	3.0	–	277/1	EXISTING (2)
PFP-11-11	135	540	–	8"ø	–	135	1/10	277/1	9822	3.0	–	277/1	EXISTING
PFP-11-12	88	350	–	8"ø	–	88	1/10	277/1	6237	2.0	–	277/1	EXISTING (2)
PFP-11-13	143	570	–	8"ø	–	143	1/10	277/1	10157	3.0	–	277/1	EXISTING
PFP-11-14	195	780	–	10"ø	–	195	1/10	277/1	13899	4.0	–	277/1	EXISTING

(1) BASED ON EXISTING DRAWINGS.
(2) NEW LAYOUT AND/OR GRILLE LOCATIONS. TAB BOX AND SUPPLY AIR CFMS FOR EACH RUNOUT.

VAV ROOM TERMINAL BOX SCHEDULE

TERMINAL NUMBER	BOX CFM			BOX INLET SIZE (1)	BOX RUNOUT SIZE (1)	ELECTRIC HEATING				REMARKS
	COOLING MAXIMUM	COOLING AND HEATING MINIMUM	HEATING MAXIMUM			HEATING CAPACITY BTU/HR	KW	VOLTAGE AND PHASE	STAGES	
VAV-4-1	250	125	–	5"	–	5118	1.5	277V-1ø	UNK	EXISTING RELOCATED (2)
VAV-4-2	250	125	–	5"	–	5118	1.5	277V-1ø	UNK	EXISTING
VAV-4-3	360	180	–	6"	–	1706	0.5	277V-1ø	UNK	EXISTING
VAV-4-4	1300	675	–	10x13	–	8530	2.5	277V-1ø	UNK	EXISTING
VAV-4-5	400	200	–	7"	–	6824	2.0	277V-1ø	UNK	EXISTING (2)
VAV-4-6	250	125	–	5"	–	5118	1.5	277V-1ø	UNK	EXISTING
VAV-10-1	360	180	–	6"	–	1706	0.5	277V-1ø	UNK	EXISTING
VAV-10-2	100	50	–	4"	–	1706	0.5	277V-1ø	UNK	EXISTING
VAV-10-3	250	125	–	5"	–	5118	1.5	277V-1ø	UNK	EXISTING
VAV-11-1	250	125	–	5"	–	5118	1.5	277V-1ø	UNK	EXISTING
VAV-11-2	360	180	–	6"	–	1706	0.5	277V-1ø	UNK	EXISTING
VAV 13-1	1100	225	550	10"	12"	23,800	8.0	277V-1ø	SCR	COURT ROOM – 4 (2)
VAV 13-2	1100	225	550	10"	12"	23,800	8.0	277V-1ø	SCR	COURT ROOM – 4 (2)
VAV 13-3	450	100	225	6"	8"	9720	3.0	277V-1ø	SCR	JUDGE 1205 (2)
VAV 13-4	1000	200	500	10"	12"	21,600	7.0	277V-1ø	SCR	CONFERENCE 1208/LOBBY 1201 (2)
VAV 13-5	800	200	400	8"	10"	17,280	5.0	277V-1ø	SCR	ATTORNEY LOUNGE 1209 (2)
VAV 14-1	800	200	400	8"	10"	17,280	5.0	277V-1ø	SCR	JURY LOUNGE 2204 (2)
VAV 14-2	1500	600	750	12"	14"	30,250	10.0	277V-1ø	SCR	JURY ASSEMBLY 2200 (2)
VAV 14-3	1500	600	750	12"	14"	30,250	10.0	277V-1ø	SCR	JURY ASSEMBLY 2200 (2)
VAV 14-4	1100	225	550	10"	12"	23,800	8.0	277V-1ø	SCR	OPEN OFFICE 2202 (2)
VAV 14-5	600	175	350	8"	10"	15,120	5.0	277V-1ø	SCR	BREAK 3209/OFFICE 2202 (2)
VAV 14-6	400	100	200	6"	8"	8,640	2.5	277V-1ø	SCR	OFFICES AREA (2)
VAV 14-7	800	200	400	8"	10"	17,280	5.0	277V-1ø	SCR	CONFERENCE ROOM/OFFICES (2)
VAV 14-8	850	200	425	8"	10"	17,280	5.0	277V-1ø	SCR	WORKROOM/INNER OFFICES (2)
VAV 14-9	1300	250	675	12"	14"	29,200	9.0	277V-1ø	SCR	GRAND JURY (2)
VAV 14-10	850	200	425	8"	10"	18,360	6.0	277V-1ø	SCR	SPECIAL PROCEEDINGS 3200 (2)

(1) FOR EXISTING BOXES SIZES ARE BASED ON EXISTING DRAWINGS. FOR NEW VAV BOXES INLET SIZE IS ROOM TERMINAL BOX INLET SIZE. RUNOUT SIZE IS AS SCHEDULED AND SHOWN ON DRAWINGS. DUCT TRANSITION SHALL OCCUR 36" BEFORE BOX INLET. TOTAL STATIC PRESSURE DROP FOR BOX TERMINAL INLET VALVE, BOX, PLUS COIL SHALL NOT EXCEED 0.50"W.G.
(2) NEW LAYOUT AND/OR GRILLE LOCATIONS. TAB BOX AND SUPPLY AIR CFMS FOR EACH RUNOUT.

PIPE INSULATION THICKNESS SCHEDULE

PIPE SIZE	INSULATION THICKNESS CHILLED WATER	REMARKS
3/4"	1–1/2"	
1"	1–1/2"	
1–1/4"	1–1/2"	
1–1/2"	1–1/2"	
2"	1–1/2"	
2–1/2"	1–1/2"	
3"	1–1/2"	
4"	1–1/2"	
5"	1–1/2"	
6"	1–1/2"	
8"	1–1/2"	

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Brunswick County Courthouse Addition & Renovations

Bolivia, NC

CONSTRUCTION DRAWINGS
SEPTEMBER 23, 2019

Revisions:

MECHANICAL SCHEDULES

M6.0

OF 20

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AIR HANDLING UNIT SCHEDULE

SYMBOL	UNIT TYPE	AIR QUANTITY		EXT. S.P. "H20 (1)	ELECTRICAL		PREHEAT POSITION COIL			COOLING COIL (3)							REHEAT POSITION COIL				CONTROL VALVE	BASIS OF DESIGN	REMARKS
		SUPPLY CFM	OUTSIDE CFM		SUPPLY FAN HP	VOLTAGE & PHASE	HEATING CAPACITY MBH	KW	STAGES	VOLTAGE AND PHASE	EDB °F	EWB °F	LDB °F	LWB °F	GTH-MBH	GPM (2)	PIPE SIZE	HEATING CAPACITY MBH	KW	STAGES	VOLTAGE AND PHASE			
AHU-1	VTCV	2225	1815	2.5	3	460V-3ø	92.1	27	6	480V-3ø	91.4	77.3	51.1	51.0	198.1	33.0	4"	102.4	30 (9)	6	480V-3ø	UNK	EXISTING (5)	
AHU-2	VTCF	4150	3465	2.5	5	460V-3ø	153.6	45	3	480V-3ø	91.8	77.5	51.7	51.6	366.9	66.1	3"	187.7	55 (9)	6	480V-3ø	UNK	EXISTING (5)	
AHU-3	VTCV	1150	1150	2.5	2	460V-3ø	51.2	15	3	480V-3ø	95.0	80.0	51.1	51.1	116.7	19.4	2"	51.2	15 (9)	4	480V-3ø	UNK	EXISTING (5)	
AHU-4	VAV	22,875	5200	5.15	40	460V-3ø	187.7	55 (6)	6	480V-3ø	82.5	67.5	48.8	48.8	1260.4	210.0	2"	–	–	–	–	UNK	EXISTING (5)	
AHU-5	VTCV	1500	240	2.25	2	460V-3ø	58.7	17.2	3	480V-3ø	81.0	67.0	52.7	52.3	66.5	DX (7)	(7)	–	–	–	–	UNK	EXISTING (5)	
AHU-6	VTCV	7000	1600	3.25	10	460V-3ø	99.0	29	3	480V-3ø	79.5	66.0	50.8	50.6	317.5	52.9	2-1/2"	307.2	90 (9)	6	480V-3ø	UNK	EXISTING (5)	
AHU-7	VTCV	2900	1620	2.75	5	460V-3ø	68.3	20	6	480V-3ø	86.2	72.0	52.3	52.1	185.2	30.9	2-1/2"	128.0	37.5 (9)	6	480V-3ø	UNK	EXISTING (5)	
AHU-8	VTCV	2900	1560	2.6	5	460V-3ø	68.3	20	6	480V-3ø	85.8	72.0	52.3	52.1	185.2	30.9	2-1/2"	128.0	37.5 (9)	6	480V-3ø	UNK	EXISTING (5)	
AHU-9	VTCV	2900	1620	2.5	5	460V-3ø	68.3	20	6	480V-3ø	86.2	72.0	52.3	52.1	185.2	30.9	2-1/2"	128.0	37.5 (9)	6	480V-3ø	UNK (4)	EXISTING (5)	
AHU-10	VAV	25,600	6400	5.0	50	460V-3ø	153.6 102.4	45 (6) 30 (6)	6	480V-3ø	83.0	68.0	49.1	49.	1436.7	239.3	5"	–	–	–	–	UNK	EXISTING (5)	
AHU-11	VAV	28,325	5500	4.85	50	460V-3ø	76.8 119.5	22.5 (6) 35 (6)	6	480V-3ø	83.0	68.0	49.0	49.	1571.4	261.8	5"	–	–	–	–	UNK	EXISTING (5)	
AHU-12	VTCV	885	–	0.3	1/2	277V-1ø	–	–	–	–	72.0	60.0	–	–	22.7	4.0 (8)	(8)	16.0	4.7	UNK	480V-3ø	UNK	EXISTING (5)	
AHU-13	VAV	4000	1100	1.25	5	460V-3ø	138.2	40.5	SSR	480V-3ø	80.0	68.0	53.0	52.6	180.0	29.5	2"	–	–	–	–	2-WAY (4)	TRANE CSAA008	
AHU-14	VAV	8500	2200	1.25	10	460V-3ø	293.5	86	SSR	480V-3ø	79.7	67.7	53.0	52.7	370.0	61.5	2-1/2"	–	–	–	–	3-WAY	TRANE CSAA017	

(1) EXT. S.P. INCLUDES DUCTWORK AND GRILLES. INTERNAL COMPONENTS SUCH AS FILTER, COILS AND DAMPERS ARE NOT INCLUDED IN THIS FIGURE.
(2) BASED ON 42°F EWT AND 12°F TEMPERATURE RISE. MAXIMUM WATER PRESSURE DROP OF 15 FT. FOR COIL PLUS CONTROL VALVE.
(3) BASED ON MAXIMUM COIL FACE VELOCITY OF 550 FPM AND A MAXIMUM AIR SIDE PRESSURE DROP OF 2.0" WATER COLUMN. COIL SHALL HAVE A MINIMUM OF 6 ROWS AND MAXIMUM OF 132 FINS PER FOOT. UNIT FILTERS SHALL HAVE A MAXIMUM FACE VELOCITY OF 500 FPM.
(4) PROVIDE VARIABLE SPEED PUMPING SYSTEM DIFFERENTIAL PRESSURE TRANSMITTER ACROSS CHS AND CHR PIPING TO COILS WITH INSTALLATION PER MANUFACTURERS INSTRUCTIONS.
(5) DATA IS FROM EXISTING DESIGN DRAWINGS (3-2000).
(6) PREHEAT COIL LOCATED IN OA DUCT TO AHU.
(7) CU-1 IS THE DX SPLIT SYSTEM OUTDOOR UNIT MATCHED WITH AHU-5.
(8) AHU-12 HAS DX COIL AND CHILLED WATER COIL.
(9) REHEAT COIL LOCATED IN SUPPLY DUCT DOWNSTREAM OF THE AIR HANDLING UNIT.

POWER VENTILATOR SCHEDULE

SYMBOL	CFM	ESP	RPM	TIP SPEED	ELECTRICAL		TYPE	DRIVE	CONTROL	ROOF OPENING (1)	REMARKS
					HP	VOLTAGE					
EF-1	1815	0.75	1192	4680	0.5	115V-1ø	ROOF MOUNTED CENTRIFUGAL	BELT	INTERLOCK WITH AHU-1	EXISTING	(4)
EF-2	3465	0.75	837	4601	1.0	460V-3ø	ROOF MOUNTED CENTRIFUGAL	BELT	INTERLOCK WITH AHU-2	EXISTING	(4)
EF-3	1100	0.75	1202	4248	0.33	115V-1ø	ROOF MOUNTED CENTRIFUGAL	BELT	INTERLOCK WITH AHU-3	EXISTING	(4)
EF-4	4000	1	986	5420	1.5	460V-3ø	ROOF MOUNTED CENTRIFUGAL	BELT	INTERLOCK WITH AHU-4, 10 & 11	EXISTING	(4)
EF-5	240	0.75	1859	–	0.33	115V-1ø	ROOF MOUNTED CENTRIFUGAL	BELT	CONSTANT RUNNING	EXISTING	(4)
EF-6	1500	0.75	1108	4351	0.5	115V-1ø	ROOF MOUNTED CENTRIFUGAL	BELT	INTERLOCK WITH AHU-6	EXISTING	(4)
EF-7	1620	0.50	847	3658	0.33	115V-1ø	ROOF MOUNTED CENTRIFUGAL	BELT	INTERLOCK WITH AHU-7	EXISTING	(4)
EF-8	1620	0.50	847	3658	0.33	115V-1ø	ROOF MOUNTED CENTRIFUGAL	BELT	INTERLOCK WITH AHU-8	EXISTING	(4)
EF-9	1620	0.50	847	3658	0.33	115V-1ø	ROOF MOUNTED CENTRIFUGAL	BELT	INTERLOCK WITH AHU-9	EXISTING	(4)
EF-10	1330	0.375	858	3369	0.33	115V-1ø	ROOF MOUNTED CENTRIFUGAL	BELT	INTERLOCK W/ TSTAT & INTAKE MOD	EXISTING	(4)
EF-11	4200	1	860	5065	1.5	460V-3ø	ROOF MOUNTED CENTRIFUGAL	BELT	INTERLOCK WITH AHU-4, 10 & 11	EXISTING	(4)
EF-12	3810	1	1087	5549	1.5	460V-3ø	ROOF MOUNTED CENTRIFUGAL	BELT	INTERLOCK WITH AHU-4, 10 & 11	EXISTING	(4)
EF-13	3340	1	1019	5202	1.5	460V-3ø	ROOF MOUNTED CENTRIFUGAL	BELT	INTERLOCK WITH AHU-4, 10 & 11	EXISTING	(4)
EF-14	700	0.75	1794	4696	0.33	115V-1ø	ROOF MOUNTED CENTRIFUGAL	BELT	INTERLOCK WITH AHU-4, 10 & 11	EXISTING	(4)
F-15	2100	0.25	860	3770	0.25	460V-3ø	INLINE EXHAUST FAN	DIRECT	INTERLOCK W/TSTAT & INTAKE MOD	–	
EF-16	1500	0.375	754	3257	0.33	115V-1ø	ROOF MOUNTED CENTRIFUGAL	BELT	INTERLOCK W/ TSTAT & INTAKE MOD	EXISTING	(4)
EF-17	1330	0.375	858	3369	0.33	115V-1ø	ROOF MOUNTED CENTRIFUGAL	BELT	INTERLOCK W/ TSTAT & INTAKE MOD	EXISTING	(4)
EF-18	1100	0.50	1044	3689	0.33	115V-1ø	ROOF MOUNTED CENTRIFUGAL	BELT	INTERLOCK W/ TSTAT & INTAKE MOD	EXISTING	(4)
EF-19	1100	0.50	1044	3689	0.33	115V-1ø	ROOF MOUNTED CENTRIFUGAL	BELT	INTERLOCK W/ TSTAT & INTAKE MOD	EXISTING	(4)
EF-20	710	0.75	1804	4722	0.33	115V-1ø	ROOF MOUNTED CENTRIFUGAL	BELT	INTERLOCK W/ TSTAT & INTAKE MOD	EXISTING	(4)
F-21	75	0.5	950	1925	80 (2)	115V-1ø	CEILING EXHAUST	DIRECT	(3)	–	CUSTODIAN 1204
F-22	75	0.5	950	1925	80 (2)	115V-1ø	CEILING EXHAUST	DIRECT	(3)	–	TOILET 1206
F-23	75	0.5	950	1925	80 (2)	115V-1ø	CEILING EXHAUST	DIRECT	(3)	–	TOILET 1211
F-24	75	0.5	950	1925	80 (2)	115V-1ø	CEILING EXHAUST	DIRECT	(3)	–	TOILET 1210
F-25	375	0.5	950	4526	1/10	115V-1ø	CENTRIFUGAL ROOF EXHAUST	DIRECT	AHU-14	13"x13"	JURY TOILETS-2ND/3RD FL
F-26	150	0.5	1550	4413	1/20	115V-1ø	CENTRIFUGAL ROOF EXHAUST	DIRECT	AHU-14	13"x13"	GRAND JURY TOILETS 3RD FL

(1) FOR BIDDING PURPOSES ONLY
(2) WATTS
(3) VIA LIGHTING CONTROL SYSTEM'S OCCUPANCY SENSOR.
(4) EXISTING – FOR REFERENCE ONLY

REGISTER, GRILLE & DIFFUSER SCHEDULE

SYMBOL	C.F.M.	NECK SIZE	TYPE	RUNOUT SIZE	REMARKS
⟨A⟩	50–100	6"X6"	2'X2' LAY-IN CEILING S.A. DIFFUSER	6"ø	
⟨B⟩	125–225	9"X9"	2'X2' LAY-IN CEILING S.A. DIFFUSER	8"ø	
⟨C⟩	250–400	12"X12"	2'X2' LAY-IN CEILING S.A. DIFFUSER	10"ø	
⟨D⟩	100 CFM/LF (MAX)	–	4' SLOT DIFFUSER	8"ø	3 SLOT WITH 1" WIDE SLOTS
⟨E⟩	175–400	18"X6"	SIDEWALL S.A. REGISTER	10"ø	
⟨F⟩	50–100	6"X6"	CEILING S.A. DIFFUSER	6"ø	
⟨G⟩	50–1200	22"X22"	2'X2' LAY-IN R.A. GRILLE	–	
⟨H⟩	50–200	10"X10"	EXHAUST REGISTER	–	
⟨J⟩	225–500	12"X12"	EXHAUST REGISTER	–	
⟨K⟩	1000–1600	24"X24"	EXHAUST REGISTER	–	
⟨L⟩	0–400	18"X6"	SIDEWALL R.A. OR EX.A. REGISTER	–	
⟨M⟩	125 CFM/LF (MAX)	18"X6"	SIDEWALL LINEAR BAR GRILLE	8"	6" CORE – 24" LONG

PUMP SCHEDULE

SYMBOL	GPM	HEAD IN FEET	RPM	MINIMUM % EFFICIENCY	ELECTRICAL		TYPE	MIN. SIZE		REMARKS
					HP	VOLTAGE		SUCTION	DISCHARGE	
~~P-1~~	~~1000~~	~~35~~	~~1150~~	~~85.27~~	~~15~~	~~460V-3ø~~	~~BASE MOUNT END SUCTION~~	~~8~~	~~6~~	~~DEMOLITION EXISTING CHILLER PRIMARY (2)~~
~~P-2~~	~~1000~~	~~35~~	~~1150~~	~~85.27~~	~~15~~	~~460V-3ø~~	~~FLOOR MTD~~	~~8~~	~~6~~	~~DEMOLITION EXISTING CHILLER PRIMARY (2)~~
~~P-3~~	~~1000~~	~~75~~	~~1750~~	~~83.75~~	~~30~~	~~460V-3ø~~	~~FLOOR MTD~~	~~6~~	~~5~~	~~DEMOLITION EXISTING CHILLED WATER SECONDARY (2)~~
~~P-4~~	~~1000~~	~~75~~	~~1750~~	~~83.75~~	~~30~~	~~460V-3ø~~	~~FLOOR MTD~~	~~6~~	~~5~~	~~DEMOLITION EXISTING CHILLED WATER SECONDARY (2)~~
~~P-5~~	~~1500~~	~~70~~	~~1750~~	~~83.45~~	~~40~~	~~460V-3ø~~	~~HORIZONTAL SPLIT CASE~~	~~8~~	~~6~~	~~DEMOLITION EXISTING CONDENSER WATER (2)~~
~~P-6~~	~~1500~~	~~70~~	~~1750~~	~~83.45~~	~~40~~	~~460V-3ø~~	~~HORIZONTAL SPLIT CASE~~	~~8~~	~~6~~	~~DEMOLITION EXISTING CONDNSER WATER (2)~~
P-1	515	40	1750	85	7-1/2	460V-3ø	BASE MOUNT END SUCTION	5"	4"	CHILLER PUMP (3)
P-2	515	40	1750	85	7-1/2	460V-3ø	BASE MOUNT END SUCTION	5"	4"	CHILLER PUMP (3)
P-3	1075	70	1750	84	30	460V-3ø	BASE MOUNT END SUCTION	6"	5"	CHILLED WATER SYSTEM PUMP (1)(3)
P-4	1075	70	1750	84	30	460V-3ø	BASE MOUNT END SUCTION	6"	5"	CHILLED WATER SYSTEM PUMP (1)(3)

(1) PUMP WITH VARIABLE FREQUENCY DRIVE.
(2) COORDINATE AND PHASE DEMOLITION AND NEW INSTALLATION FOR MINIMAL OF ONE WEEKEND CHANGE OVER TO NEW AIR COOLED CHILLER(S) PROVIDING CHILLED WATER TO THE BUILDING. COORDINATE COOLING SHUTDOWN/CHANGEOVER WITH OWNER.
(3) 100% STANDBY OPERATION.

CHILLER SCHEDULE

SYMBOL	CAPACITY TONS REFFR. (1)	COOLER				AIR COOLED COND.		ELECTRICAL			MIN. EFFICIENCY (3)		BASIS OF DESIGN	REMARKS
		EWT °F	LWT °F	GPM	MAX. PD	EAT °F	CFM	VOLTAGE	MCA (2)	MAX FUSE	MIN. SHORT CIRCUIT/AIC RATING	FULL LOAD EER	MIN. IPLV		
CHILLER#1	253.0	54	42	515	10 FT	95	187,000	460V-3ø	496.0	600	65,000	11.3	20.5 (5)	TRANE ACRA 275	(4)
CHILLER#2	253.0	54	42	515	10 FT	95	187,000	460V-3ø	496.0	600	65,000	11.3	20.5 (5)	TRANE ACRA 275	(4)

(1) BASED ON 0.0001 EVAPORATOR FOULING FACTOR.
(2) MINIMUM CIRCUIT AMPACITY WITH SINGLE POINT POWER CONNECTION AND SEPARATE 115V-1ø POWER CONNECTION FOR HEATER CIRCUITS. COORDINATE ALL POWER REQUIREMENTS FOR ACTUAL CHILLER BEING PROVIDED WITH ELECTRICAL CONTRACTOR AND ADJUST AS NECESSARY.
(3) PER AHRI 550/590.
(4) SEE CHILLER SPECIFICATION FOR ACOUSTICAL TREATMENT REQUIREMENTS.
(5) FOR EXCEPTION 7 TO NC ECC C403.3 REQUIREMENT FOR AIR OR WATER ECONOMIZER, MIN IPLV SHALL BE 27% MIN IMPROVEMENT OVER MIN IPLV REQUIRED PER TABLE C403.3(2).

DUCTLESS SPLIT SYSTEM HEAT PUMP UNIT SCHEDULE

AIR HANDLING UNIT SECTION					OUTDOOR HEAT PUMP SECTION							REMARKS
SYMBOL	AIR QUANTITY		EXT. S.P. "H20 (1)	ELECTRICAL	SYMBOL	ELECTRICAL			COOLING CAPACITY BTU/H (2)	HEATING CAPACITY BTU/H (3)	MIN. SEER	
	TOTAL CFM	OUTSIDE CFM		FAN FLA	VOLTAGE & PHASE		MCA	MOCP	VOLTAGE & PHASE			
DAHU-1	650	–	–	1.0	208V-1ø	DHP-1	19	26	208V-1ø	10,000-24,000	15,700	21.4	ADDITION DATA ROOM 1207
DAHU-2	650	–	–	1.0	208V-1ø	DHP-2	19	26	208V-1ø	10,000-24,000	15,700	21.4	ADDITION DATA ROOM 2201
DAHU-3	650	–	–	1.0	208V-1ø	DHP-3	19	26	208V-1ø	10,000-24,000	15,700	21.4	ADDITION DATA ROOM 3207
DAHU-4	650	–	–	1.0	208V-1ø	DHP-4	19	26	208V-1ø	10,000-24,000	15,700	21.4	EXISTING DATA ROOM 2066
DAHU-5	650	–	–	1.0	208V-1ø	DHP-5	19	26	208V-1ø	10,000-24,000	15,700	21.4	REVISED DATA ROOM 2065

(1) EXT. S.P. INCLUDES SUPPLY & RETURN AIR DUCTWORK. FILTERS IN UNIT ARE NOT INCLUDED IN THIS FIGURE.
(2) CAPACITY WHEN MATCHED WITH INDOOR HEATING PUMP SECTION AT AHRI CONDITIONS.
(3) CAPACITY AT 17°F OUTSIDE AIR TEMPERATURE.

UNIT HEATER SCHEDULE

SYMBOL	CFM	BTU/HR	ELECTRICAL		MOUNTING HEIGHT	REMARKS
			K.W.	VOLTAGE		
EUH#1	650	34,100	10	480V-3ø	EXISTING	MECHANICAL 1053 – EXISTING (1)(3)
EUH#2	650	34,100	10	480V-3ø	EXISTING	MECHANICAL 1053 – EXISTING (1)(3)
EUH#3	350	17,000	5	480V-3ø	EXISTING	MECHANICAL 3048 – EXISTING (1)(3)
EUH#4	350	17,000	5	480V-3ø	EXISTING	MECHANICAL 3033 – EXISTING (1)(3)
EUH#5	350	17,000	5	480V-3ø	EXISTING	MECHANICAL 3024 – EXISTING (1)(3)
UH#6	400	17,000	5	480V-3ø	8'-0" MIN	MECHANICAL 1203 (1)(3)
UH#7	400	17,000	5	480V-3ø	8'-0" MIN	MECHANICAL 2205 (1)(3)
EWH#1	175	5121	1.5	120V-1ø	EXISTING	EXIT STAIR 1060 – EXISTING (2)(3)
EWH#2	175	5121	1.5	120V-1ø	EXISTING	EXIT STAIR 1040 – EXISTING (2)(3)

(1) BASED ON 60°F EAT AND 105°F LAT.
(2) BASED ON 55°F EAT AND 85°F LAT.
(3) UNIT HEATER WITH UNIT MOUNTED THERMOSTAT AND FUSED DISCONNECT.

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NORTH CAROLINA PROFESSIONAL SEAL 17655 ENGINEER KENNETH LYNCH

Brunswick County Courthouse Addition & Renovations

Bolivia, NC

CONSTRUCTION DRAWINGS
SEPTEMBER 23, 2019

Revisions:

MECHANICAL SCHEDULES

M6.1

OF 20

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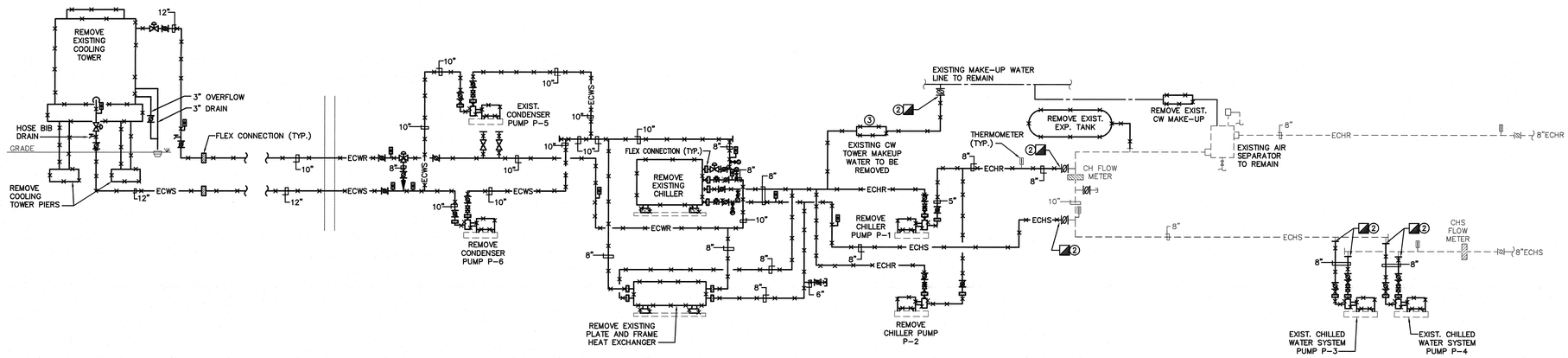
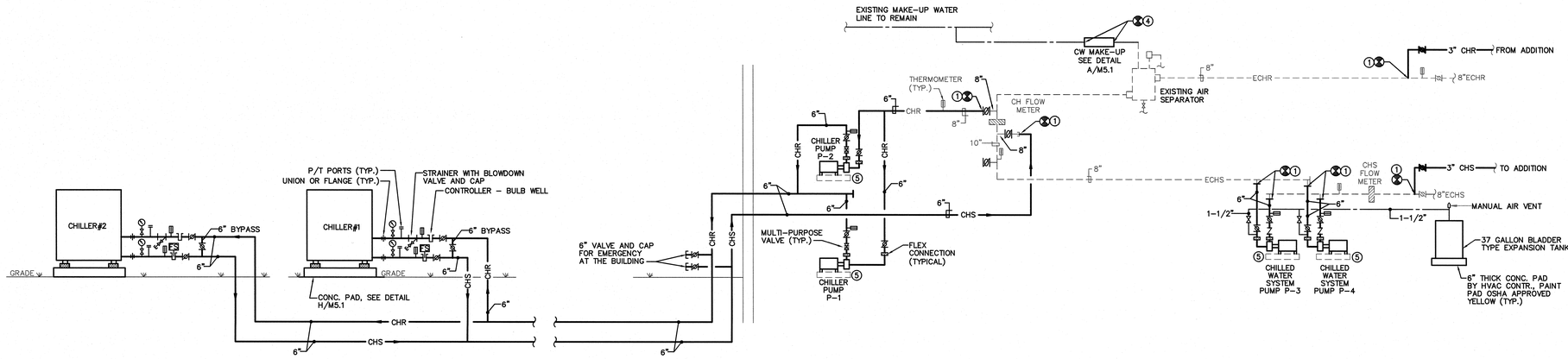


1 M7.0 CHILLED WATER SYSTEM PIPING SCHEMATIC – DEMOLITION
SCALE: NONE



2 M7.0 CHILLED WATER SYSTEM PIPING SCHEMATIC – RENOVATION
SCALE: NONE

KEYED NOTES: (THIS SHEET ONLY)

1. CONNECT NEW PIPING TO EXISTING. FIELD VERIFY EXACT SIZE AND LOCATION AND PROVIDE TRANSITION IN SIZES AS REQUIRED.
2. REMOVE PIPING TO EXISTING.
3. REMOVE MAKE-UP WATER STATION TO EXISTING COOLING TOWER BACK TO BALL VALVE AT COLD WATER LINE. CAP WATERTIGHT AND INSULATE TO MATCH EXISTING.
4. PROVIDE NEW PRESSURE REDUCING MAKE-UP WATER TO CHILLED WATER SYSTEM. SEE DETAIL A/M5.1.
5. EXISTING CONCRETE PAD TO REMAIN AND BE REUSED. PAINT PAD OSHA APPROVED YELLOW.

SEE M0.1 FOR CHILLED WATER PLANT SEQUENCE OF WORK

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 17655 DECEMBER 9, 2019 KENNETH LYNCH

Brunswick County Courthouse Addition & Renovations

Bolivia, NC

CONSTRUCTION DRAWINGS
SEPTEMBER 23, 2019

Revisions:

MECHANICAL SCHEMATIC DIAGRAMS

M7.0

OF 20

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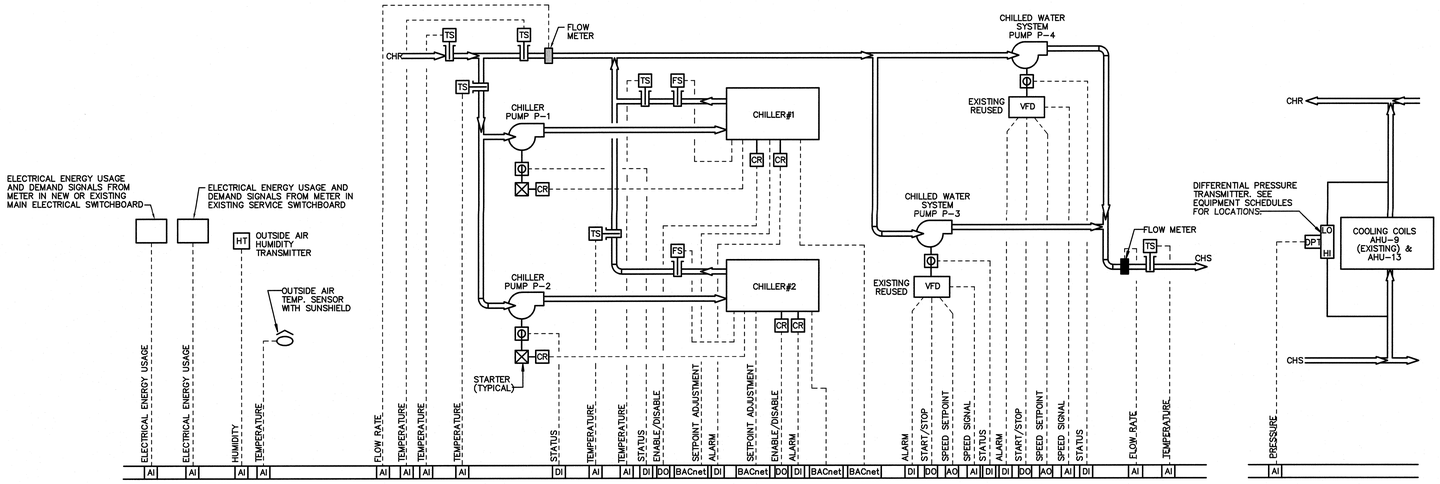


CHILLED WATER SYSTEM

SEQUENCE OF OPERATION

PRIMARY–SECONDARY, VARIABLE FLOW CHILLED WATER SYSTEM WITH MULTIPLE CHILLERS

DESCRIPTION : VARIABLE FLOW CHILLED WATER SYSTEM UTILIZING MULTIPLE CHILLERS PIPED IN PARALLEL. CHILLERS AND PUMPS ARE 100% BACKUP OF ONE ANOTHER. PRIMARY CHILLER CONTROL IS PROVIDED BY FACTORY CONTROLLER INTERFACED WITH DDC SYSTEM.

SYSTEM START/STOP CONTROL : START/STOP SYSTEM BASED ON (1) USER–DEFINED "ON/OFF" SCHEDULE, (2) DEMAND FOR COOLING BY SECONDARY SYSTEMS AS USER– DEFINED, OR (3) OPERATOR COMMAND. START SEQUENCE SHALL BE AS FOLLOWS:

COMMAND LEAD SECONDARY CHILLED WATER PUMP "ON".

SECONDARY CHILLED WATER TEMPERATURE/FLOW CONTROL:

MONITOR SECONDARY CHILLED WATER SUPPLY TEMPERATURE.

MONITOR SECONDARY CHILLED WATER RETURN TEMPERATURE.

MODULATE SECONDARY CHILLED WATER PUMPS SPEED VIA INTERFACE WITH VFD CONTROLLER TO MAINTAIN SECONDARY CHILLED WATER RETURN TEMPERATURE AT SETPOINT.

ROTATE LEAD SECONDARY CHILLED WATER PUMP TO EQUALIZE RUNTIME AS LEAD PUMP.

MONITOR DIFFERENTIAL PRESSURE AT POINT(S) INDICATED ON THE DRAWINGS.

IF DIFFERENTIAL PRESSURE INPUT(S) FALLS BELOW SETPOINT, INCREASE SECONDARY CHILLED WATER PUMPS SPEED TO MAINTAIN DIFFERENTIAL PRESSURE(S) AT SETPOINT. DURING TEST AND BALANCE OF SECONDARY HOT WATER DISTRIBUTION, DIFFERENTIAL PRESSURE SETPOINT(S) TO VALUE(S) RECOMMENDED BY ADJUST SUBCONTRACTOR, AS APPROVED BY A/E.

MONITOR SECONDARY PUMP STATUS VIA CURRENT SENSOR.

IF LEAD SECONDARY PUMP DOES NOT OPERATE OR SATISFY SETPOINT, COMMAND PUMP "OFF", INITIATE ALARM, AND COMMAND BACKUP PUMP "ON".

MONITOR PRIMARY CHILLED WATER RETURN TEMPERATURE.

START/STOP LEAD CHILLER IN SEQUENCE TO MAINTAIN PRIMARY CHILLED WATER RETURN TEMPERATURE AT OR BELOW SECONDARY CHILLED WATER RETURN TEMPERATURE SETPOINT, AS FOLLOWS:

IF PRIMARY CHILLED WATER RETURN TEMPERATURE IS ABOVE SECONDARY CHILLED WATER RETURN TEMPERATURE SETPOINT FOR 30 MINUTES, COMMAND LEAD CHILLER "ON".

IF PRIMARY CHILLED WATER RETURN TEMPERATURE IS BELOW SECONDARY CHILLED WATER RETURN TEMPERATURE SETPOINT MINUS COMPUTED TEMPERATURE RISE PER CHILLER FOR 30 MINUTES, COMMAND A CHILLER "OFF".

ROTATE CHILLER ON/OFF SEQUENCE TO EQUALIZE RUNTIME BETWEEN CHILLERS.

CHILLER START/STOP CONTROL:

CHILLER SHALL CONTROL ITS PRIMARY CHILLED WATER PUMP "ON".

CONFIRM PRIMARY CHILLED WATER FLOW VIA DIFFERENTIAL PRESSURE FLOW SWITCH.

COMMAND CHILLER "ON" THROUGH INTERFACE WITH CHILLER CONTROLLER.

MONITOR CHILLER ENTERING CHILLED WATER TEMPERATURE.

MONITOR CHILLER LEAVING CHILLED WATER TEMPERATURE.

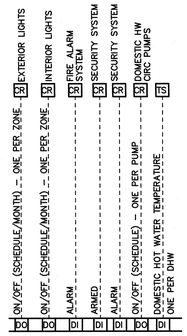
IF CHILLER FAILS TO START WITHIN 5 MINUTES, STOP LEAD CHILLER AND INITIATE ALARM. COMMAND BACKUP CHILLER "ON".

LEAVING CHILLED WATER TEMPERATURE SHALL BE MAINTAINED VIA CHILLER CONTROLLER AT SETPOINT INPUT FROM DDC SYSTEM.

MONITOR CHILLER ALARM STATUS. IF CHILLER SAFETY CONTROLS STOP CHILLER, STOP LEAD CHILLER AND INITIATE ALARM. COMMAND BACKUP CHILLER "ON".

PRIMARY CHILLED WATER PUMPS SHALL RUN AS COMMANDED BY THEIR CHILLERS.

UPON RESUMPTION OF POWER AFTER A POWER OUTAGE, LEAD CHILLER SHALL RESTART, IF COMMANDED "ON", AFTER 3 MINUTES.



MISCELLANEOUS POINTS

GENERAL SEQUENCES OF OPERATION

A. LIGHTING AND SECURITY SEQUENCE OF OPERATION
   1. SECURITY SYSTEM INTERFACE: THE SECURITY ALARM PANEL WILL PROVIDE CONTACTS FOR ALARM/NORMAL AND ARMED/DISARMED TO THE BAS SYSTEM.
   2. INTERIOR LIGHTING: ON/OFF BASED ON USER–DEFINED SCHEDULE OR OPERATOR COMMAND.
   3. EXTERIOR LIGHTING: THE EXTERIOR LIGHTS (ONLY THOSE LIGHTS THAT ARE ATTACHED TO THE BUILDING) WILL BE ENERGIZED AT SUNDOWN AND WILL BE DEENERGIZED AT SUNRISE.
B. HEATERS
   1. ELECTRIC UNIT HEATER: BUILT–IN THERMOSTAT SHALL MAINTAIN ITS SET POINT OF 55°F. BY STARTING THE UNIT HEATER. NO ENERGY MANAGEMENT SYSTEM MONITORING OR CONTROL IS REQUIRED FOR UNIT HEATERS.
C. BAS OVERRIDE
   1. ACTIVATION OF THE OVERRIDE PUSHBUTTON AT SPECIFIED WALL MOUNTED TEMPERATURE SENSOR WILL SWITCH AN AIR HANDLING UNIT AND ASSOCIATED ZONE CONTROL SEQUENCE OR FROM THE UNOCCUPIED TO THE OCCUPIED MODE FOR A PROGRAMMABLE TIME PERIOD THE INITIAL SET UP TIME PERIOD SHALL BE TWO HOURS.
D. TREND LOGS
   1. PROVIDE TREND LOGS FOR ALL MAJOR EQUIPMENT OPERATION AT OWNER'S DISCRETION.
   2. COORDINATE WITH OWNER FOR EXACT REQUIREMENTS OF TREND LOG REQUIREMENTS
E. DOMESTIC HOT WATER SYSTEM
   1. WATER HEATER BURNER SHALL BE CONTROLLED BY INTERNAL THERMOSTAT.
   2. DOMESTIC HOT WATER RECIRCULATING PUMP(S) SHALL BE CONTROLLED BY SEPARATE DIGITAL OUTPUTS FOR COMMAND AND OVERRIDE BASED ON SCHEDULE.
   3. TEMPERATURE SHALL BE SENSED FOR MONITORING AND ALARM POINTS.

CONTROL SYMBOL LEGEND

DPT	DIFFERENTIAL PRESSURE SWITCH
FS	FLOW SENSOR
TS	TEMPERATURE SENSOR
HT	HUMIDITY SENSOR
VFD	VARIABLE FREQUENCY DRIVE
CR	CONTROL RELAY
ES	EMERGENCY SWITCH
EVS	EVENT SWITCH
M2E	MOTOR OPERATED TWO POSITION ELECTRIC
MPE	MOTOR OPERATED PROPORTIONAL ELECTRIC
NO	NORMALLY OPEN
NC	NORMALLY CLOSED
FAR	FIRE ALARM RELAY
CLS	CONDENSATE LEVEL SENSOR
EN	ENTHALPY
SPS	STATIC PRESSURE SENSOR
O/V	OCCUPANCY/VACANCY SENSOR
SA	SUPPLY AIR
RA	RETURN AIR
OA	OUTSIDE AIR
	CONTROL VALVE
	CURRENT SENSOR
	STARTER

1. EXISTING BAS CONTROLS ARE TRANE TRACER SC + BACnet DDC.
2. NEW CONTROLS SHALL BE AN EXTENSION OF AND FULLY COMPATIBLE AND COMMUNICATING WITH THAT SYSTEM, INCLUDING GRAPHICS

AIR HANDLING UNITS – GENERAL

A. LOGIC STRATEGIES: THE BAS SHALL FULLY CONTROL THE AIR HANDLERS. GENERALLY THE BAS SHALL ENERGIZE THE AHU (START THE FANS AND ACTIVATE CONTROL LOOPS) AS DICTATED FOR EACH AIR HANDLER. THE FOLLOWING INDICATES WHEN AND HOW THE BAS SHALL ENERGIZE THE AHUS AND CONTROL VARIOUS COMMON ASPECTS OF THEM. THE FOLLOWING "LOGIC STRATEGIES" SHALL BE INCLUDED BY REFERENCE WITH EACH AIR HANDLER WITH ANY SPECIFIC CLARIFICATIONS REQUIRED:
   1. SCHEDULED OCCUPANCY: BAS SHALL DETERMINE THE OCCUPANCY PERIODS (OCCUPIED, UNOCCUPIED, PREOCCUPANCY, AND SETBACK). THE FOLLOWING DETAILS THE COMMON CONTROL ASPECTS RELATED TO THE SCHEDULED OCCUPANCY. THE BAS SHALL DISPLAY THE APPLICABLE MODE OR "CAUSE" FOR THE UNIT OPERATING. REFERENCE THE BAS CONTROL SPECIFICATIONS (GRAPHICS) FOR MORE INFORMATION ON HOW THIS SHOULD BE DISPLAYED.
      a. OCCUPIED PERIOD: BAS SHALL ENERGIZE THE AHU DURING ALL OCCUPIED PERIODS. NOTE THAT THE BEGINNING OF THE OCCUPANCY PERIOD SHALL BE SET SUFFICIENTLY BEFORE THE ACTUAL START OF OCCUPANCY TO OBTAIN THE REQUIRED BUILDING COMPONENT OF VENTILATION PER ASHRAE 62. SPECIFIC TIMES SHALL BE AS DIRECTED BY THE A/E & OWNER. MINIMUM OA FLOW SETPOINT SHALL BE AS SCHEDULED ON THE DRAWINGS. "NORMAL"' SETPOINTS SHALL APPLY.
      b. UNOCCUPIED PERIOD: MINIMUM OA FLOW SHALL BE 0 CFM AND THE MINIMUM OA DAMPER POSITION SHALL BE 0% IF DURING THE UNOCCUPIED PERIOD THERE IS A REQUEST FOR OCCUPANCY OVERRIDE, THE OCCUPANCY MODES HALL BECOME ACTIVE FOR AN ADJUSTABLE PERIOD. TILE UNOCCUPIED PERIOD AND THE PREOCCUPANCY PERIOD WILL TYPICALLY OVERLAP.
      c. SETBACK PERIOD: THE BAS SHALL DEENERGIZE THE UNIT EXCEPT AS REQUIRED TO MAINTAIN A SETBACK TEMPERATURE AS INDICATED IN THE INDIVIDUAL SEQUENCES WITH A 5°F CYCLE DIFFERENTIAL. GENERALLY, WHERE SETBACK TEMPERATURES APPLY IN MULTIPLE ZONES, THE WORST ZONE SHALL CONTROL THE SYSTEM. SETBACK SETPOINTS GENERALLY APPLY EXCEPT DURING PREOCCUPANCY. IF DURING THE UNOCCUPIED PERIOD THERE IS A REQUEST FOR OCCUPANCY OVERRIDE, THE OCCUPANCY MODE SHALL BECOME ACTIVE FOR AN ADJUSTABLE PERIOD. GENERALLY, DURING HEATING SETBACK, COOLING SHALL BE DISABLED. DURING COOLING SETBACK, BOTH HEATING AND COOLING SHALL BE ENABLED.
      d. PREOCCUPANCY: BAS SHALL ENERGIZE THE AHU CONTINUOUSLY DURING THE PREOCCUPANCY PERIOD. MINIMUM OA FLOW SHALL BE 0 CFM OR THE MINIMUM OA DAMPER POSITION SHALL BE 0%. "NORMAL" SPACE SETPOINTS SHALL APPLY FOR THE CONNECTED TERMINAL UNITS. PREOCCUPANCY DURATION SHALL BE OPTIMIZED SO THAT THE PRESET START TIME IS MINIMIZED BUT ALL ZONES ACHIEVE SETPOINT AT THE START OF THE OCCUPIED PERIOD. THE BAS SHALL CONTINUOUSLY ADJUST TO THE PREOCCUPANCY PERIOD (UP TO A USER DEFINED MAXIMUM AMOUNT OF TIME) TO OPTIMIZE THE PREOCCUPANCY START PERIOD. GENERALLY, DURING WARM–UP MODE, COOLING SHALL BE DISABLED. DURING MORNING COOLDOWN, BOTH HEATING AND COOLING SHALL BE ENABLED.
   2. SEQUENCED HEATING AND COOLING: BAS SHALL CONTROL THE HEATING AND COOLING COILS AND AIR SIDE ECONOMIZER AS DETAILED FOR THE PARTICULAR AHU. PROGRAM LOGIC SHALL DIRECTLY PROHIBIT THE HEATING AND COOLING VALVES AS WELL AS THE HEATING VALVE AND ECONOMIZER DAMPER TO BE OPEN (OR ABOVE MINIMUM) SIMULTANEOUSLY. THIS DOES NOT APPLY TO COOLING VALVES AND REHEAT THAT ARE USED SIMULTANEOUSLY FOR DEHUMIDIFICATION.
   3. MIXED AIR LOW LIMIT OVERRIDE: BAS SHALL OVERRIDE THE SIGNAL TO THE OA & RA DAMPERS VIA A PROPORTIONAL ONLY LOOP TO MAINTAIN A MINIMUM MIXED AIR TEMPERATURE. THE MAXIMUM ALLOWED OUTPUT OF THE OA/RA DAMPERS SHALL DROP FROM 100% TO 0% AS THE MIXED AIR TEMPERATURE DROPS FROM 47°F TO 42°F (ALL VALUES BEING ADJUSTABLE).
   4. FREEZE SAFETY: UPON A DROP IN TEMPERATURE BELOW 40°F AT THE HEATING COIL DISCHARGE AIR TEMPERATURE SENSOR, THE SUPPLY AIR FANS SHALL STOP, THE OA & EA DAMPERS WILL CLOSE, THE RA DAMPER WILL OPEN, THE SECONDARY CHILLED WATER PUMP SHALL START, AND THE HEATING WATER AND CHILLED WATER CONTROL VALVES AT THE AIR HANDLING UNIT SHALL OPEN FULLY. AFTER A TIME DELAY OF 20 MINUTES (ADJ.), IF THE HEATING COIL DISCHARGE AIR TEMPERATURE HAS RISEN ABOVE 40°F (ADJ.), THE UNIT SUPPLY AIR FANS SHALL START AGAIN. IF THE HEATING COIL DISCHARGE AIR TEMPERATURE FALLS BELOW 40°F A SECOND TIME WITHIN ONE HOUR (ADJ.), INITIATE AN ALARM. PROCEED THROUGH THE FREEZE PROTECTION CYCLE AGAIN. THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED UNTIL MANUALLY RESET (VIA SOFTWARE).
   5. SMOKE/FIRE SAFETY: UPON INDICATION OF SMOKE OR FIRE BY THE FIRE ALARM SYSTEM (VIA A RELAY PROVIDED BY THE FAS CONTRACTOR), THE BAS SHALL DEENERGIZE THE AHU VIA A HARD WIRED INTERLOCK. ALL DAMPERS SHALL REVERT TO THEIR NORMAL "OFF" POSITIONS UNLESS SPECIFICALLY INDICATED OTHERWISE. THE BAS SHALL ENUNCIATE THE APPROPRIATE ALARM; THEN REMOVE AND LOCK OUT THE UNIT START COMMAND UNTIL THE ALARM CONDITION IS CLEARED.
   6. HIGH OR LOW PRESSURE SAFETY: UPON ACTIVATION OF A HIGH OR LOW PRESSURE SAFETY SWITCH, AHU SHALL BE DEENERGIZED VIA A HARD WIRED INTERLOCK AND AN INDICATION OF THE OPERATION SHALL BE INDICATED AT THE BAS. THE BAS SHALL ENUNCIATE THE APPROPRIATE ALARM; THEN REMOVE AND LOCK OUT THE UNIT START COMMAND UNTIL THE ALARM CONDITION IS CLEARED. AS CONFIRMED AS PART OF TEST AND BALANCE PROCESS:
      a. HIGH PRESSURE SAFETY SETPOINT SHALL BE 1" W.G. (ADJ.) ABOVE FAN MAXIMUM FINAL EXTERNAL STATIC PRESSURE.
      b. LOW PRESSURE SAFETY SETPOINT SHALL BE 50% (ADJ.) BELOW FAN FINAL MINIMUM EXTERNAL STATIC PRESSURE.
   7. SUPPLY AIR STATIC PRESSURE RESET CONTROL: RESET DUCT STATIC PRESSURE SET POINT(S) HIGHER OR LOWER BETWEEN MAXIMUM AND MINIMUM SET POINTS BASED ON BAS OPTIMIZATION LOGIC THAT USES THE TERMINAL UNIT AIR DAMPER POSITIONS. THE SET POINT(S) SHALL BE INCREASED TO MAINTAIN ALL DAMPERS AT LESS THAN 95% OPEN. THE SET POINTS(S) SHALL BE DECREASED TO MAINTAIN MINIMUM OF ONE DAMPER AT NO LESS THAN 90% OPEN. INITIAL AND MINIMUM SETPOINTS SHALL BE RECOMMENDED BY THE TAB CONTRACTOR AND APPROVED BY THE ENGINEER. MAXIMUM SET POINTS SHALL BE EQUAL TO THE INITIAL SETPOINTS PLUS 0.50 INCHES. RESET SET POINT IN 15 MINUTE INCREMENTS.
   8. HUMIDITY CONTROL: UPON A RISE IN HUMIDITY LEVEL ABOVE 60% (ADJUSTABLE) AND UNTIL RELATIVE HUMIDITY DROPS TO 55%, AS SENSED BY THE RETURN DUCT HUMIDITY SENSOR, THE COOLING COIL CONTROL VALVE SHALL MODULATE TO PROVIDE 55°F DISCHARGE AIR TEMPERATURE. THE UNIT FAN SPEED, TERMINAL BOX POSITION, AND REHEAT CONTROL SHALL BE MODULATED TO MAINTAIN SPACE TEMPERATURE 1 DEG LOWER THAN THE COOLING SETPOINT.
B. THE DETAILED LOGIC "STRATEGIES" ABOVE SHALL BE REQUIRED BY REFERENCE TO THEM IN EACH OF THE INDIVIDUAL SEQUENCES SPECIFIED FOR THIS PROJECT.

SPACE TEMPERATURE AND HUMIDITY CRITERIA

OCCUPIED PERIOD SETPOINTS:
1. TYPICAL: 68°F HEATING / 75°F COOLING / 60% RH MAXIMUM.
2. ELECTRICAL/DATA ROOMS: 60°F HEATING / 80°F COOLING / 60% RH MAXIMUM.
3. MECHANICAL ROOMS: 60°F HEATING.

UNOCCUPIED PERIOD SETPOINTS:
1. 60°F HEATING / 80°F COOLING / 60% RH MAXIMUM.

CONFIRM ALL SETPOINTS WITH OWNER

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Brunswick County Courthouse Addition & Renovations

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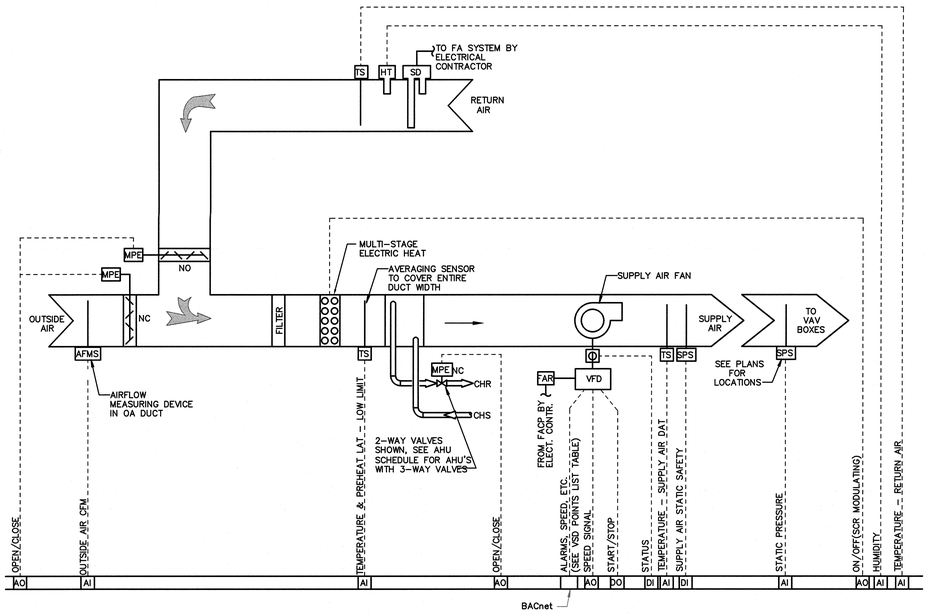


VARIABLE AIR VOLUME AIR HANDLING UNIT (NEW AHU# 13 & 14)

SEQUENCE OF OPERATION

SINGLE DUCT VAV AHU WITH PH & CHW COILS

A. SUPPLY FAN: BAS SHALL CONTROL THE STARTING AND STOPPING OF THE SUPPLY FAN AS FOLLOWS:
   1. START/STOP: BAS SHALL COMMAND THE OPERATION OF THE SUPPLY FAN AND IT SHALL RUN CONTINUOUSLY WHENEVER THE AHU IS "ENERGIZED" AS SPECIFIED FOR THE APPLICABLE LOGIC STRATEGIES SPECIFIED IN ITEM "AIR HANDLING UNITS – GENERAL".
   2. PROOF: BAS SHALL PROVE FAN OPERATION AND USE THE STATUS INDICATION TO ACCUMULATE RUNTIME. UPON FAILURE OF THE FAN, BAS SHALL ENUNCIATE AN ALARM.
   3. VFD CONTROL: WHENEVER THE FAN IS ENERGIZED, BAS SHALL CONTROL THE SPEED OF THE VFD TO MAINTAIN THE SUPPLY DUCT STATIC PRESSURE SETPOINT. ON START AND STOP, THE VFD SHALL RAMP TO SPEED AND SLOW DOWN WITHIN ADJUSTABLE ACCELERATION AND DECELERATION LIMITS.
   4. VFD INTERFACE: BAS SHALL MONITOR THE VFD VIA A DIRECT INTERFACE. ALL AVAILABLE INFORMATION SHALL BE ACCESSIBLE VIA THE INTERFACE FOR DISPLAY ON THE VFD GRAPHIC. THE VFD ALARM POINT SHALL BE DISPLAYED ON THE MAIN GRAPHIC AND SHALL BE ALARMED VIA THE BAS. ALL OTHER POINTS MAY BE DISPLAYED ON A SEPARATE GRAPHIC THAT IS SELECTED FROM THIS SYSTEM'S GRAPHIC.
   5. SUPPLY DUCT STATIC PRESSURE SETPOINT:
      a. SETPOINT SHALL BE RESET BETWEEN THE LIMITS OF 0.5" TO 2" TO MAINTAIN PRESSURE REQUESTS OF THE VAV BOXES. THE PRELIMINARY SETPOINT SHALL BE 1.2" STATIC PRESSURE. RESET SHALL BE IMPLEMENTED SO THAT THE STATIC PRESSURE IS PROPORTIONALLY RESET DOWN OR UP TO MAINTAIN AT LEAST ONE VAV BOX NO MORE THAN 95% OPEN. STEP STATIC 0.1" W.G. EVERY 2 MINUTES.
      b. BAS SHALL UTILIZE A SAMPLE AND BUMP OUTPUT STRATEGY OR OTHER SIMILAR LOOP OUTPUT OR LOGIC TO RESET THE STATIC SETPOINT.
      c. RESET VALUES SHALL BE ADJUSTED FOR OPTIMIZED BUILDING AND ENERGY PERFORMANCE.

B. OUTSIDE AIR (OA)/ RETURN AIR (RA) DAMPERS: BAS SHALL CONTROL THE DAMPERS AS FOLLOWS:
   1. CLOSED: WHEN AHU IS DEENERGIZED, DAMPERS SHALL REMAIN IN THEIR "OFF" POSITIONS. WHEN AHU IS ENERGIZED DURING UNOCCUPIED PERIOD THE MINIMUM OA FLOW SETPOINT WILL BE 0 CFM WHICH WILL CLOSE THE OA DAMPER.
   2. MINIMUM OA CONTROL: OA DAMPER SHALL MODULATE TO MAINTAIN MINIMUM OA CFM. THE MINIMUM OA VENTILATION REQUIREMENTS SHALL BE AS INDICATED ON THE DRAWINGS AND AS SPECIFIED BY THE ENGINEER, DAMPER POSITIONS ESTABLISHED BY THE AIR BALANCER, AND BAS PROGRAMMED BY THE BAS CONTRACTOR.
   3. MIXED AIR LOW LIMIT: PER THE MIXED AIR LOW LIMIT LOGIC STRATEGY, THE OA AND RA DAMPERS' POSITION SHALL BE LIMITED TO PREVENT THE MIXED AIR TEMPERATURE FROM FALLING BELOW THE LOW LIMIT SETPOINT. THE LIMIT SHALL OVERRIDE THE OUTPUT FROM THE ECONOMIZER AND MINIMUM OA FLOW CONTROL LOOP OUTPUTS.

C. SPACE TEMPERATURE CONTROL: THE SPACE TEMPERATURES SHALL BE CONTROLLED VIA INDIVIDUAL VAV BOXES.

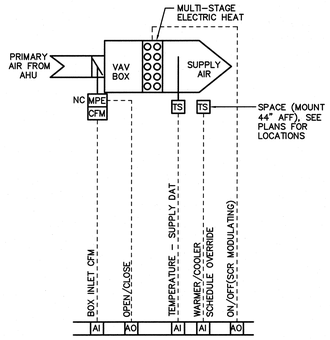
D. DISCHARGE TEMPERATURE CONTROL: THE DISCHARGE TEMPERATURE SETPOINT SHALL BE SET TO THE LOWER OF THE FOLLOWING:
   1. THE BAS SHALL UTILIZE A SAMPLE AND BUMP OUTPUT STRATEGY OR OTHER SIMILAR LOOP OUTPUT/LOGIC TO CALCULATE A RESULTANT VALUE BASED ON THE NUMBER OF "NEED COOLING" REQUESTS FROM ASSOCIATED TERMINAL VAV UNITS. THE UPPER AND LOWER LIMITS OF THIS RESET SETPOINT SHALL INITIALLY BE SET TO 65°F AND 55°F (BOTH ADJUSTABLE), RESPECTIVELY. THE OUTPUT OF THIS LOOP SHALL INPUT TO A DEHUMIDIFICATION LOOP AS THE HIGH LIMIT OF ITS RESET RANGE (SEE BELOW).
   2. A DEHUMIDIFICATION LOOP SHALL BE A PROPORTIONAL ONLY LOOP OUTPUT RESET FROM THE HIGH LIMIT OUTPUT FROM THE TEMPERATURE RESET LOOP (AS DESCRIBED ABOVE) TO 55°F (ADJ.) AS THE RETURN AIR HUMIDITY RISES FROM 55% TO 65% (BOTH ADJUSTABLE).
   3. THE RESULTANT TEMPERATURE OUTPUT AFTER PASSING THROUGH THE TWO LOOPS (AS DESCRIBED ABOVE) SHALL BE THE EFFECTIVE DISCHARGE TEMPERATURE SETPOINT. THIS VALUE SHALL BE TRENDED, ALARMED (VS ACTUAL TEMPERATURE) AND SHOWN ON THE BAS GRAPHIC.

E. ALL RESET VALUES SHALL BE ADJUSTED FOR OPTIMIZED BUILDING AND ENERGY PERFORMANCE.

F. PREHEATING SECTION:
   1. ELECTRIC HEATING: SCR MODULATING CONTROL PER THE HIGHER OF:
      a. A PID LOOP TO MAINTAIN A LEAVING COIL TEMPERATURE AT 55°F (ADJ.), AND
      b. A PROPORTIONAL ONLY LOOP THAT IS RESET FROM 0 TO 100% AS THE PREHEAT AIR TEMPERATURE DROPS FROM 48°F (ADJ.) TO 40°F (ADJ.).
   2. HEATING LOOPS SHALL REMAIN ACTIVE EVEN WHEN THE AHU IS NOT ENABLED.
   3. FREEZE CONDITION: WHENEVER A FREEZE CONDITION IS INITIATED (AS DESCRIBED IN ITEM "AIR HANDLING UNITS– GENERAL – FREEZE SAFETY"), THE HEATING SHALL BE COMMANDED TO 100% OPEN (ADJ.).

G. COOLING SECTION:
   1. COOLING COIL VALVE: WHENEVER THE AHU IS ENERGIZED AND STATUS IS PROVEN ON, NC COOLING COIL VALVE SHALL MODULATE VIA A DA PID LOOP TO MAINTAIN DISCHARGE TEMPERATURE AT SETPOINT.
   2. DURING SETBACK OR MORNING WARM–UP MODES, THE CHW VALVE SHALL REMAIN CLOSED.
   3. FREEZE CONDITION: WHENEVER A FREEZE CONDITION IS INITIATED (AS DESCRIBED IN ITEM "AIR HANDLING UNITS– 4. GENERAL– FREEZE SAFETY"), THE CHW VALVE SHALL BE COMMANDED TO 100% OPEN (ADJ.).

H. OCCUPANCY OVERRIDE: WHEN THE OCCUPANCY OVERRIDE BUTTON ON ANY OF THE ROOM SENSORS IS DEPRESSED MOMENTARILY, THE UNIT SHALL BE INDEXED TO THE OCCUPIED PERIOD FOR 120 MIN. (ADJ.).



VAV BOX

SEQUENCE OF OPERATION

SINGLE DUCT VAV BOX WITH REHEAT CONTROL

A. GENERAL: CONTROL SHALL BE PRESSURE INDEPENDENT WITH MINIMUM, MAXIMUM AND HEATING MAXIMUM FLOW SETPOINTS, SCHEDULED OCCUPANCY WITH OPTIMUM PREOCCUPANCY.

B. SPACE TEMPERATURE CONTROL: FOUR SETPOINTS SHALL APPLY. NORMAL HEATING, NORMAL COOLING, SETBACK HEATING, AND SETBACK COOLING. THESE FOUR VALUES SHALL BE THE ONLY VALUES CHANGED BY THE OPERATOR TO ADJUST SPACE TEMPERATURE SETPOINT. ALL OTHER DEADBANDS, DIFFERENTIALS, ETC. SHALL BE CALCULATED IN THE PROGRAM LOGIC (UNLESS ANOTHER MEANS IS PROVIDED TO PROHIBIT OVERLAP OF THE HEATING AND COOLING LOOPS AND ENSURE A DEAD BAND SUCH AS FUNCTION BLOCK TEMPLATES THAT RESTRICT THE SETPOINT INPUT).

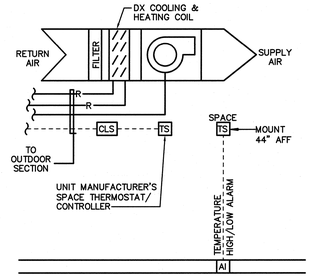
C. TEMPERATURE SENSORS SHALL HAVE WARMER/COOLER ADJUSTMENT AND AN OVERRIDE PUSH BUTTON, THE HVAC SYSTEM SHALL BE OPERATED IN OCCUPIED MODE FOR A TWO HOUR PERIOD (ADJ.).

D. ZONE DAMPER: ZONE DAMPER SHALL MODULATE IN A PI LOOP TO MAINTAIN ZONE VOLUME SETPOINT. ZONE VOLUME SETPOINT SHALL BE RESET AS FOLLOWS BASED ON THE PARENT AHU DISCHARGE AIR TEMPERATURE:
   1. WHENEVER THE PARENT AHU DAT IS < 65°F (ADJ.), THE FOLLOWING SEQUENCE SHALL APPLY:
      a. COOLING: THE ZONE VOLUME SETPOINT SHALL BE RESET BETWEEN THE MINIMUM AND THE COOLING MAXIMUM VOLUME SETTINGS TO MAINTAIN THE SPACE TEMPERATURE AT THE COOLING SPACE TEMPERATURE SETPOINT VIA A PID LOOP OUTPUT. THE ZONE VOLUME SETPOINT SHALL BE RESET LINEARLY BETWEEN THE MINIMUM AND COOLING MAXIMUM VOLUME SETPOINTS AS THE LOOP OUTPUT INCREASES FROM 0 TO 100%.
      b. HEATING: THE ZONE VOLUME SETPOINT SHALL BE RESET BETWEEN THE MINIMUM AND THE HEATING MAXIMUM VOLUME SETTINGS TO MAINTAIN THE SPACE TEMPERATURE AT THE HEATING SPACE TEMPERATURE SETPOINT VIA A PID LOOP OUTPUT. NOTE THAT A COMMON SPACE HEATING PID LOOP OUTPUT WILL BE USED TO RESET THE ZONE VOLUME SETPOINT (IN THE HEATING MODE) AND THE HW REHEAT VALVE (SEE BELOW). THE ZONE VOLUME SETPOINT SHALL BE RESET LINEARLY BETWEEN THE MINIMUM AND HEATING MAXIMUM VOLUME SETPOINTS AS THE LOOP OUTPUT INCREASES FROM 25 TO 100% (ADJ.).
      c. DEAD BAND: WHEN THE SPACE TEMPERATURE IS BETWEEN THE EFFECTIVE SPACE TEMPERATURE HEATING AND COOLING SETPOINTS (HEATING AND COOLING PID OUTPUTS ARE BOTH AT 0%), THE ZONE VOLUME SETPOINT SHALL REMAIN AT THE MINIMUM FLOW SETPOINT.
   2. WHENEVER THE PARENT AHU DAT IS > 65°F (ADJ.), THE FOLLOWING SEQUENCE SHALL APPLY:
      a. COOLING: THE ZONE VOLUME SETPOINT SHALL REMAIN AT MINIMUM WHENEVER THE SPACE TEMPERATURE IS ABOVE THE COOLING SETPOINT AS NO COOLING IS AVAILABLE IN THIS MODE.
      b. HEATING: THE ZONE VOLUME SETPOINT SHALL BE RESET BETWEEN THE MINIMUM AND THE COOLING MAXIMUM VOLUME SETTINGS TO MAINTAIN THE SPACE TEMPERATURE AT THE HEATING SPACE TEMPERATURE SETPOINT VIA A PID LOOP OUTPUT. NOTE THAT A COMMON SPACE HEATING PID LOOP OUTPUT WILL BE USED TO RESET THE ZONE VOLUME SETPOINT (IN THE HEATING MODE) AND THE HW REHEAT VALVE (SEE BELOW). THE ZONE VOLUME SETPOINT SHALL BE RESET LINEARLY BETWEEN THE MINIMUM AND COOLING MAXIMUM VOLUME SETPOINTS AS THE LOOP OUTPUT INCREASES FROM 0 TO 100% (ADJ.).
      c. DEAD BAND: WHEN THE SPACE TEMPERATURE IS BETWEEN THE EFFECTIVE SPACE TEMPERATURE HEATING AND COOLING SETPOINTS (HEATING AND COOLING PID OUTPUTS ARE BOTH AT 0%), THE ZONE VOLUME SETPOINT SHALL REMAIN AT THE MINIMUM FLOW SETPOINT.
   3. ZONE VOLUME FLOW SETPOINTS SHALL BE AS SCHEDULED ON THE DRAWINGS.

E. REHEAT: ELECTRIC REHEAT SHALL MODULATE VIA SCR CONTROL IN A PID LOOP OUTPUT (SAME LOOP OUTPUT THAT RESETS THE VOLUME SETPOINT IN THE HEATING MODE) TO MAINTAIN THE SPACE TEMPERATURE AT THE HEATING SETPOINT AS DEFINED ABOVE. REHEAT SHALL MODULATE FROM 0 TO 100% ON A PID LOOP OUTPUT OF 0–75% (ADJ.). REHEAT SHALL BE OFF WHENEVER ALL THE PARENT AIR UNITS IS OFF.

F. STATIC PRESSURE REQUEST: THIS TERMINAL SHALL ISSUE A "PRESSURE REQUEST" AS FOLLOWS"
   1. WHENEVER THE DAMPER OUTPUT IS > 95%, A PRESSURE REQUEST SHALL BE ISSUED
   2. WHENEVER THE DAMPER OUTPUT FALLS BELOW 85%, THE PRESSURE REQUEST SHALL STOP

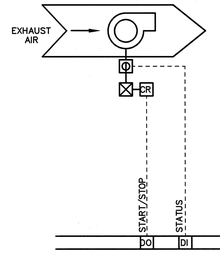
SEQUENCES OF OPERATION FOR EXISTING SERIES FP TERMINAL UNITS AND PARALLEL FP TERMINAL UNITS SHALL REMAIN AS EXISTING



DUCTLESS SPLIT SYSTEM HEAT PUMP

SEQUENCE OF OPERATION

A. MANUFACTURER FURNISHED WALL MOUNTED HARD WIRED THERMOSTAT SHALL CONTROL UNIT.
B. BAS SYSTEM SPACE TEMPERATURE SENSOR SHALL MONITOR SPACE TEMPERATURE AND ALARM ON HIGH OR LOW SPACE TEMPERATURE.
C. LEVEL SWITCH IN CONDENSATE PUMP SHALL DEENERGIZE HEAT PUMP ON HIGH LEVELS



POWER VENTILATOR

SEQUENCE OF OPERATION

A. POWER VENTILATORS CONTROLLED BY THE ENERGY MANAGEMENT SYSTEM:
   1. OCCUPIED PERIOD: FANS SHALL OPERATE
   2. UNOCCUPIED PERIOD: FANS ARE OFF.
   3. PREPARATORY PERIOD: FANS ARE OFF
B. REMAINING POWER VENTILATORS SHALL BE LIGHTING CONTROL'S OCCUPANCY SENSOR CONTROLLED.
C. SEE POWER VENTILATOR SCHEDULE FOR DEFINITION OF POWER VENTILATOR CONTROL.
D. SOO FOR EXISTING POWER VENTILATORS SHALL REMAIN AS EXISTING.

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ELECTRICAL NOTES

1. ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.
2. PERMITS FOR ELECTRICAL WORK SHALL BE OBTAINED BY AND PAID BY THE ELECTRICAL CONTRACTOR. THE ELECTRICAL CONTRACTOR SHALL PAY FOR ANY ADDITIONAL FEES FOR INSPECTIONS, TESTS, AND OTHER SERVICES AS REQUIRED FOR THE COMPLETION OF THE WORK.
3. THE ELECTRICAL CONTRACTOR AND ANY OF HIS SUBCONTRACTORS SHALL VISIT THE PROJECT SITE TO WITNESS EXISTING CONDITIONS AND BECOME FAMILIAR WITH THE SCOPE OF THE WORK REQUIRED PRIOR TO SUBMITTING PROPOSALS. WORK REQUIRED BY EXISTING JOB CONDITIONS NOT INDICATED ON DRAWINGS SHALL BE INCLUDED IN THE BID.
4. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO RESULT IN THE PRODUCTION OF A COMPLETE AND FUNCTIONAL ELECTRICAL SYSTEM. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL MATERIAL, LABOR, EQUIPMENT, AND OTHER SERVICES AS NECESSARY TO COMPLETE THE WORK.
5. DISCREPANCIES IN THE DRAWINGS AND SPECIFICATIONS THAT WILL AFFECT THE WORK SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT, ENGINEER, AND/OR OWNER PRIOR TO SUBMITTING PROPOSALS.
6. UNLESS NOTED OTHERWISE, ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND INCLUDE A 3RD PARTY LABEL (I.E.: UL, CSA, ETL, ETC.) LISTING APPROVAL FOR ITS INSTALLED APPLICATION.
7. REVIEW PLANS OF OTHER TRADES FOR COORDINATION OF WORK AND FOR RELATED AND ADJOINING WORK.
8. REVIEW COMPLETE PLAN SET FOR CONSTRUCTION TYPE, FINISHES, HEADROOM, ROOF FINISHES, CEILINGS, ETC. REVIEW COMPLETE PLAN SET FOR PROJECT PHASING AND STAGING. REVIEW COMPLETE PLAN SET FOR WORK COVERED BY ALTERNATE BID ITEMS.
9. COORDINATE DEVICE AND EQUIPMENT MOUNTING HEIGHTS WITH OTHER DISCIPLINE DRAWINGS, CASEWORK DETAILS & SUBMITTALS, EQUIPMENT DETAILS & SUBMITTALS, ETC.
10. PENETRATIONS OF FIRE-RATED WALLS, FLOORS, CEILINGS, AND PARTITIONS SHALL BE FIRE STOPPED IN ACCORDANCE WITH REQUIREMENTS OF THE STATE BUILDING CODE. COORDINATE WORK TO INSURE THAT FIRE STOPPING IS COMPLETED.
11. PENETRATIONS OF SMOKE PARTITIONS SHALL BE SEALED IN ACCORDANCE WITH REQUIREMENTS OF THE STATE BUILDING CODE. COORDINATE WORK TO INSURE THAT SMOKE PARTITION SEALING IS COMPLETED.
12. PENETRATIONS OF EXTERIOR BUILDING WALLS, FLOORS, OR ROOFS SHALL BE SEALED WATERTIGHT. INTERIORS OF RACEWAY PENETRATIONS THROUGH EXTERIOR WALLS SHALL BE SEALED WITH NON-HARDENING ELECTRICAL PUTTY.
13. CUTTING AND PATCHING TO INSTALL DEVICES AND EQUIPMENT SHALL BE PERFORMED WITH FINISHES RESTORED TO THEIR ORIGINAL CONDITION. SUCH WORK SHALL BE COMPLETED TO A DEGREE THAT IS ACCEPTABLE TO THE ARCHITECT, ENGINEER, AND/OR OWNER.
14. SEE SPECIFICATIONS FOR DIVISION OF RESPONSIBILITY FOR PROVIDING DISCONNECTS, STARTERS, DRIVES, ETC. FOR EQUIPMENT SUPPLIED BY OTHER SUBCONTRACTORS.
15. COORDINATE PRECISE LOCATION OF HVAC EQUIPMENT WITH THE MECHANICAL CONTRACTOR.
16. FOR HVAC EQUIPMENT, VERIFY CIRCUIT BREAKER RATINGS, FUSE RATINGS, AND WIRE SIZES. IF RATINGS DIFFER FROM THOSE INDICATED ON THE DRAWINGS, NOTIFY THE ARCHITECT, ENGINEER, AND OWNER FOR DIRECTION. PROVIDE OVERCURRENT PROTECTION IN ACCORDANCE WITH EQUIPMENT MANUFACTURER NAMEPLATE DATA. IF THE EQUIPMENT LISTING LABEL REQUIRES FUSED PROTECTION, ENSURE THAT FUSES IN A FUSED DISCONNECT SWITCH AT THE EQUIPMENT ARE SIZED AS INDICATED ON THE EQUIPMENT LABEL.
17. VERIFY PROPER SIZING OF OVERLOAD DEVICES IN STARTERS BASED ON EQUIPMENT NAMEPLATE DATA.
18. IF HORSEPOWER OR LOAD RATINGS OF EQUIPMENT DIFFER FROM THOSE INDICATED ON THE DRAWINGS, NOTIFY THE ARCHITECT, ENGINEER, AND OWNER FOR DIRECTION.
19. PROVIDE NATIONAL ELECTRICAL CODE REQUIRED CLEARANCES FOR ALL ELECTRICAL EQUIPMENT. COORDINATE RESOLUTION OF CONFLICTS WITH OTHER TRADES.
20. RECEPTACLE, SWITCH, DATA/TELEPHONE OUTLETS SHALL BE FLUSH MOUNTED IN FINISHED SPACES UNLESS OTHERWISE NOTED.
21. WHERE INSTALLED IN PLENUM SPACES, CABLES SHALL BE PLENUM-RATED OR INSTALLED IN METAL RACEWAY.
22. PRIOR TO ORDERING LIGHT FIXTURES, CONTRACTOR SHALL VERIFY TYPE OF CEILING OR WALL BY REVIEW OF ARCHITECTURAL FINISH SCHEDULES AND PROVIDE SUITABLE TRIM AND APPURTENANCES TO MOUNT FIXTURES IN TYPE OF CEILING OR WALL INDICATED.
23. RECESSED LIGHT FIXTURES INSTALLED IN CEILINGS HAVING INSULATION INSTALLED OVER CEILING AND FIXTURES (AS INDICATED IN ARCHITECTURAL PLANS, OR FOUND AS EXISTING CONDITIONS) SHALL BE U.L. RATED FOR DIRECT CONTACT WITH INSULATION.
24. RECESSED LIGHT FIXTURES INSTALLED IN FIRE RATED CEILING SHALL BE U.L. RATED FOR USE IN FIRE RATED CEILINGS OR SHALL BE INSTALLED WITH "TENTING' IN ACCORDANCE WITH RATING REQUIREMENTS OF THE CEILING ASSEMBLY.
25. EXIT AND EMERGENCY LIGHTS SHALL BE CONNECTED TO THE NEAREST UNSWITCHED CIRCUIT THAT SERVES LIGHT FIXTURES WITHIN THE SAME SPACE.
26. NO MOUNTING HARDWARE SHALL BE ATTACHED TO ROOF DECKS. ATTACHMENTS SHALL BE MADE TO THE ROOF SUPPORTING STRUCTURE.
27. WHERE WORKING IN EXISTING BUILDINGS, FACILITIES, OR STRUCTURES; PROTECT AND MAINTAIN IN OPERATION EXISTING LIFE SAFETY SYSTEMS, PUBLIC ADDRESS SYSTEMS, ELECTRICAL SYSTEMS, ETC. IF SHUTDOWNS ARE REQUIRED, NOTIFY THE ARCHITECT, ENGINEER, AND OWNER FOR COORDINATION WELL IN ADVANCE OF ANY SYSTEM SHUTDOWN. WHERE AN OUTAGE OF EXTENDED DURATION IS NOT ACCEPTABLE TO THE OWNER, PROVIDE TEMPORARY CONNECTIONS AS REQUIRED TO MAINTAIN SERVICE.
28. WHERE WORKING IN EXISTING BUILDINGS, FACILITIES, OR STRUCTURES; WORK MAY BE REQUIRED TO BE PERFORMED WHILE REMAINING OCCUPIED BY OWNER STAFF. WORK SHALL BE COORDINATED WITH THE OWNER TO MINIMIZE DISRUPTION TO THE OWNER.
29. WHERE WORKING IN EXISTING BUILDINGS, FACILITIES, OR STRUCTURES; EXISTING ABANDONED CIRCUITS USED TO CONNECT NEW LOADS IN THE SAME AREA SHALL BE CLEARLY IDENTIFIED ON AS-BUILT MARK-UP DRAWINGS WITH REGARD TO PANEL-CIRCUIT AND CIRCUITRY ROUTING CONFIGURATION.
30. ABANDONED CIRCUITRY (RACEWAY & CONDUCTORS) SHALL BE REMOVED IN ITS ENTIRETY FROM ITS SOURCE. ABANDONED LOW VOLTAGE CABLING SHALL BE REMOVED IN ITS ENTIRETY UNLESS OTHERWISE NOTED.
31. PANEL BUS MATERIAL: COPPER.
32. SHARED NEUTRAL CONDUCTORS SHALL NOT BE USED UNLESS SPECIFICALLY INDICATED SO ON HOMERUN CIRCUITRY DESIGNATIONS.
33. PANEL BREAKER CONFIGURATIONS SHALL BE INSTALLED AS INDICATED ON THE PANEL SCHEDULES OR AS NOTED. BREAKER POSITION REVISIONS WILL NOT BE ACCEPTED UNLESS APPROVED IN WRITING BY THE ENGINEER.
34. LOAD CIRCUITS SHALL BE INSTALLED AS INDICATED ON THE DRAWINGS. CIRCUITRY REVISIONS WILL NOT BE ACCEPTED UNLESS APPROVED IN WRITING BY THE ENGINEER.

ABBREVIATIONS

ADA	AMERICAN DISABILITIES ACT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLER UNIT
AIC	AMPS INTERRUPTING CAPABILITY
BAS	BUILDING AUTOMATION SYSTEM
BKR	BREAKER
C	CONDUIT
C/B	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CLG	CEILING
CKT	CIRCUIT
COMP	COMPRESSOR
CU	COPPER\
DAS	DISTRIBUTED ANTENNA SYSTEM
DIA	DIAMETER
DDC	DIRECT DIGITAL CONTROL
DWG	DRAWING
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSED
ERRCS	EMERGENCY RADIO RESPONDER COVERAGE SYSTEM
EXSTG	EXISTING
FACP	FIRE ALARM CONTROL PANEL
FACU	FIRE ALARM CONTROL UNIT
G	EQUIPMENT GROUND
GEC	GROUNDING ELECTRODE CONDUCTOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT INTERRUPTER
HP	HEAT PUMP
HP	HORSEPOWER
IMC	INTERMEDIATE METAL CONDUIT
K	KILO (THOUSAND)
LED	LIGHT EMITTING DIODE
LTG	LIGHTING
LTS	LIGHTS
MCB	MAIN CIRCUIT BREAKER
MDP	MAIN DISTRIBUTION PANEL
MFR	MANUFACTURER
MLO	MAIN LUG ONLY
MTG	MOUNTING
N/A	NOT APPLICABLE
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOC.
NHCS	NEW HANOVER COUNTY SCHOOLS
NTS	NOT TO SCALE
P	PHASE OR POLE
PH	PHASE
PNL	PANEL
PROJ	PROJECTOR
PVC	POLYVINYL CHLORIDE
REC	RECEPTACLE
RECPT	RECEPTACLE
REQ.	REQUIRED
S.S.	STAINLESS STEEL
SYS	SYSTEM
S/N	SOLID NEUTRAL
TYP	TYPICAL
UL	UNDERWRITERS LABORATORY
UNO	UNLESS NOTED OTHERWISE
UON	UNLESS OTHERWISE NOTED
V	VOLTS
VA	VOLT-AMPS
VFD	VARIABLE FREQUENCY DRIVE
W	WATTS
W	WIRE
W/	WITH
WP	WEATHERPROOF
XFMR	TRANSFORMER

APPENDIX B, BUILDING CODE SUMMARY
ELECTRICAL SUMMARY

METHOD OF COMPLIANCE
- –ENERGY CODE: ☒ PRESCRIPTIVE ☐ PERFORMANCE
- –ASHRAE 90.1: ☐ PRESCRIPTIVE ☐ PERFORMANCE

LIGHTING SCHEDULE
- Lamp Type Required in Fixtures
- Number of Lamps in Fixtures
- Ballast Types Used in Fixtures
- Number of Ballasts Used in Fixtures
- Total Wattage per Fixture

— SEE LIGHT FIXTURE / LUMINAIRE SCHEDULE

TOTAL WATTAGE SPECIFIED VERSUS ALLOWED
- Interior Specified: **9727 Watts** Exterior Specified: **44 Watts**
- Interior Allowed: **11546 Watts** Exterior Allowed: **60 Watts**

ADDITIONAL METHOD OF COMPLIANCE:
- ☐ 506.2.1 More Efficient Mechanical Equipment
- ☒ 506.2.2 Reduced Lighting Power Density
- ☐ 506.2.3 Energy Recovery Ventilation System
- ☐ 506.2.4 Higher Efficiency Service Water Heating
- ☐ 506.2.5 On-Site Supply of Renewable Energy
- ☐ 506.2.6 Automatic Daylighting Control Systems

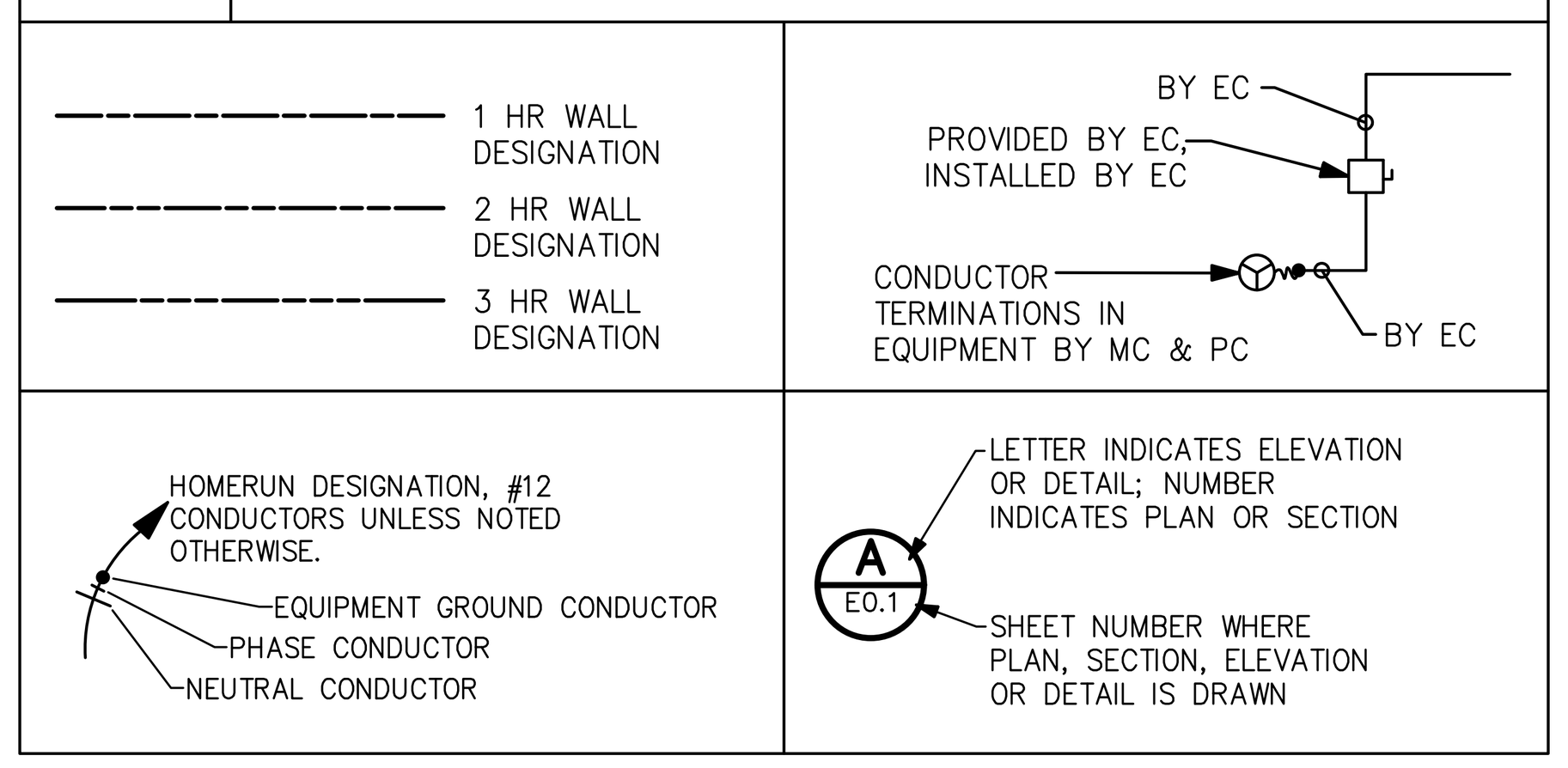
DESIGNER STATEMENT

To the best of my knowledge and belief, the design of this building complies with the electrical systems and equipment requirements of the North Carolina State Building Code, Section 505 of the North Carolina Energy Conservation Code.

SIGNED: [signature]
NAME: Mark A. Ciarrocca, P.E.
TITLE: Engineer

MISC. ELECTRICAL SYMBOL LEGEND

	ENCLOSED CIRCUIT BREAKER, NEMA 1 INSIDE, NEMA 3R OUTSIDE (UNO); AMPERAGE AS INDICATED OR BASED ON SUPPLY CIRCUIT RATING.
	EQUIPMENT CONNECTION
	SAFETY SWITCH DISCONNECT, HEAVY-DUTY, NON-FUSED, NEMA 1 INSIDE, NEMA 3R OUTSIDE (UNO), AMPERAGE AS INDICATED OR BASED ON SUPPLY CIRCUIT BREAKER RATING.
	SAFETY SWITCH DISCONNECT, HEAVY-DUTY, FUSED AT NAMEPLATE RATING OF EQUIPMENT SERVED, NEMA 1 INSIDE, NEMA 3R OUTSIDE (UNO), AMPERAGE AS INDICATED OR BASED ON SUPPLY CIRCUIT BREAKER RATING.
	PANELBOARD, SEE PANEL SCHEDULE
T	TRANSFORMER, DRY TYPE, RATINGS INDICATED, NEMA 1 ENCLOSURE (UNO). PROVIDE 4" CONCRETE HOUSE KEEPING PAD IF A FLOOR MOUNTED UNIT IS PROVIDED.



SHEET LIST

E0.1	ELECTRICAL NOTES, LEGENDS, SCHEDULES
ED1.1	ELECTRICAL 1ST FLOOR POWER DEMOLITION PLAN
ED1.2	ELECTRICAL 1ST FLOOR LIGHTING DEMOLITION PLAN
ED1.3	ELECTRICAL 1ST FLOOR AUXILIARY SYSTEMS DEMOLITION PLAN
ED1.4	ELECTRICAL 2ND FLOOR POWER DEMOLITION PLAN
ED1.5	ELECTRICAL 2ND FLOOR LIGHTING DEMOLITION PLAN
ED1.6	ELECTRICAL 2ND FLOOR AUXILIARY SYSTEMS DEMOLITION PLAN
ED1.7	ELECTRICAL 3RD FLOOR POWER DEMOLITION PLAN
ED1.8	ELECTRICAL 3RD FLOOR LIGHTING DEMOLITION PLAN
ED1.9	ELECTRICAL 3RD FLOOR AUXILIARY SYSTEMS DEMOLITION PLAN
E1.1	ELECTRICAL 1ST FLOOR POWER PLAN
E1.2	ELECTRICAL 1ST FLOOR LIGHTING PLAN
E1.3	ELECTRICAL 1ST FLOOR AUXILIARY SYSTEMS PLAN
E1.4	ELECTRICAL 2ND FLOOR POWER PLAN
E1.5	ELECTRICAL 2ND FLOOR LIGHTING PLAN
E1.6	ELECTRICAL 2ND FLOOR AUXILIARY SYSTEMS PLAN
E1.7	ELECTRICAL 3RD FLOOR POWER PLAN
E1.8	ELECTRICAL 3RD FLOOR LIGHTING PLAN
E1.9	ELECTRICAL 3RD FLOOR AUXILIARY SYSTEMS PLAN
E4.1	ELECTRICAL 1ST FLOOR ENLARGED POWER PLAN
E5.1	ELECTRICAL DETAILS
E5.2	ELECTRICAL DETAILS
E6.1	ELECTRICAL LUMINAIRE SCHEDULE
E6.2	ELECTRICAL PANEL SCHEDULES
E7.1	ELECTRICAL RISERS

JUNCTION BOX SCHEDULE

SYMBOL	DESCRIPTION	NOTES
J	JUNCTION BOX	AS A MINIMUM, SIZE BASED ON REQUIREMENTS OF NEC
	WALL SLEEVE, RATED WALLS, COMMUNICATIONS CABLING	ABOVE CEILING, FOR LOW VOLTAGE CABLES; PRE-ENGINEERED FIRE-RATED PASS-THROUGH; DESIGN BASIS: STI EZ-PATH SERIES 44

COURTROOM SYSTEM INFRASTRUCTURE SCHEDULE

SYMBOL	DESCRIPTION	MOUNTING	NOTES
M J	MICROPHONE CONNECTOR	JUDGE'S DECK OR WITNESS STAND, STANDARD 3-PIN FLUSH MOUNTED MICROPHONE OUTLET ON STAINLESS STEEL PLATE.	(1) 3/4"C TO SOUND SYSTEMS RACK.
M	MICROPHONE CONNECTOR	FLOOR, STANDARD 3-PIN FLUSH MOUNTED MICROPHONE OUTLET MOUNTED IN A FLUSH CAST IRON FLOOR BOX	(1) 3/4"C TO SOUND SYSTEMS RACK.
PA	PA SPEAKER	CEILING	
PN	PUSHBUTTON FOR PINK NOISE	WALL	(1) 3/4"C TO SOUND SYSTEMS RACK

SWITCH LEGEND

SYMBOL	DESCRIPTION	NOTES
$ D	DIMMER SWITCH	RATED FOR VOLTAGE WHERE APPLIED, 20A; MTD 42" AFF UNO
$ D3	DIMMER SWITCH FOR 3-WAY CONTROL	RATED FOR VOLTAGE WHERE APPLIED, 20A; MTD 42" AFF UNO
$ OD	OCCUPANCY SENSOR WALL SWITCH, DIMMER; DUAL TECHNOLOGY	RATED FOR VOLTAGE WHERE APPLIED, 20A; MTD 42" AFF UNO
$ 02	OCCUPANCY SENSOR WALL SWITCH, DUAL CKT, DUAL TECHNOLOGY	RATED FOR VOLTAGE WHERE APPLIED, 20A; CONFIGURE OUTPUT FOR DUAL LEVEL SWITCHING; MTD 42" AFF UNO
$ 01	OCCUPANCY SENSOR WALL SWITCH, SINGLE CKT, DUAL TECHNOLOGY	RATED FOR VOLTAGE WHERE APPLIED, 20A; MTD 42" AFF UNO
OS	OCCUPANCY SENSOR, DUAL TECHNOLOGY; CEILING MTD	INCORPORATE POWER PACK FOR CIRCUITRY SWITCHING, SEE WIRING DIAGRAMS
$	TOGGLE SWITCH, SINGLE POLE	RATED FOR VOLTAGE WHERE APPLIED, 20A; MTD 42" AFF UNO; WHERE SHOWN PAIRED, PROVIDE DUAL LEVEL SWITCHING.
$ 3	3-WAY SWITCH	RATED FOR VOLTAGE WHERE APPLIED, 20A; MTD 42" AFF UNO

FIRE ALARM LEGEND

SYMBOL	DESCRIPTION	MOUNTING
F 15	HORN/STROBE, 15 CANDELA	CEILING
F 30	HORN/STROBE, 30 CANDELA	CEILING
F 75	HORN/STROBE, 75 CANDELA	CEILING
F 95	HORN/STROBE, 95 CANDELA	CEILING
F 115	HORN/STROBE, 115 CANDELA	CEILING
S 15	STROBE, 15 CANDELA	CEILING
S 30	STROBE, 30 CANDELA	CEILING
S 75	STROBE, 75 CANDELA	CEILING
S 95	STROBE, 95 CANDELA	CEILING
S 115	STROBE, 115 CANDELA	CEILING
CM	CONTROL / RELAY MODULE	
D	DUCT DETECTOR – PROVIDED BY FIRE ALARM VENDOR	BY MECH CONTRACTOR
ERRCS	EMERGENCY RESPONDER RADIO COVERAGE SYSTEM	WALL
ERRCS RA	EMERGENCY RESPONDER RADIO COVERAGE SYSTEM REMOTE ANNUNCIATOR	WALL
FACP	FIRE ALARM CONTROL PANEL	
H	HEAT DETECTOR	CEILING
F 30	HORN/STROBE, 30 CANDELA	WALL
MM	MONITOR MODULE FOR MONITORING A DRY CONTACT CLOSURE DEVICE	
F	PULL STATION	WALL
RA	REMOTE ANNUNCIATOR	WALL
SD	SMOKE DETECTOR	CEILING
SD	SMOKE DETECTOR	WALL

RECEPTACLE LEGEND

SYMBOL	NEMA	VOLTS	DESCRIPTION
	5-20R	120V 1P 2W	DUPLEX, MTD 18" AFF UNO
CP	5-20R	120V 1P 2W	DUPLEX FOR CONDENSATE PUMP; COORDINATE LOCATION W/ MECH CONTRACTOR
COPIER	5-20R	120V 1P 2W	DUPLEX FOR COPIER, MTD 18" AFF UNO
	5-20R	120V 1P 2W	DUPLEX, MTD 6" ABOVE COUNTER HEIGHT UNO
G	5-20R	120V 1P 2W	DUPLEX GFCI, MTD 6" ABOVE COUNTER HEIGHT UNO
EWC	5-20R	120V 1P 2W	DUPLEX ELECTRIC WATER COOLER OUTLET; SUPPLY FROM GFCI TYPE C/B; COORDINATE MTG LOCATION TO CONCEAL OUTLET WHEN COOLER IS INSTALLED.
W/G	5-20R	120V 1P 2W	DUPLEX GFCI, MTD 18" AFG UNO; LISTED WEATHER-RESISTANT TYPE; PROVIDE CAST ALUMINUM WEATHERPROOF IN-USE COVER WITH CAST ALUMINUM FD WEATHERPROOF BOX
	5-20R	120V 1P 2W	DUPLEX; MTD IN FLUSH FLOOR BOX; SEE AUX SYS PLANS FOR SHARED BOX; PROVIDE DIVIDER FOR POWER SEPARATION FROM VOICE/DATA
R	5-20R	120V 1P 2W	DUPLEX FOR REFRIGERATOR; MOUNT 48" AFF UNO. SUPPLY FROM GFCI TYPE C/B.
TV	5-20R	120V 1P 2W	DUPLEX, LOCATED BEHIND TV MOUNT IN RECESSED LCD OUTLET BOX (COORDINATE SPECIFIC LOCATION WITH OWNER/ARCHITECT). SEE AUXILIARY SYSTEMS PLANS FOR SHARED BOX WITH DATA OUTLET. DESIGN BASIS ARLINGTON #TVBS613 WITH COVER. SEE DETAIL D/E5.2. MTD 66" AFF UNO.
CTV	5-20R	120V 1P 2W	DUPLEX, MTD FLUSH IN CEILING FOR TV
UCR	5-20R	120V 1P 2W	DUPLEX FOR UNDER COUNTER REFRIGERATOR; COORDINATE MOUNTING HEIGHT WITH CASEWORK DRAWINGS.
V	5-20R	120V 1P 2W	DUPLEX FOR VENDING MACHINE, MTD 30" AFF UNO. SUPPLY FROM GFCI TYPE C/B.
J DDC		120V 1P 2W	J-BOX ABOVE CLG LEVEL FOR DDC OR MECHANICAL CONTROL POWER SOURCE
J ERRCS		120V 1P 2W	POWER FOR EMERGENCY RESPONDER RADIO COVERAGE SYSTEM
J HH		120V 1P 2W	POWER FOR HARD OF HEARING SOUND EMITTER
J HT	5-20R	120V 1P 2W	JUNCTION BOX FOR HEAT TRACE; SUPPLY FROM GFEP (30mA) TYPE CIRCUIT BREAKER.
J T		120V 1P 2W	POWER FOR TURNSTILE. PROVIDE 3/4"C FROM PRIMARY CABINET TO SECONDARY CABINET IN SLAB. TURNSTILE DESIGN BASIS: CONTROLLED ACCESS, INC #EX300
	5-20R	120V 1P 2W	QUAD, MTD 18" AFF UNO
	5-20R	120V 1P 2W	QUAD, MTD IN FLUSH FLOOR BOX; SEE AUX SYS PLANS FOR SHARED BOX; PROVIDE DIVIDER FOR POWER SEPARATION FROM VOICE/DATA
	5-20R	120V 1P 2W	QUAD; MTD IN POKE-THRU ASSEMBLY; SEE AUX SYS PLANS FOR SHARED ASSEMBLY; 8" POKE-THRU WITH 5-GANG CAPACITY; COVER FINISH SELECTION BY ARCHITECT.
EF		120V 1P 2W	EXHAUST FAN; SEE MECHANICAL SCHEDULE. PROVIDE POWER PACK FOR SWITCHING WITH LIGHTING CEILING OCCUPANCY SENSOR.

TELEPHONE AND DATA SCHEDULE

SYMBOL	DESCRIPTION	MOUNTING	NOTES
CTV	CEILING MOUNTED TV OUTLET	NO MOUNTING PROVISIONS REQUIRED BY CONTRACTOR.	CABLING WILL RUN DIRECTLY DOWN TV MOUNTING MAST.
TV	TV OUTLET	WALL, LOCATED BEHIND TV MOUNT IN RECESSED LCD OUTLET BOX (COORDINATE SPECIFIC LOCATION AND MOUNTING HEIGHT WITH OWNER/ARCHITECT).	SEE POWER PLANS FOR SHARED BOX WITH POWER OUTLET. DESIGN BASIS ARLINGTON #TVBS613 WITH COVER.
C	DATA / TELEPHONE OUTLET	WALL, MTD 6" ABOVE COUNTER HEIGHT AFF UNO; 5" SQUARE, 2.875" DEEP BOX, 64 CUBIC INCHES, WITH CABLE MANAGEMENT POSTS. DESIGN BASIS: STEEL CITY #82181T SERIES	STUB (2) 1"C TO 6" ABOVE CEILING
	DATA / TELEPHONE OUTLET	WALL, 18" AFF UNO; 5" SQUARE, 2.875" DEEP BOX, 64 CUBIC INCHES, WITH CABLE MANAGEMENT POSTS. DESIGN BASIS: STEEL CITY #82181T SERIES	STUB (2) 1"C TO 6" ABOVE CEILING.
	DATA / TELEPHONE OUTLET	FLOOR, INTEGRAL TO POWER POKE-THRU WITH DIVIDER SEPARATING POWER & COMMUNICATIONS	ROUTE (1) 2" C BELOW FLOOR SLAB TO WALL AND TURNED UP TO 6" ABOVE ACCESSIBLE CEILING OR ROUTE (1) 2"C BELOW FLOOR SLAB IN CEILING CAVITY TO DATA ROOM.
	DATA / TELEPHONE OUTLET	FLOOR, INTEGRAL TO POWER FLOOR BOX WITH DIVIDER SEPARATING POWER & COMMUNICATIONS	ROUTE (2) 1" C UNDERGROUND, TURN UP INTO WALL CAVITY, & STUB UP TO 6" ABOVE CEILING.

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NORTH CAROLINA PROFESSIONAL SEAL ENGINEER MARK A. CIARROCCA 01 NOV 2019

Brunswick County Courthouse Addition & Renovations

Bolivia, NC

CONSTRUCTION DRAWINGS
SEPTEMBER 23, 2019

Revisions:

ELECTRICAL NOTES, LEGENDS, SCHEDULES

E0.1

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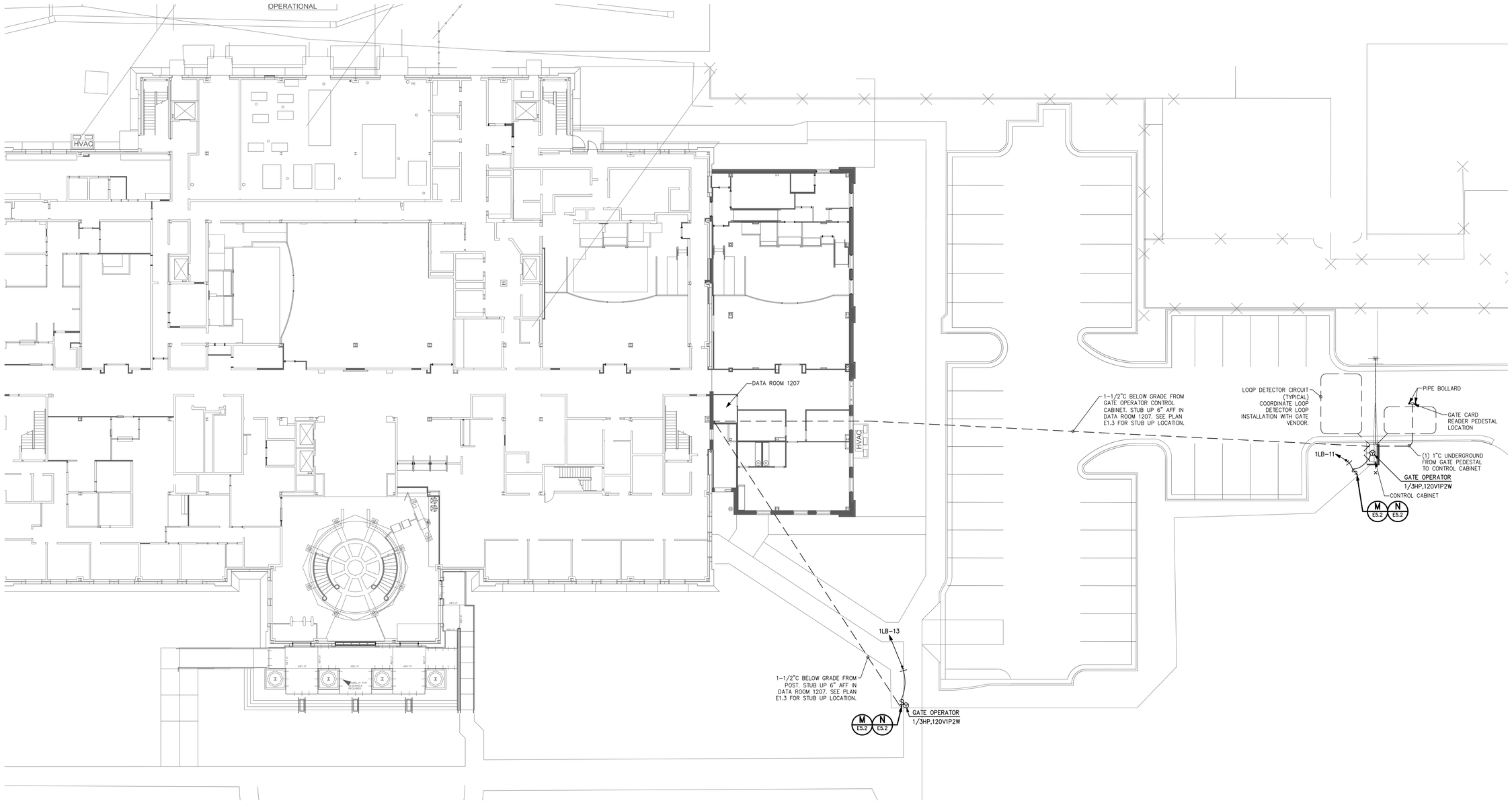

1 E1.9 ELECTRICAL 3RD FLOOR AUXILIARY SYSTEMS PLAN
SCALE: 1/16" = 1'-0"

GRAPHIC SCALE: 1/16"=1'-0"
0 4 8 16 32

TRUE NORTH

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 17593 MARK A. CIARROCCHI

Brunswick County Courthouse Addition & Renovations

Bolivia, NC

CONSTRUCTION DRAWINGS
SEPTEMBER 23, 2019

Revisions:

ELECTRICAL SITE PLAN

E0.11

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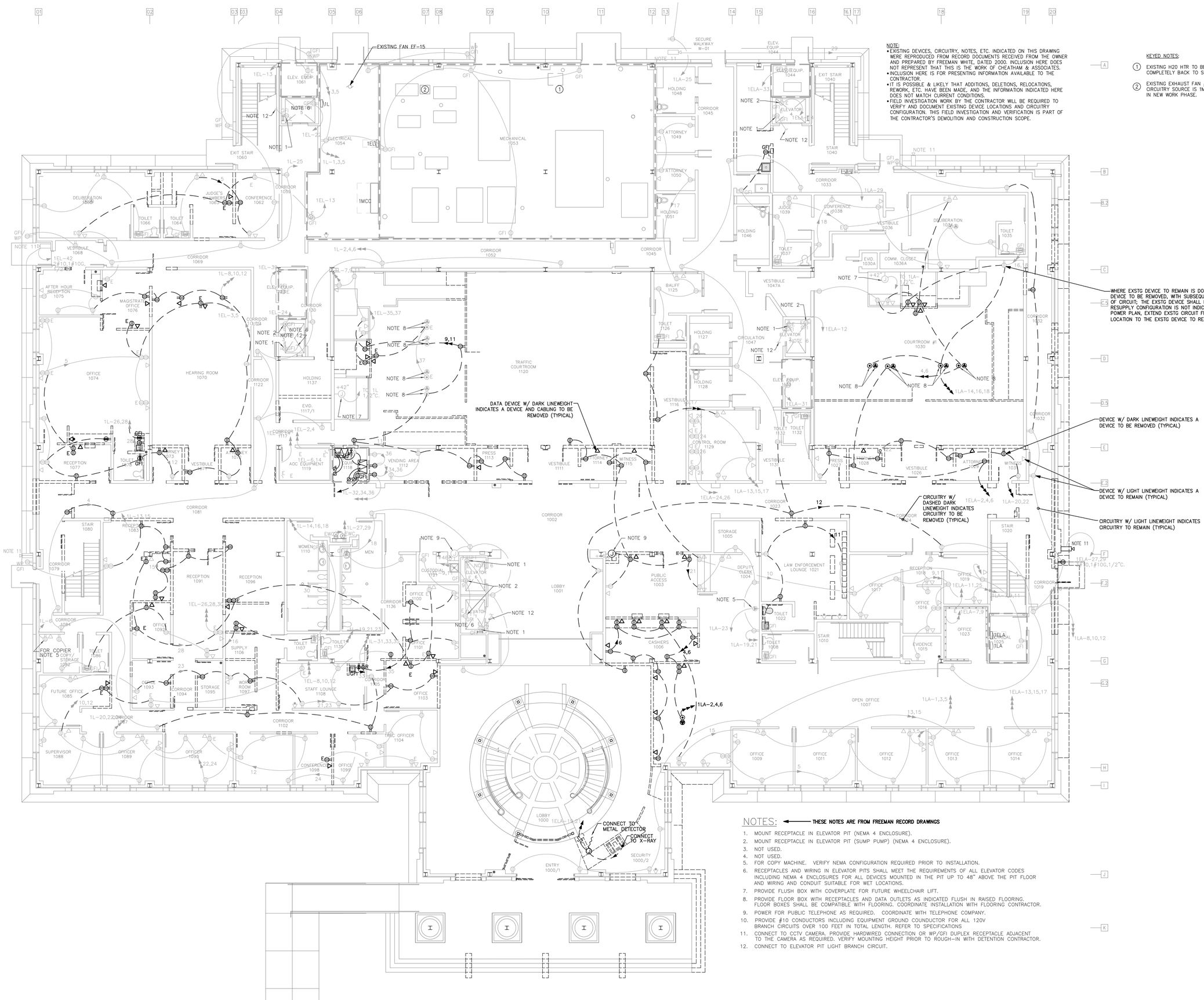

NOTES:

THESE NOTES ARE FROM FREEMAN RECORD DRAWINGS

1. MOUNT RECEPTACLE IN ELEVATOR PIT (NEMA 4 ENCLOSURE).
2. MOUNT RECEPTACLE IN ELEVATOR PIT (SUMP PUMP) (NEMA 4 ENCLOSURE).
3. NOT USED.
4. NOT USED.
5. FOR COPY MACHINE. VERIFY NEMA CONFIGURATION REQUIRED PRIOR TO INSTALLATION.
6. RECEPTACLES AND WIRING IN ELEVATOR PITS SHALL MEET THE REQUIREMENTS OF ALL ELEVATOR CODES INCLUDING NEMA 4 ENCLOSURES FOR ALL DEVICES MOUNTED IN THE PIT UP TO 48" ABOVE THE PIT FLOOR AND WIRING AND CONDUIT SUITABLE FOR WET LOCATIONS.
7. PROVIDE FLUSH BOX WITH COVERPLATE FOR FUTURE WHEELCHAIR LIFT.
8. PROVIDE FLOOR BOX WITH RECEPTACLES AND DATA OUTLETS AS INDICATED FLUSH IN RAISED FLOORING. FLOOR BOXES SHALL BE COMPATIBLE WITH FLOORING. COORDINATE INSTALLATION WITH FLOORING CONTRACTOR.
9. POWER FOR PUBLIC TELEPHONE AS REQUIRED. COORDINATE WITH TELEPHONE COMPANY.
10. PROVIDE #10 CONDUCTORS INCLUDING EQUIPMENT GROUND COUNDUCTOR FOR ALL 120V BRANCH CIRCUITS OVER 100 FEET IN TOTAL LENGTH. REFER TO SPECIFICATIONS
11. CONNECT TO CCTV CAMERA. PROVIDE HARDWIRED CONNECTION OR WP/GFI DUPLEX RECEPTACLE ADJACENT TO THE CAMERA AS REQUIRED. VERIFY MOUNTING HEIGHT PRIOR TO ROUGH-IN WITH DETENTION CONTRACTOR.
12. CONNECT TO ELEVATOR PIT LIGHT BRANCH CIRCUIT.

1 ED1.1 ELECTRICAL 1ST FLOOR POWER DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

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

TRUE NORTH

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NORTH CAROLINA REGISTERED ARCHITECT JOHN A. CIARDIELLO
10 NOVEMBER 2019

Brunswick County Courthouse Addition & Renovations

Bolivia, NC

CONSTRUCTION DRAWINGS
SEPTEMBER 23, 2019

Revisions:

ELECTRICAL
1ST FLOOR
POWER
DEMOLITION PLAN

ED1.1

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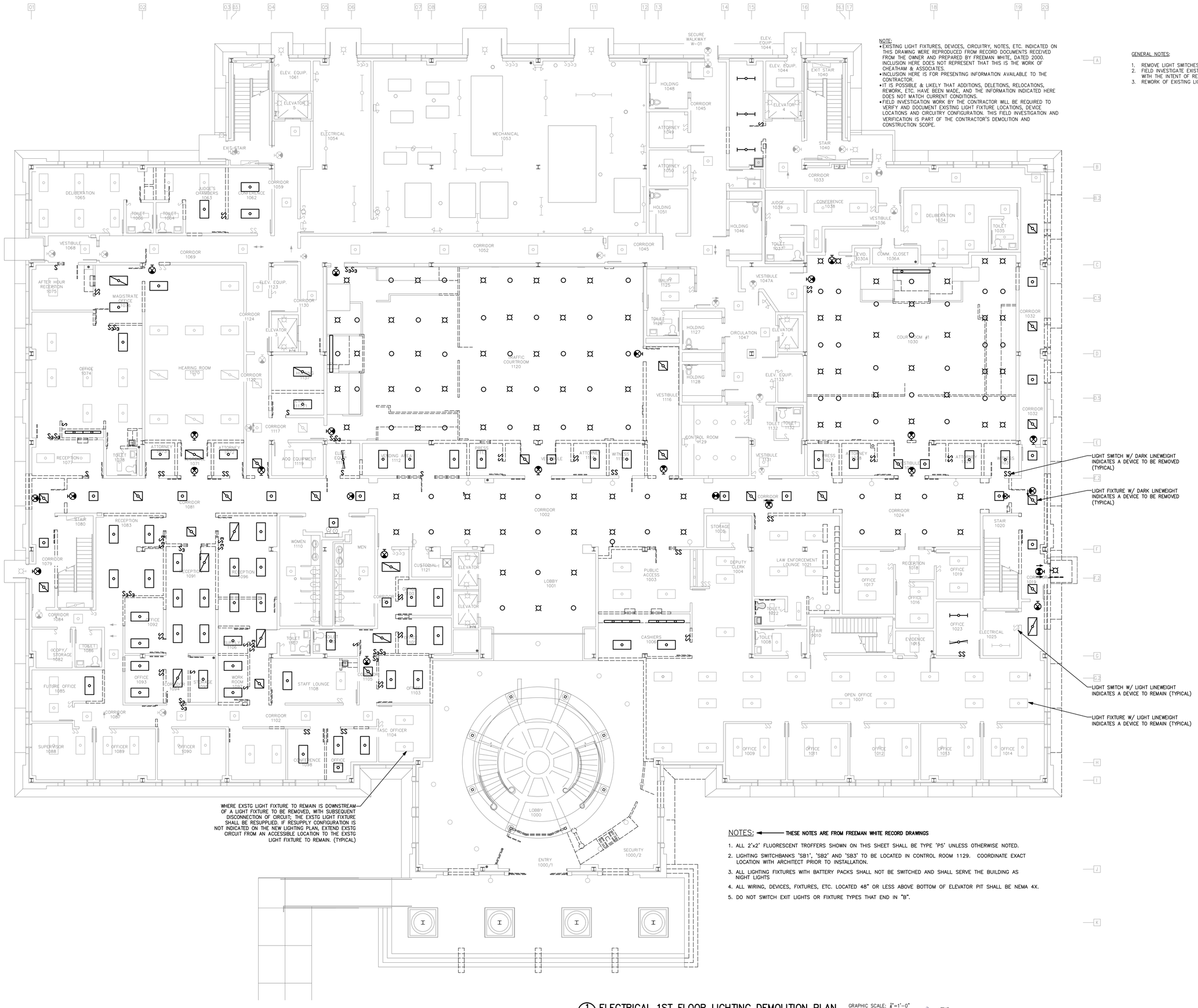

NOTE:
- EXISTING LIGHT FIXTURES, DEVICES, CIRCUITRY, NOTES, ETC. INDICATED ON THIS DRAWING WERE REPRODUCED FROM RECORD DOCUMENTS RECEIVED FROM THE OWNER AND PREPARED BY FREEMAN WHITE, DATED 2000. INCLUSION HERE DOES NOT REPRESENT THAT THIS IS THE WORK OF CHEATHAM & ASSOCIATES.
- INCLUSION HERE IS FOR PRESENTING INFORMATION AVAILABLE TO THE CONTRACTOR.
- IT IS POSSIBLE & LIKELY THAT ADDITIONS, DELETIONS, RELOCATIONS, REWORK, ETC. HAVE BEEN MADE, AND THE INFORMATION INDICATED HERE DOES NOT MATCH CURRENT CONDITIONS.
- FIELD INVESTIGATION WORK BY THE CONTRACTOR WILL BE REQUIRED TO VERIFY AND DOCUMENT EXISTING LIGHT FIXTURE LOCATIONS, DEVICE LOCATIONS AND CIRCUITRY CONFIGURATION. THIS FIELD INVESTIGATION AND VERIFICATION IS PART OF THE CONTRACTOR'S DEMOLITION AND CONSTRUCTION SCOPE.

GENERAL NOTES:

1. REMOVE LIGHT SWITCHES IN WALLS TO BE DEMOLISHED.
2. FIELD INVESTIGATE EXISTING HOMERUN CIRCUITRY SUPPLYING LIGHT FIXTURES WITH THE INTENT OF REUSING HOMERUNS FOR NEW LIGHTING.
3. REWORK OF EXISTING LIGHTING CIRCUITS WILL BE REQUIRED.

LIGHT SWITCH W/ DARK LINEWEIGHT INDICATES A DEVICE TO BE REMOVED (TYPICAL)

LIGHT FIXTURE W/ DARK LINEWEIGHT INDICATES A DEVICE TO BE REMOVED (TYPICAL)

LIGHT SWITCH W/ LIGHT LINEWEIGHT INDICATES A DEVICE TO REMAIN (TYPICAL)

LIGHT FIXTURE W/ LIGHT LINEWEIGHT INDICATES A DEVICE TO REMAIN (TYPICAL)

WHERE EXSTG LIGHT FIXTURE TO REMAIN IS DOWNSTREAM OF A LIGHT FIXTURE TO BE REMOVED, WITH SUBSEQUENT DISCONNECTION OF CIRCUIT; THE EXSTG LIGHT FIXTURE SHALL BE RESUPPLIED. IF RESUPPLY CONFIGURATION IS NOT INDICATED ON THE NEW LIGHTING PLAN, EXTEND EXSTG CIRCUIT FROM AN ACCESSIBLE LOCATION TO THE EXSTG LIGHT FIXTURE TO REMAIN. (TYPICAL)

NOTES: ← THESE NOTES ARE FROM FREEMAN WHITE RECORD DRAWINGS

1. ALL 2'x2' FLUORESCENT TROFFERS SHOWN ON THIS SHEET SHALL BE TYPE 'P5' UNLESS OTHERWISE NOTED.
2. LIGHTING SWITCHBANKS 'SB1', 'SB2' AND 'SB3' TO BE LOCATED IN CONTROL ROOM 1129. COORDINATE EXACT LOCATION WITH ARCHITECT PRIOR TO INSTALLATION.
3. ALL LIGHTING FIXTURES WITH BATTERY PACKS SHALL NOT BE SWITCHED AND SHALL SERVE THE BUILDING AS NIGHT LIGHTS
4. ALL WIRING, DEVICES, FIXTURES, ETC. LOCATED 48" OR LESS ABOVE BOTTOM OF ELEVATOR PIT SHALL BE NEMA 4X.
5. DO NOT SWITCH EXIT LIGHTS OR FIXTURE TYPES THAT END IN "B".

1 ED1.2 ELECTRICAL 1ST FLOOR LIGHTING DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

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

TRUE NORTH

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 17... DANIEL A. CIARROCCA

Brunswick County Courthouse Addition & Renovations

Bolivia, NC

CONSTRUCTION DRAWINGS
SEPTEMBER 23, 2019

Revisions:

ELECTRICAL
1ST FLOOR
LIGHTING
DEMOLITION PLAN

ED1.2

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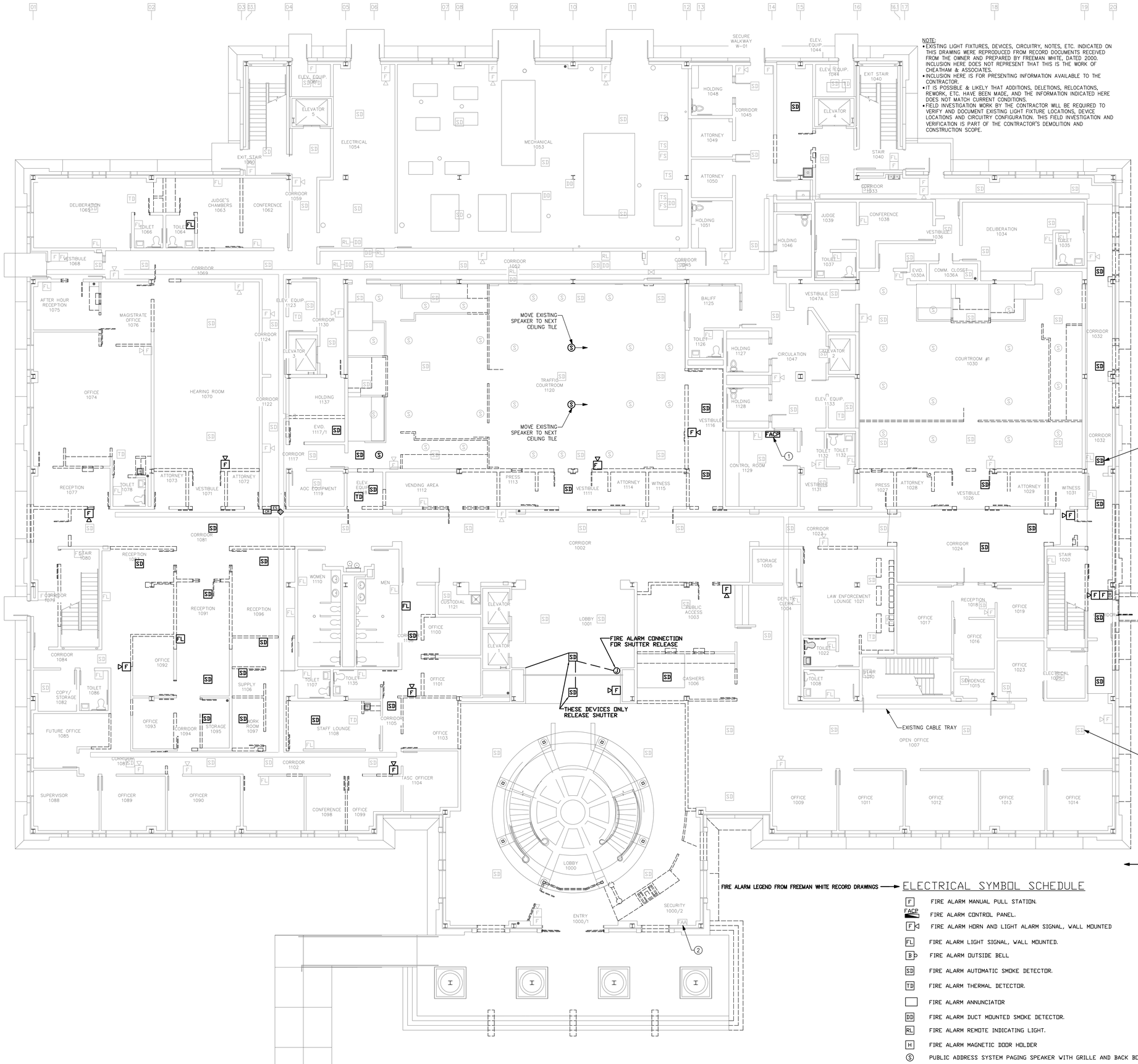

NOTE:
- EXISTING LIGHT FIXTURES, DEVICES, CIRCUITRY, NOTES, ETC. INDICATED ON THIS DRAWING WERE REPRODUCED FROM RECORD DOCUMENTS RECEIVED FROM THE OWNER AND PREPARED BY FREEMAN WHITE, DATED 2000. INCLUSION HERE DOES NOT REPRESENT THAT THIS IS THE WORK OF CHEATHAM & ASSOCIATES.
- INCLUSION HERE IS FOR PRESENTING INFORMATION AVAILABLE TO THE CONTRACTOR.
- IT IS POSSIBLE & LIKELY THAT ADDITIONS, DELETIONS, RELOCATIONS, REWORK, ETC. HAVE BEEN MADE, AND THE INFORMATION INDICATED HERE DOES NOT MATCH CURRENT CONDITIONS.
- FIELD INVESTIGATION WORK BY THE CONTRACTOR WILL BE REQUIRED TO VERIFY AND DOCUMENT EXISTING LIGHT FIXTURE LOCATIONS, DEVICE LOCATIONS AND CIRCUITRY CONFIGURATION. THIS FIELD INVESTIGATION AND VERIFICATION IS PART OF THE CONTRACTOR'S DEMOLITION AND CONSTRUCTION SCOPE.

KEYED NOTES:

1. REMOVE EXISTING NOTIFIER AM2020 FIRE ALARM CONTROL PANEL AND REPLACE WITH NEW. CONTRACTOR SHALL ENSURE THAT NEW FIRE ALARM PANEL IS BACKWARDS COMPATIBLE WITH EXISTING DEVICES.
2. FIELD INVESTIGATE FIRE ALARM REMOTE ANNUNCIATOR. VERIFY THAT EXISTING REMOTE ANNUNCIATOR IS COMPATIBLE WITH NEW FIRE ALARM CONTROL PANEL TO BE INSTALLED. IF EXISTING REMOTE ANNUNCIATOR IS NOT COMPATIBLE, REPLACE WITH NEW.

ELECTRICAL SYMBOL SCHEDULE

F	FIRE ALARM MANUAL PULL STATION.
FACP	FIRE ALARM CONTROL PANEL.
F	FIRE ALARM HORN AND LIGHT ALARM SIGNAL, WALL MOUNTED
FL	FIRE ALARM LIGHT SIGNAL, WALL MOUNTED.
B	FIRE ALARM OUTSIDE BELL
SD	FIRE ALARM AUTOMATIC SMOKE DETECTOR.
TD	FIRE ALARM THERMAL DETECTOR.
	FIRE ALARM ANNUNCIATOR
DD	FIRE ALARM DUCT MOUNTED SMOKE DETECTOR.
RL	FIRE ALARM REMOTE INDICATING LIGHT.
H	FIRE ALARM MAGNETIC DOOR HOLDER
S	PUBLIC ADDRESS SYSTEM PAGING SPEAKER WITH GRILLE AND BACK BOX, CEILING MTD.

1 ELECTRICAL 1ST FLOOR AUXILIARY SYSTEMS DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

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

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Brunswick County Courthouse Addition & Renovations

Bolivia, NC

CONSTRUCTION DRAWINGS
SEPTEMBER 23, 2019

Revisions:

ELECTRICAL
1ST FLOOR
AUXILIARY SYSTEMS
DEMOLITION PLAN

ED1.3

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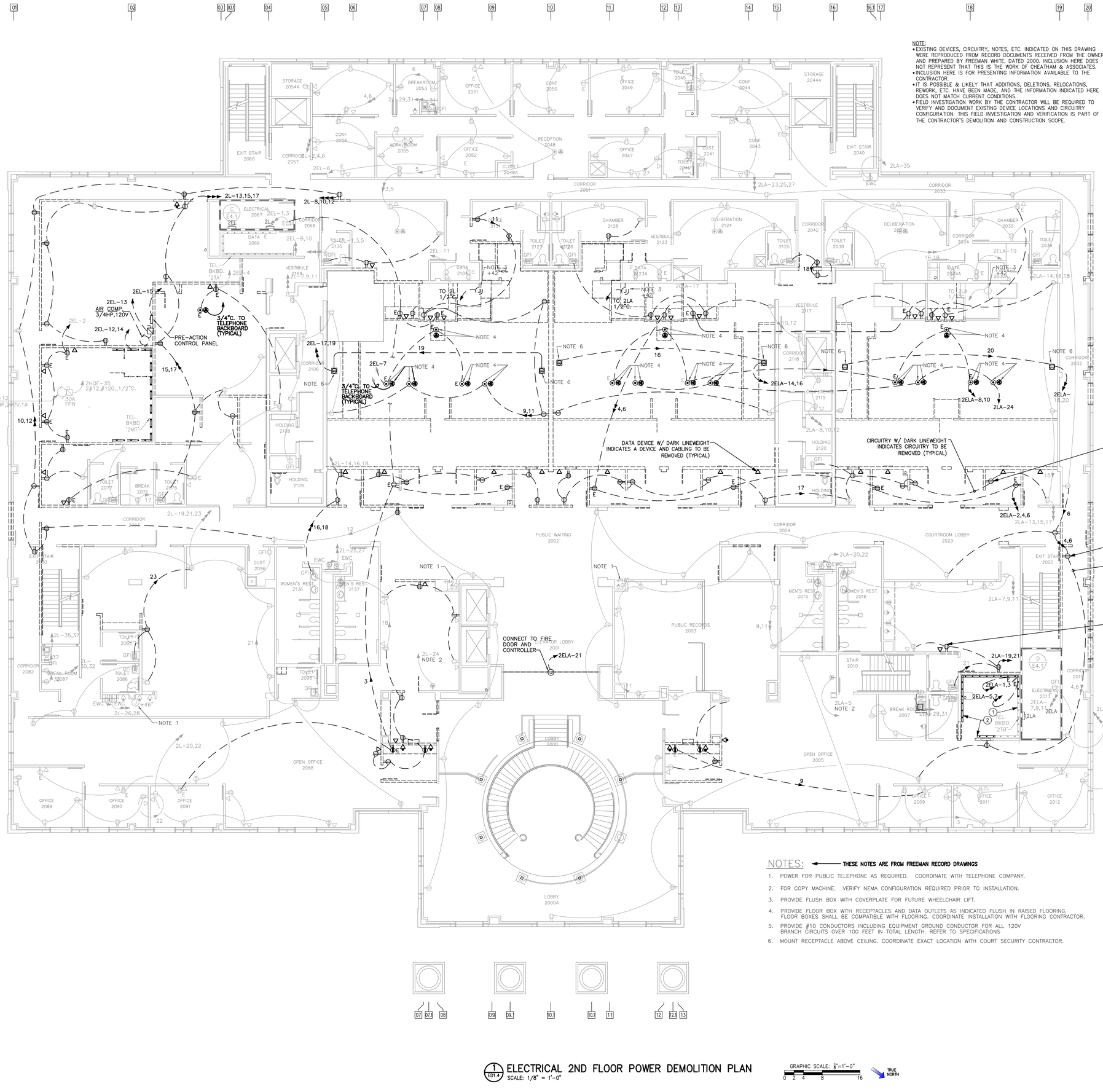

NOTES: ← THESE NOTES ARE FROM FREEMAN RECORD DRAWINGS

1. POWER FOR PUBLIC TELEPHONE AS REQUIRED. COORDINATE WITH TELEPHONE COMPANY.
2. FOR COPY MACHINE. VERIFY NEMA CONFIGURATION REQUIRED PRIOR TO INSTALLATION.
3. PROVIDE FLUSH BOX WITH COVERPLATE FOR FUTURE WHEELCHAIR LIFT.
4. PROVIDE FLOOR BOX WITH RECEPTACLES AND DATA OUTLETS AS INDICATED FLUSH IN RAISED FLOORING. FLOOR BOXES SHALL BE COMPATIBLE WITH FLOORING. COORDINATE INSTALLATION WITH FLOORING CONTRACTOR.
5. PROVIDE #10 CONDUCTORS INCLUDING EQUIPMENT GROUND CONDUCTOR FOR ALL 120V BRANCH CIRCUITS OVER 100 FEET IN TOTAL LENGTH. REFER TO SPECIFICATIONS
6. MOUNT RECEPTACLE ABOVE CEILING. COORDINATE EXACT LOCATION WITH COURT SECURITY CONTRACTOR.

1 ED1.4 ELECTRICAL 2ND FLOOR POWER DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

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

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 17593 MARK A. CHARNOCK 10/4/2019

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Bolivia, NC

CONSTRUCTION DRAWINGS
SEPTEMBER 23, 2019

Revisions:

ELECTRICAL
2ND FLOOR
POWER
DEMOLITION PLAN

ED1.4

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NOTE:
- EXISTING LIGHT FIXTURES, DEVICES, CIRCUITRY, NOTES, ETC. INDICATED ON THIS DRAWING WERE REPRODUCED FROM RECORD DOCUMENTS RECEIVED FROM THE OWNER AND PREPARED BY FREEMAN WHITE, DATED 2000. INCLUSION HERE DOES NOT REPRESENT THAT THIS IS THE WORK OF CHEATHAM & ASSOCIATES.
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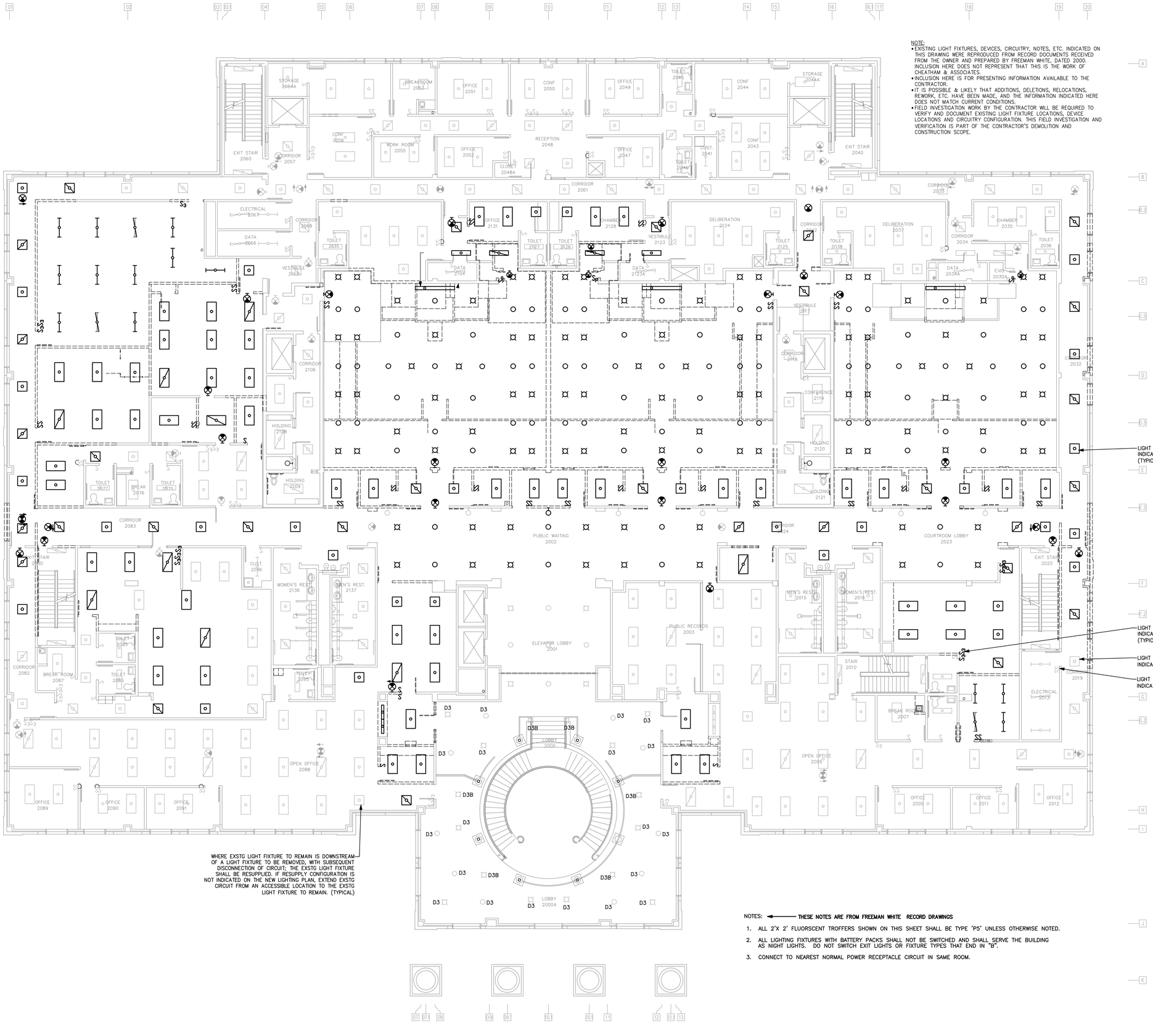
GENERAL NOTES:

1. LIGHT FIXTURES TO BE REMOVED SHALL BE EXAMINED BY CONTRACTOR PRIOR TO REMOVAL. ANY FIXTURES WITH DAMAGED LENS OR LAMPS SHALL BE REPLACED WITH NEW PRIOR TO INSTALLATION IN NEW LOCATION. STORE REMOVED LIGHT FIXTURES FOR RE-INSTALLATION. IF ANY LIGHT FIXTURES ARE DAMAGED DURING STORAGE, CONTRACTOR SHALL REPLACE WITH NEW AT NO COST TO OWNER.
2. REMOVE LIGHT SWITCHES IN WALLS TO BE DEMOLISHED.
3. FIELD INVESTIGATE EXISTING HOMERUN CIRCUITRY SUPPLYING LIGHT FIXTURES WITH THE INTENT OF REUSING HOMERUNS FOR NEW LIGHTING.
4. REWORK OF EXISTING LIGHTING CIRCUITS WILL BE REQUIRED.



NOTES: ← THESE NOTES ARE FROM FREEMAN WHITE RECORD DRAWINGS

1. ALL 2'X 2' FLUORSCENT TROFFERS SHOWN ON THIS SHEET SHALL BE TYPE 'P5' UNLESS OTHERWISE NOTED.
2. ALL LIGHTING FIXTURES WITH BATTERY PACKS SHALL NOT BE SWITCHED AND SHALL SERVE THE BUILDING AS NIGHT LIGHTS. DO NOT SWITCH EXIT LIGHTS OR FIXTURE TYPES THAT END IN "B".
3. CONNECT TO NEAREST NORMAL POWER RECEPTACLE CIRCUIT IN SAME ROOM.

1 ED1.5 ELECTRICAL 2ND FLOOR LIGHTING DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

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

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 17593 MARK A. CIARROCCA 04/04/2019

Brunswick County Courthouse Addition & Renovations

Bolivia, NC

CONSTRUCTION DRAWINGS
SEPTEMBER 23, 2019

Revisions:

ELECTRICAL 2ND FLOOR LIGHTING DEMOLITION PLAN

ED1.5

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NOTE:
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DEVICE W/ DARK LINEWEIGHT INDICATES A DEVICE TO BE REMOVED (TYPICAL)

DEVICE W/ LIGHT LINEWEIGHT INDICATES A DEVICE TO REMAIN (TYPICAL)

ELECTRICAL SYMBOL SCHEDULE

F	FIRE ALARM MANUAL PULL STATION. SUBSCRIPT INDICATES ZONE.
FACP	FIRE ALARM CONTROL PANEL.
F	FIRE ALARM HORN AND LIGHT ALARM SIGNAL, WALL MOUNTED
FL	FIRE ALARM LIGHT SIGNAL, WALL MOUNTED.
B	FIRE ALARM OUTSIDE BELL
SD	FIRE ALARM AUTOMATIC SMOKE DETECTOR. SUBSCRIPT INDICATES ZONE.
TD	FIRE ALARM THERMAL DETECTOR. SUBSCRIPT INDICATES ZONE.
	FIRE ALARM ANNUNCIATOR
DD	FIRE ALARM DUCT MOUNTED SMOKE DETECTOR, SUBSCRIPT INDICATES ZONE.
RL	FIRE ALARM REMOTE INDICATING LIGHT.
H	FIRE ALARM MAGNETIC DOOR HOLDER
S	PUBLIC ADDRESS SYSTEM PAGING SPEAKER WITH GRILLE AND BACK BOX, CEILING MTD.

1 ED1.6 ELECTRICAL 2ND FLOOR AUXILIARY SYSTEMS DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

TRUE NORTH

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030161 ENGINEER CARLA A. CIARROCCA
31 NOV 2019

Brunswick County Courthouse Addition & Renovations

Bolivia, NC

CONSTRUCTION DRAWINGS
SEPTEMBER 23, 2019

Revisions:

ELECTRICAL
2ND FLOOR
AUXILIARY SYSTEMS
DEMOLITION PLAN

ED1.6

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NOTE:
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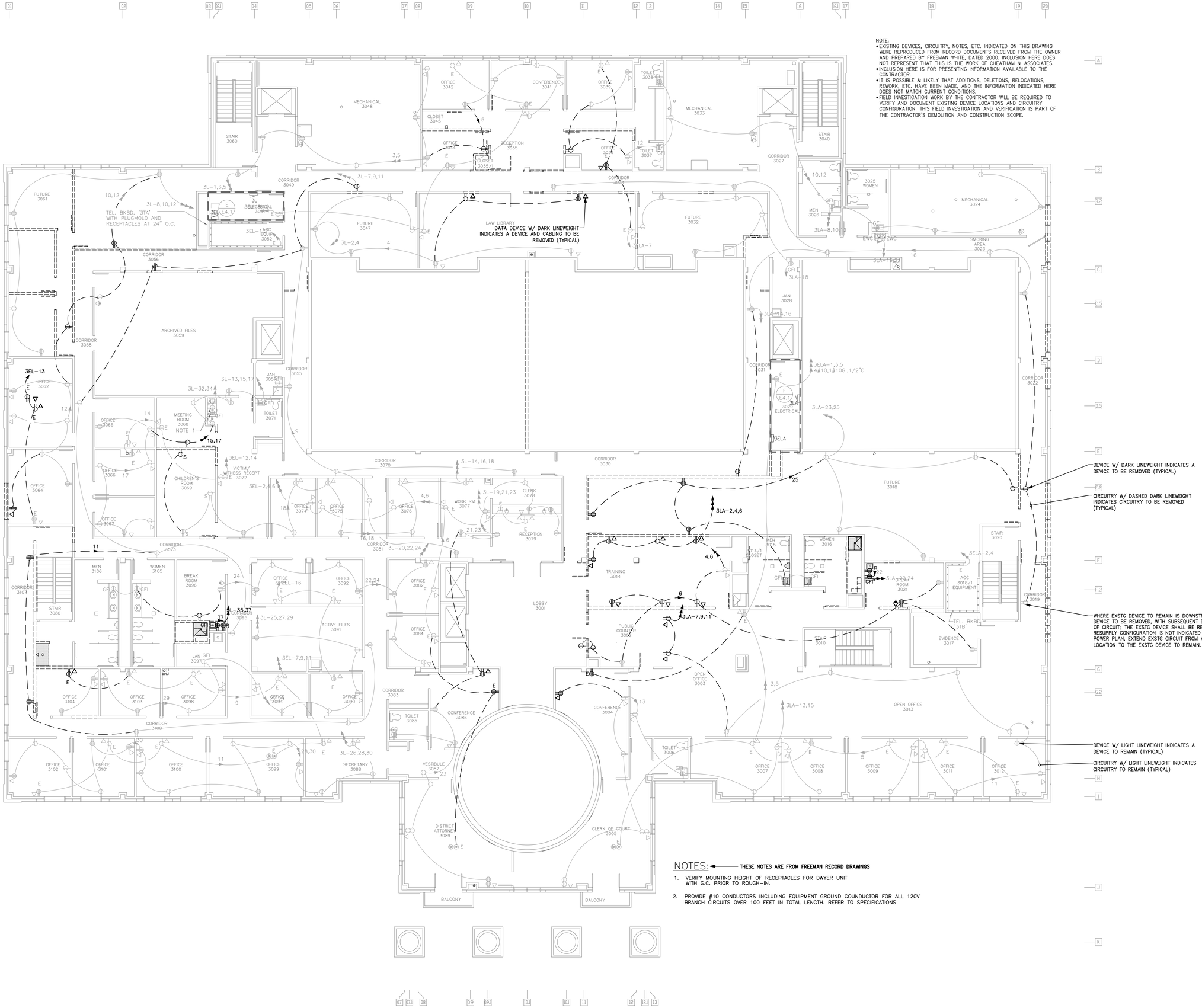

NOTES: ← THESE NOTES ARE FROM FREEMAN RECORD DRAWINGS

1. VERIFY MOUNTING HEIGHT OF RECEPTACLES FOR DWYER UNIT WITH G.C. PRIOR TO ROUGH-IN.
2. PROVIDE #10 CONDUCTORS INCLUDING EQUIPMENT GROUND COUNDUCTOR FOR ALL 120V BRANCH CIRCUITS OVER 100 FEET IN TOTAL LENGTH. REFER TO SPECIFICATIONS

1 ED1.7 ELECTRICAL 3RD FLOOR POWER DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

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

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NORTH CAROLINA
01 NOV 2019
MARK A. CIARROCCA

Brunswick County Courthouse Addition & Renovations

Bolivia, NC

CONSTRUCTION DRAWINGS
SEPTEMBER 23, 2019

Revisions:

ELECTRICAL
3RD FLOOR
POWER
DEMOLITION PLAN

ED1.7

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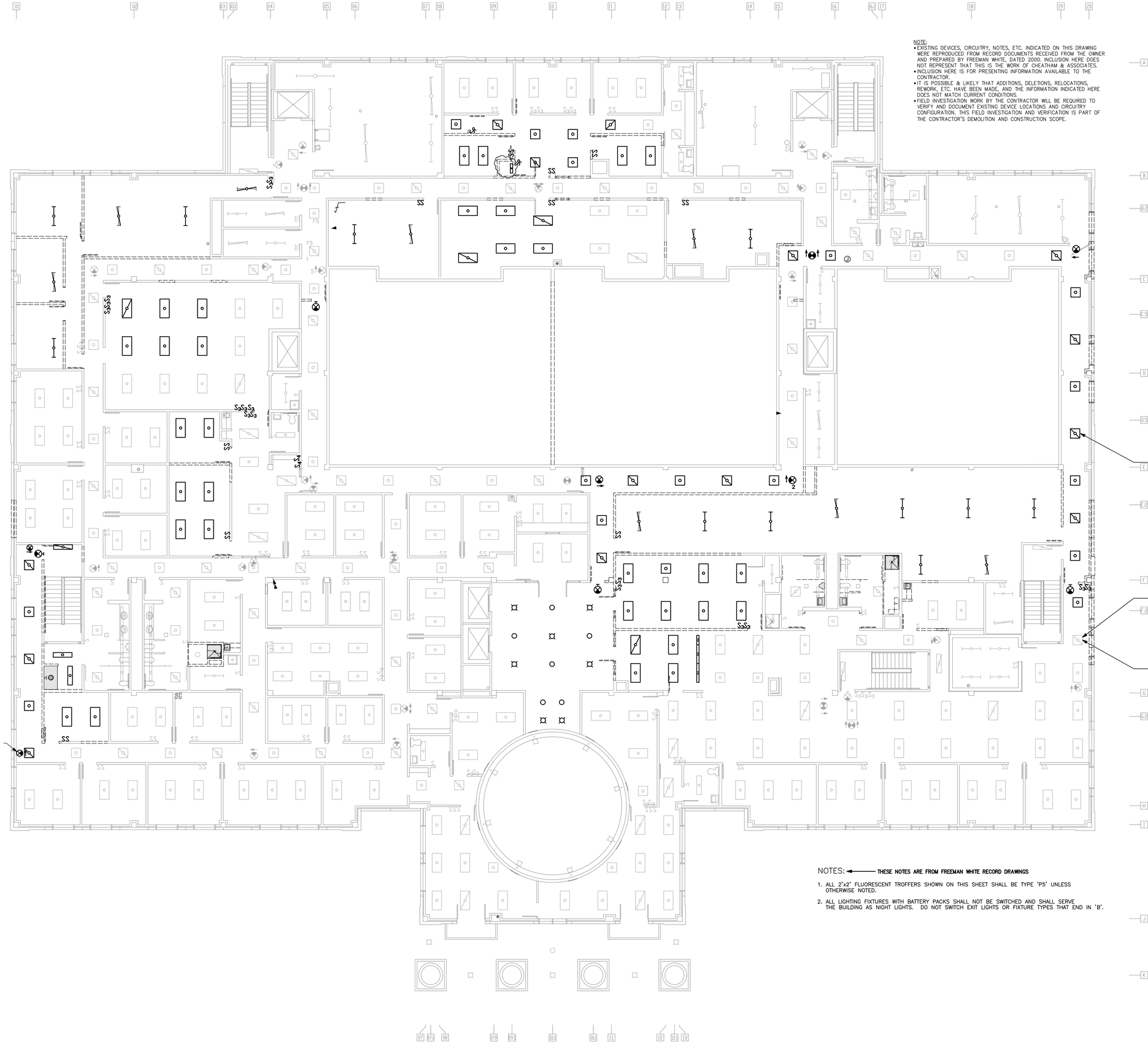

1 ED1.8 ELECTRICAL 3RD FLOOR LIGHTING DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

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

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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1726 TODD K. EASLEY
NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 2011 JOHN A. CHIARIOTTI

Brunswick County Courthouse Addition & Renovations

Bolivia, NC

CONSTRUCTION DRAWINGS
SEPTEMBER 23, 2019

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ELECTRICAL
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DEMOLITION PLAN

ED1.8

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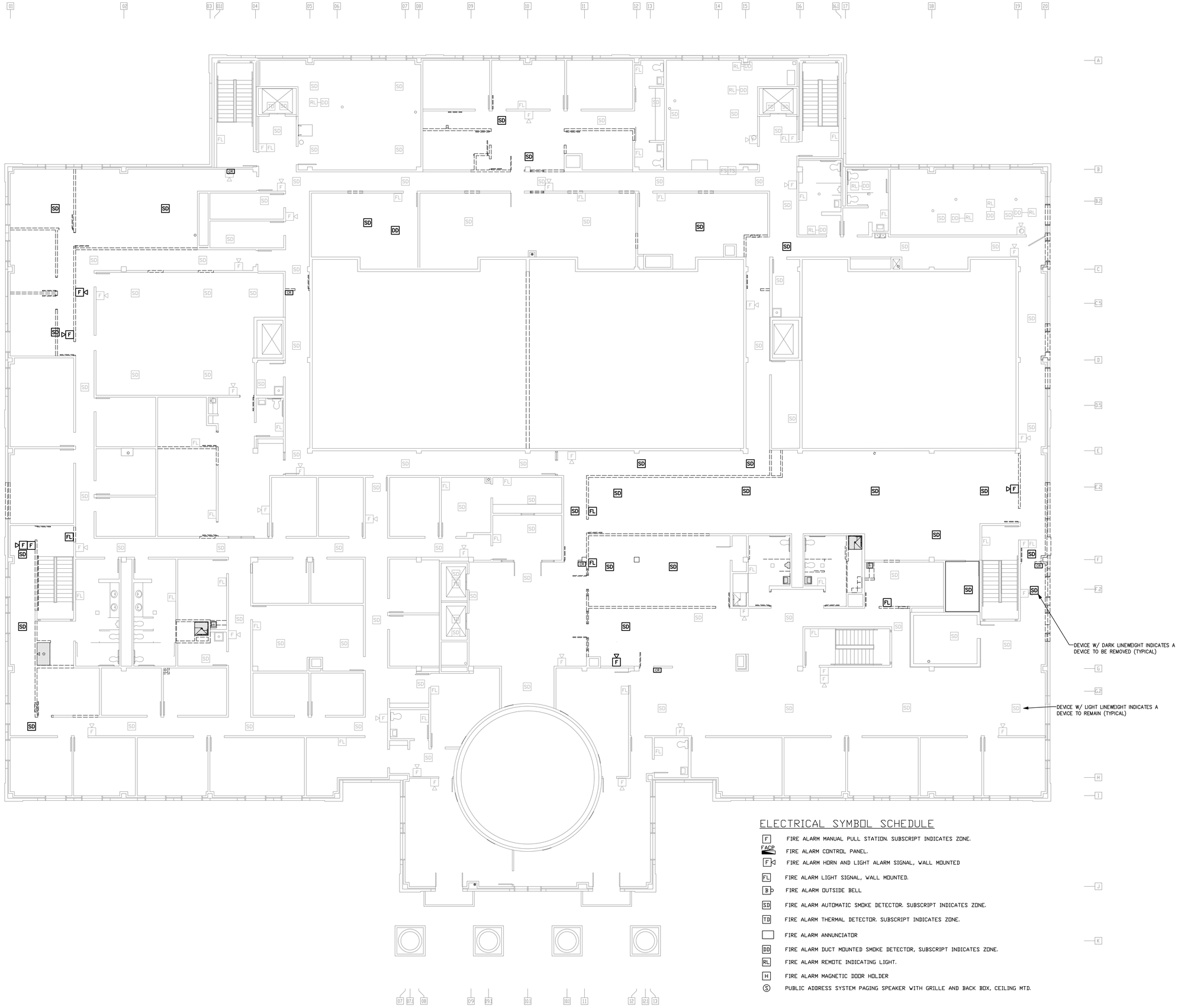

ELECTRICAL SYMBOL SCHEDULE

F	FIRE ALARM MANUAL PULL STATION. SUBSCRIPT INDICATES ZONE.
FACP	FIRE ALARM CONTROL PANEL.
F	FIRE ALARM HORN AND LIGHT ALARM SIGNAL, WALL MOUNTED
FL	FIRE ALARM LIGHT SIGNAL, WALL MOUNTED.
B	FIRE ALARM OUTSIDE BELL
SD	FIRE ALARM AUTOMATIC SMOKE DETECTOR. SUBSCRIPT INDICATES ZONE.
TD	FIRE ALARM THERMAL DETECTOR. SUBSCRIPT INDICATES ZONE.
	FIRE ALARM ANNUNCIATOR
DD	FIRE ALARM DUCT MOUNTED SMOKE DETECTOR, SUBSCRIPT INDICATES ZONE.
RL	FIRE ALARM REMOTE INDICATING LIGHT.
H	FIRE ALARM MAGNETIC DOOR HOLDER
S	PUBLIC ADDRESS SYSTEM PAGING SPEAKER WITH GRILLE AND BACK BOX, CEILING MTD.

1 ED1.9 ELECTRICAL 3RD FLOOR AUXILIARY SYSTEMS DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

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

TRUE NORTH

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Brunswick County Courthouse Addition & Renovations

Bolivia, NC

CONSTRUCTION DRAWINGS
SEPTEMBER 23, 2019

Revisions:

ELECTRICAL
3RD FLOOR
AUXILIARY SYSTEMS
DEMOLITION PLAN

ED1.9

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REGISTERED
LANDSCAPE
ARCHITECT
17579
10/09/2019
MARK A. CIARROCCA

Brunswick County Courthouse Addition & Renovations

Bolivia, NC

CONSTRUCTION DRAWINGS
SEPTEMBER 23, 2019

Revisions:

ELECTRICAL
1ST FLOOR
POWER PLAN

E1.1

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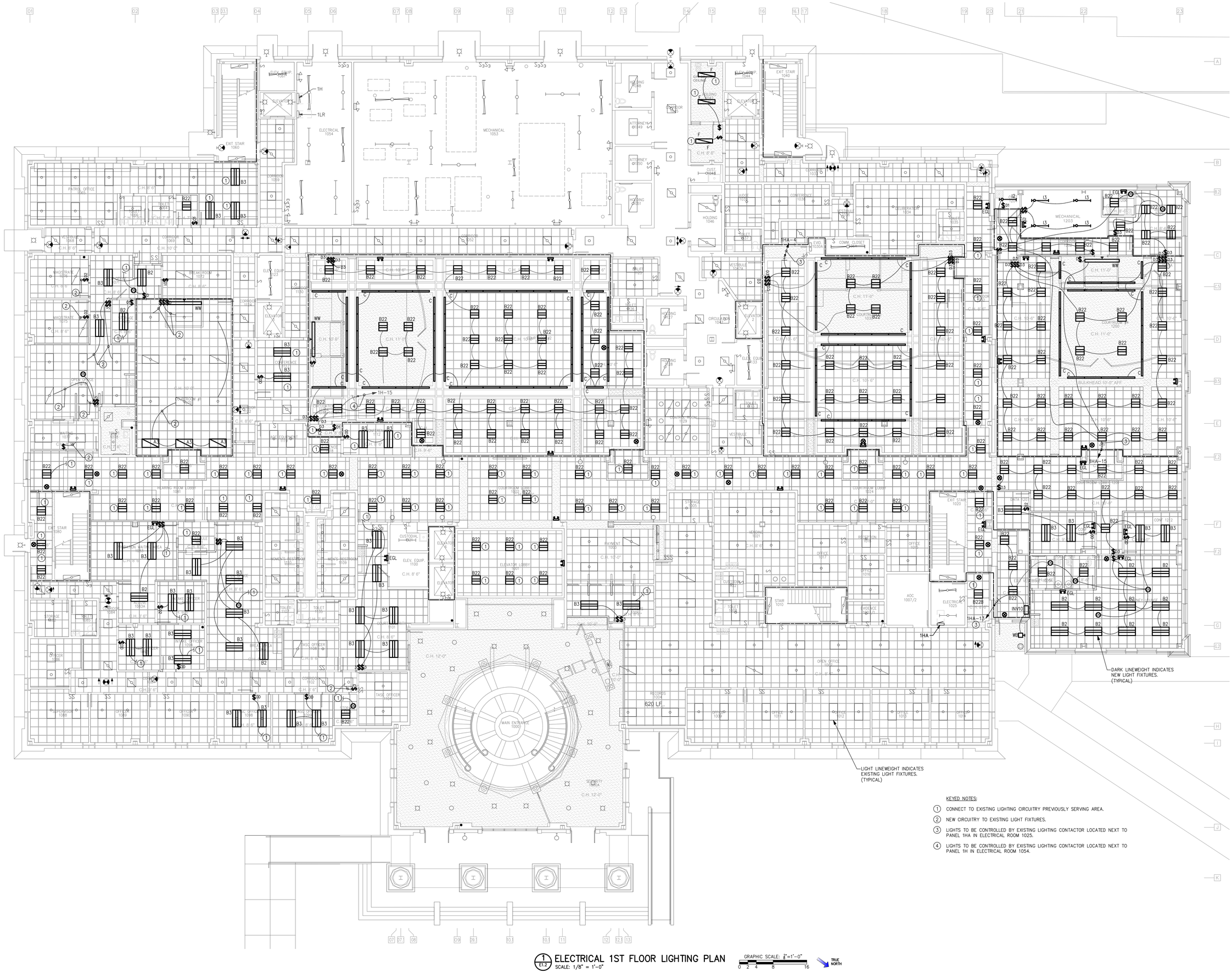
KEYED NOTES:

1. EXISTING PANEL 1LD IS SIEMENS TYPE S4 (CATALOG #S4C75LX600EBS).
   - UTILIZE EXISTING 200A/3P SPARE CIRCUIT BREAKER AT SPACES 1,3,5 TO FEED NEW PANEL 1LB.
2. INSTALL NEW 45A/3P CIRCUIT BREAKER IN EXISTING PANEL 1ED AT SPACES 37,39,41 TO FEED NEW TRANSFORMER T1ELB. INSTALL NEW 125A/3P CIRCUIT BREAKER IN EXISTING PANEL 1ED AT SPACES 38,40,42 TO FEED NEW TRANSFORMER T2ELB.
3. UTILIZE EXISTING 400A3P SPARE CIRCUIT BREAKER IN EXISTING SWITCHBOARD MSB AT SPACE A2 TO FEED NEW PANEL 1HQFB.
4. CONNECT NEW CIRCUITRY TO THE EXISTING SPARE CIRCUIT BREAKER INDICATED.
5. EXISTING PANEL 1LR IS SIEMENS TYPE S1.
   - PROVIDE 2P/25A CIRCUIT BREAKER AT SPACES 35,37 TO FEED DHP-4.
   - PROVIDE 2P/25A CIRCUIT BREAKER AT SPACES 39,41 TO FEED DHP-5.
6. EXISTING PANEL 1LR IS SIEMENS TYPE S1.
   - PROVIDE 1P/20A GFCI CIRCUIT BREAKER AT SPACE 25.
   - PROVIDE 1P/20A GFCI CIRCUIT BREAKER AT SPACE 26.
   - PROVIDE 1P/20A GFCI CIRCUIT BREAKER AT SPACE 28.
   - PROVIDE 1P/20A GFCI CIRCUIT BREAKER AT SPACE 30.
7. EXISTING HOME RUN, EXTEND TO INDICATED DISCONNECT WITH NEW CIRCUITRY.

1 E1.1 ELECTRICAL 1ST FLOOR POWER PLAN
SCALE: 1/8" = 1'-0"

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


MECHANICAL 1053
ELECTRICAL 1054
EXIT STAIR 1060
EXIT STAIR 1040
CORRIDOR 1059
CORRIDOR 1033
CONFERENCE 1035
DELIBERATION 1034
MECHANICAL 1203
MAGISTRATE 1075
MAGISTRATE 1072
BREAK ROOM 1077
CORRIDOR 1124
CONFERENCE 1125
CORRIDOR 1120
HEARING ROOM 1081
HEARING ROOM LOBBY 1082
COURTROOM 1023
COURTROOM LOBBY 1024
COURTROOM 1200
COURTROOM LOBBY 1201
EXIT STAIR 1080
EXIT STAIR 1020
ELEVATOR LOBBY 1001
MAIN ENTRANCE 1000
SECURITY 1000A
620 LF
RECORDS 1004
OPEN OFFICE 1007
OFFICE 1002
OFFICE 1011
OFFICE 1012
OFFICE 1013
OFFICE 1014
OFFICE 1088
OFFICE 1089
OFFICE 1090
OFFICE 1096
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OFFICE 1098
OFFICE 1099
STORAGE 1005
STORAGE 1085
STORAGE 1095
PAYMENT 1003
VENDING 1021
OFFICE 1017
DIRECTOR 1016
OFFICE 1015
STAIR 1010
AOC 1007/2
EVIDENCE 1027
ELECTRICAL 1025
DATA 1201
CONF 1212
MEN'S RESTROOM 1109
WOMEN'S RESTROOM 1110
TOILET 1105
TOILET 1106
TOILET 1107
TOILET 1108
TOILET 1009
TOILET 1004
CUSTODIAL 1104
CUSTODIAL 1002
ELEV. EQUIP 1100
ELEV. EQUIP 1123
ELEV. EQUIP 1133
ELEV. EQUIP 1041
ELEV. EQUIP 1061
ELEVATOR 1
ELEVATOR 2
ELEVATOR 3
ELEVATOR 4
SHAFT 1121
SHAFT 1131
SHAFT 1042
SHAFT 1062
HOLDING 1048
HOLDING 1049
HOLDING 1050
HOLDING 1051
HOLDING 1046
HOLDING 1127
HOLDING 1128
ATTORNEY 1049
ATTORNEY 1050
JUDGE 1002
CONTROL ROOM 1129
CONFERENCE 1018
CONFERENCE 1112
CONFERENCE 1113
CONFERENCE 1114
CONFERENCE 1115
CONFERENCE 1116
CONFERENCE 1117
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CONFERENCE 1135
CONFERENCE 1136
CONFERENCE 1137
CONFERENCE 1138
CONFERENCE 1139
CONFERENCE 1140
CONFERENCE 1141
CONFERENCE 1142
CONFERENCE 1143
CONFERENCE 1144
CONFERENCE 1145
CONFERENCE

RELOCATED COURT ROOM SPEAKER

RELOCATED COURT ROOM SPEAKER

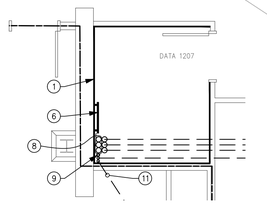
3/4"C FOR TURNSTILE ACCESS CONTROL

DEVICE W/ LIGHT LINEWEIGHT INDICATES AN EXISTING DEVICE TO REMAIN (TYPICAL)

DEVICE W/ DARK LINEWEIGHT INDICATES A NEW DEVICE TO BE INSTALLED (TYPICAL)

KEYED NOTES:

1. FIRE RATED PLYWOOD BACKBOARD. 3/4" THICK, 4'WIDEx8'TALL, MOUNTED VERTICALLY, PAINT WHITE. MOUNT ON ALL FOUR WALLS IN DATA ROOM.
2. CABLE TRAY ABOVE CEILING, WIRE MESH/BASKET TYPE, 6"WX4"DEEP
3. BOND EACH CABLE TRAY SECTION TO GROUND BAR WITH #6 STRANDED COPPER, GREEN INSULATED GROUND.
4. EXISTING 12"W CABLE TRAY.
5. CABLE TRAY ABOVE CEILING, WIRE MESH/BASKET TYPE, 12"W, MATCH DEPTH OF EXISTING CABLE TRAY.
6. GROUND BAR. SEE DETAIL L/E5.2
7. (3) 4"C BELOW GRADE. STUB UP 6" ABOVE GRADE IN DATA ROOM 1207.
8. (3) 4"C STUBBED UP THROUGH CEILING TO 6" AFF IN SECOND FLOOR DATA ROOM 2201.
9. LOCATION FOR FIRST FLOOR DAS ANTENNA 1-1/2"C STUBBED THOUGH FIRST FLOOR CEILING. SEE RISER C/E7.1.
10. 1-1/2"C BELOW GRADE STUBBED UP 6" AFF IN DATA ROOM 1207. CONTINUE CONDUIT TO GATE OPERATOR CONTROL CABINET. SEE SITE PLAN E0.11.
11. 1-1/2"C BELOW GRADE STUBBED UP 6" AFF IN DATA ROOM 1207. CONTINUE CONDUIT TO POST FOR GATE OPERATOR. SEE SITE PLAN E0.11.



2 E1.3 ENLARGED DATA ROOM 1207
SCALE: 1/4" = 1'-0"
GRAPHIC SCALE: 1/4"=1'-0"
0 1 2 4 8

1 E1.3 ELECTRICAL 1ST FLOOR AUXILIARY SYSTEMS PLAN
SCALE: 1/8" = 1'-0"
GRAPHIC SCALE: 1/8"=1'-0"
0 2 4 8 16
TRUE NORTH

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Bolivia, NC

CONSTRUCTION DRAWINGS
SEPTEMBER 23, 2019

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ELECTRICAL
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PLAN

E1.3

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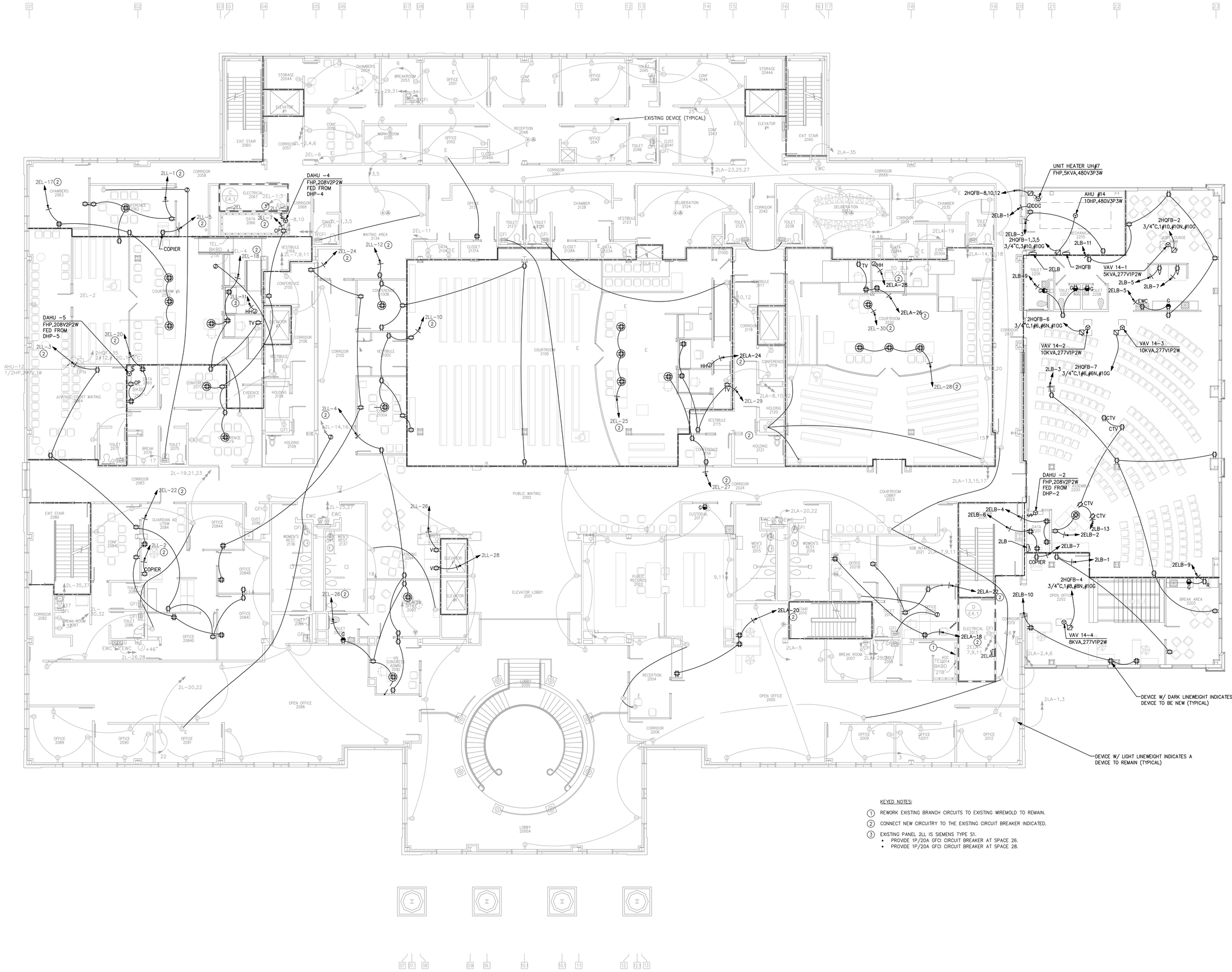

KEYED NOTES:

1. REWORK EXISTING BRANCH CIRCUITS TO EXISTING WIREMOLD TO REMAIN.
2. CONNECT NEW CIRCUITRY TO THE EXISTING CIRCUIT BREAKER INDICATED.
3. EXISTING PANEL 2LL IS SIEMENS TYPE S1.
   - PROVIDE 1P/20A GFCI CIRCUIT BREAKER AT SPACE 26.
   - PROVIDE 1P/20A GFCI CIRCUIT BREAKER AT SPACE 28.

1 E1.4 ELECTRICAL 2ND FLOOR POWER PLAN
SCALE: 1/8" = 1'-0"

GRAPHIC SCALE: 1/8"=1'-0"
0 2 4 8 16
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NORTH CAROLINA PROFESSIONAL ENGINEER 17555 MARK A. CIARROCCHI 01 NOV 2019

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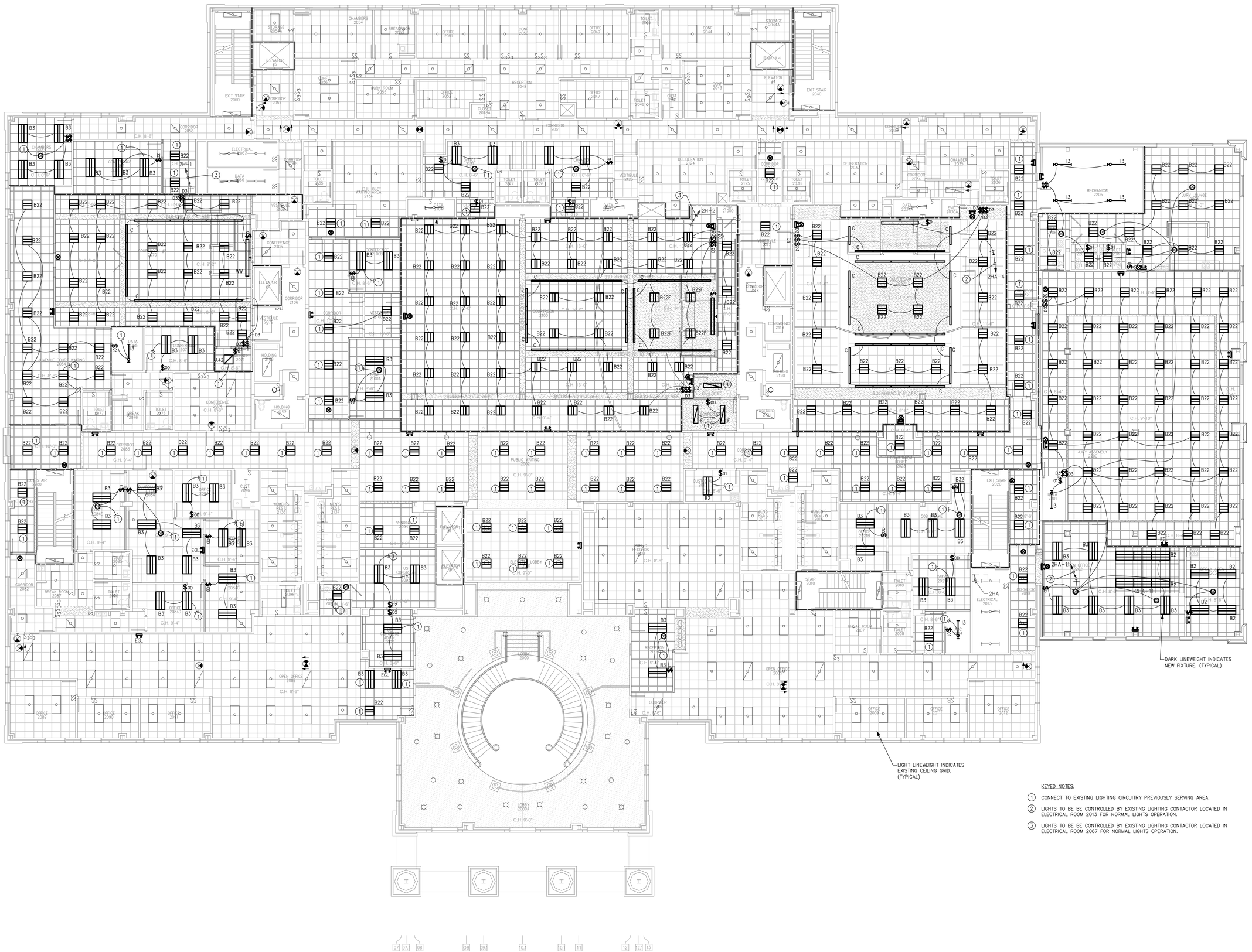

KEYED NOTES:

1. CONNECT TO EXISTING LIGHTING CIRCUITRY PREVIOUSLY SERVING AREA.
2. LIGHTS TO BE BE CONTROLLED BY EXISTING LIGHTING CONTACTOR LOCATED IN ELECTRICAL ROOM 2013 FOR NORMAL LIGHTS OPERATION.
3. LIGHTS TO BE BE CONTROLLED BY EXISTING LIGHTING CONTACTOR LOCATED IN ELECTRICAL ROOM 2067 FOR NORMAL LIGHTS OPERATION.

1 / E1.5 ELECTRICAL 2ND FLOOR LIGHTING PLAN
SCALE: 1/8" = 1'-0"

GRAPHIC SCALE: 1/8"=1'-0"
0 2 4 8 16
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NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER 17593 MARK A. CIARROCCA 10/04/2019

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E1.5

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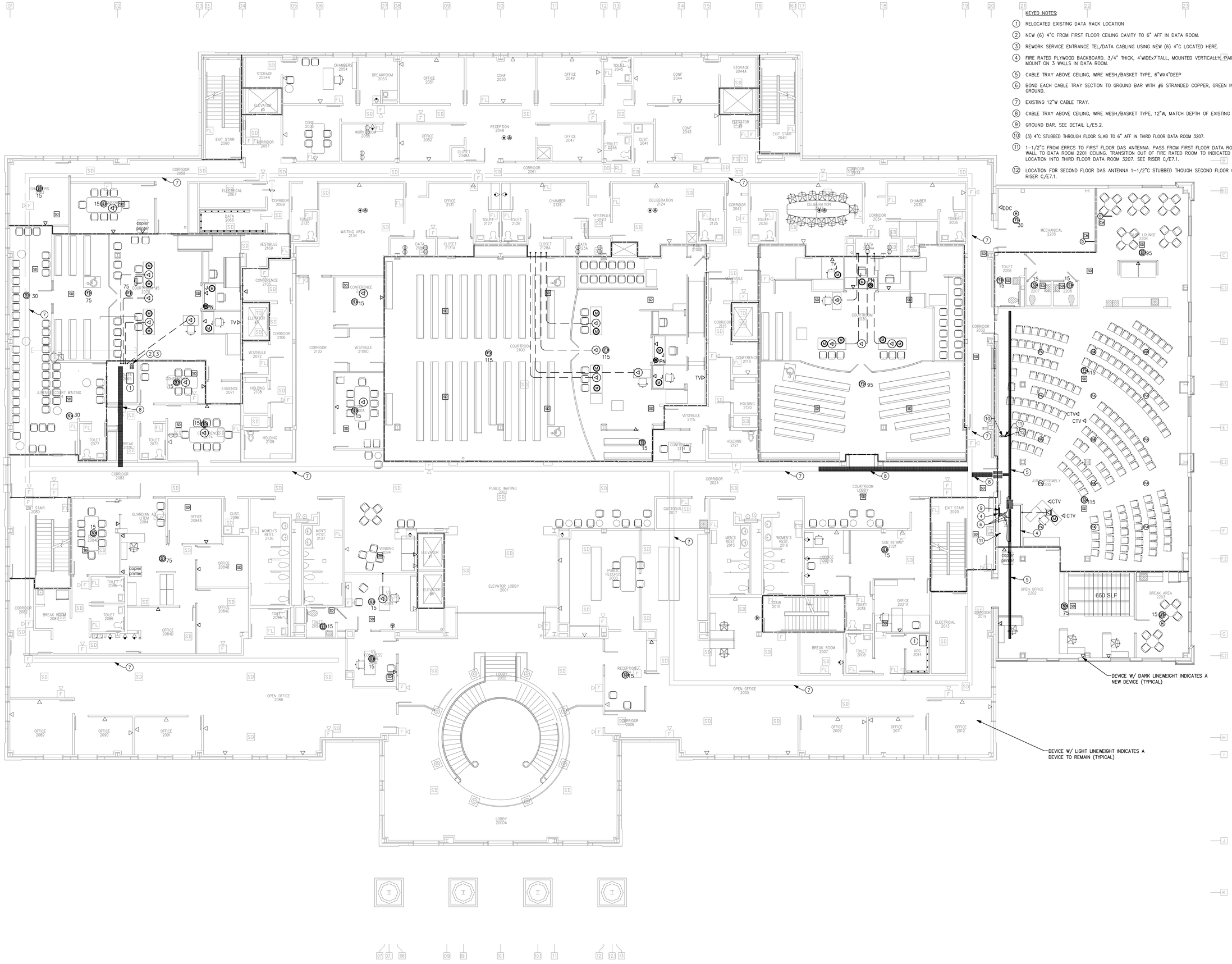

KEYED NOTES:

1. RELOCATED EXISTING DATA RACK LOCATION
2. NEW (6) 4"C FROM FIRST FLOOR CEILING CAVITY TO 6" AFF IN DATA ROOM.
3. REWORK SERVICE ENTRANCE TEL/DATA CABLING USING NEW (6) 4"C LOCATED HERE.
4. FIRE RATED PLYWOOD BACKBOARD. 3/4" THICK, 4'WIDEx7'TALL, MOUNTED VERTICALLY, PAINT WHITE. MOUNT ON 3 WALLS IN DATA ROOM.
5. CABLE TRAY ABOVE CEILING, WIRE MESH/BASKET TYPE, 6"WX4"DEEP
6. BOND EACH CABLE TRAY SECTION TO GROUND BAR WITH #6 STRANDED COPPER, GREEN INSULATED GROUND.
7. EXISTING 12"W CABLE TRAY.
8. CABLE TRAY ABOVE CEILING, WIRE MESH/BASKET TYPE, 12"W, MATCH DEPTH OF EXISTING CABLE TRAY.
9. GROUND BAR. SEE DETAIL L/E5.2.
10. (3) 4"C STUBBED THROUGH FLOOR SLAB TO 6" AFF IN THIRD FLOOR DATA ROOM 3207.
11. 1-1/2"C FROM ERRCS TO FIRST FLOOR DAS ANTENNA. PASS FROM FIRST FLOOR DATA ROOM 1207, UP WALL TO DATA ROOM 2201 CEILING. TRANSITION OUT OF FIRE RATED ROOM TO INDICATED STUB UP LOCATION INTO THIRD FLOOR DATA ROOM 3207. SEE RISER C/E7.1.
12. LOCATION FOR SECOND FLOOR DAS ANTENNA 1-1/2"C STUBBED THOUGH SECOND FLOOR CEILING. SEE RISER C/E7.1.

1 E1.6 ELECTRICAL 2ND FLOOR AUXILIARY SYSTEMS PLAN
SCALE: 1/8" = 1'-0"

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

TRUE NORTH

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NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER SEAL 17593 MICHAEL A. CIARAMITARO

Brunswick County Courthouse Addition & Renovations

Bolivia, NC

CONSTRUCTION DRAWINGS
SEPTEMBER 23, 2019

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PLAN

E1.6

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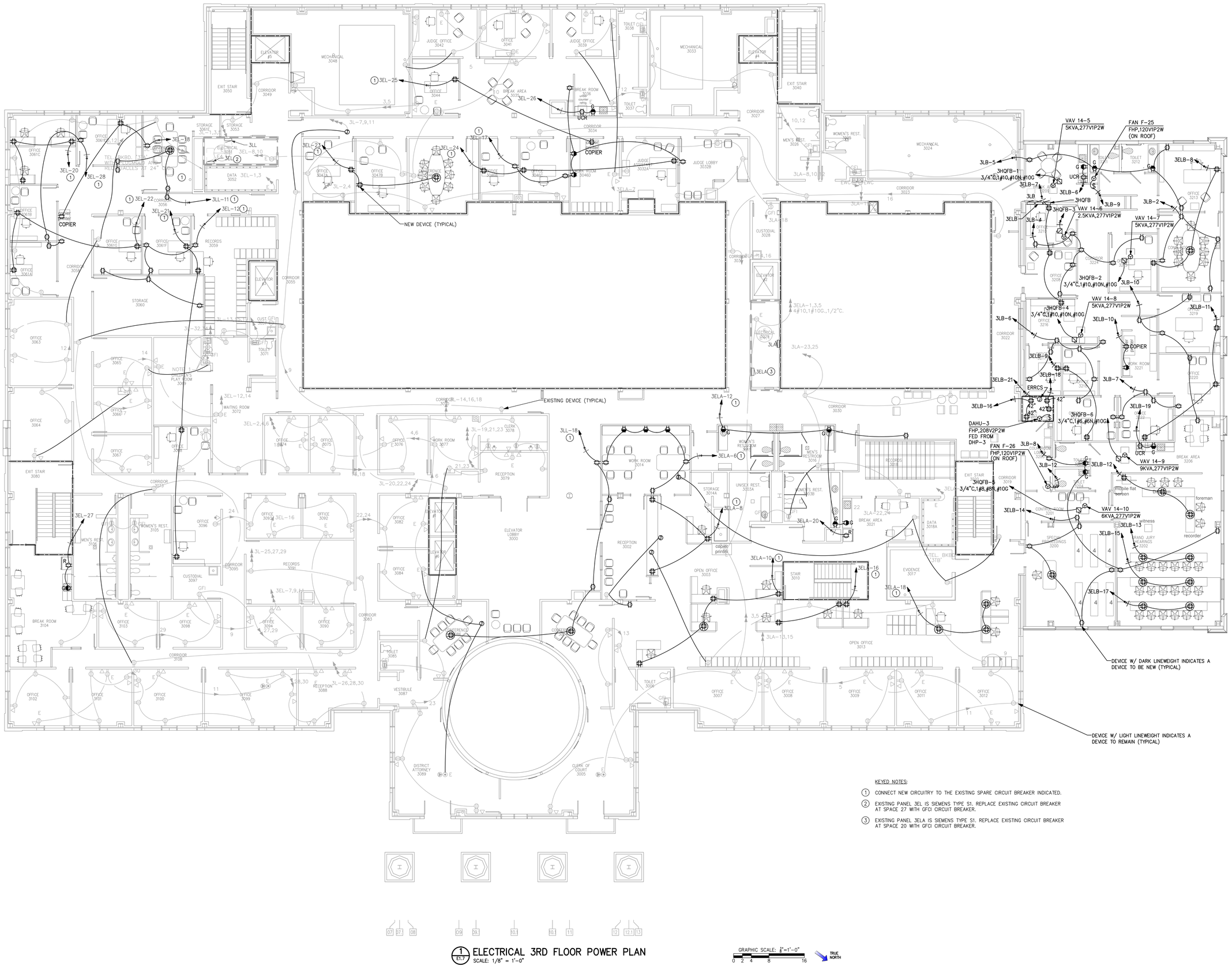

1 E1.7 ELECTRICAL 3RD FLOOR POWER PLAN
SCALE: 1/8" = 1'-0"

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

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NORTH CAROLINA 17009 ENGINEER MARK A. CIARROCCA 10/09/2019

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E1.7

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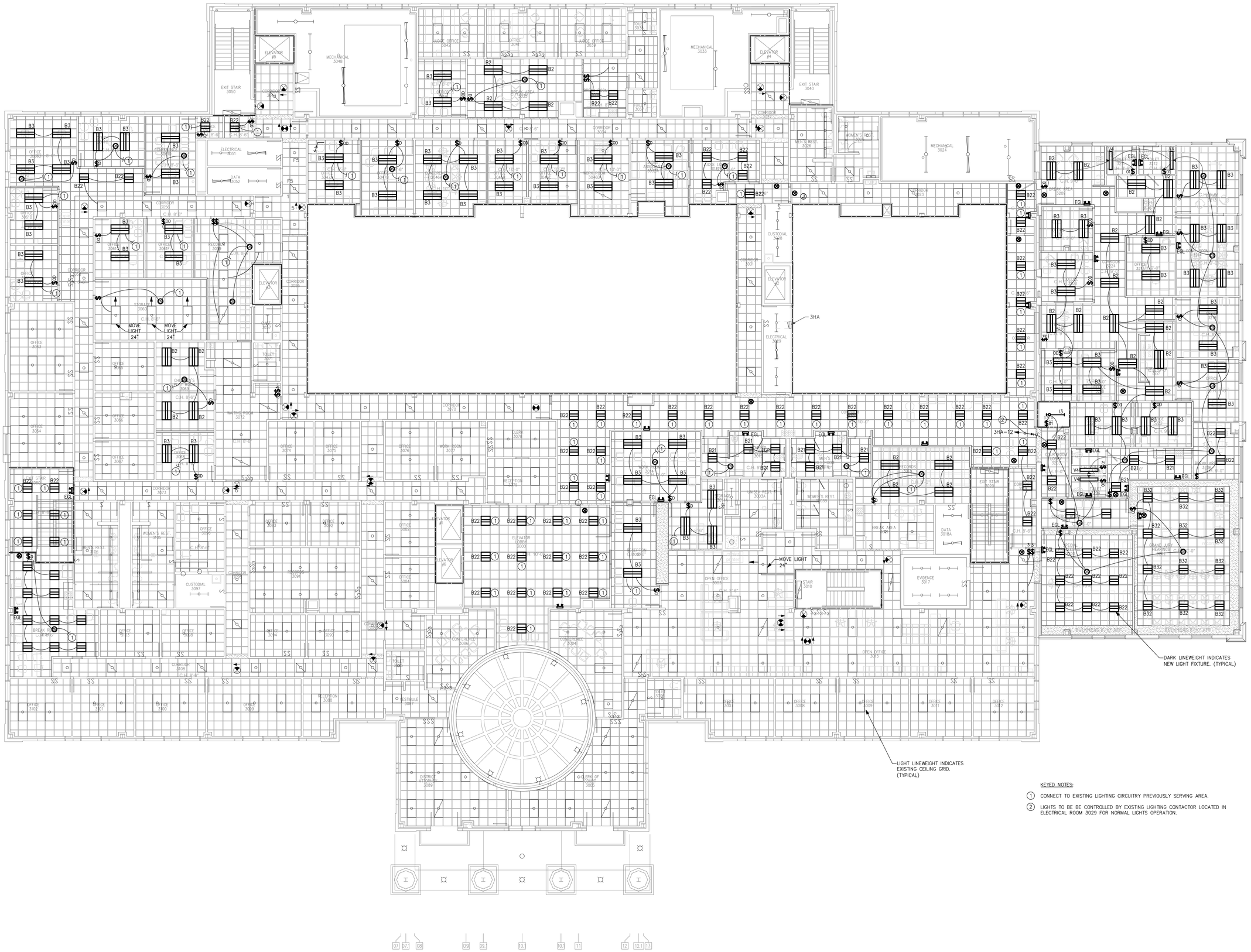

KEYED NOTES:

1. CONNECT TO EXISTING LIGHTING CIRCUITRY PREVIOUSLY SERVING AREA.
2. LIGHTS TO BE BE CONTROLLED BY EXISTING LIGHTING CONTACTOR LOCATED IN ELECTRICAL ROOM 3029 FOR NORMAL LIGHTS OPERATION.

1 / E1.8 ELECTRICAL 3RD FLOOR LIGHTING PLAN
SCALE: 1/8" = 1'-0"

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

TRUE NORTH

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030766 ENGINEERING FABIO A. CIARIDORO
21 NOV 2019

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LIGHTING PLAN

E1.8

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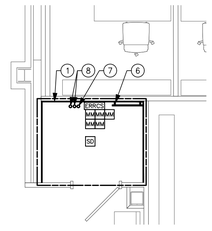
KEYED NOTES:

1. FIRE RATED PLYWOOD BACKBOARD. 3/4" THICK, 4'WIDEx7'TALL, MOUNTED VERTICALLY, PAINT WHITE. MOUNT ON 3 INDICATED WALLS IN DATA ROOM.
2. CABLE TRAY ABOVE CEILING, WIRE MESH/BASKET TYPE, 6"WX4"DEEP
3. BOND EACH CABLE TRAY SECTION TO GROUND BAR WITH #6 STRANDED COPPER, GREEN INSULATED GROUND.
4. EXISTING 12"W CABLE TRAY.
5. CABLE TRAY ABOVE CEILING, WIRE MESH/BASKET TYPE, 12"W, MATCH DEPTH OF EXISTING CABLE TRAY.
6. GROUND BAR. SEE DETAIL L/E5.2.
7. 1-1/2"C FROM ERRCS TO ROOF FOR DONOR ANTENNA, PENETRATE THROUGH THIRD FLOOR CEILING TO ROOF. INSTALL WEATHERHEAD ON ROOF. SEE RISER C/E7.1.
8. LOCATION FOR DAS ANTENNA (2) 1-1/2"C STUBBED THOUGH SECOND FLOOR CEILING. SEE RISER C/E7.1.



2 E1.9 ENLARGED DATA ROOM 3207
SCALE: 1/4" = 1'-0"
GRAPHIC SCALE: 1/4"=1'-0"
0 1 2 4 8

1 E1.9 ELECTRICAL 3RD FLOOR AUXILIARY SYSTEMS PLAN
SCALE: 1/8" = 1'-0"
GRAPHIC SCALE: 1/8"=1'-0"
0 2 4 8 16
TRUE NORTH

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MARTIN CARROLL CIAPPOCHINI
NORTH CAROLINA
SEAL
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ENGINEER
20 NOV 2019

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PLAN

E1.9

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KEYED NOTES – DEMOLITION WORK :

(D1) EXISTING COOLING TOWER TO BE REMOVED.

(D2) EXISTING SAFETY SWITCH (30A) FOR BASIN HEATER SYSTEM & CIRCUITRY TO BE REMOVED. THE EXISTING CIRCUIT IS FROM PANEL 1ED (CIRCUIT #25,27,29).

(D3) EXISTING SAFETY SWITCH (200A) FOR COOLING TOWER & CIRCUITRY TO BE REMOVED. THE EXISTING CIRCUIT IS FROM 1MCC (CIRCUIT #D1).

(D4) EXISTING 12"X12"X6" HINGED PULL BOX TO BE REMOVED.

(D5) EXISTING SINGLE POLE SWITCHES FOR THE HEAT TRACE SYSTEM TO BE REMOVED. THE EXISTING CIRCUITS ARE FROM PANEL 1EL (CIRCUITS #34,36,38,40). THESE CIRCUITS NEED TO BE RE-INSTALLED IN A JUNCTION BOX INSIDE THE ELECTRICAL ROOM #1054 FOR USE IN THE NEW WORK PHASE.

(D6) EXISTING SINGLE POLE SWITCH FOR THE ELECTRIC FLOAT SYSTEM TO BE REMOVED. IT ISPOWERED FROM THE GROUND FAULT INTERRUPTING RECEPTACLE.

(D7) EXISTING GROUND FAULT INTERRUPTING RECEPTACLE TO BE REMOVED. EXISTING CIRCUIT IS FROM PANEL 1EL (CIRCUIT #25). THIS CIRCUIT NEEDS TO BE INSTALLED IN A JUNCTION BOX INSIDE THE ELECTRICAL ROOM #1054 FOR USE IN THE NEW WORK PHASE.

(D8) REMOVE EXISTING EQUIPMENT RACK.

(D9) REMOVE EXISTING WATER HEATER CIRCUITRY TO LOAD SIDE OF THE SAFETY SWITCH. EXISTING DISCONNECT TO REMAIN.

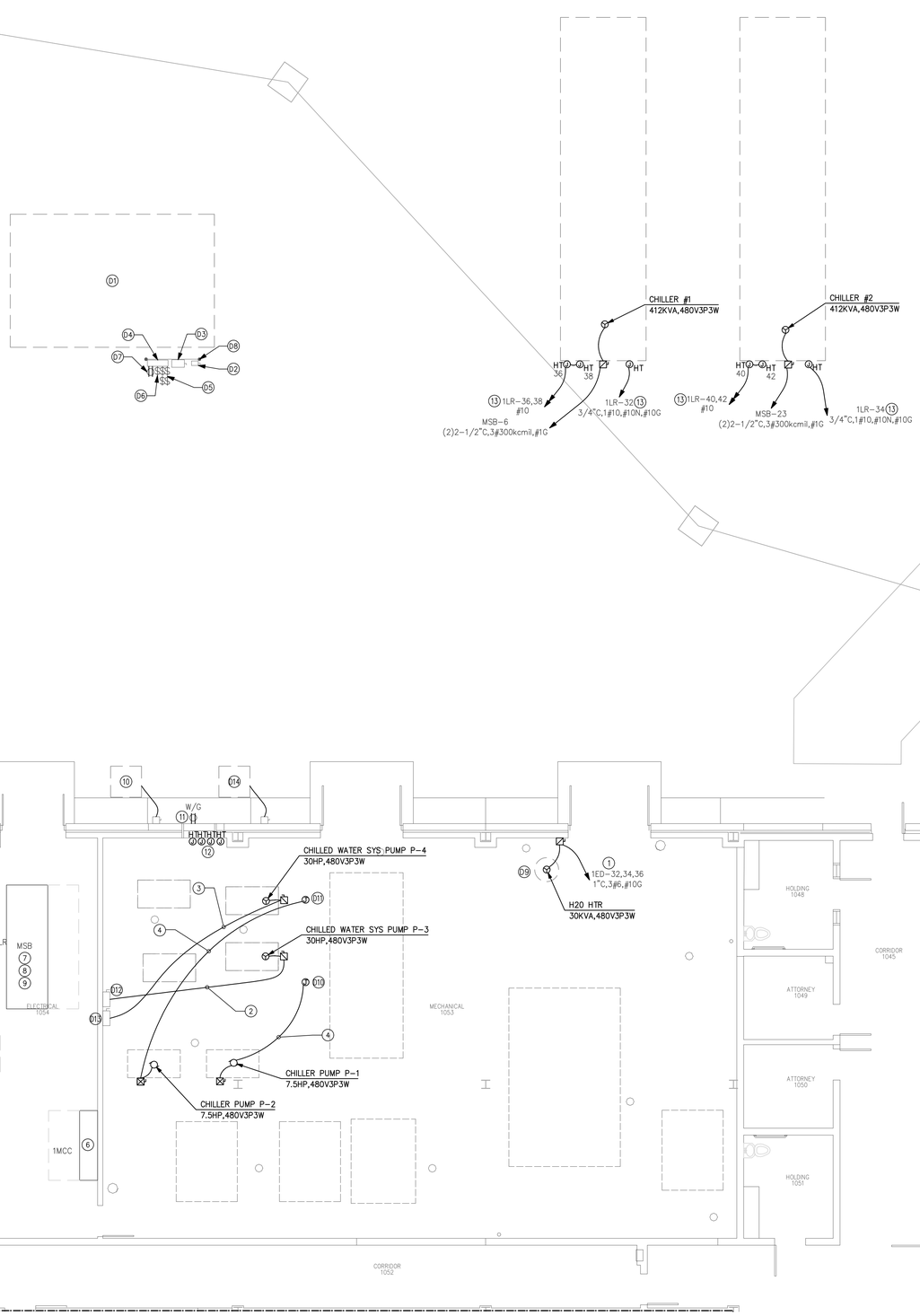
(D10) EXISTING CIRCUITRY (¾"C.3#10,#10G) FOR PUMP P-1 IS BE REMOVED TO JUNCTION BOX IN THE CEILING, SO IT CAN BE EXTENDED IN THE NEW WORK PHASE. REMOVE EXISTING SAFETY SWITCH TO PUMP. CIRCUIT ORIGINATES IN 1MCC (CIRCUIT #A1).

(D11) EXISTING CIRCUITRY (¾"C.3#10,#10G) FOR PUMP P-2 IS BE REMOVED TO JUNCTION BOX IN THE CEILING, SO IT CAN BE EXTENDED IN THE NEW WORK PHASE. REMOVE EXISTING SAFETY SWITCH TO PUMP. CIRCUIT ORIGINATES IN 1MCC (CIRCUIT #A2).

(D12) EXISTING CIRCUITRY (1 1/2"C.3#1,#6G) FROM PUMP P-3 TO THE EXISTING VFD IS TO BE REMOVED. EXISTING VARIABLE FREQUENCY DRIVE IS GOING TO BE REUSED FOR CONTROL TO THE NEW PUMP. CIRCUIT ORIGINATES IN PANEL 1HQD (CIRCUIT #13,15,17).

(D13) EXISTING CIRCUITRY (1 1/2"C.3#1,#6G) FROM PUMP P-4 TO THE EXISTING VFD IS TO BE REMOVED. EXISTING VARIABLE FREQUENCY DRIVE IS GOING TO BE REUSED FOR CONTROL TO THE NEW PUMP. CIRCUIT ORIGINATES IN PANEL 1HQD (CIRCUIT #8,10,12).

(D14) EXISTING CONDENSING UNIT (CU-1), SAFETY SWITCH & CIRCUITRY SHALL BE RELOCATED TO NEW LOCATION INDICATED FOR NEW WORK. CU-1 IS FED FROM PANEL 1HQ (CIRCUITS #26,28,30) WITH ¾"C.3,#10,#10G.



1 E4.1 ELECTRICAL ENLARGED PLAN – MECHANICAL 1053
SCALE: 3/16" = 1'-0"

GRAPHIC SCALE: 3/16"=1'-0" (0 2 4 8) TRUE NORTH

NEW WORK KEYED NOTES:

(1) CIRCUITRY FOR NEW WATER HEATER IS FOR THE LOAD SIDE OF THE SAFETY SWITCH. INSTALL NEW FUSES FOR NEW WATER HEATER CIRCUITRY REQUIREMENTS.

(2) EXTEND NEW 1 ¼"C.3#2,#6G FROM EXISTING VFD TO PUMP P-3 LOCATION. CIRCUIT 1HQD-13,15,17. FUSE AT NAMEPLATE RATING.

(3) EXTEND NEW 1 ¼"C.3#2,#6G FROM EXISTING VFD TO PUMP P-4 LOCATION. CIRCUIT 1HQD-8,10,12. FUSE AT NAMEPLATE RATING.

(4) EXTEND NEW ¾"C.3#8,#10G TO PUMP P-1 LOCATION. CIRCUIT 1MCC-A1. REPLACE EXISTING 3P/30A CIRCUIT BREAKER WITH A 3P/40A CIRCUIT BREAKER FUSE AT NAMEPLATE RATING.

(5) EXTEND NEW ¾"C.3#8,#10G TO PUMP P-1 LOCATION. CIRCUIT 1MCC-A2. REPLACE EXISTING 3P/30A CIRCUIT BREAKER WITH A 3P/40A CIRCUIT BREAKER FUSE AT NAMEPLATE RATING.

(6) EXISTING MOTOR CONTROL CENTER (1MCC). MANUFACTURED BY SEIMENS (MODEL 95). 480V,3PH,4W,42KAIC.

(7) EXISTING MAIN SWITCHBOARD (MSB). MANUFACTURED BY SEIMENS (TYPE SB2). 480/277V,3PH,4W,4000A,65KAIC.

(8) CONNECT NEW FEEDER FOR CHILLER #1 TO SPARE CIRCUIT BREAKER (600A) IN SPACE #6.

(9) PROVIDE (1) 3P/600A CIRCUIT BREAKER & INSTALL IN SPACE #23 FOR NEW FEEDER FOR CHILLER #2.

(10) NEW LOCATION FOR EXISTING CU-1. EXTEND CIRCUITRY ¾"C.3#10,#10G & CONNECT SAFETY SWITCH TO CU-1.

(11) EXISTING RECEPTACLE.

(12) NEW HEAT TRACE SYSTEM FOR THS CHILLER PIPING SYSTEM AT MECHANICAL RM#1053. EXTEND CIRCUITRY ¾"C,1#12,#12N,#12G FROM JUNCTION BOXES INSTALLED DURING DEMOLITION PHASE (SEE NOTE #D5) TO THE CONNECTION POINTS FOR THE HEAT TRACE SYSTEM. EXISTING CIRCUITS ARE 1HQ-34,36,38,40 (EXISTING GFCI CIRCUIT BREAKERS).

(13) PROVIDE GFCI CIRCUIT BREAKER IN PANEL INDICATED. PANEL IS MANUFACTURED BY SIEMENS (TYPE S1).

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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 17556 GARY A. CIARROCCHI 10/NOV/2019

Brunswick County Courthouse Addition & Renovations

Bolivia, NC

CONSTRUCTION DRAWINGS
SEPTEMBER 23, 2019

Revisions:

ELECTRICAL
1ST FLOOR
ENLARGED POWER
PLAN

E4.1

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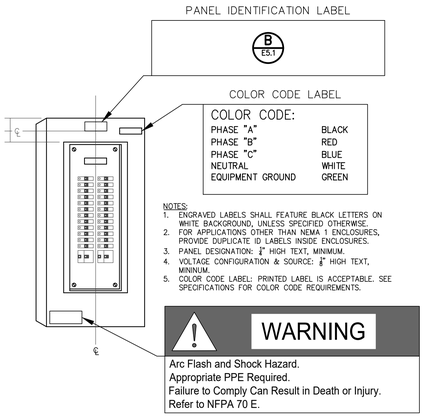
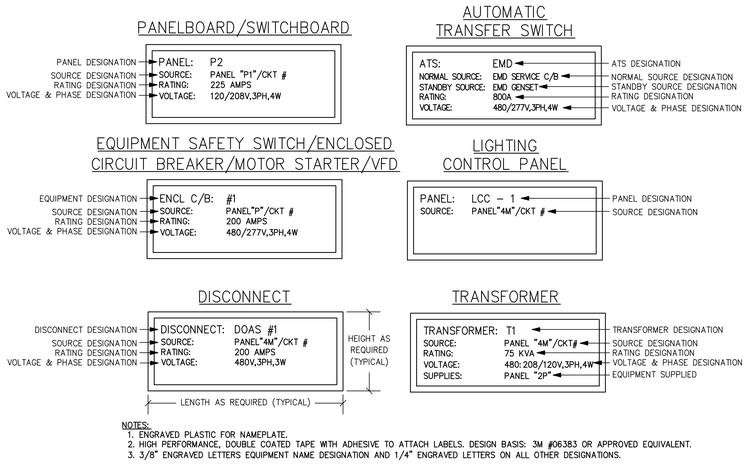
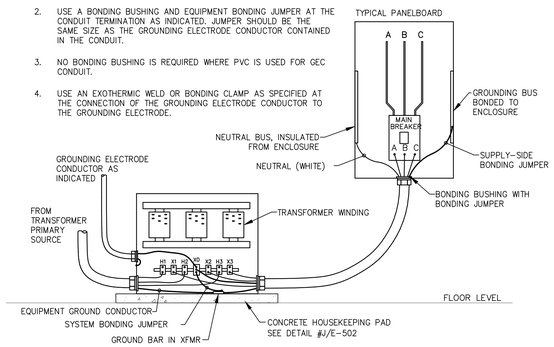


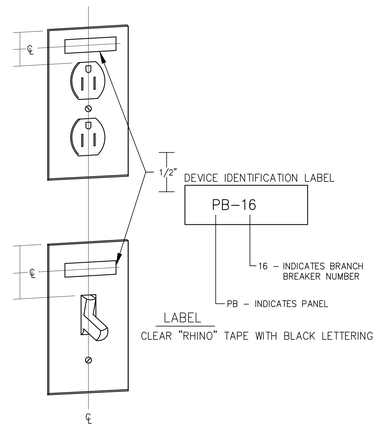
A E5.1 TYPICAL PANELBOARD IDENTIFICATION
NO SCALE



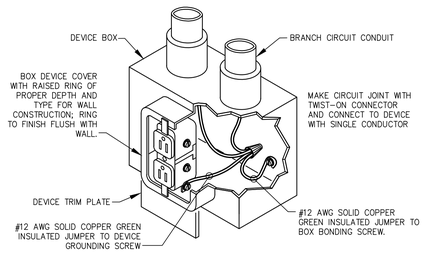
B E-501 TYPICAL NAMEPLATE DETAILS
NO SCALE



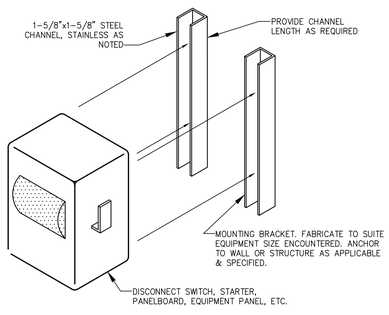
C E5.1 DRY-TYPE TRANSFORMER GROUNDING DETAIL
NO SCALE



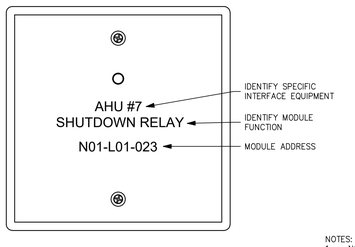
D E5.1 WIRING DEVICE IDENTIFICATION LABEL



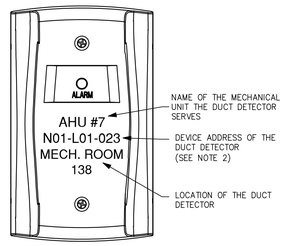
E E5.1 OUTLET GROUNDING DETAIL
SCALE: N/A



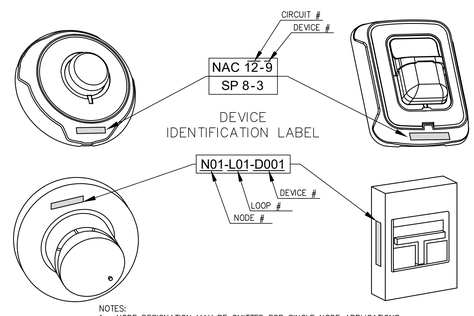
F E5.1 EQUIPMENT MOUNTING DETAIL
NO SCALE



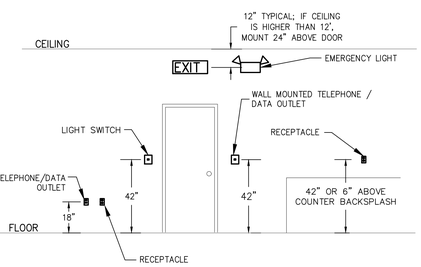
G E-501 CONTROL/RELAY MODULE LABELING DETAIL
NO SCALE



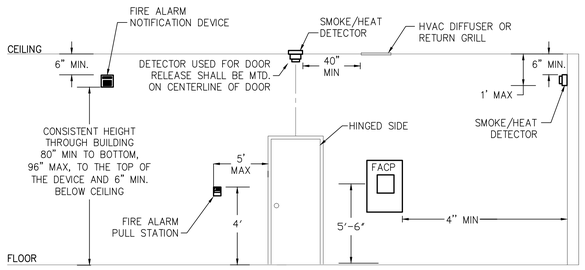
H E-501 REMOTE ALARM INDICATING LAMP LABELING DETAIL
NO SCALE



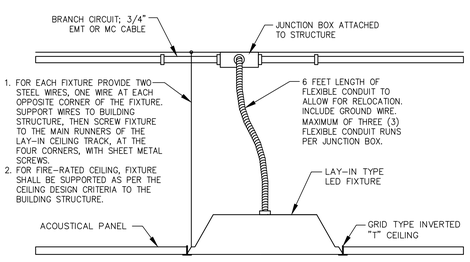
J E-501 TYPICAL FIRE ALARM DEVICE IDENTIFICATION
NO SCALE



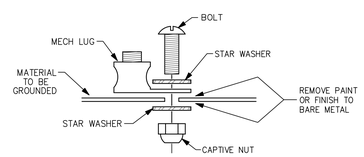
K E-501 MOUNTING HEIGHTS OF DEVICES
NO SCALE



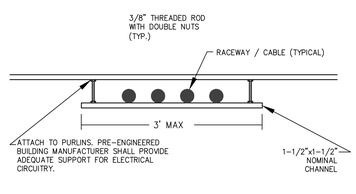
N E-501 MOUNTING HEIGHTS OF DEVICES DETAIL – FIRE ALARM
NO SCALE



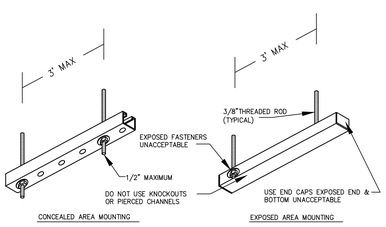
L E-501 LIGHT FIXTURE MOUNTING DETAIL
SCALE: N/A



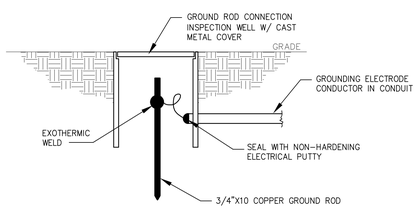
M E5.1 GROUNDING LUG DETAIL
NO SCALE



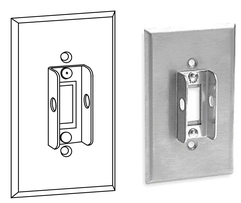
P E5.1 CHANNEL SUPPORT DETAIL
NO SCALE



Q E5.1 CHANNEL MOUNTING DETAILS
NO SCALE



R E5.1 GROUND ROD & INSPECTION WELL
NO SCALE



S E5.1 LOCKABLE TOGGLE SWITCH COVER
NO SCALE

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18048

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 17503 MARK A. CIARROCCA 21 JUNE 2019

Brunswick County Courthouse Addition & Renovations

Bolivia, NC

CONSTRUCTION DRAWINGS
SEPTEMBER 23, 2019

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ELECTRICAL DETAILS

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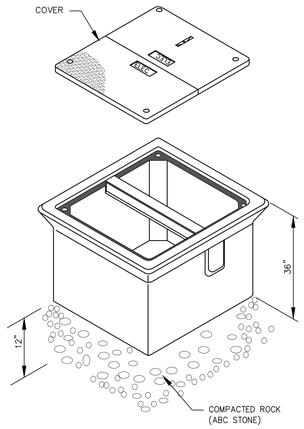
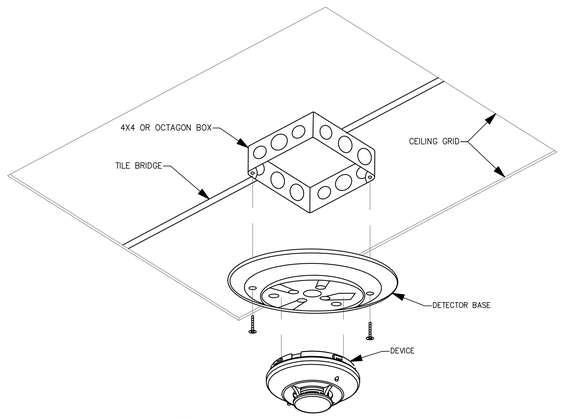
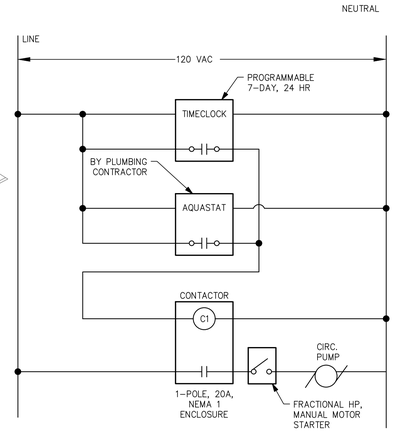


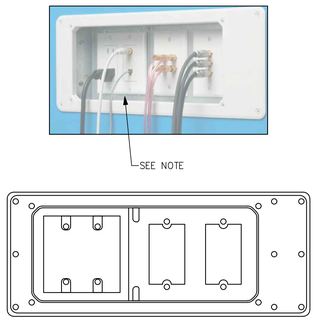
A E5.2 TYPICAL HANDHOLE DETAIL
NO SCALE
DESIGN BASIS: QUAZITE #PG3048HH00-PG3048BA36 (30"X48")



B E5.2 DEVICE MOUNTING DETAIL
NO SCALE

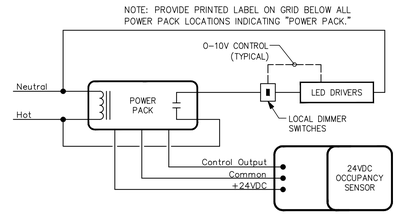


C E5.2 CIRCULATION PUMP CONTROL SCHEMATIC
NO SCALE



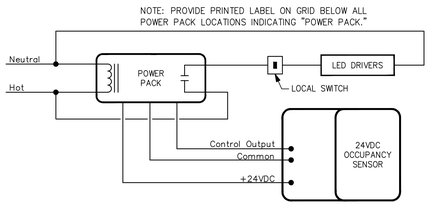
DESIGN BASIS: ARLINGTON TVBS613
APPROVED EQUIVALENTS BY ALTERNATE MANUFACTURERS ARE ACCEPTABLE.

D E5.2 TV MONITOR OUTLET BOX DETAIL
NO SCALE



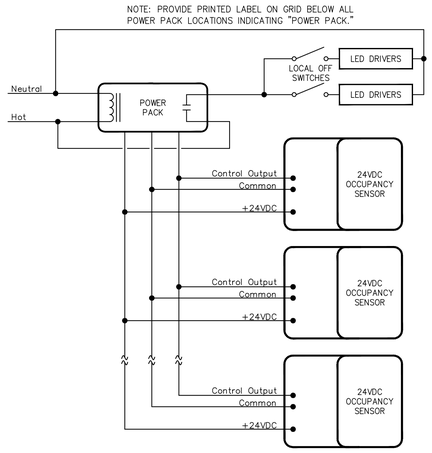
SINGLE OCCUPANCY SENSOR, LOW VOLTAGE

E E5.2 OCCUPANCY SENSOR WIRING FOR DIMMING LEVEL LIGHTING CONTROL
NO SCALE



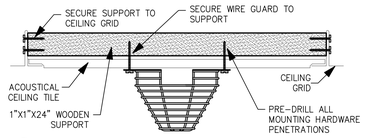
SINGLE OCCUPANCY SENSOR, LOW VOLTAGE

F E5.2 OCCUPANCY SENSOR WIRING LIGHTING CONTROL
NO SCALE

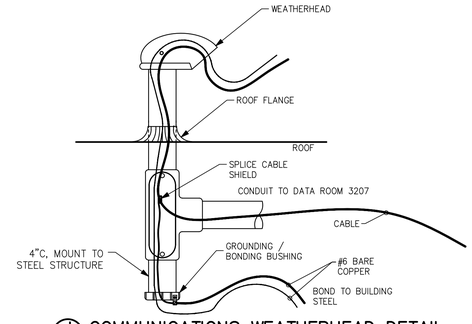


MULTIPLE OCCUPANCY SENSORS, SINGLE CIRCUIT CONTROL

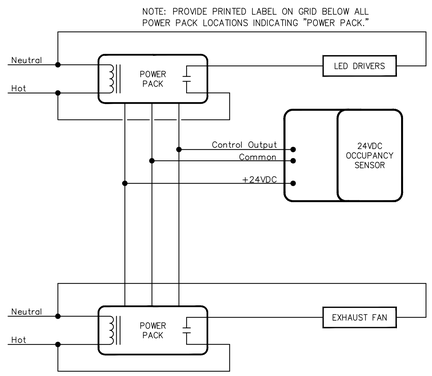
G E5.2 OCCUPANCY SENSOR WIRING FOR DUAL LEVEL LIGHTING CONTROL
NO SCALE



H E5.2 CEILING MOUNTED GUARD DETAIL
NO SCALE

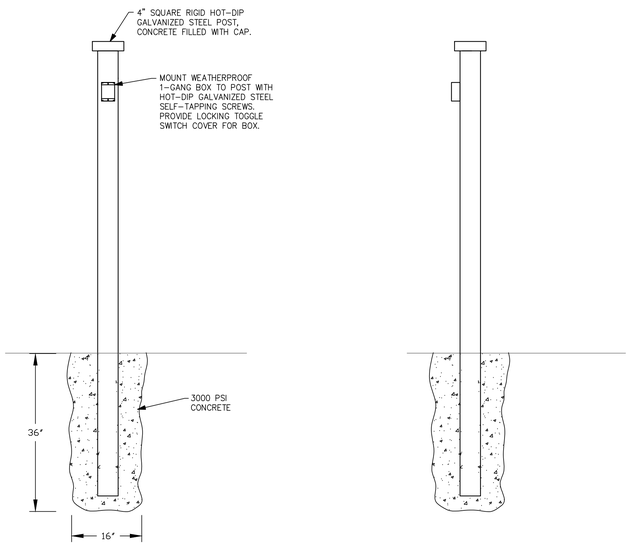


J E5.2 COMMUNICATIONS WEATHERHEAD DETAIL
NO SCALE



SINGLE OCCUPANCY SENSOR, LOW VOLTAGE

F E5.2 OCCUPANCY SENSOR WIRING LIGHTING AND EXHAUST FAN CONTROL
NO SCALE

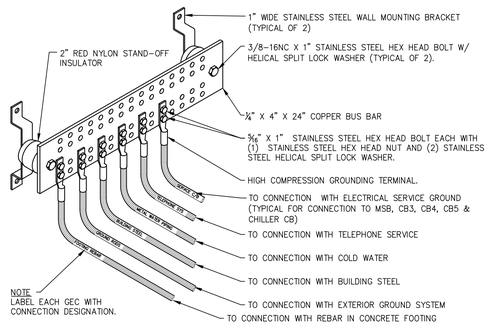


M E5.2 TYPICAL GATE OPERATOR DISCONNECT POST MOUNT
NO SCALE



TYPICALLY USED FOR 120V EQUIPMENT
DISCONNECTS INCLUDING, WATER HEATERS,
CIRCULATION PUMPS, DAHU'S, ETC.

N E5.2 LOCKABLE EXTERIOR TOGGLE SWITCH COVER
NO SCALE



L E5.2 MAIN GROUND BAR
NO SCALE

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Brunswick County Courthouse Addition & Renovations

Bolivia, NC

CONSTRUCTION DRAWINGS
SEPTEMBER 23, 2019

Revisions:

ELECTRICAL DETAILS

E5.2

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LUMINAIRE SCHEDULE

CALLOUT	SYMBOL	DESCRIPTION	LAMP	BALLAST	VOLTS	MOUNTING	MANUFACTURER / MODEL	NOTES	CALLOUT
A3		2x4, PRISMATIC LENS	(1) 47W LED	ELECTRONIC	277V 1P 2W	RECESSED	COLUMBIA #LJT SERIES DAYBRITE #2T LED SERIES METALUX #2GR LED SERIES	5300 NOMINAL LUMENS. 3500K COLOR TEMPERATURE. 0.156" PRISMATIC LENS.	A3
A42		2x2, PRISMATIC LENS	(1) 52W LED	ELECTRONIC	277V 1P 2W	RECESSED	COLUMBIA #LJT SERIES DAYBRITE #2T LED SERIES METALUX #2GR LED SERIES	4500 NOMINAL LUMENS. 3500K COLOR TEMPERATURE. 0.156" NOMINAL LENS.	A42
B2		2x4, ARCHITECTURAL LENSED, INDIRECT	(1) 40W LED	LED DIMMABLE DRIVER	277V 1P 2W	RECESSED	COLUMBIA #LCAT SERIES DAYBRITE #2EV SERIES METALUX #24CZ SERIES	4300 NOMINAL LUMENS. 3500K COLOR TEMPERATURE.	B2
B3		2x4, ARCHITECTURAL LENSED, INDIRECT	(1) 47W LED	LED DIMMABLE DRIVER	277V 1P 2W	RECESSED	COLUMBIA #LCAT SERIES DAYBRITE #2EV SERIES METALUX #24CZ SERIES	5300 NOMINAL LUMENS. 3500K COLOR TEMPERATURE.	B3
B21		2x2, ARCHITECTURAL LENSED, INDIRECT	(1) 20W LED	LED DIMMABLE DRIVER	277V 1P 2W	RECESSED	COLUMBIA #LCAT SERIES DAYBRITE #2EV SERIES METALUX #22CZ SERIES	2000 NOMINAL LUMENS. 3500K COLOR TEMPERATURE.	B22
B22		2x2, ARCHITECTURAL LENSED, INDIRECT	(1) 30W LED	LED DIMMABLE DRIVER	277V 1P 2W	RECESSED	COLUMBIA #LCAT SERIES DAYBRITE #2EV SERIES METALUX #22CZ SERIES	3000 NOMINAL LUMENS. 3500K COLOR TEMPERATURE.	B22
B22B		2x2, ARCHITECTURAL LENSED, INDIRECT, BATTERY	(1) 30W LED	LED DIMMABLE DRIVER	277V 1P 2W	RECESSED	COLUMBIA #LCAT SERIES DAYBRITE #2EV SERIES METALUX #22CZ SERIES	3000 NOMINAL LUMENS. 3500K COLOR TEMPERATURE. INTEGRAL BATTERY BACKUP.	B22B
B22F		2x2, ARCHITECTURAL LENSED, INDIRECT, FLANGED	(1) 30W LED	LED DIMMABLE DRIVER	277V 1P 2W	RECESSED	COLUMBIA #LCAT SERIES DAYBRITE #2EV SERIES METALUX #22CZ SERIES	3000 NOMINAL LUMENS. 3500K COLOR TEMPERATURE. PROVIDE FLANGE KIT FOR GYPBOARD CEILING INSTALLATION.	B22F
B32		2x2, ARCHITECTURAL LENSED, INDIRECT	(1) 40W LED	LED DIMMABLE DRIVER	277V 1P 2W	RECESSED	COLUMBIA #LCAT SERIES DAYBRITE #2EV SERIES METALUX #22CZ SERIES	4300 NOMINAL LUMENS. 3500K COLOR TEMPERATURE.	B32
C		LINEAR INDIRECT	(1) 36W LED	LED DIMMABLE DRIVER	277V 1P 2W	BULKHEAD; MTD 12" BELOW CEILING	BIRCHWOOD #ASHLEY LED SERIES	3600 NOMINAL LUMENS PER 4 FT. 3500K COLOR TEMPERATURE. 15 DEGREE TILT NARROW DISTRIBUTION OPTIC. PLASTIC DUST COVER. SEE PLANS FOR OVERALL LENGTH. FINISH SELECTION BY ARCHITECT.	C
EG		EMERGENCY EGRESS, BATTERY	(2) 7W MR 16 LED	BATTERY	277V 1P 2W	WALL; MTD 6" BELOW CEILING LEVEL	EMERGILITE #COMPACT PREMIER SERIES CHLORIDE #TPU SERIES LIGHTALARMS #COMPACT GRANDE SERIES	CONNECT TO NEAREST UNSWITCHED LIGHT CIRCUIT IN SAME SPACE. THESE FIXTURES ARE NOT TAGGED WITH "EG" ON THE DRAWINGS; ONLY THE SYMBOL IS USED. DESIGN CRITERIA: 70FT SPACING, UTILIZING 6FT WIDE PATH, 80/50/20 REFLECTANCES, MAINTAINING 1FC AVG AND 01.FC MININUM.	EG
EGL		EMERGENCY EGRESS, BATTERY, LOW WATTAGE	(2) 4W MR 16 LED	BATTERY	277V 1P 2W	WALL; MTD 6" BELOW CEILING LEVEL	EMERGILITE #COMPACT PREMIER SERIES CHLORIDE #TPU SERIES LIGHTALARMS #COMPACT GRANDE SERIES	CONNECT TO NEAREST UNSWITCHED LIGHT CIRCUIT IN SAME SPACE. DESIGN CRITERIA: 50FT SPACING, UTILIZING 6FT WIDE PATH, 80/50/20 REFLECTANCES, MAINTAINING 1FC AVG AND 01.FC MININUM.	EGL
F		1x4 SECURITY FIXTURE, FLANGED	(1) 52W LED	ELECTRONIC	277V 1P 2W	RECESSED	NEWSTAR #37M SERIES SIGNIFY EQUIVALENT FAIL-SAFE #MR SERIES	3500 NOMINAL LUMENS. 3500K COLOR TEMPERATURE. 14 GAUGE STAINLESS STEEL HOUSING AND FRAME. 0.187" CLEAR TEMPERED GLASS OUTER LENS. 0.187" PRISMATIC POLYCARBONATE INNER LENS.	F
I2		4' INDUSTRIAL	(1) 30W LED	LED DRIVER	277V 1P 2W	PENDANT/SURFACE	COLUMBIA #LCR SERIES DAYBRITE #FSS SERIES METALUX #SNLED SERIES	3700 NOMINAL LUMENS. 3500K COLOR TEMPERATURE. WIRE GUARD.	I2
I3		4' INDUSTRIAL	(1) 40W LED	LED DRIVER	277V 1P 2W	PENDANT/SURFACE	COLUMBIA #LCL SERIES DAYBRITE #FSS SERIES METALUX #SNLED SERIES	5300 NOMINAL LUMENS. 3500K COLOR TEMPERATURE. WIRE GUARD.	I3
INV10		INVERTER, EGRESS LIGHTING	N/A	BATTERY	277V 1P 2W	SURFACE	EMERGI-LITE #EMIU SERIES HIGH-LITES #PCF SERIES IOTA #IIS SERIES	INVERTER FOR BATTERY BACKUP OF EGRESS LIGHTING; 100W FOR 90 MINUTES (MINIMUM). INCLUDE SELF-DIAGNOSTIC OPTION. LOCATE ABOVE CEILING – PROVIDE "LIGHTING INVERTER" LABEL ON CEILING GRID BELOW INSTALLED LOCATION.	INV10
V4		4' VANITY FIXTURE	(1) 38W LED	LED DRIVER	277V 1P 2W	WAL	COLUMBIA #CWM-4 SERIES DAY-BRITE #FSW-4 SERIES TERON #DD48 SERIES	4100 NOMINAL LUMENS. 3500K COLOR TEMPERATURE. FROSTED LENS. COORINATE EXACT LOCATION AND HEIGHT WITH ARCHITECT.	V4
WB		HALF CYLINDER WALL PACK, BACKED UP BY BATTERY INVERTER	(1) 20W LED (1) 20W LED	LED DRIVER LED DRIVER	277V 1P 2W	WALL	DECO LIGHTING #D440 SERIES GARDCO #104L SERIES RAYON #T650L SERIES	3800 NOMINAL LUMENS. MATCH COLOR TEMPERATURE OF EXISTING EXTERIOR LIGHT FIXTURES IN AREA. TYPE IV DISTRIBUTION. DUAL LED DRIVERS AND DUAL LED ARRAYS FOR EGRESS REQUIREMENTS. INTEGRAL PHOTOCELL. DOWNLIGHT ONLY. FINISH SELECTION BY ARCHITECT.	WB
WW		4' LINEAR WALL WASH	(1) 20W LED	LED DIMMABLE DRIVER	277V 1P 2W	WALL	LITECONTROL #3L-W-D PRE-APPROVED EQUIVALENT AXIS #BMWDLED SERIES	1500 NOMINAL LUMENS. 3500K COLOR TEMPERATURE. WALL WASH DISTRIBUTION. DIFFUSED LENS. COORDINATE MOUNTING HEIGHT WITH ARCHITECT.	WW
X		EXIT SIGN, BATTERY BACKUP	(2) 1W LED	BATTERY	277V 1P 2W	UNIVERSAL	DUAL-LITE #SE SERIES LIGHTALARMS #QLXN500R SURE-LITES #LPX SERIES	120/277V INPUT; NICAD BATTERY; CONNECT TO NEAREST UNSWITCHED LIGHT CIRCUIT IN SAME SPACE. THESE FIXTURES ARE NOT TAGGED WITH "X" ON THE DRAWINGS; ONLY THE SYMBOL IS USED. WHERE SHOWN PAIRED WITH LIGHT FIXTURE TYPE EG, FIXTURE SHALL BE WALL MOUNTED.	X

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MARK A. CIARROCCA
09/23/2019

Brunswick County Courthouse Addition & Renovations

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3ELB

ROOM: BREAK AREA 3209 | VOLTS: 208Y/120V 3P 4W | AIC: 10,000
MOUNTING: FLUSH | BUS AMPS: 100 | MAIN BKR: MLO
FED FROM: 1ELB | NEUTRAL: 100% | LUGS: STANDARD
NOTE:

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	B	C	CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	B	C
1	20/1	SPARE	0			2	20/1	SPARE	0		
3	20/1	SPARE		0		4	20/1	SPARE		0	
5	20/1	SPARE			0	6	20/1	(*) REC-REFRIGERATOR, REC			0.68
7	20/1	REC	1.08			8	20/1	REC, RECEPTACLE	0.9		
9	20/1	REC		1.08		10	20/1	REC, REC-COPIER		1.18	
11	20/1	REC			1.08	12	20/1	REC, RECEPTACLE			0.72
13	20/1	RECEPTACLE	0.36			14	20/1	REC, RECEPTACLE	1.08		
15	20/1	RECEPTACLE		0.36		16	20/1	REC		0.72	
17	20/1	RECEPTACLE			0.36	18	20/1	REC			0.72
19	20/1	(*) REC-REFRIGERATOR, REC	0.68			20	20/1	SPARE	0		
21	20/1	(#) EMERGENCY RESPONDER RADIO		1		22	20/1	SPARE		0	
23	20/1	SPARE			0	24	20/1	SPARE			0
25	20/1	SPARE	0			26	20/1	SPARE	0		
27	20/1	SPARE		0		28	20/1	SPARE		0	
29	20/1	SPARE			0	30	20/1	SPARE			0
31	20/1	SPARE	0			32	20/1	SPARE	0		
33	20/1	SPARE		0		34	20/1	SPARE		0	
35	20/1	SPARE			0	36	20/1	SPARE			0
37	20/1	SPARE	0			38	20/1	SPARE	0		
39	20/1	SPARE		0		40	20/1	SPARE		0	
41	20/1	SPARE			0	42	20/1	SPARE			0
								TOTAL CONNECTED KVA BY PHASE	4.1	4.34	3.56
								TOTAL CONNECTED AMPS BY PHASE	34.2	36.2	29.7

	CONN KVA	CALC KVA			CALC KVA
RECEPTACLES	10	10	(50%>10)	TOTAL LOAD	12
NONCONTINUOUS	2	2	(100%)	BALANCED 3-PHASE AMPS	33.3

(*) INDICATES GFCI C/B; (#) INDICATES BREAKER LOCK

3HQFB

ROOM: BREAK AREA 3209 | VOLTS: 480Y/277V 3P 4W | AIC: 18,000
MOUNTING: FLUSH | BUS AMPS: 125 | MAIN BKR: MLO
FED FROM: 1HQFB | NEUTRAL: 100% | LUGS: STANDARD
NOTE:

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	B	C	CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	B	C
1	25/1	VAV 14-5	5			2	25/1	VAV 14-7	5		
3	20/1	VAV 14-6		2.5		4	25/1	VAV 14-8		5	
5	35/1	VAV 14-10			6	6	45/1	VAV 14-9			9
7	-/1	SPACE ONLY	0			8	-/1	SPACE ONLY	0		
9	-/1	SPACE ONLY		0		10	-/1	SPACE ONLY		0	
11	-/1	SPACE ONLY			0	12	-/1	SPACE ONLY			0
13	-/1	SPACE ONLY	0			14	-/1	SPACE ONLY	0		
15	-/1	SPACE ONLY		0		16	-/1	SPACE ONLY		0	
17	-/1	SPACE ONLY			0	18	-/1	SPACE ONLY			0
19	-/1	SPACE ONLY	0			20	-/1	SPACE ONLY	0		
21	-/1	SPACE ONLY		0		22	-/1	SPACE ONLY		0	
23	-/1	SPACE ONLY			0	24	-/1	SPACE ONLY			0
25	-/1	SPACE ONLY	0			26	-/1	SPACE ONLY	0		
27	-/1	SPACE ONLY		0		28	-/1	SPACE ONLY		0	
29	-/1	SPACE ONLY			0	30	-/1	SPACE ONLY			0
31	-/1	SPACE ONLY	0			32	-/1	SPACE ONLY	0		
33	-/1	SPACE ONLY		0		34	-/1	SPACE ONLY		0	
35	-/1	SPACE ONLY			0	36	-/1	SPACE ONLY			0
37	-/1	SPACE ONLY	0			38	-/1	SPACE ONLY	0		
39	-/1	SPACE ONLY		0		40	-/1	SPACE ONLY		0	
41	-/1	SPACE ONLY			0	42	-/1	SPACE ONLY			0
								TOTAL CONNECTED KVA BY PHASE	10	7.5	15
								TOTAL CONNECTED AMPS BY PHASE	36.1	27.1	54.2

	CONN KVA	CALC KVA			CALC KVA
HEATING	32.5	32.5	(100%)	TOTAL LOAD	32.5
				BALANCED 3-PHASE AMPS	39.1

3LB

ROOM: BREAK AREA 3209 | VOLTS: 208Y/120V 3P 4W | AIC: 10,000
MOUNTING: FLUSH | BUS AMPS: 100 | MAIN BKR: MLO
FED FROM: 1LB | NEUTRAL: 100% | LUGS: STANDARD
NOTE:

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	B	C	CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	B	C
1	20/1	SPARE	0			2	20/1	REC	0.72		
3	20/1	SPARE		0		4	20/1	REC		1.26	
5	20/1	REC			0.9	6	20/1	REC			1.26
7	20/1	REC	0.9			8	20/1	REC	0.9		
9	20/1	FAN F-25		0.1		10	20/1	REC		0.9	
11	20/1	SPARE			0	12	20/1	FAN F-26			0.1
13	20/1	SPARE	0			14	20/1	SPARE	0		
15	20/1	SPARE		0		16	20/1	SPARE		0	
17	20/1	SPARE			0	18	20/1	SPARE			0
19	20/1	SPARE	0			20	20/1	SPARE	0		
21	20/1	SPARE		0		22	20/1	SPARE		0	
23	20/1	SPARE			0	24	20/1	SPARE			0
25	20/1	SPARE	0			26	20/1	SPARE	0		
27	20/1	SPARE		0		28	20/1	SPARE		0	
29	20/1	SPARE			0	30	20/1	SPARE			0
31	20/1	SPARE	0			32	20/1	SPARE	0		
33	20/1	SPARE		0		34	20/1	SPARE		0	
35	20/1	SPARE			0	36	20/1	SPARE			0
37	20/1	SPARE	0			38	20/1	SPARE	0		
39	20/1	SPARE		0		40	20/1	SPARE		0	
41	20/1	SPARE			0	42	20/1	SPARE			0
								TOTAL CONNECTED KVA BY PHASE	2.52	2.26	2.26
								TOTAL CONNECTED AMPS BY PHASE	21	18.8	18.8

	CONN KVA	CALC KVA			CONN KVA	CALC KVA	
LARGEST MOTOR	0.1	0.025	(25%)	MOTORS	0.2	0.2	(100%)
				RECEPTACLES	6.84	6.84	(50%>10)
				TOTAL LOAD		7.07	
				BALANCED 3-PHASE AMPS		19.6	

2ELB

ROOM: MECHANICAL 2205 | VOLTS: 208Y/120V 3P 4W | AIC: 10,000
MOUNTING: SURFACE | BUS AMPS: 100 | MAIN BKR: MLO
FED FROM: 1ELB | NEUTRAL: 100% | LUGS: STANDARD
NOTE:

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	B	C	CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	B	C
1	20/1	DDC J-BOX	0.15			2	20/1	REC, RECEPTACLE	0.36		
3	20/1	REC		0.36		4	20/1	REC		0.72	
5	20/1	(*) REC-EWC, REC			0.78	6	20/1	REC			0.72
7	20/1	REC-COPIER	1			8	20/1	SPARE	0		
9	20/1	(*) REC-REFRIGERATOR, REC		1.18		10	20/1	REC		1.08	
11	20/1	SPARE			0	12	20/1	SPARE			0
13	20/1	SPARE	0			14	20/1	SPARE	0		
15	20/1	SPARE		0		16	20/1	SPARE		0	
17	20/1	SPARE			0	18	20/1	SPARE			0
19	20/1	SPARE	0			20	20/1	SPARE	0		
21	20/1	SPARE		0		22	20/1	SPARE		0	
23	20/1	SPARE			0	24	20/1	SPARE			0
25	20/1	SPARE	0			26	20/1	SPARE	0		
27	20/1	SPARE		0		28	20/1	SPARE		0	
29	20/1	SPARE			0	30	20/1	SPARE			0
31	20/1	SPARE	0			32	20/1	SPARE	0		
33	20/1	SPARE		0		34	20/1	SPARE		0	
35	20/1	SPARE			0	36	20/1	SPARE			0
37	20/1	SPARE	0			38	20/1	SPARE	0		
39	20/1	SPARE		0		40	20/1	SPARE		0	
41	20/1	SPARE			0	42	20/1	SPARE			0
								TOTAL CONNECTED KVA BY PHASE	1.51	3.34	1.5
								TOTAL CONNECTED AMPS BY PHASE	12.6	27.8	12.5

	CONN KVA	CALC KVA			CALC KVA
RECEPTACLES	3.6	3.6	(50%>10)	TOTAL LOAD	6.35
NONCONTINUOUS	2.75	2.75	(100%)	BALANCED 3-PHASE AMPS	17.6

(*) INDICATES GFCI C/B

2HQFB

ROOM: MECHANICAL 2205 | VOLTS: 480Y/277V 3P 4W | AIC: 22,000
MOUNTING: SURFACE | BUS AMPS: 250 | MAIN BKR: MLO
FED FROM: 1HQFB | NEUTRAL: 100% | LUGS: STANDARD
NOTE:

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	B	C	CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	B	C
1	30/3	AHU #14	3.88			2	25/1	VAV 14-1	5		
3	|			3.88		4	40/1	VAV 14-4		8	
5	|				3.88	6	50/1	VAV 14-2			10
7	50/1	VAV 14-3	10			8	15/3	UNIT HEATER UH#7	1.7		
9	-/1	SPACE ONLY		0		10	|			1.7	
11	-/1	SPACE ONLY			0	12	|				1.7
13	-/1	SPACE ONLY	0			14	-/1	SPACE ONLY	0		
15	-/1	SPACE ONLY		0		16	-/1	SPACE ONLY		0	
17	-/1	SPACE ONLY			0	18	-/1	SPACE ONLY			0
19	-/1	SPACE ONLY	0			20	-/1	SPACE ONLY	0		
21	-/1	SPACE ONLY		0		22	-/1	SPACE ONLY		0	
23	-/1	SPACE ONLY			0	24	-/1	SPACE ONLY			0
25	-/1	SPACE ONLY	0			26	-/1	SPACE ONLY	0		
27	-/1	SPACE ONLY		0		28	-/1	SPACE ONLY		0	
29	-/1	SPACE ONLY			0	30	-/1	SPACE ONLY			0
31	-/1	SPACE ONLY	0			32	-/1	SPACE ONLY	0		
33	-/1	SPACE ONLY		0		34	-/1	SPACE ONLY		0	
35	-/1	SPACE ONLY			0	36	-/1	SPACE ONLY			0
37	-/1	SPACE ONLY	0			38	-/1	SPACE ONLY	0		
39	-/1	SPACE ONLY		0		40	-/1	SPACE ONLY		0	
41	-/1	SPACE ONLY			0	42	-/1	SPACE ONLY			0
								TOTAL CONNECTED KVA BY PHASE	20.6	13.6	15.6
								TOTAL CONNECTED AMPS BY PHASE	74.3	49	56.2

	CONN KVA	CALC KVA			CONN KVA	CALC KVA	
LARGEST MOTOR	11.6	2.91	(25%)	MOTORS	11.7	11.7	(100%)
				HEATING	38	38	(100%)
				TOTAL LOAD		52.6	
				BALANCED 3-PHASE AMPS		63.3	

2LB

ROOM: DATA 2201 | VOLTS: 208Y/120V 3P 4W | AIC: 10,000
MOUNTING: SURFACE | BUS AMPS: 100 | MAIN BKR: MLO
FED FROM: 1LB | NEUTRAL: 100% | LUGS: STANDARD
NOTE:

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	B	C	CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	B	C
1	20/1	REC	0.36			2	20/1	SPARE	0		
3	20/1	REC		0.9		4	20/1	SPARE		0	
5	20/1	(*) REC-VENDING			1	6	20/1	SPARE			0
7	20/1	(*) REC-VENDING	1			8	20/1	SPARE	0		
9	20/1	REC		0.72		10	20/1	SPARE		0	
11	20/1	REC			0.9	12	20/1	SPARE			0
13	20/1	REC	0.72			14	20/1	SPARE	0		
15	20/1	SPARE		0		16	20/1	SPARE		0	
17	20/1	SPARE			0	18	20/1	SPARE			0
19	20/1	SPARE	0			20	20/1	SPARE	0		
21	20/1	SPARE		0		22	20/1	SPARE		0	
23	20/1	SPARE			0	24	20/1	SPARE			0
25	20/1	SPARE	0			26	20/1	SPARE	0		
27	20/1	SPARE		0		28	20/1	SPARE		0	
29	20/1	SPARE			0	30	20/1	SPARE			0
31	20/1	SPARE	0			32	20/1	SPARE	0		
33	20/1	SPARE		0		34	20/1	SPARE		0	
35	20/1	SPARE			0	36	20/1	SPARE			0
37	20/1	SPARE	0			38	20/1	SPARE	0		
39	20/1	SPARE		0		40	20/1	SPARE		0	
41	20/1	SPARE			0	42	20/1	SPARE			0
								TOTAL CONNECTED KVA BY PHASE	2.08	1.62	1.9
								TOTAL CONNECTED AMPS BY PHASE	17.3	13.5	15.8

	CONN KVA	CALC KVA			CALC KVA
RECEPTACLES	3.6	3.6	(50%>10)	TOTAL LOAD	5.6
NONCONTINUOUS	2	2	(100%)	BALANCED 3-PHASE AMPS	15.5

(*) INDICATES GFCI C/B

1ELB

ROOM: MECHANICAL 1203 | VOLTS: 208Y/120V 3P 4W | AIC: 10,000
MOUNTING: SURFACE | BUS AMPS: 225 | MAIN BKR: MLO
FED FROM: CBT1ELB | NEUTRAL: 100% | LUGS: STANDARD
NOTE:

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	B	C	CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	B	C
1	20/1	REC, REC-FLOOR, REC-TV	1.66			2	20/1	REC, REC-COPIER	1.18		
3	20/1	REC-COPIER		1		4	20/1	REC		0.54	
5	20/1	(*) REC-REFRIGERATOR, REC			0.86	6	20/1	REC-FLOOR			0.72
7	20/1	(*) REC-REFRIGERATOR, REC	0.68			8	20/1	REC, REC-TV	1.3		
9	20/1	REC		1.08		10	20/1	REC		1.08	
11	20/1	REC, REC-COPIER			1.36	12	20/1	REC			0.72
13	20/1	REC-FLOOR	0.36			14	20/1	REC-FLOOR	1.08		
15	20/1	REC-FLOOR		1.08		16	20/1	REC		0.36	
17	20/1	REC, REC-FLOOR, REC-TV			1.3	18	20/1	REC			0.36
19	20/1	REC	0.72			20	20/1	REC	0.36		
21	20/1	SPARE		0		22	20/1	DDC J-BOX		0.15	
23	20/1	SPARE			0	24	20/1	SOUND EMITTER			1
25	20/1	SPARE	0			26	20/1	SPARE	0		
27	20/1	SPARE		0		28	20/1	SPARE		0	
29	20/1	SPARE			0	30	20/1	SPARE			0
31	20/1	SPARE	0			32	20/1	SPARE	0		
33	20/1	SPARE		0		34	20/1	SPARE		0	
35	20/1	SPARE			0	36	20/1	SPARE			0
37	100/3	PANEL 3ELB	4.1			38	100/3	PANEL 2ELB	1.51		
39	|			4.34		40	|			3.34	
41	|				3.56	42	|				1.5
								TOTAL CONNECTED KVA BY PHASE	13	13	11.4
								TOTAL CONNECTED AMPS BY PHASE	108	108	94.8

	CONN KVA	CALC KVA			CALC KVA
RECEPTACLES	28.4	19.2	(50%>10)	TOTAL LOAD	28.1
NONCONTINUOUS	8.9	8.9	(100%)	BALANCED 3-PHASE AMPS	78

(*) INDICATES GFCI C/B

1HQFB

ROOM: MECHANICAL 1203 | VOLTS: 480Y/277V 3P 4W | AIC: 25,000
MOUNTING: SURFACE | BUS AMPS: 400 | MAIN BKR: MLO
FED FROM: 1HQD | NEUTRAL: 100% | LUGS: STANDARD
NOTE:

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	B	C	CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	B	C
1	15/3	AHU #13	2.11			2	15/1	VAV 13-3	3		
3	|			2.11		4	40/1	VAV 13-1		8	
5	|				2.11	6	40/1	VAV 13-2			8
7	35/1	VAV 13-4	7			8	15/3	UNIT HEATER UH#6	1.7		
9	25/1	VAV 13-5		5		10	|			1.7	
11	-/1	SPACE ONLY			0	12	|				1.7
13	-/1	SPACE ONLY	0			14	-/1	SPACE ONLY	0		
15	-/1	SPACE ONLY		0		16	-/1	SPACE ONLY		0	
17	-/1	SPACE ONLY			0	18	-/1	SPACE ONLY			0
19	-/1	SPACE ONLY	0			20	-/1	SPACE ONLY	0		
21	-/1	SPACE ONLY		0		22	-/1	SPACE ONLY		0	
23	-/1	SPACE ONLY			0	24	-/1	SPACE ONLY			0
25	-/1	SPACE ONLY	0			26	-/1	SPACE ONLY	0		
27	-/1	SPACE ONLY		0		28	-/1	SPACE ONLY		0	
29	-/1	SPACE ONLY			0	30	-/1	SPACE ONLY			0
31	125/3	PANEL 3HQFB	10			32	-/1	SPACE ONLY	0		
33	|			7.5		34	-/1	SPACE ONLY		0	
35	|				15	36	-/1	SPACE ONLY			0
37	250/3	PANEL 2HQFB	20.6			38	-/1	SPACE ONLY	0		
39	|			13.6		40	-/1	SPACE ONLY		0	
41	|				15.6	42	-/1	SPACE ONLY			0
								TOTAL CONNECTED KVA BY PHASE	44.4	37.9	42.4
								TOTAL CONNECTED AMPS BY PHASE	160	137	153

	CONN KVA	CALC KVA			CONN KVA	CALC KVA	
LARGEST MOTOR	11.6	2.91	(25%)	MOTORS	18.2	18.2	(100%)
				HEATING	107	107	(100%)
				TOTAL LOAD		128	
				BALANCED 3-PHASE AMPS		153	

1LB

ROOM: MECHANICAL 1203 | VOLTS: 208Y/120V 3P 4W | AIC: 10,000
MOUNTING: SURFACE | BUS AMPS: 225 | MAIN BKR: MLO
FED FROM: 1LD | NEUTRAL: 100% | LUGS: STANDARD
NOTE:

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	B	C	CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	B	C
1	20/1	SPARE	0			2	20/1	REC	0.9		
3	20/1	EXH FAN, REC		1.05		4	20/1	REC, REC-EXT GFCI, REC-FLOOR		1.08	
5	20/1	EXH FAN, REC			0.87	6	20/1	EXH FAN, REC, REC-FLOOR			1.2
7	20/1	REC	0.54			8	20/1	SPARE	0		
9	20/1	REC		0.72		10	20/1	SPARE		0	
11	20/1	GATE OPERATOR			0.864	12	20/1	SPARE			0
13	20/1	GATE OPERATOR	0.864			14	20/1	SPARE	0		
15	20/1	SPARE		0		16	20/1	SPARE		0	
17	20/1	SPARE			0	18	20/1	SPARE			0
19	20/1	SPARE	0			20	20/1	SPARE	0		
21	20/1	SPARE		0		22	20/1	SPARE		0	
23	20/1	SPARE			0	24	20/1	SPARE			0
25	20/1	SPARE	0			26	20/1	SPARE	0		
27	20/1	SPARE		0		28	20/1	SPARE		0	
29	20/1	SPARE			0	30	20/1	SPARE			0
31	100/3	PANEL 3LB	2.52			32	25/2	DHP-1	2		
33	|			2.26		34	|			2	
35	|				2.26	36	25/2	DHP-2			2
37	100/3	PANEL 2LB	2.08			38	|		2		
39	|			1.62		40	25/2	DHP-3		2	
41	|				1.9	42	|				2
								TOTAL CONNECTED KVA BY PHASE	10.9	10.7	11.1
								TOTAL CONNECTED AMPS BY PHASE	90.8	89.4	92.4

	CONN KVA	CALC KVA			CONN KVA	CALC KVA	
LARGEST MOTOR	4	1	(25%)	NONCONTINUOUS	2	2	(100%)
MOTORS	2.53	2.53	(100%)	HEATING	12	12	(100%)
RECEPTACLES	16.2	13.1	(50%>10)	COOLING	12	0	(0%)
				TOTAL LOAD		30.6	
				BALANCED 3-PHASE AMPS		85	

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Brunswick County Courthouse Addition & Renovations

Bolivia, NC

CONSTRUCTION DRAWINGS
SEPTEMBER 23, 2019

Revisions:

ELECTRICAL PANEL SCHEDULES

E6.2

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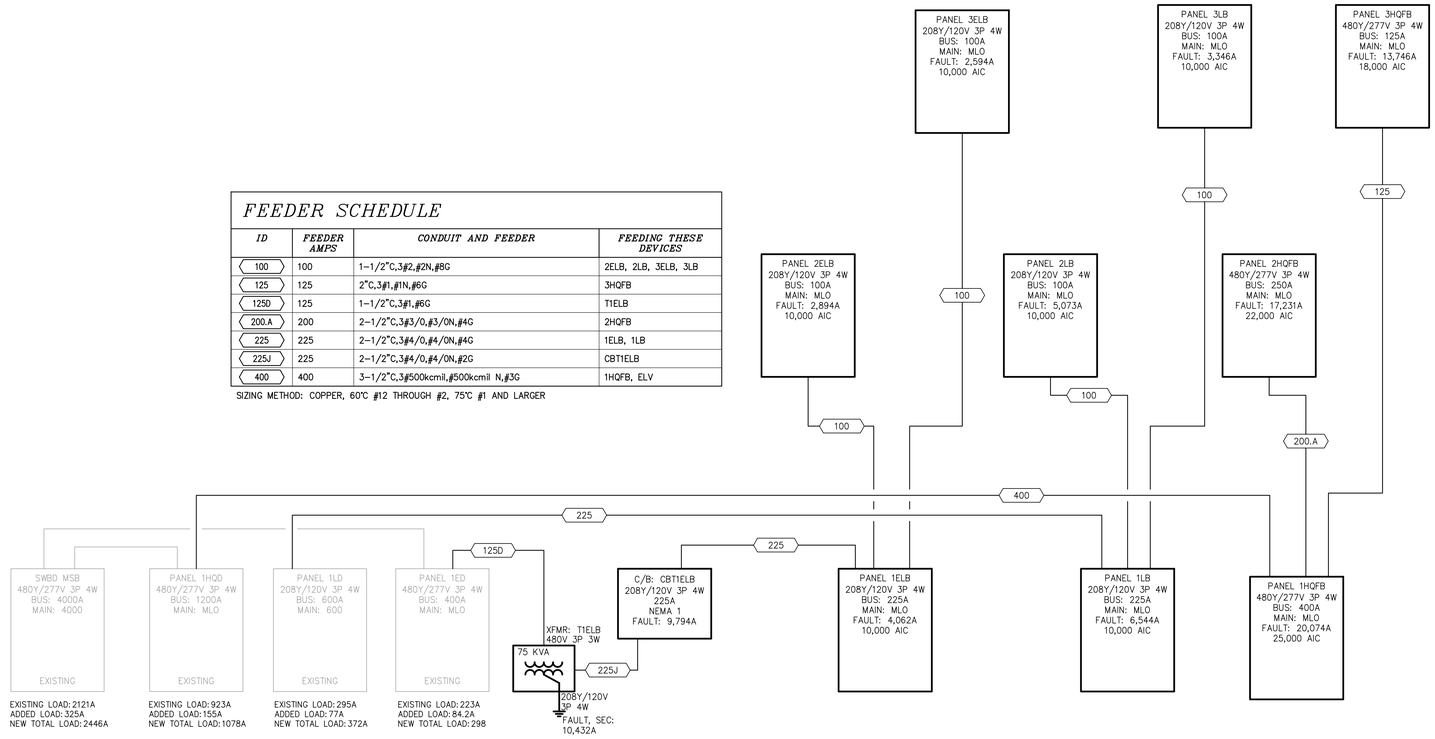
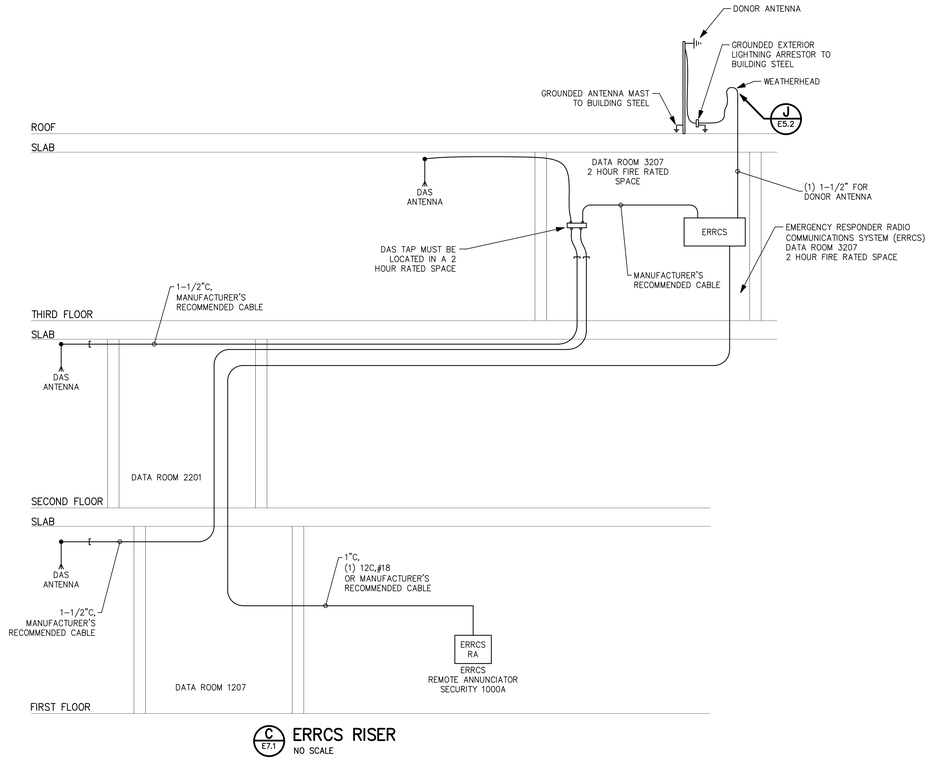
FEEDER SCHEDULE

ID	FEEDER AMPS	CONDUIT AND FEEDER	FEEDING THESE DEVICES
100	100	1-1/2"C,3#2,#2N,#8G	2ELB, 2LB, 3ELB, 3LB
125	125	2"C,3#1,#1N,#6G	3HQFB
125D	125	1-1/2"C,3#1,#6G	T1ELB
200.A	200	2-1/2"C,3#3/0,#3/0N,#4G	2HQFB
225	225	2-1/2"C,3#4/0,#4/0N,#4G	1ELB, 1LB
225J	225	2-1/2"C,3#4/0,#4/0N,#2G	CBT1ELB
400	400	3-1/2"C,3#500kcmil,#500kcmil N,#3G	1HQFB, ELV

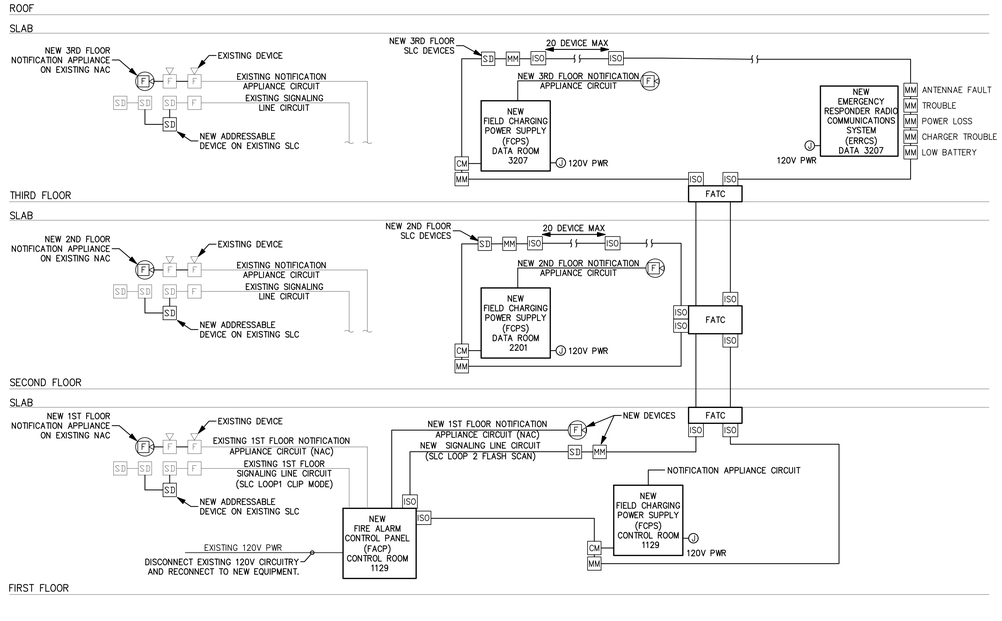
SIZING METHOD: COPPER, 60°C #12 THROUGH #2, 75°C #1 AND LARGER



A E7.1 **ELECTRICAL RISER DIAGRAM**
SCALE: NO SCALE



C E7.1 **ERRCS RISER**
NO SCALE



B E7.1 **FIRE ALARM RISER DIAGRAM**
SCALE: NO SCALE

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Brunswick County Courthouse Addition & Renovations

Bolivia, NC

CONSTRUCTION DRAWINGS
SEPTEMBER 23, 2019

Revisions:

ELECTRICAL RISERS

E7.1

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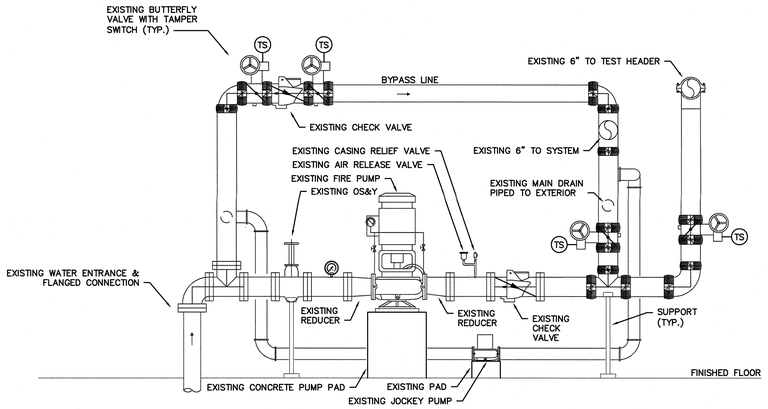
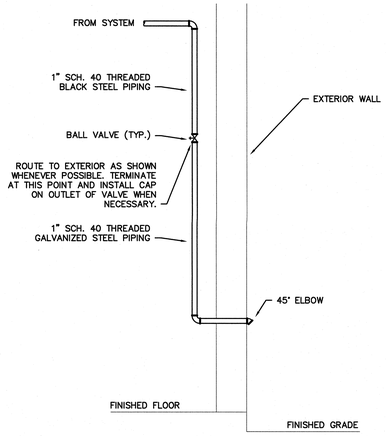
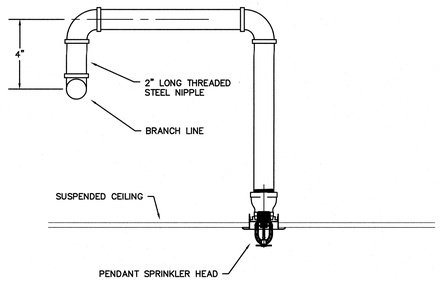


A F0.1 EXISTING SPRINKLER ENTRANCE DETAIL
NO SCALE



B F0.1 AUXILIARY DRAIN DETAIL
NO SCALE



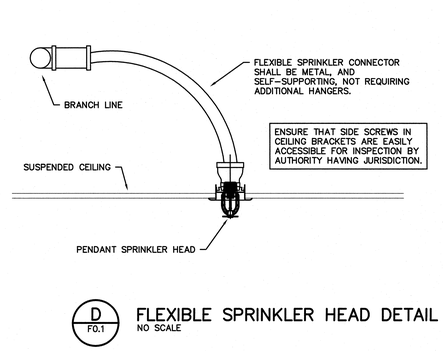
C F0.1 ARMOVER DETAIL
NO SCALE

GENERAL NOTES: (APPLIES TO ALL FIRE PROTECTION DRAWINGS)

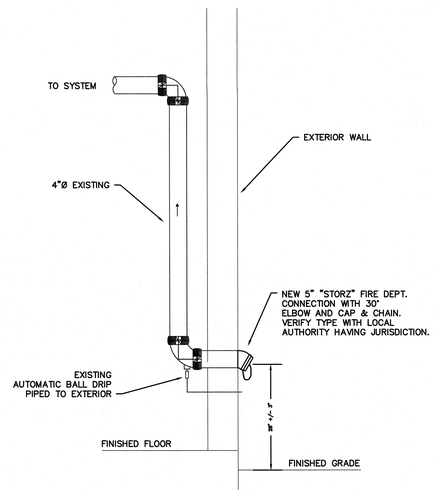
1. SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH BUILDING STRUCTURE AND SYSTEMS, AS WELL AS THE WORK OF OTHER TRADES IN ORDER TO ELIMINATE CONFLICTS.
2. EXISTING SPRINKLER SYSTEM SHALL BE COMPLETELY DRAINED PRIOR TO START OF WORK. IT IS ACCEPTABLE TO DRAIN ONLY ONE OR MORE FLOORS BY UTILIZING THE EXISTING ZONE CONTROL VALVES. LOCATIONS ARE INDICATED ON THE PLANS.
3. PRIOR TO START OF WORK, GENERAL CONTRACTOR AND SPRINKLER CONTRACTOR SHALL CONTACT THE BRUNSWICK COUNTY FIRE MARSHAL, ANDREW THOMPSON, TO SET UP A MEETING TO COORDINATE INSPECTIONS.
4. SPRINKLER CONTRACTOR'S DESIGN SHALL BE PER NFPA 13 AND THE NC STATE FIRE CODE (LATEST EDITION APPROVED BY THE NC BUILDING CODE COUNCIL WITH NC AMENDMENTS).
5. PROVIDE AUXILIARY DRAINS WHEREVER PIPING IS ROUTED SUCH THAT WATER IS TRAPPED IN EXCESS OF 5 GALLONS.
6. LIGHT HAZARD OCCUPANCIES: PER NFPA 13, DESIGN AREA SHALL BE 0.1 GPM PER SQUARE FOOT OVER THE MOST REMOTE 1,500 SQUARE FEET. REMOTE AREA MAY BE DECREASED IN AREAS WITH CEILINGS LOWER THAN 20 FEET AFF AND QUICK RESPONSE HEADS PER NFPA 13. HOSE ALLOWANCE FOR LIGHT HAZARD SHALL BE 100 GPM PER NFPA 13.
7. ORDINARY HAZARD I OCCUPANCIES: PER NFPA 13, DESIGN DENSITY SHALL BE 0.15 GPM PER SQUARE FOOT OVER THE MOST REMOTE 1,500 SQUARE FEET. REMOTE AREA MAY BE DECREASED IN AREAS WITH CEILINGS LOWER THAN 20 FEET AFF AND QUICK RESPONSE HEADS PER NFPA 13. HOSE ALLOWANCE FOR ORDINARY HAZARD I SHALL BE 250 GPM PER NFPA 13.
8. ORDINARY HAZARD II OCCUPANCIES: PER NFPA 13, DESIGN DENSITY SHALL BE 0.2 GPM PER SQUARE FOOT OVER THE MOST REMOTE 1,500 SQUARE FEET. REMOTE AREA MAY BE DECREASED IN AREAS WITH CEILINGS LOWER THAN 20 FEET AFF AND QUICK RESPONSE HEADS PER NFPA 13. HOSE ALLOWANCE FOR ORDINARY HAZARD II SHALL BE 250 GPM PER NFPA 13.
9. EXISTING INFORMATION IS BASED ON A FIELD SURVEY AND EXISTING DRAWINGS. SOME INFORMATION PRESENTED IS ESTIMATED OR ASSUMED BASED ON EXPERIENCE. CONTRACTOR SHALL FIELD VERIFY CONDITIONS BEFORE AND DURING THE COURSE OF WORK AND ALERT THE ARCHITECT AND/OR ENGINEER OF DIFFERENCES BETWEEN FIELD CONDITIONS AND THE DRAWINGS THAT WILL ALTER THE DESIGN INTENT INDICATED ON THE DRAWINGS.



F F0.1 DESIGN FLOW TEST SITE DIAGRAM
NO SCALE



D F0.1 FLEXIBLE SPRINKLER HEAD DETAIL
NO SCALE



E F0.1 FIRE DEPT. CONNECTION
NO SCALE

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CONSTRUCTION DRAWINGS
SEPTEMBER 23, 2019

Revisions:

FIRE PROTECTION DETAILS AND GENERAL NOTES

F0.1

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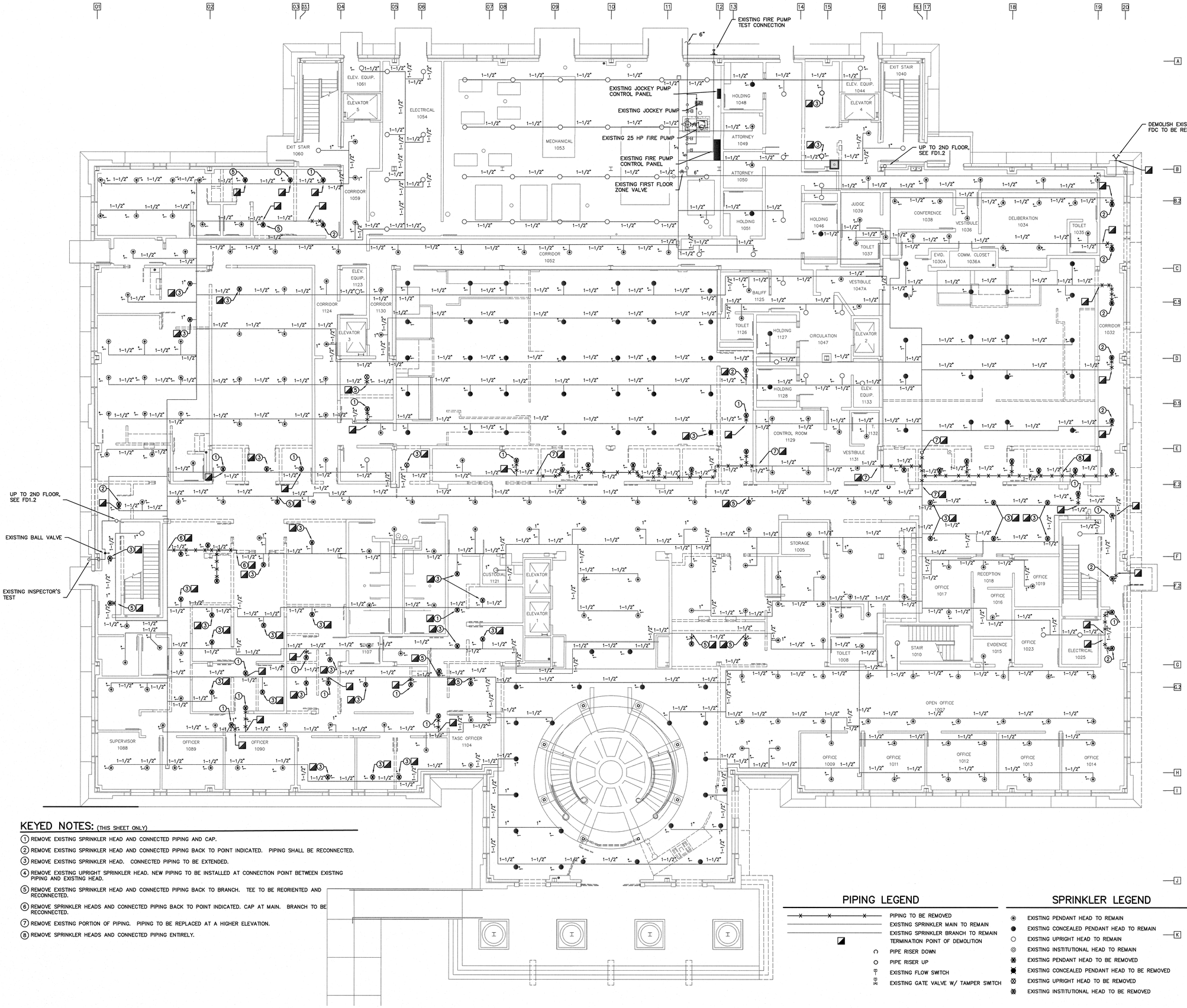

KEYED NOTES: (THIS SHEET ONLY)

1. REMOVE EXISTING SPRINKLER HEAD AND CONNECTED PIPING AND CAP.
2. REMOVE EXISTING SPRINKLER HEAD AND CONNECTED PIPING BACK TO POINT INDICATED. PIPING SHALL BE RECONNECTED.
3. REMOVE EXISTING SPRINKLER HEAD. CONNECTED PIPING TO BE EXTENDED.
4. REMOVE EXISTING UPRIGHT SPRINKLER HEAD. NEW PIPING TO BE INSTALLED AT CONNECTION POINT BETWEEN EXISTING PIPING AND EXISTING HEAD.
5. REMOVE EXISTING SPRINKLER HEAD AND CONNECTED PIPING BACK TO BRANCH. TEE TO BE REORIENTED AND RECONNECTED.
6. REMOVE SPRINKLER HEADS AND CONNECTED PIPING BACK TO POINT INDICATED. CAP AT MAIN. BRANCH TO BE RECONNECTED.
7. REMOVE EXISTING PORTION OF PIPING. PIPING TO BE REPLACED AT A HIGHER ELEVATION.
8. REMOVE SPRINKLER HEADS AND CONNECTED PIPING ENTIRELY.

PIPING LEGEND

- PIPING TO BE REMOVED
- EXISTING SPRINKLER MAIN TO REMAIN
- EXISTING SPRINKLER BRANCH TO REMAIN
- TERMINATION POINT OF DEMOLITION
- PIPE RISER DOWN
- PIPE RISER UP
- EXISTING FLOW SWITCH
- EXISTING GATE VALVE W/ TAMPER SWITCH

SPRINKLER LEGEND

- EXISTING PENDANT HEAD TO REMAIN
- EXISTING CONCEALED PENDANT HEAD TO REMAIN
- EXISTING UPRIGHT HEAD TO REMAIN
- EXISTING INSTITUTIONAL HEAD TO REMAIN
- EXISTING PENDANT HEAD TO BE REMOVED
- EXISTING CONCEALED PENDANT HEAD TO BE REMOVED
- EXISTING UPRIGHT HEAD TO BE REMOVED
- EXISTING INSTITUTIONAL HEAD TO BE REMOVED

1 FD1.1 FIRE PROTECTION DEMOLITION PLAN – FIRST FLOOR
SCALE: 1/8" = 1'-0"

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FIRE PROTECTION DEMOLITION PLAN FIRST FLOOR

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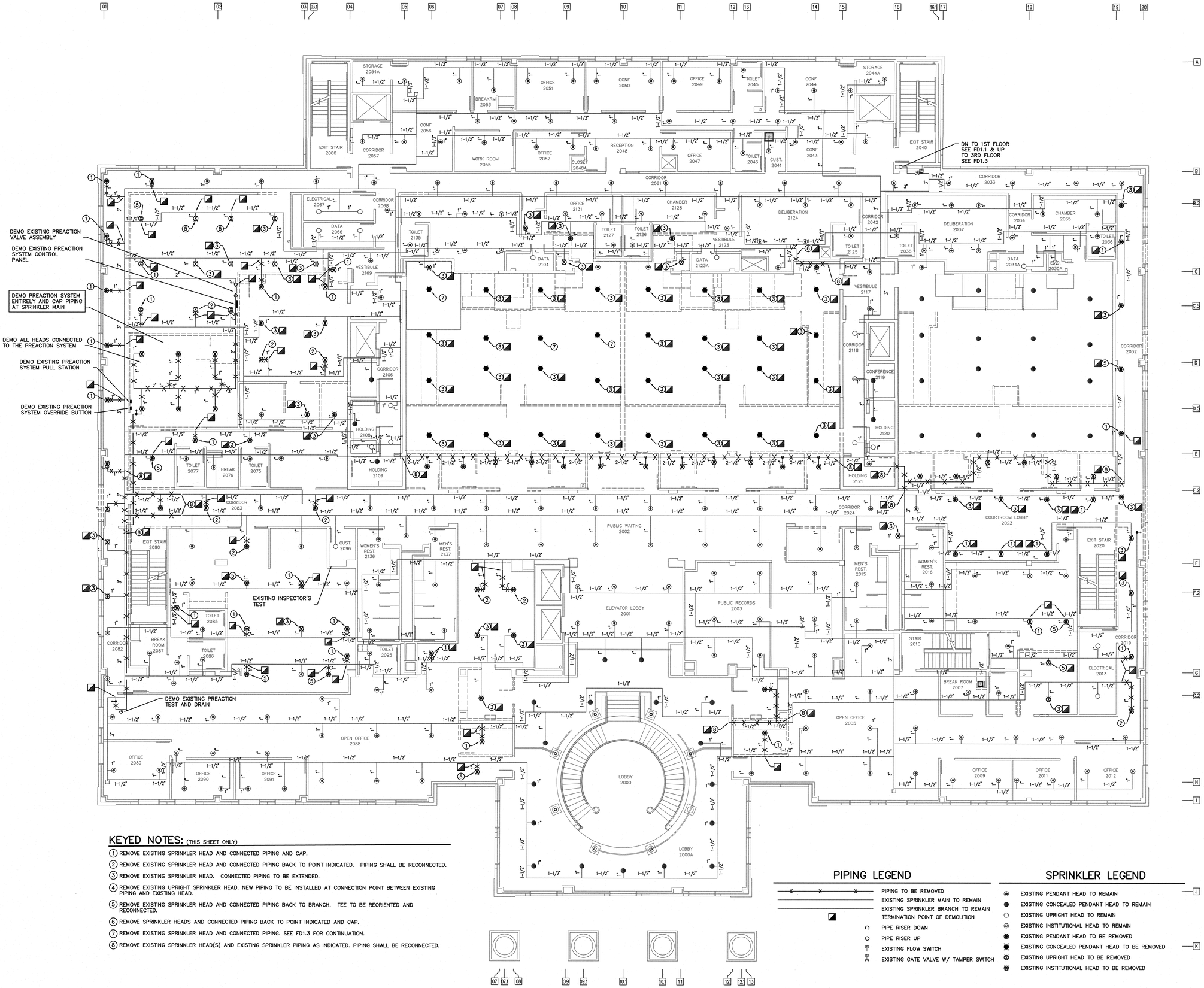

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2. REMOVE EXISTING SPRINKLER HEAD AND CONNECTED PIPING BACK TO POINT INDICATED. PIPING SHALL BE RECONNECTED.
3. REMOVE EXISTING SPRINKLER HEAD. CONNECTED PIPING TO BE EXTENDED.
4. REMOVE EXISTING UPRIGHT SPRINKLER HEAD. NEW PIPING TO BE INSTALLED AT CONNECTION POINT BETWEEN EXISTING PIPING AND EXISTING HEAD.
5. REMOVE EXISTING SPRINKLER HEAD AND CONNECTED PIPING BACK TO BRANCH. TEE TO BE REORIENTED AND RECONNECTED.
6. REMOVE SPRINKLER HEADS AND CONNECTED PIPING BACK TO POINT INDICATED AND CAP.
7. REMOVE EXISTING SPRINKLER HEAD AND CONNECTED PIPING. SEE FD1.3 FOR CONTINUATION.
8. REMOVE EXISTING SPRINKLER HEAD(S) AND EXISTING SPRINKLER PIPING AS INDICATED. PIPING SHALL BE RECONNECTED.

PIPING LEGEND

- PIPING TO BE REMOVED
- EXISTING SPRINKLER MAIN TO REMAIN
- EXISTING SPRINKLER BRANCH TO REMAIN
- TERMINATION POINT OF DEMOLITION
- PIPE RISER DOWN
- PIPE RISER UP
- EXISTING FLOW SWITCH
- EXISTING GATE VALVE W/ TAMPER SWITCH

SPRINKLER LEGEND

- EXISTING PENDANT HEAD TO REMAIN
- EXISTING CONCEALED PENDANT HEAD TO REMAIN
- EXISTING UPRIGHT HEAD TO REMAIN
- EXISTING INSTITUTIONAL HEAD TO REMAIN
- EXISTING PENDANT HEAD TO BE REMOVED
- EXISTING CONCEALED PENDANT HEAD TO BE REMOVED
- EXISTING UPRIGHT HEAD TO BE REMOVED
- EXISTING INSTITUTIONAL HEAD TO BE REMOVED

07 07.1 08 09 09.1 10.1 10.2 11 12 12.1 13

1 FD1.2 FIRE PROTECTION DEMOLITION PLAN – SECOND FLOOR
SCALE: 1/8" = 1'-0"

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FIRE PROTECTION DEMOLITION PLAN SECOND FLOOR

FD1.2

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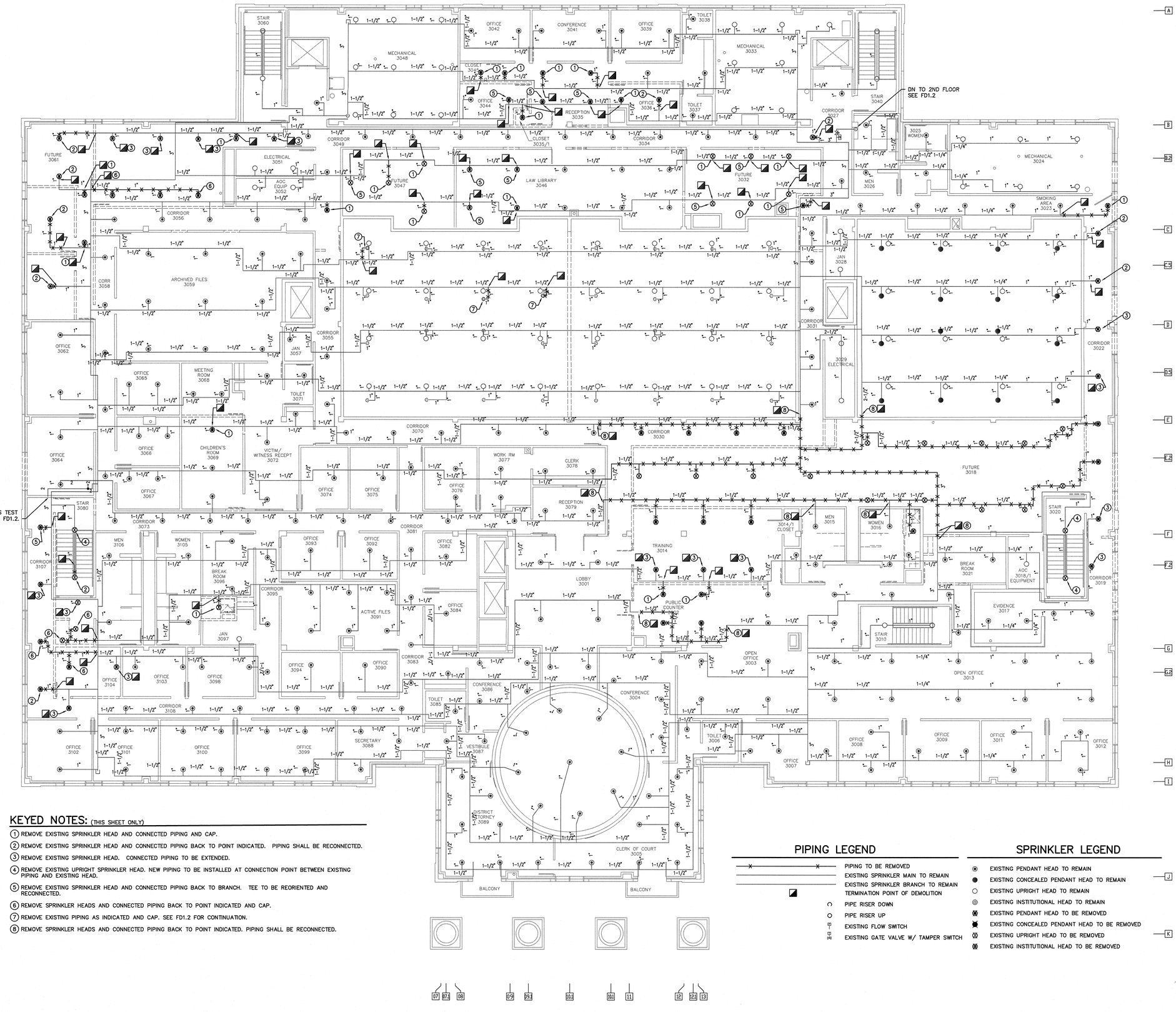

KEYED NOTES: (THIS SHEET ONLY)

1. REMOVE EXISTING SPRINKLER HEAD AND CONNECTED PIPING AND CAP.
2. REMOVE EXISTING SPRINKLER HEAD AND CONNECTED PIPING BACK TO POINT INDICATED. PIPING SHALL BE RECONNECTED.
3. REMOVE EXISTING SPRINKLER HEAD. CONNECTED PIPING TO BE EXTENDED.
4. REMOVE EXISTING UPRIGHT SPRINKLER HEAD. NEW PIPING TO BE INSTALLED AT CONNECTION POINT BETWEEN EXISTING PIPING AND EXISTING HEAD.
5. REMOVE EXISTING SPRINKLER HEAD AND CONNECTED PIPING BACK TO BRANCH. TEE TO BE REORIENTED AND RECONNECTED.
6. REMOVE SPRINKLER HEADS AND CONNECTED PIPING BACK TO POINT INDICATED AND CAP.
7. REMOVE EXISTING PIPING AS INDICATED AND CAP. SEE FD1.2 FOR CONTINUATION.
8. REMOVE SPRINKLER HEADS AND CONNECTED PIPING BACK TO POINT INDICATED. PIPING SHALL BE RECONNECTED.

PIPING LEGEND

- PIPING TO BE REMOVED
- EXISTING SPRINKLER MAIN TO REMAIN
- EXISTING SPRINKLER BRANCH TO REMAIN
- TERMINATION POINT OF DEMOLITION
- PIPE RISER DOWN
- PIPE RISER UP
- FS — EXISTING FLOW SWITCH
- TS — EXISTING GATE VALVE W/ TAMPER SWITCH

SPRINKLER LEGEND

- EXISTING PENDANT HEAD TO REMAIN
- EXISTING CONCEALED PENDANT HEAD TO REMAIN
- EXISTING UPRIGHT HEAD TO REMAIN
- EXISTING INSTITUTIONAL HEAD TO REMAIN
- EXISTING PENDANT HEAD TO BE REMOVED
- EXISTING CONCEALED PENDANT HEAD TO BE REMOVED
- EXISTING UPRIGHT HEAD TO BE REMOVED
- EXISTING INSTITUTIONAL HEAD TO BE REMOVED

1 FD1.3 FIRE PROTECTION DEMOLITION PLAN – THIRD FLOOR
SCALE: 1/8" = 1'-0"

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FIRE PROTECTION DEMOLITION PLAN THIRD FLOOR

FD1.3

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PROVIDE SIGN ON DOOR INDICATING "SPRINKLER RISER ROOM"

EXISTING FIRE PUMP TEST CONNECTION

EXISTING JOCKEY PUMP CONTROL PANEL

EXISTING JOCKEY PUMP

EXISTING 25 HP FIRE PUMP

EXISTING FIRE PUMP CONTROL PANEL

EXISTING FIRST FLOOR ZONE VALVE

REPLACE FDC PER DETAIL ON DRAWING F0.1

UP TO 2ND FLOOR, SEE FD1.2

PROVIDE LISTED EXPANSION LOOP WHERE PIPING CROSSES EXPANSION JOINT

SPRINKLER MAIN

SPRINKLER MAIN

PROVIDE WHITE SIGN WITH RED LETTERS STATING "FDC AT REAR OF BUILDING"

SPRINKLER MAIN

UP TO 2ND FLOOR, SEE FD1.2

EXISTING BALL VALVE

EXISTING INSPECTOR'S TEST, PROVIDE CONCRETE SPLASH BLOCK

KEYED NOTES: (THIS SHEET ONLY)

1. ADJUST POSITION OF EXISTING SPRINKLER HEAD TO BE CENTERED IN NEW CEILING TILE.
2. INSTALL NEW SPRINKLER HEAD.

WALL LEGEND

- 1-HOUR WALL DESIGNATION
- 2-HOUR WALL DESIGNATION
- 3-HOUR WALL DESIGNATION

SPRINKLER LEGEND

- RECESSED PENDANT HEAD
- CONCEALED PENDANT HEAD
- UPRIGHT HEAD
- INSTITUTIONAL HEAD
- EXISTING PENDANT HEAD TO REMAIN
- EXISTING CONCEALED PENDANT HEAD TO REMAIN
- EXISTING UPRIGHT HEAD TO REMAIN
- EXISTING INSTITUIONAL HEAD TO REMAIN

PIPING LEGEND

- EXISTING SPRINKLER MAIN TO REMAIN
- EXISTING SPRINKLER BRANCH TO REMAIN
- SPRINKLER MAIN
- SPRINKLER BRANCH
- POINT OF NEW CONNECTION TO EXISTING
- CAP
- PIPE RISER DOWN
- PIPE RISER UP
- EXISTING FLOW SWITCH
- EXISTING GATE VALVE W/ TAMPER SWITCH

HAZARD LEGEND

- LIGHT HAZARD
- ORDINARY HAZARD I

1 F1.1 FIRE PROTECTION RENOVATION PLAN – FIRST FLOOR
SCALE: 1/8" = 1'-0"

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FIRE PROTECTION RENOVATION PLAN FIRST FLOOR

F1.1

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DRAIN FROM INSPECTOR'S TEST DN TO 1ST FLOOR & UP TO THIRD FLOOR. SEE F1.1 AND F1.3.

DN TO 1ST FLOOR SEE F1.1 & UP TO 3RD FLOOR SEE F1.3

PROVIDE LISTED EXPANSION LOOP WHERE PIPING CROSSES EXPANSION JOINT

NOTE: STORAGE FILING SHELVES TO BE PROVIDED PER ALTERNATE G-2 (SEE ARCH). THIS ROOM SHALL BE DESIGNED TO ORDINARY HAZARD II UNDER BASE BID AND UNDER ALTERNATE G-2.

KEYED NOTES: (THIS SHEET ONLY)

1. CONNECT 1" SPRINKLER PIPING TO EXISTING 1" SPRINKLER PIPING ABOVE. SEE F1.3 FOR CONTINUATION.

WALL LEGEND

- 1-HOUR WALL DESIGNATION
- 2-HOUR WALL DESIGNATION
- 3-HOUR WALL DESIGNATION

SPRINKLER LEGEND

- RECESSED PENDANT HEAD
- CONCEALED PENDANT HEAD
- UPRIGHT HEAD
- INSTITUTIONAL HEAD
- EXISTING PENDANT HEAD TO REMAIN
- EXISTING CONCEALED PENDANT HEAD TO REMAIN
- EXISTING UPRIGHT HEAD TO REMAIN
- EXISTING INSTITUTIONAL HEAD TO REMAIN

PIPING LEGEND

- EXISTING SPRINKLER MAIN TO REMAIN
- EXISTING SPRINKLER BRANCH TO REMAIN
- SPRINKLER MAIN
- SPRINKLER BRANCH
- POINT OF NEW CONNECTION TO EXISTING
- CAP
- PIPE RISER DOWN
- PIPE RISER UP
- EXISTING FLOW SWITCH
- EXISTING GATE VALVE W/ TAMPER SWITCH

HAZARD LEGEND

- LIGHT HAZARD
- ORDINARY HAZARD I
- ORDINARY HAZARD II

1 / F1.2 FIRE PROTECTION RENOVATION PLAN – SECOND FLOOR
SCALE: 1/8" = 1'-0"

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FIRE PROTECTION RENOVATION PLAN SECOND FLOOR

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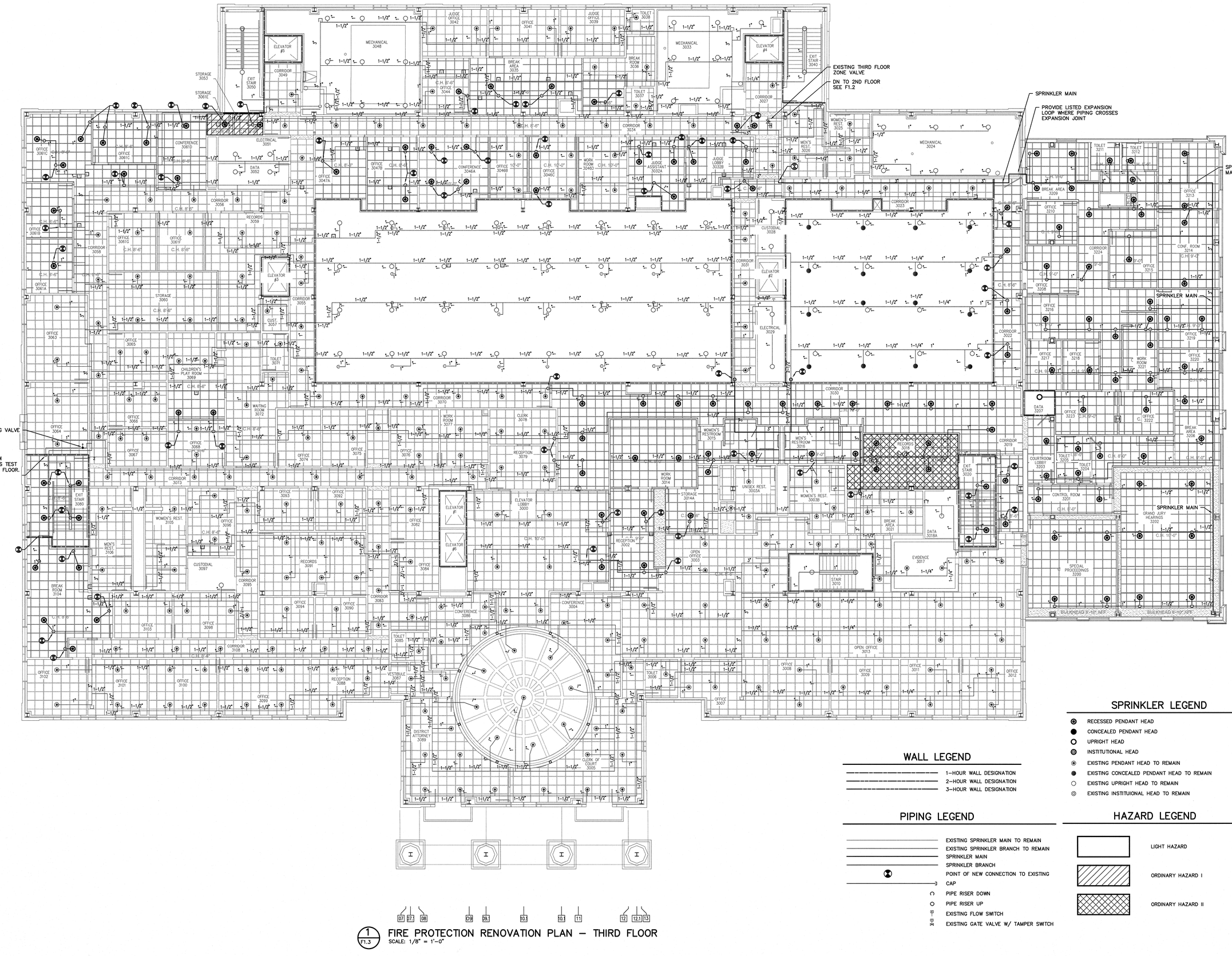

WALL LEGEND

- 1-HOUR WALL DESIGNATION
- 2-HOUR WALL DESIGNATION
- 3-HOUR WALL DESIGNATION

SPRINKLER LEGEND

- RECESSED PENDANT HEAD
- CONCEALED PENDANT HEAD
- UPRIGHT HEAD
- INSTITUTIONAL HEAD
- EXISTING PENDANT HEAD TO REMAIN
- EXISTING CONCEALED PENDANT HEAD TO REMAIN
- EXISTING UPRIGHT HEAD TO REMAIN
- EXISTING INSTITUIONAL HEAD TO REMAIN

PIPING LEGEND

- EXISTING SPRINKLER MAIN TO REMAIN
- EXISTING SPRINKLER BRANCH TO REMAIN
- SPRINKLER MAIN
- SPRINKLER BRANCH
- POINT OF NEW CONNECTION TO EXISTING
- CAP
- PIPE RISER DOWN
- PIPE RISER UP
- EXISTING FLOW SWITCH
- EXISTING GATE VALVE W/ TAMPER SWITCH

HAZARD LEGEND

- LIGHT HAZARD
- ORDINARY HAZARD I
- ORDINARY HAZARD II

07 07.1 08 09 09.1 10.1 10.1 11 12 12.1 13

1 / F1.3 FIRE PROTECTION RENOVATION PLAN – THIRD FLOOR
SCALE: 1/8" = 1'-0"

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FIRE PROTECTION RENOVATION PLAN THIRD FLOOR

F1.3

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