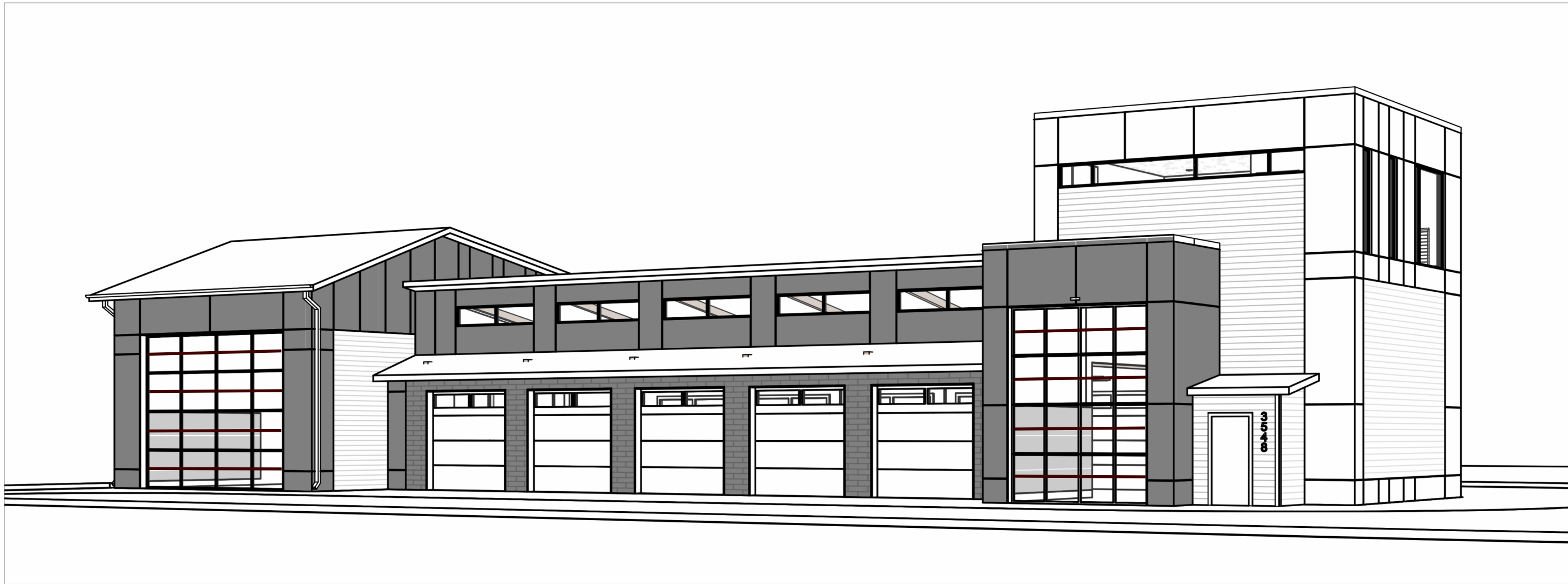


OFFICE ANNEX

CONSTRUCTION DOCUMENTS

7/14/2023

6725 MONUMENT DRIVE.
WILMINGTON, NC 28405



DESIGN TEAM

ARCHITECT

MARK LOUDERMILK
ARCHITECTURE, PLLC.

PLUMBING, MECHANICAL,
ELECTRICAL ENGINEERS
OT ENGINEERING, PLLC

STRUCTURAL ENGINEERS

WOODS ENGINEERING, PA

GENERAL NOTES

- CODES:** ALL WORK ON THIS PROJECT SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE BUILDING CODES, ORDINANCES, REGULATIONS, STANDARDS, AND ANY ADDITIONAL REQUIREMENT STATED IN ANY LAW, ORDINANCE, OR REGULATION PERTAINING TO CONSTRUCTION WITHIN THE LIMITS OF THE AUTHORITY HAVING JURISDICTION OVER THE PROPOSED WORK (INCLUDING BUT NOT LIMITED TO: FIRE, ACCESSIBILITY, ZONING, WATER, WASTEWATER, ENVIRONMENTAL, STRUCTURAL, ARCHITECTURAL, HEALTH, FIRE PROTECTION, PLUMBING, MECHANICAL, ELECTRICAL, AND ENERGY CONSERVATION). CONFORMITY TO ALL CODES APPLICABLE TO THIS PROJECT SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
- EGRESS:** ALL MEANS OF EGRESS SHALL BE CONTROLLED BY THE AUTHORITY HAVING JURISDICTION, INCLUDING EXITS, EXIT ACCESS, EXIT DISCHARGE, OTHER EGRESS PATHS, OCCUPANTS LOADS, SPRINKLER PROTECTION, ETC.
- ACCESSIBILITY:** ALL BUILDING COMPONENTS, FIXTURES, ACCESSORIES, ETC. SHALL BE INSTALLED WITH MANEUVERING AND OPERATING CLEARANCES, MOUNTING HEIGHTS, ETC. IN ACCORDANCE WITH AMERICANS WITH DISABILITIES ACT STANDARDS, ICC/ANSI A117.1, AND STATE ACCESSIBILITY CODE.
- FIELD VERIFICATION:** THE CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS AND PROPOSED BUILDING DIMENSIONS PRIOR TO CONSTRUCTION. ANY VARIATIONS, DISCREPANCIES, OR FIELD ALTERATIONS TO THESE DESIGN DRAWINGS SHALL BE BROUGHT TO THE ARCHITECT'S ATTENTION PRIOR TO CONSTRUCTION. IF CONTRACTOR COMMENCES CONSTRUCTION WITHOUT NOTIFYING ARCHITECT OF VARIATIONS, DISCREPANCIES, OR FIELD ALTERATIONS, THAT SHALL CONSTITUTE WAIVER TO ANY CLAIM BY CONTRACTOR FOR ADDITIONAL EXPENSES NECESSARY TO PERFORM WORK ASSOCIATED WITH THOSE CONDITIONS.
- SUBMITTALS:** CONTRACTOR SHALL SUBMIT ALL NECESSARY BUILDING COMPONENTS, SYSTEMS, EQUIPMENT, MATERIALS, FINISHES, ETC. FOR REVIEW BY ARCHITECT/OWNER PRIOR TO PROCUREMENT, FABRICATION, AND/OR INSTALLATION.
- INSTALLATION:** PROPER ASSEMBLY, INSTALLATION, AND OPERATION OF ALL MATERIALS, COMPONENTS, SYSTEMS, AND FINISHES IS THE CONTRACTOR'S RESPONSIBILITY AND SHALL BE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND ALL APPLICABLE CODES.
- INCIDENTAL WORK:** ANY ITEMS NOT SPECIFICALLY SHOWN ON THE DRAWINGS, BUT WHICH ARE REASONABLY INCIDENTAL TO AND NECESSARY FOR THE SATISFACTORY COMPLETION OF THE PROJECT IN ACCORDANCE WITH APPLICABLE CODES, ORDINANCES, REGULATIONS, AND STANDARDS, ARE INCLUDED WITHIN THE INTENT OF THESE DESIGN DRAWINGS.
- OWNER-PROVIDED WORK:** LOCATION OF ALL OWNER-PROVIDED FIXTURES, EQUIPMENT, ETC. SHALL BE COORDINATED TO ENSURE PROPER ALIGNMENT FOR INSTALLATION AND OPERATION, BLOCKING, ETC.
- SAFETY:** COMPONENTS FOR CONSTRUCTION SAFETY ARE NOT INDICATED IN THESE DRAWINGS. THE CONTRACTOR IS RESPONSIBLE TO COMPLY WITH ALL RULES AND OTHER REQUIREMENTS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA), AND APPLICABLE STATE AND LOCAL SAFETY REQUIREMENTS DURING ALL CONSTRUCTION ACTIVITIES.
- INSPECTIONS:** CONTRACTOR IS RESPONSIBLE FOR SCHEDULING ALL ON-SITE INSPECTIONS REQUIRED PRIOR TO OCCUPANCY APPROVAL.
- DIMENSIONS:** UNLESS OTHERWISE INDICATED: WALLS ARE TO FACE OF STUD FRAMING AND TO FACE OF MASONRY; WINDOWS AND DOORS ARE TO CENTERLINE OF OPENING IN STUD FRAMING AND TO FACE OF MASONRY OPENING IN MASONRY; PLUMBING FIXTURES ARE TO CENTERLINE OF FIXTURE.
- BLOCKING:** PROVIDE BLOCKING AS REQUIRED FOR INSTALLATION OF ALL PORTIONS OF THE WORK AND PER MANUFACTURER'S WRITTEN RECOMMENDATIONS, WHETHER OR NOT SPECIFICALLY INDICATED IN THESE DRAWINGS.
- METAL PROTECTION AT TREATED WOOD:** METAL CONNECTORS THAT COME IN CONTACT WITH TREATED LUMBER SHALL BE STAINLESS STEEL OR "ZMAX" CORROSION RESISTANT MATERIALS TO HELP PROTECT AGAINST ACCELERATED CORROSION. CONTRACTOR SHALL COORDINATE COMPATIBILITY OF ALL METALS USED WITH TREATMENT PRODUCT(S) MANUFACTURER(S)S WRITTEN RECOMMENDATIONS.
- HURRICANE TIES:** CONTRCTOR SHALL PROVIDE HURRICANE TIES AND CONSTRUCTION CONNECTORS PER CODE AND AS REQUIRED BY AUTHORITY HAVING JURISDICTION.
- WINDOWS AND DOORS:** WINDOWS AND DOORS ARE INDICATED USING NOMINAL DIMENSIONS. MATERIALS AND INSTALLATION SHALL COMPLY WITH DESIGN PRESSURE (DP) RATINGS, WATER INFILTRATION RATING, IMPACT/SAFETY GLAZING, WIND REQUIREMENTS, EGRESS HARDWARE, U-FACTOR / R-VALUE, ETC.. ALL EXTERIOR UNITS SHALL HAVE CORROSION-RESISTANT HARDWARE.
- LIFE SAFETY COMPONENTS:** FINAL LOCATION OF FIRE EXTINGUISHERS, EMERGENCY LIGHTING, AND EXIT SIGNS TO BE AS DIRECTED BY LOCAL FIRE MARSHAL, AND ARE SUBJECT TO FINAL ON-SITE INSPECTION AND EVALUATION. CONTRACTOR SHALL MAKE REVISIONS AND/OR ADDITIONS IN ACCORDANCE WITH FIRE MARSHAL'S INSPECTION..
- FIRE PROTECTION, PLUMBING, MECHANICAL, ELECTRICAL WORK:** ALL FIRE PROTECTION, PLUMBING, MECHANICAL, AND ELECTRICAL WORK SHALL BE PERFORMED BY QUALIFIED, LICENSED (SUB)CONTRACTORS, AND BE IN ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, STANDARDS, ETC.. ALL COMPONENTS SHALL BE INSTALLED ABOVE THE FLOOD ELEVATION AS REQUIRED BY FEMA, LOCAL A.H.J., AND ALL APPLICABLE CODES.
- PIPE INSULATION:** CONTRACTOR SHALL INSULATE AND PROTECT PIPES AS REQUIRED BY CODE, AND AS REQUIRED TO PROTECT PIPING EXPOSED TO EXTERIOR CONDITIONS.
- GRADING:** CONTRACTOR SHALL COORDINATE SITE GRADING TO COMPLY WITH CODES AND ORDINANCES, AND TO MAINTAIN POSITIVE DRAINAGE AWAY FROM BUILDING.

ABBREVIATIONS

ACT	ACOUSTIC CEILING TILE	FTG	FOOTING	RM	ROOM
AFF	ABOVE FINISH FLOOR	FV	FIELD VERIFY	RO	ROUGH OPENING
ALUM	ALUMINUM	GA	GAUGE	RUB	RUBBER (WALL BASE)
		GW	GYPSUM WALL BOARD		
BD	BOARD			SD	SOAP DISPENSER SECTION
BLDG	BUILDING	HC	HANDICAPPED	SECT	SHEET
BRG	BEARING	HDW	HARDWARE	SHT	SHIM
		HM	HOLLOW METAL	SIM	STAINLESS STEEL
CAB	CABINET	HR	HOUR	SLS	
CH	CEILING HEIGHT	HT	HEIGHT		
CJ	CONTROL JOINT			SM	SURFACE MOUNTED
CLG	CEILING	INSUL	INSULATION	SS	SERVICE SINK
CLR	CLEAR			STL	STEEL
CLST	CLOSET	JAN	JANITOR	STOR	STORAGE
CMU	CONCRETE MASONRY UNIT	JST	JOIST	STRUCT	STRUCTURAL
		JT	JOINT	SUSP	SUSPEND (SUSPENDED)
CONC	CONCRETE	LAM	LAMINATE		
CONT	CONTINUOUS	LAV	LAVATORY SINK	T&G	TONGUE & GROOVED
CORR	CORRIDOR			THLD	THRESHOLD
CPT	CARPET	M	MEN	TOB	TOP OF BEARING
CT	CERAMIC TILE	MAINT	MAINTENANCE	TOM	TOP OF MASONRY PARAPET
		MAT	MATERIALS	TYP	TYPICAL
		MAX	MAXIMUM		
DBL	DOUBLE	MECH	MECHANICAL	UL	UNDERWRITERS LABORATORIES
DF	DRINKING FOUNTAIN	MFR	MANUFACTURE R	UON	UNLESS OTHERWISE NOTED
DIA	DIAMETER			USG	U.S. GYPSUM COMPANY
DIM	DIMENSION				
DS	DOWNSPOUT	MIN	MINIMUM	VCT	VINYL COMPOSITION TILE
DWG	DRAWING	MO	MASONRY OPENING	VERT	VERTICAL
		MTL	METAL	VEST	VESTIBULE
EA	EACH	NC	NONCOMBUSTIBLE		
EJ	EXPANSION JOINT	NIC	NOT IN CONTRACT		
ELEC	ELECTRIC/ELECTRICAL	NTS	NOT TO SCALE		
EP	EPOXY PAINT				
EQ	EQUAL				
EQUIP	EQUIPMENT				
EXG	EXISTING	OC	ON CENTER		
EXP	EXPANSION	OFF	OFFICE		
EXT	EXTERIOR	OH	OPPOSITE HAND		
FC	FIRE CODE	PART	PARTITION	W	WOMEN
FD	FLOOR DRAIN	PLAM	PLASTIC LAMINATE	WI	WITH
FE	FIRE EXTINGUISHER	PLY	PLYWOOD	WAIN	WAINSCOT
FEC	FIRE EXTINGUISHER CABINET	PT	PAINTED	WC	WATER CLOSET
				WD	WOOD
FOS	FACE OF STUD	RD	ROOF DRAIN	WL	WALL
FRP	FIREGLASS REINFORCED PLASTIC	REC	RECESSED	WM	WALL-MOUNTED
		REF	REFRIGERATOR		
		REQD	REQUIRED		

SYMBOLS OF MATERIALS

	BATT INSULATION		PARTICLE BOARD
	BRICK		RIGID INSULATION
	CAST STONE		STEEL-LARGE SCALE
	CONCRETE		WOOD-FINISH
	CONCRETE MASONRY UNITS		WOOD BLOCKING
	EARTH		

DRAWING KEYS

	SECTION		ELEVATION
	DETAILS IN PLAN, SECTION		NEW WALL
	WALL TYPE, SEE A501		EXISTING WALL TO REMAIN
	WINDOW TAG		EXISTING WALL TO BE REMOVED
	DOOR TAG		STRUCTURAL GRID LINES
	CONSTRUCTION KEYNOTE		

DRAWING LIST

SHEET No.	SHEET TITLE
GENERAL	
G001	COVER SHEET
G101	BUILDING CODE SUMMARY
G102	LIFE SAFETY PLAN
STRUCTURAL	
S101	GENERAL NOTES
S102	TYPICAL CONCRETE AND WOOD DETAILS AND SCHEDULES
S201	FOUNDATION DETAIL
S202	ROOF FRAMING PLAN
S301	FOUNDATION SECTIONS
S401	ROOF FRAMING SECTIONS
S402	ROOF FRAMING SECTIONS
S501	SHEAR WALLS DETAILS
ARCHITECTURAL	
A101	FLOOR PLANS
A102	CEILING PLAN
A103	ROOF PLAN
A201	EXTERIOR ELEVATIONS
A202	EXTERIOR ELEVATIONS
A203	EXTERIOR ELEVATIONS
A301.A	BUILDING SECTIONS
A301.B	BUILDING SECTIONS
A302	WALL SECTIONS
A303	WALL SECTIONS
A304	WALL SECTIONS
A305	WALL SECTIONS
A306	STAIRCASE SECTION AND PLAN
A307	STAIRCASE SECTION AND PLAN
A401	ENLARGED PLANS AND SECTIONS
A402	INTERIOR ELEVATIONS
A403	INTERIOR ELEVATIONS
A404	INTERIOR ELEVATIONS
A501	DETAILS
A502	DETAILS
A503	DETAILS
A504	DETAILS
A505	DETAILS
A601	DOOR AND FINISH SCHEDULE
A602	STOREFRONT ELEVATION
A603	SPECIFICATIONS
PLUMBING	
P0.1	PLUMBING SHCHEDULE & SPECIFICATIONS
P0.2	PLUMBING DETAILS & LEGEND
P1.1	PLUMBING PLAN
MECHANICAL	
M0.1	MECHANICAL SCHEDULES & SPECIFICATIONS
M1.1	MECHANICAL PLAN 1ST FLOOR
M1.2	MECHANICAL PLAN 2ND FLOOR
ELECTRICAL	
E0.1	ELECTRICAL SCHEDULES, LEGEND, NOTES AND SPECIFICATIONS
E0.2	PANEL SCHEDULES, ELECTRICAL RISER AND DETAILS
E1.1	PARTIAL LIGHTING PLAN - 1ST FLOOR
E1.2	PARTIAL LIGHTING PLAN - 1ST FLOOR
E1.3	LIGHTING PLAN - 2ND
E2.1	POWER PLAN - 1ST FLOOR
E2.2	POWER PLAN - 2ND FLOOR



OFFICE ANNEX

6725 MONUMENT DRIVE.
WILMINGTON, NC 28405

© 2023 MARK LOUDERMILK ARCHITECTURE, PLLC		
Mark	Date	Description
PROJECT NO: 23038		
DATE: 7/14/2023		
SCALE: 1" = 1'-0"		
DRAWN BY:		
PROJ MGR:		
COVER SHEET		
G001		

BUILDING CODE SUMMARY

NAME OF PROJECT: THE ANNEX
ADDRESS: 6725 MONUMENT DRIVE, WILMINGTON, NC 28405
OWNER OR AUTHORIZED AGENT: L. Mark Loudermilk, AIA... PHONE #: (910) 622-0765... E-Mail: mark@loudermilkarch.com
OWNED BY: City County State Private
CODE ENFORCEMENT JURISDICTION: City County State

CONTACT: L. Mark Loudermilk, AIA
DESIGNER FIRM NAME LICENSE # TELEPHONE # EMAIL ADDRESS
ARCHITECTURAL Mark Loudermilk Architecture L. Mark Loudermilk, AIA 10776 (910) 769-3583 mark@loudermilkarch.com
CIVIL
ELECTRICAL OT Engineering, LLC Christopher M. Lippincott, PE #026003 (910) 791-8016 chris@otmep.com
FIRE ALARM OT Engineering, LLC Christopher M. Lippincott, PE #026003 (910) 791-8016 chris@otmep.com
PLUMBING OT Engineering, LLC Christopher M. Lippincott, PE #026003 (910) 791-8016 chris@otmep.com
MECHANICAL OT Engineering, LLC Christopher M. Lippincott, PE #026003 (910) 791-8016 chris@otmep.com
SPRINKLER-STANDPIPE
STRUCTURAL Woods Engineering Don R. Woods, PE 19575 (910) 343-9007 donwoods@woodseng.com
RETAINING WALL >5' HIGH
OTHER

2018 NC BUILDING CODE:
New Building Addition 1st Time Interior Completion
Phased Construction - Shell/Core - Contact the local inspection jurisdiction for possible additional procedures and requirements
Shell/Core - Contact the local inspection jurisdiction for possible additional procedures and requirements
2018 NC EXISTING BUILDING CODE:
N/A Chapter 14 Alteration Level I N/A
Prescriptive Historic Property Alteration Level II Repair Change of Use
Repair Change of Use Alteration Level III Historic Property
CONSTRUCTED: CURRENT OCCUPANCY(S) (Ch. 3)
RENOVATED: PROPOSED OCCUPANCY(S) (Ch. 3)
OCCUPANCY CATEGORY (Table 1604.5):
CURRENT N/A I II III IV
PROPOSED N/A I II III IV

BASIC BUILDING DATA:
CONSTRUCTION TYPE: I-A I-B II-A II-B III-A III-B IV V-A V-B
SPRINKLERS: NO YES PARTIAL NFPA 13 NFPA 13R NFPA 13D
STANDPIPES: NO YES CLASS I CLASS II CLASS III WET DRY
PRIMARY FIRE DISTRICT: NO YES
FLOOD HAZARD AREA: NO YES BUILDING IS LESS THAN 12,000 SF; SPRINKLERS NOT REQUIRED PER 903.2.10.
SPECIAL INSPECTIONS: NO YES (Contact the local inspection jurisdiction for additional procedures and requirements)

GROSS BUILDING AREA TABLE:

TOTAL	6,018 SF
-------	----------

ALLOWABLE AREA:
PRIMARY OCCUPANCY CLASSIFICATION(S): S-2; ENCLOSED PARKING GARAGE
ACCESSORY OCCUPANCY CLASSIFICATION(S):
INCIDENTAL USES (Table 509):
SPECIAL USES (Chapter 4 - List Code Sections):
SPECIAL Provisions (Chapter 5 - List Code Sections):
MIXED OCCUPANCY: NO YES SEPARATION: HR. EXCEPTION:
Non-Separated Use (508.3)
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
ACTUAL AREA OF OCCUPANCY A + ACTUAL AREA OF OCCUPANCY B ALLOWABLE AREA OF OCCUPANCY A ALLOWABLE AREA OF OCCUPANCY B ≤ 1

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.2.1 AREA		(C) AREA FOR FRONTAGE INCREASE 1,5	(D) ALLOWABLE AREA PER STORY OR UNLIMITED
			UNSPRINKLERED	SPRINKLERED		
1	S-2	5,424				
2	M	594				
	TOTAL	5,424	13,500			

1. FRONTAGE AREA INCREASES FROM SECTION 506.2 ARE COMPUTED THUS:
A. PERIMETER WHICH FRONTS A PUBLIC WAY OR OPEN SPACE HAVING 20 FT MINIMUM WIDTH 392 (F)
B. TOTAL BUILDING PERIMETER = 392' (P)
C. RATIO (F/P) = 1 (F/P)
D. W = MINIMUM WIDTH OF PUBLIC WAY = 30 (W) (do not exceed 30)
E. PERCENT OF FRONTAGE INCREASE $I_i = 100 [(F/P - 0.25) \times W/30] = 75$ (%)
2. UNLIMITED AREA APPLICABLE UNDER CONDITIONS OF SECTION 507.
3. MAXIMUM BUILDING AREA = TOTAL NUMBER OF STORIES IN THE BUILDING x D (MAXIMUM 3 STORIES) (506.2)
4. THE MAXIMUM AREA OF OPEN PARKING GARAGES MUST COMPLY WITH 406.5.4. THE MAXIMUM AREA OF AIR TRAFFIC CONTROL TOWERS MUST COMPLY WITH 412.3.1
5. FRONTAGE INCREASE IS BASED ON THE UNSPRINKLERED AREA VALUE IN TABLE 506.2

ALLOWABLE HEIGHT:

	ALLOWABLE (TABLES 504.3 & 504.4)	SHOWN ON PLANS	CODE REFERENCE
BUILDING HEIGHT IN FEET	55' - 0"	33' - 0"	
BUILDING HEIGHT IN STORIES	2	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)	REQ'D	RATING PROVIDED* (W/ REDUCTION)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	DESIGN # FOR RATED PENETRATION	DESIGN # FOR RATED JOINTS
Structural Frame including columns, girders, trusses		0					
Bearing Walls							
Exterior							
North	>30'	0					
East	>30'	0					
West	>30'	0					
South	>30'	0					
Interior	>30'	0					
Nonbearing Walls and Partitions		0					
Exterior							
North	N/A						
East							
West							
South							
Interior walls and partitions		0					
Floor Construction, including supporting beams and joists		0					
Floor Ceiling Assembly		N/A					
Columns Supporting Floors		N/A					
Roof Construction, including supporting beams and joists		0					
Roof Ceiling Assembly		0					
Columns Supporting Roof		N/A					
Shaft Enclosures - Exit		N/A					
Shaft Enclosures - Other		N/A					
Corridor Separation		N/A					
Occupancy / Fire Barrier Separation		0					
Party / Fire Wall Separation		N/A					
Smoke Barrier Separation		N/A					
Tenant / Dwelling Unit / Sleeping Separation		N/A					
Incidental Use Separation		N/A					

* 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 (%)
all exterior walls >30'	UP, NS	no limit	20%

LIFE SAFETY SYSTEM REQUIREMENTS:
EMERGENCY LIGHTING: NO YES
EXIT SIGNS: NO YES
FIRE ALARM: NO YES
SMOKE DETECTION SYSTEMS: NO YES PARTIAL
CARBON MONOXIDE DETECTION: NO YES

LIFE SAFETY PLAN REQUIREMENTS:
LIFE SAFETY PLAN SHEET # G101
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 TYPES 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 (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 LOOKS 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)

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
N/A	N/A	N/A					

ACCESSIBLE PARKING (SECTION 1106)

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

PLUMBING FIXTURE REQUIREMENTS (TABLE 2902.1)

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

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

ENERGY SUMMARY
ENERGY REQUIREMENTS:
THE FOLLOWING DATA SHALL BE CONSIDERED MINIMUM AND ANY SPECIAL ATTRIBUTE REQUIRED TO MEET THE ENERGY CODE SHALL ALSO BE PROVIDED. EACH DESIGNER SHALL FURNISH THE REQUIRED PORTIONS OF THE PROJECT INFORMATION FOR THE PLAN DATA SHEET. IF PERFORMANCE METHOD, STATE THE ANNUAL ENERGY COST FOR THE STANDARD REFERENCE DESIGN VS ANNUAL ENERGY COST FOR THE PROPOSED DESIGN.
EXISTING BUILDING ENVELOPE COMPLIES WITH CODE: YES (the remainder of this section is not applicable) NO
EXEMPT BUILDING: YES Provide code or statutory reference: NO
CLIMATE ZONE: 3
METHOD OF COMPLIANCE:
PRESCRIPTIVE (ENERGY CODE)
PERFORMANCE (ENERGY CODE)
PRESCRIPTIVE (ASHRAE 90.1)
PERFORMANCE (ASHRAE 90.1)
PERFORMANCE (OTHER)
If 'Other' specify source here:

THERMAL ENVELOPE (Prescriptive method only)
ROOF/CEILING ASSEMBLY (each assembly)
DESCRIPTION OF ASSEMBLY
U-VALUE OF TOTAL ASSEMBLY
R-VALUE OF INSULATION
SKYLIGHTS IN EACH ASSEMBLY
U-VALUE OF SKYLIGHT
TOTAL SQUARE FOOTAGE OF SKYLIGHTS IN EACH ASSEMBLY
RIGID INSULATION
R-25
EXTERIOR WALLS (each assembly)
DESCRIPTION OF ASSEMBLY
U-VALUE OF TOTAL ASSEMBLY
R-VALUE OF INSULATION
OPENINGS (windows or doors with glazing)
U-VALUE OF ASSEMBLY
SOLAR HEAT GAIN COEFFICIENT
PROJECTION FACTOR
DOOR R-VALUES
CODE MINIMUM
WALLS BELOW GRADE (each assembly)
DESCRIPTION OF ASSEMBLY
U-VALUE OF TOTAL ASSEMBLY
R-VALUE OF INSULATION
FLOORS OVER UNCONDITIONED SPACE (each assembly)
DESCRIPTION OF ASSEMBLY
U-VALUE OF TOTAL ASSEMBLY
R-VALUE OF INSULATION
FLOORS SLAB ON GRADE (each assembly)
DESCRIPTION OF ASSEMBLY
U-VALUE OF TOTAL ASSEMBLY
R-VALUE OF INSULATION
HORIZONTAL / VERTICAL REQUIREMENT
SLAB HEATED

STRUCTURAL DESIGN SEE STRUCTURAL ENGINEERING DRAWINGS
DESIGN LOADS:
IMPORTANCE FACTORS: WIND (lw) SNOW (ls) SEISMIC (Ie)
LIVE LOADS: ROOF PSF MEZZANINE PSF FLOOR PSF
GROUND SNOW LOAD: PSF
WIND LOAD: BASIC WIND SPEED MPH (ASCE-7-98) EXPOSURE CATEGORY
SEISMIC DESIGN CATEGORY:
PROVIDE THE FOLLOWING SEISMIC DESIGN PARAMETERS:
OCCUPANCY CATEGORY (TABLE 1604.5)
SPECTRAL RESPONSE ACCELERATION Ss %g Si %g
SITE CLASSIFICATION (ASCE 7) DATA SOURCE:
BASIC STRUCTURAL SYSTEM
ANALYSIS PROCEDURE: N/A SIMPLIFIED EQUIVALENT LATERAL FORCE DYNAMIC
ARCHITECTURAL, MECHANICAL, COMPONENTS ANCHORED? YES NO
LATERAL DESIGN CONTROL: N/A EARTHQUAKE WIND
SOIL BEARING CAPACITIES:
N/A
FIELD TEST (PROVIDE COPY OF TEST REPORT) PSF
PRESUMPTIVE BEARING CAPACITY PSF
PILE SIZE, TYPE AND CAPACITY PSF

MECHANICAL SUMMARY SEE MECHANICAL ENGINEERING DRAWINGS
MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT
THERMAL ZONE
WINTER DRY BULB SUMMER DRY BULB
INTERIOR DESIGN CONDITIONS
WINTER DRY BULB SUMMER DRY BULB RELATIVE HUMIDITY
BUILDING HEATING LOAD
BUILDING COOLING LOAD
MECHANICAL SPACING CONDITIONING SYSTEM
UNITARY
DESCRIPTION OF UNIT
HEATING EFFICIENCY
COOLING EFFICIENCY
SIZE CATEGORY OF UNIT
BOILER
SIZE CATEGORY, IF OVERSIZED, STATE REASON
CHILLER
SIZE CATEGORY, IF OVERSIZED, STATE REASON
LIST EQUIPMENT EFFICIENCIES:

ELECTRICAL SUMMARY SEE ELECTRICAL ENGINEERING DRAWINGS
ELECTRICAL SYSTEM AND EQUIPMENT
METHOD OF COMPLIANCE:
ENERGY CODE: PRESCRIPTIVE PERFORMANCE
ASHRAE 90.1: PRESCRIPTIVE PERFORMANCE
LIGHTING SCHEDULE
LAMP TYPE REQUIRED IN FIXTURE
NUMBER OF LAMPS IN FIXTURE
BALLAST TYPE USED IN THE FIXTURE
TOTAL WATTAGE PER FIXTURE
TOTAL INTERIOR WATTAGE SPECIFIED VS ALLOWED (whole building or space by space)
TOTAL EXTERIOR WATTAGE SPECIFIED VS ALLOWED
ADDITIONAL PRESCRIPTIVE COMPLIANCE
C406.2 MORE EFFICIENT HVAC EQUIPMENT PERFORMANCE
C406.3 REDUCED LIGHTING POWER DENSITY
C406.4 ENHANCED DIGITAL LIGHTING CONTROLS
C406.5 ON-SITE RENEWABLE ENERGY
C406.6 DEDICATED OUTDOOR AIR SYSTEM
C406.7 REDUCED ENERGY USE IN SERVICE WATER HEATING



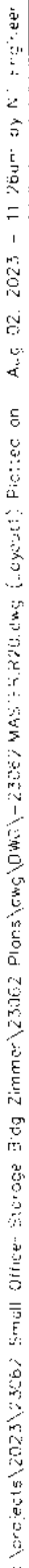
OFFICE ANNEX

6725 MONUMENT DRIVE, WILMINGTON, NC 28405

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Mark Date Description
PROJECT NO: 23038
DATE: 7/14/2023
SCALE:
DRAWN BY: OU
PROJ MGR: LML

BUILDING CODE SUMMARY

G101



	PROPERTY LINE
	PROPOSED CONTOUR
	EXISTING CONTOUR
	PROPOSED STORMDRAIN PIPE
	PROPOSED WATER LINE
	PROPOSED SANITARY SEWER
	DISTURBED AREA LIMITS
	TEMPORARY SILT FENCE
	FLOW LINE ELEVATION
	FINISH GRADE ELEVATION
	FLARED END SECTION w/ RIP-RAP ENERGY DISSIPATOR
	DROP INLET w/ INLET PROTECTION
	EXISTING TREE TO BE REMOVED
	EXISTING TREE TO REMAIN
	HD CONCRETE SIDEWALK
	PERMEABLE PAVEMENT
	LANDSCAPING

C0	OVERALL PLAN
I1	SITE INVENTORY PLAN
C1	TREE REMOVAL PLAN
C2.0	GRADING, DRAINAGE & EROSION CONTROL PLAN
C2.1	DRAINAGE AREA PLAN
C3	UTILITY PLAN
C4	LAYOUT PLAN
C5.0	NOTES & DETAILS
C5.1	NOTES & DETAILS
C5.2	NOTES & DETAILS

REVISIONS			
SYMBOL	DATE	DESCRIPTION	BY
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OVERALL SITE PLAN

**ANNEX
MONUMENT DRIVE
WILMINGTON, N.C.**

OWNER
ZP 367 OFFICE, LLC
PO BOX 2628 (28402)
111 PRINCESS STREET
WILMINGTON, NC 28401
910-294-8228
ADAMTUCKER@ZDC.COM

NORRIS & TUNSTALL
— CONSULTING ENGINEERS P.C. —
2602 IRON GATE DR., SUITE 102
1429 ASH-LITTLE RIVER RD. NW

WILMINGTON, NC 28412
PHONE (910) 343-9653

ence #C-3641

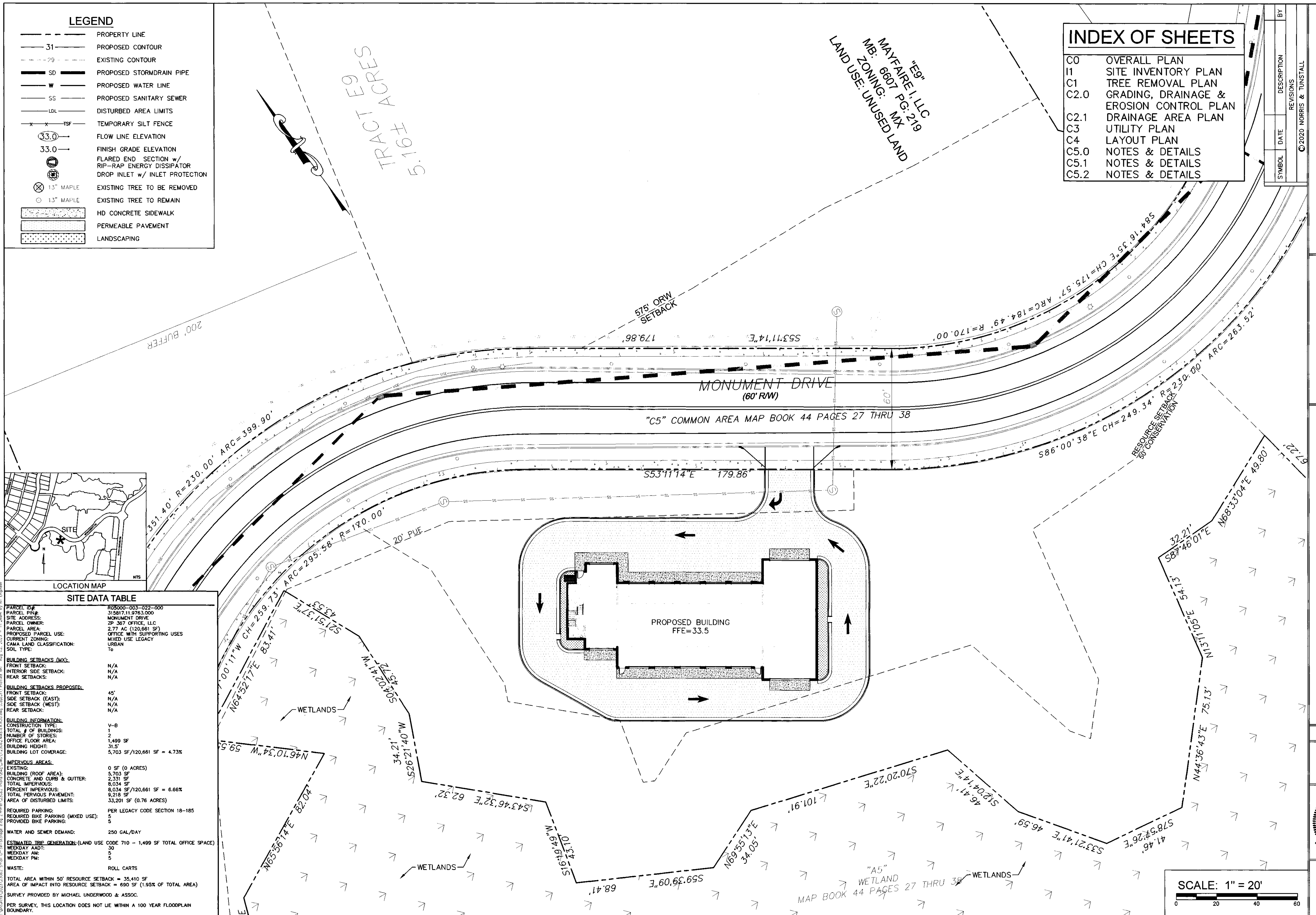
23062

JST
JPN
TBM
8/2/23

8/2/23




CO





TREE REMOVAL TABLE	
MAPLE:	BAY:
8" - 1	10" - 1
9" - 3	
10" - 3	LAUREL OAK:
12" - 3	10" - 1
14" - 1	
16" - 1	
7"/13" - 1	
6"/10" - 1	
8"/8"/18" - 2	
CLUSTER - 1	

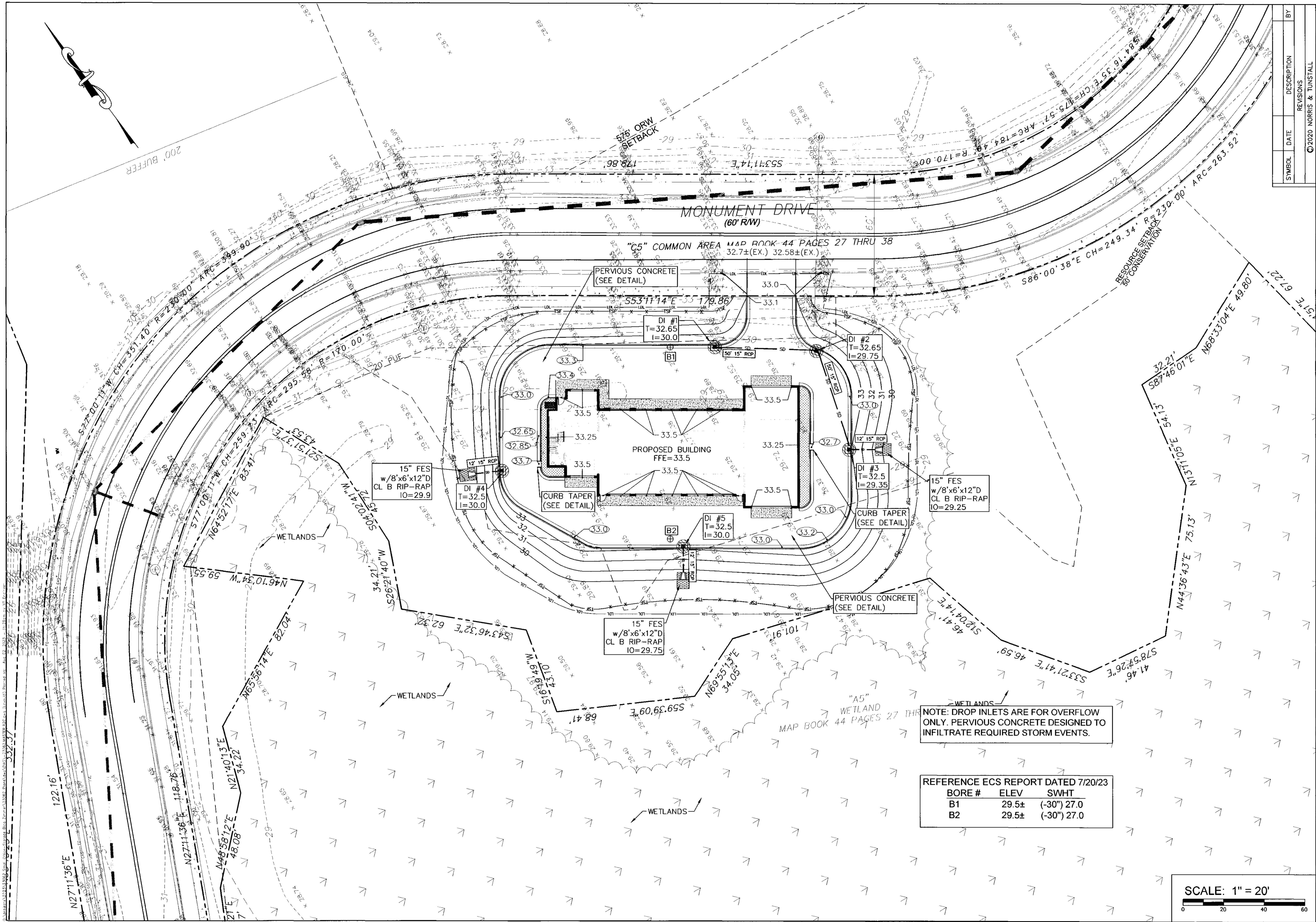
SCALE: 1" = 20'

A horizontal graphic scale bar with a black and white alternating pattern. It is marked with the numbers 0, 20, 40, and 60, representing feet.

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**TREE REMOVAL PLAN
ANNEX
MONUMENT DRIVE
WILMINGTON, N.C.**



NOTE: DROP INLETS ARE FOR OVERFLOW ONLY. PERVIOUS CONCRETE DESIGNED TO INFILTRATE REQUIRED STORM EVENTS.

REFERENCE ECS REPORT DATED 7/20/23		
BORE #	ELEV	SWHT
B1	29.5±	(-30") 27.0
B2	29.5±	(-30") 27.0

SCALE: 1" = 20'

SYMBOL	DATE	DESCRIPTION	BY
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GRADING, DRAINAGE & EROSION CONTROL PLAN
ANNEX
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WILMINGTON, N.C.

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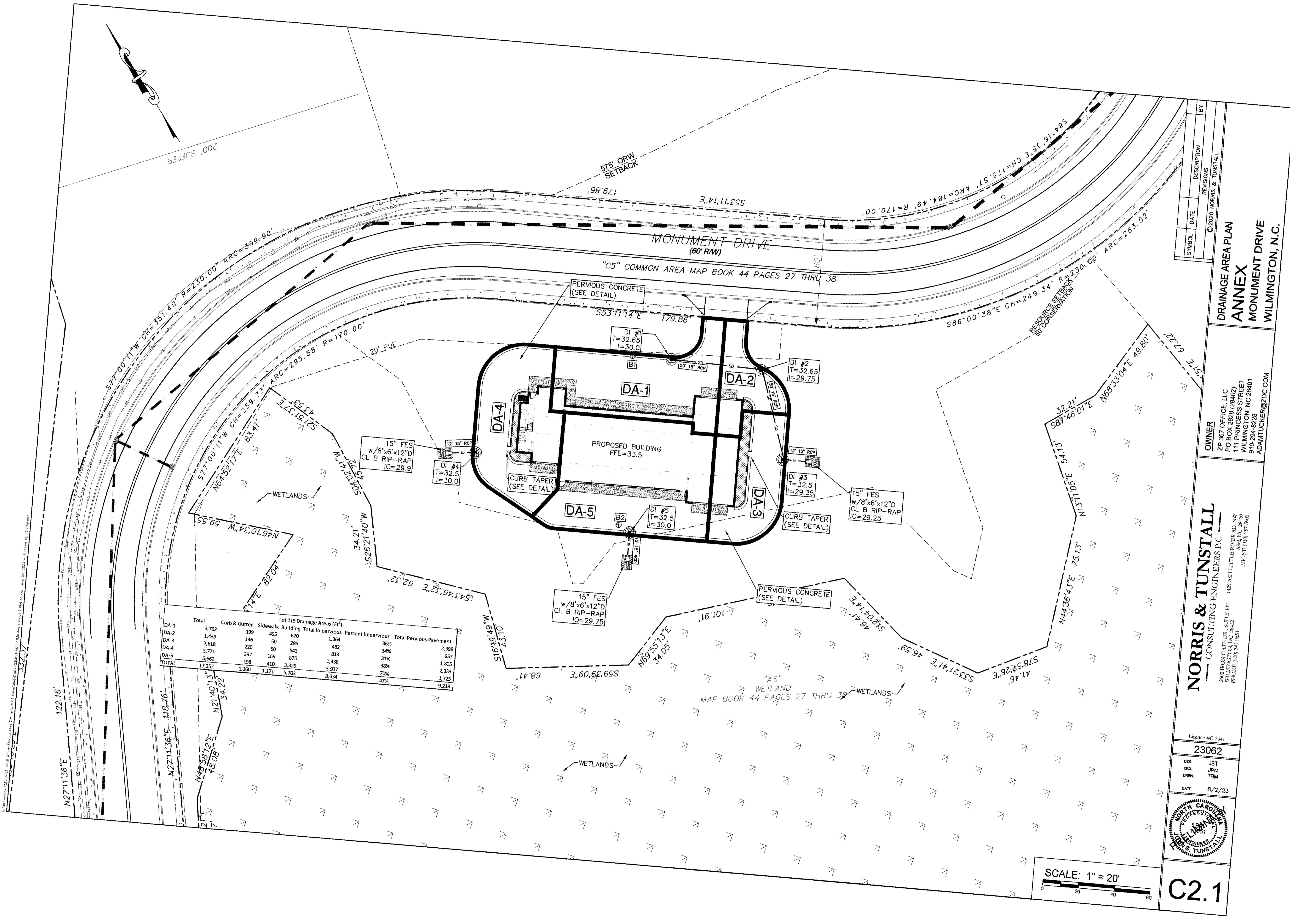
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DES. JST
CHK. JPN
DRWL. TBM
DATE 8/2/23



C2.0

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Lot 115 Drainage Areas (ft ²)						
	Total	Curb & Gutter	Sidewalk	Building	Total Impervious	Percent Impervious
DA-1	3,762	199	495	670	1,364	36%
DA-2	1,439	146	50	286	482	34%
DA-3	2,618	220	50	543	813	31%
DA-4	3,771	397	166	875	1,438	38%
DA-5	5,662	198	410	3,329	3,937	70%
TOTAL	17,252	1,160	1,171	5,703	8,034	47%
Total Pervious Pavement						
	957				1,805	
	2,338				1,725	
	9,218					



SYMBOL

DATE

REVISIONS

BY

DESCRIPTION

REVISIONS

BY

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DRAINAGE AREA PLAN

ANNEX

MONUMENT DRIVE

WILMINGTON, N.C.

OWNER

ZP 367 OFFICE, LLC

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117 PRINCESS STREET

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CHK. JFN

DRWN. TBM

DATE 8/2/23

NORTH CAROLINA

REGISTERED

ENGINEER

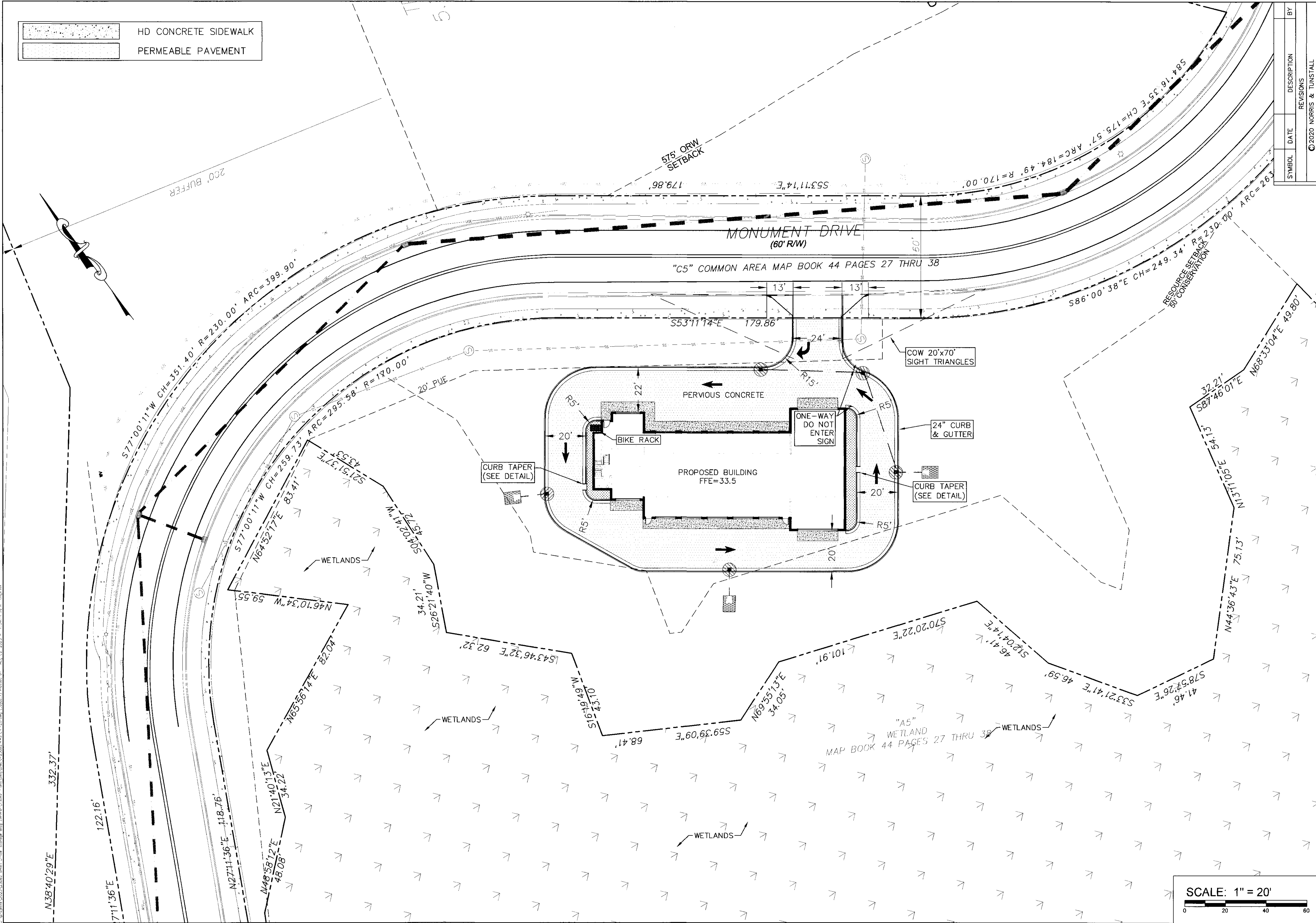
2021

NORRIS & TUNSTALL

C2.1

HD CONCRETE SIDEWALK

PERMEABLE PAVEMENT



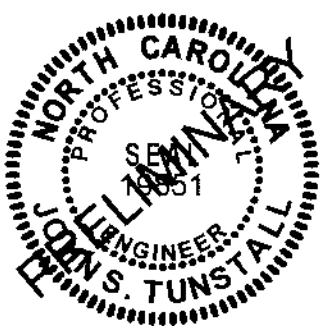
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LAYOUT PLAN
ANNEX
MONUMENT DRIVE
WILMINGTON, N.C.

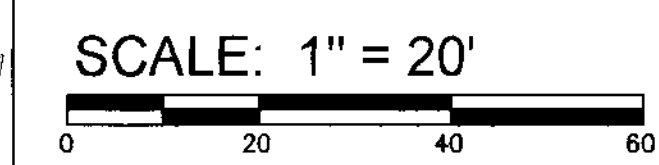
OWNER
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910-294-8228
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PHONE (910) 343-9635
FAX (910) 343-5960

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23062
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CHK. JPN
DRWN. TBM
DATE 8/2/23



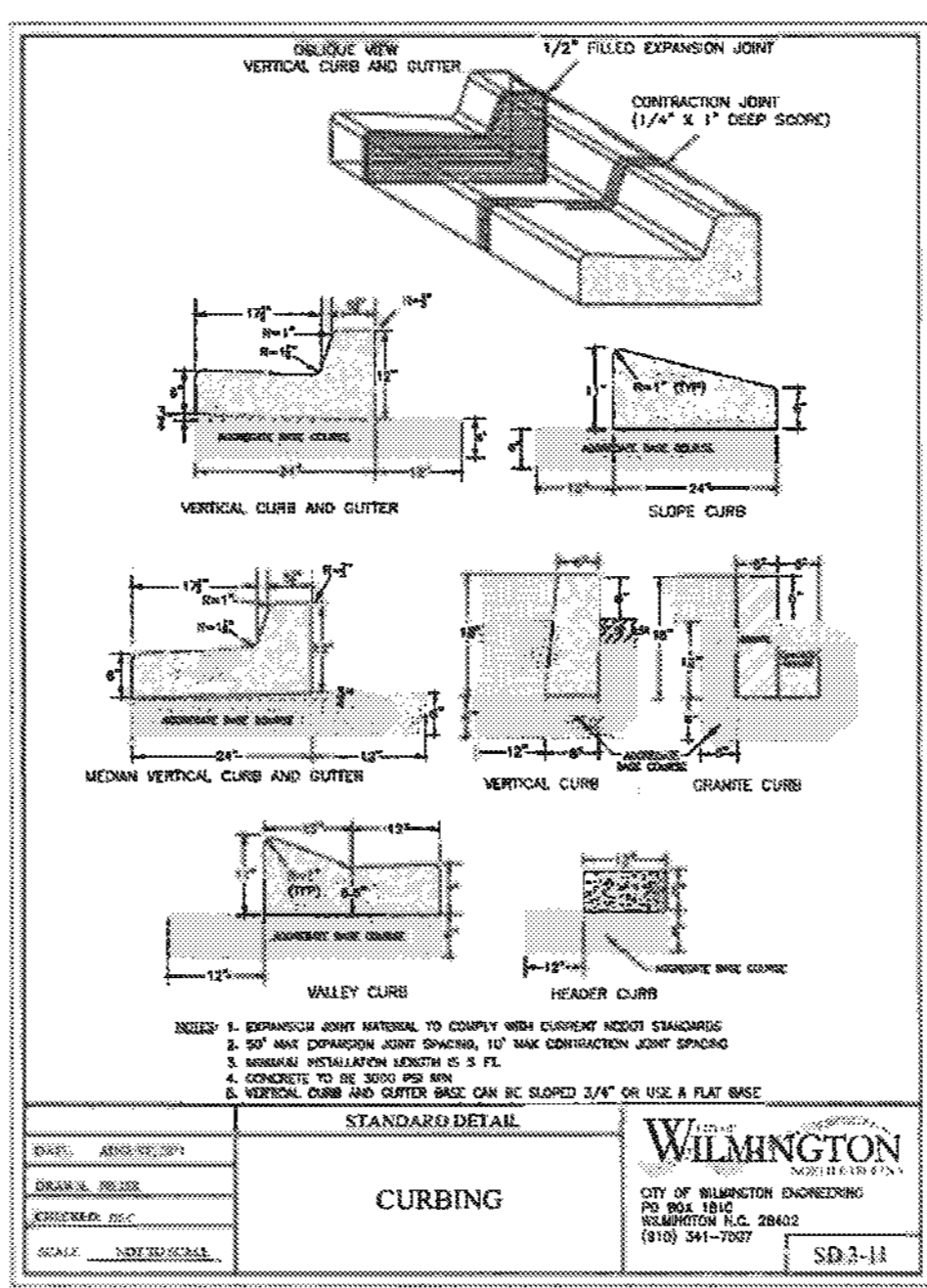
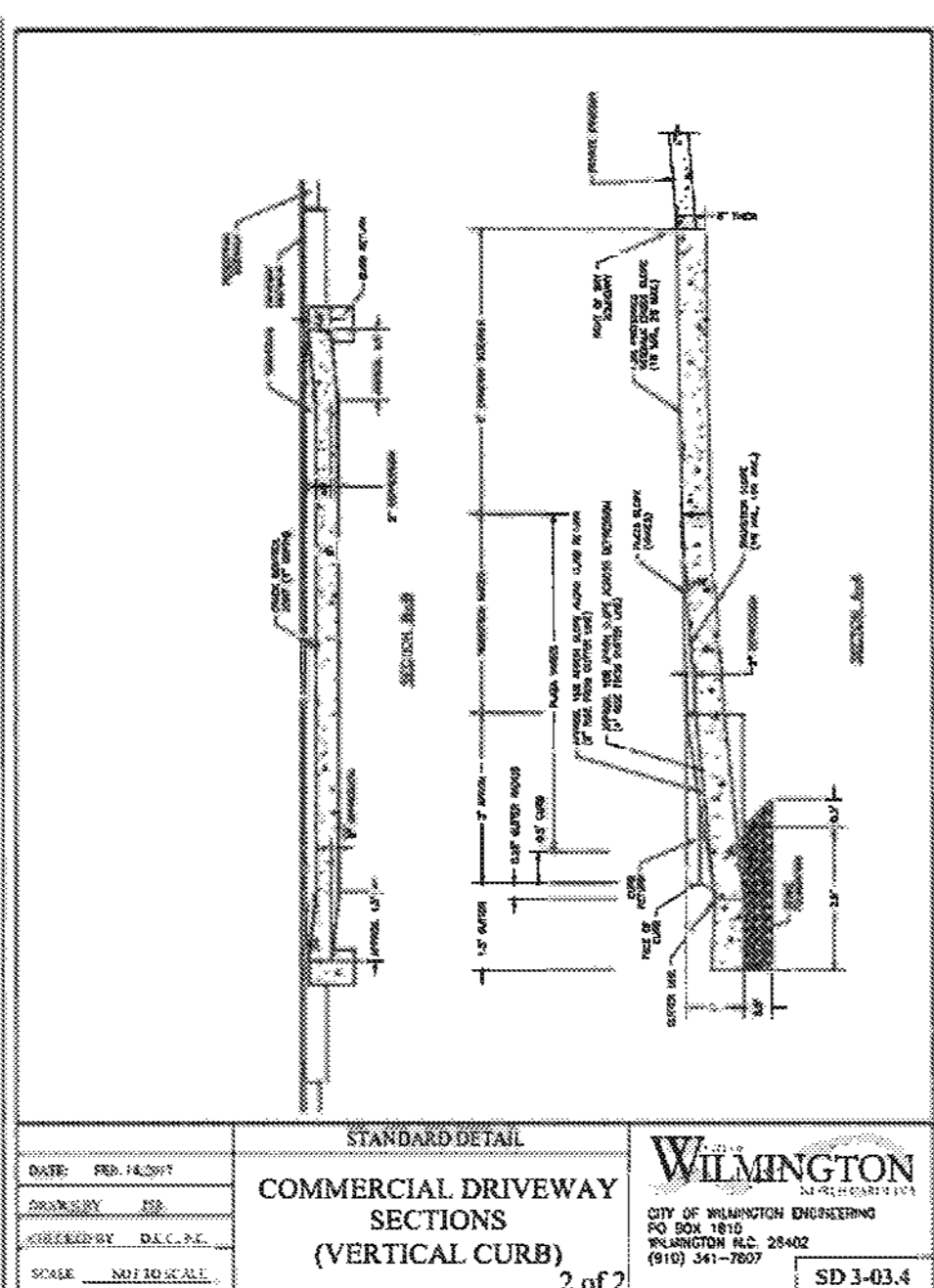
C4



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1 DROP INLET		2 HARDWARE CLOTH AND GRAVEL INLET PROTECTION		3 TEMPORARY SILT FENCE		4 ENERGY DISSIPATOR	
5 PERVIOUS PAVEMENT SECTION DRIVEWAY/PARKING		6 PERVIOUS PAVEMENT OBSERVATION WELL		7 TEMPORARY GRAVELLED CONSTRUCTION ENTRANCE		8 CURB + GUTTER TAPPER	

NOTES & DETAILS	
ANNEX	WILMINGTON, N.C.
OWNER ZP 367 OFFICE, LLC PO BOX 2628 (28402) 111 PRINCESS STREET WILMINGTON, NC 28401 910-294-9228 ADAMTUCKER@ZDC.COM	
NORRIS & TUNSTALL CONSULTING ENGINEERS P.C. 2602 IRON GATE DR., SUITE 102 1429 ASH-LITTLE RIVER RD. NW WILMINGTON, NC 28412 ASH, NC 28420 PHONE (910) 343-9653	
Licence #C-3641	
23062	
DES. JST CHK. JPN DRWN. TBM	DATE 8/2/23
C5.0	



Step 11. After installation, protect the installed pervious concrete until project completion, including routing construction traffic away from the installed pervious concrete. Contractor shall provide protection techniques including mats, plastic sheeting and barriers to ensure the pervious concrete remains protected until project completion.

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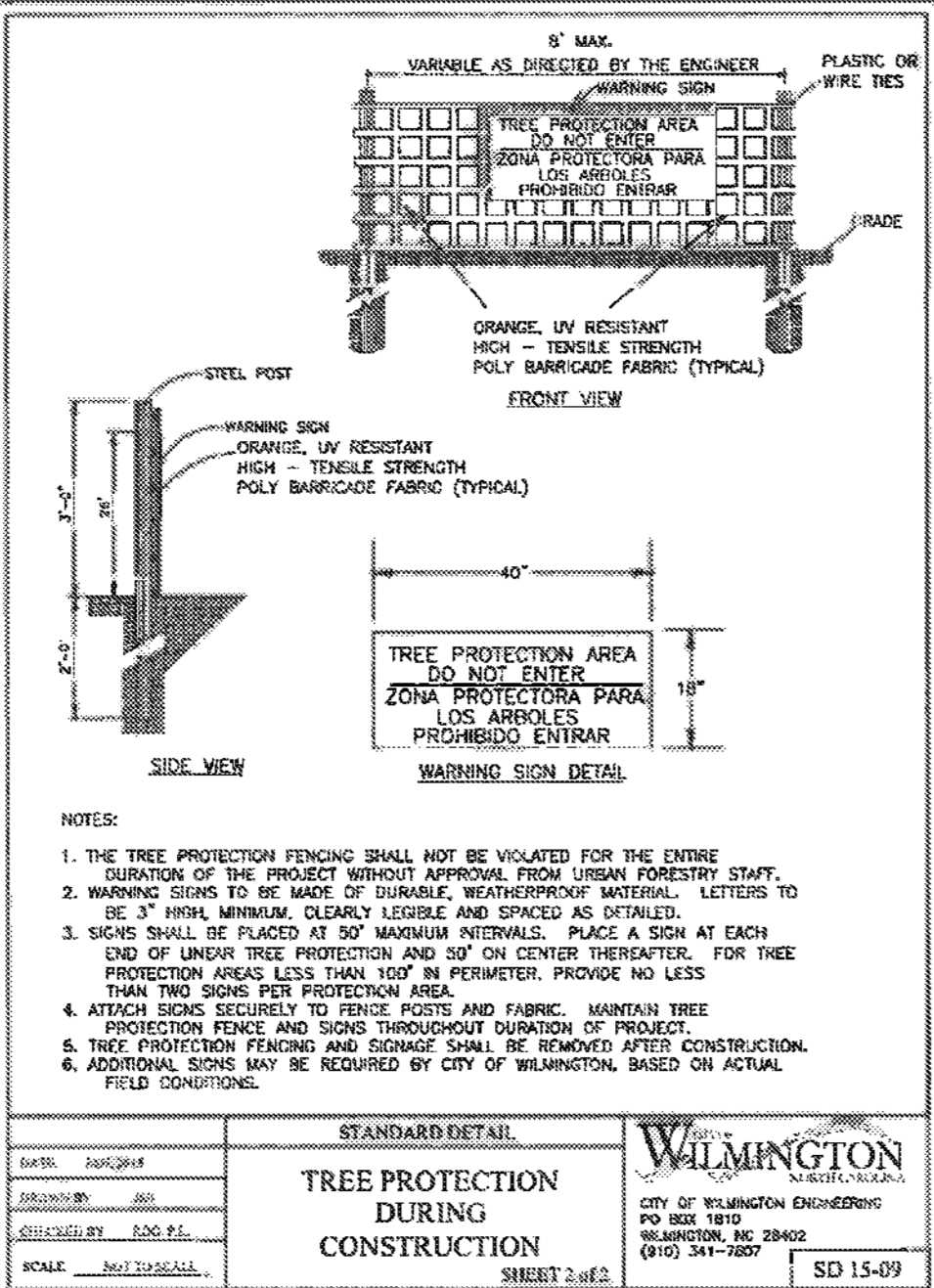
NOTES & DETAILS

ANNEX

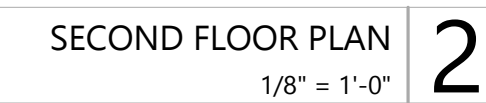
MONUMENT DRIVE
WILMINGTON, N.C.

NORRIS & TUNSTALL
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2602 IRON GATE DR., SUITE 102 1429 ASH-LITTLE RIVER RD., NW
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C5.1



1. FIRE HYDRANTS MUST BE WITHIN 150' OF THE FIRE DEPARTMENT CONNECTION.
2. THE FIRE DEPARTMENT CONNECTION MUST BE WITHIN 40' OF FIRE APPARATUS PLACEMENT.
3. LANDSCAPING AND PARKING CANNOT BLOCK OR IMPEDE THE FIRE DEPARTMENT CONNECTIONS OR FIRE HYDRANTS. A 3' CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF THE FIRE HYDRANT CONNECTION AND THE FIRE HYDRANT.
4. FIRE HYDRANTS MUST BE LOCATED WITHIN 8' OF THE CURB.
5. NEW HYDRANTS MUST BE AVAILABLE FOR USE PRIOR TO CONSTRUCTION OF THE BUILDINGS.
6. NEW HYDRANTS MUST BE BROUGHT INTO SERVICE PRIOR TO COMBUSTIBLE MATERIALS BEING DELIVERED TO THE JOB SITE.
7. THE CONTRACTOR WILL MAINTAIN ALL-WEATHER EMERGENCY ACCESS TO CONSTRUCTION SITE AT ALL TIMES.
8. TEMPORARY STREET SIGNS SHALL BE INSTALLED AT EACH STREET INTERSECTION WHEN CONSTRUCTION OF NEW ROADWAYS ALLOWS PASSAGE BY VEHICLES.
9. UNDERGROUND FIRE LINE AND PRIVATE WATER MAINS MUST BE PERMITTED AND INSPECTED BY THE WILMINGTON FIRE DEPARTMENT FROM THE PUBLIC RIGHT-OF-WAY TO THE BUILDING. CONTACT THE WILMINGTON FIRE DEPARTMENT DIVISION OF FIRE AND LIFE SAFETY AT 910-343-0696 FOR ADDITIONAL INFORMATION.
10. A MINIMUM OF 5' SHALL SEPARATE UNDERGROUND FIRE LINES OR PRIVATE WATER MAINS FROM OTHER UNDERGROUND UTILITIES.
11. HYDRANTS SHALL BE OF SUFFICIENT NUMBERS TO ACCOMMODATE BASE FLOW REQUIREMENTS OF THE STRUCTURE.
12. ADDITIONAL FIRE PROTECTION AND/OR ACCESSIBILITY REQUIREMENTS MAY BE REQUIRED DUE TO ANY SPECIAL CIRCUMSTANCES CONCERNING THE PROJECT.
13. THE CONTRACTOR SHALL SUBMIT A RADIO SIGNAL STRENGTH STUDY THAT DEMONSTRATES THAT EXISTING EMERGENCY RESPONDER RADIO SIGNAL LEVELS MEET THE REQUIREMENTS OF SEC. 510 OF THE 2018 FIRE CODE.
14. BUILDING CONSTRUCTION TYPE: II-B
15. PRIVATE UNDERGROUND FIRE LINES REQUIRE A SEPARATE UNDERGROUND FIRE LINE PERMIT FROM THE WILMINGTON FIRE AND LIFE SAFETY DIVISION 910-343-0696
16. ALL ISOLATION VALVES WITHIN THE "HOT BOX" AND BETWEEN THE "HOT BOX" AND THE RISER ROOM MUST BE ELECTRICALLY SUPERVISED.



OFFICE ANNEX

6725 MONUMENT DRIVE.
WILMINGTON, NC 28405

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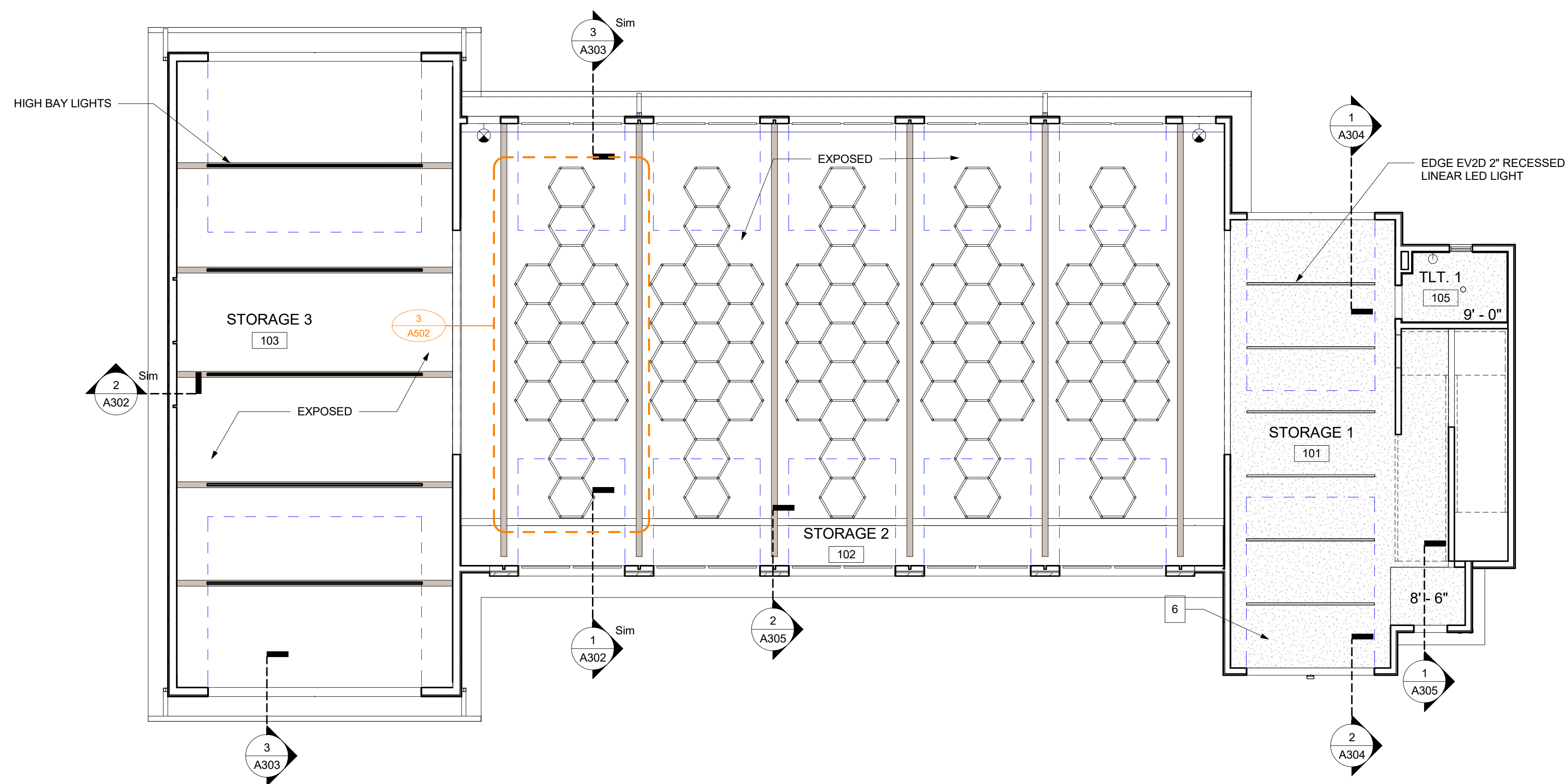
Mark	Date	Description
PROJECT NO:	23038	
DATE:	7/14/2023	
SCALE:	As indicated	
DRAWN BY:	OU	
PROJ MGR:	LML	

FLOOR PLANS

A101











SECOND FLOOR REFLECTED CEILING PLAN



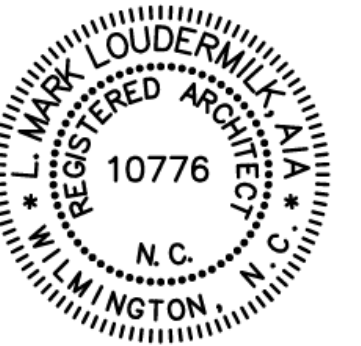
FIRST FLOOR REFLECTED CEILING PLAN

CEILING LEGEND

- | | |
|---|---|
|  | INTERIOR - GWB
CEILINGS / BULKHEADS |
|  | EXPOSED |
|  | EXIT SIGN SINGLE FACE, CEILING MOUNTED |
|  | CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY
SENSOR |
|  | SUPPLY DIFFUSER |
|  | RETURN GRILLE |
|  | EXHAUST GRILLE |
|  | WALL MOUNTED LIGHT |

CEILING NOTES

1. SEE FINISH SCHEDULE FOR ACT TYPES
2. SEE MECHANICAL DRAWINGS FOR G.R.D. TYPES, LOCATIONS, AND ADDITIONAL WORK.
3. SEE ELECTRICAL DRAWINGS FOR LIGHT FIXTURE TYPES AND LOCATIONS.
4. CEILING HEIGHTS INDICATED ARE FROM FINISH FLOOR. CEILINGS AT LANDINGS, RAMPS ETC., REFER TO NEAREST FLOOR LEVEL. COORDINATE WITH EXTERIOR WINDOW MULLION LOCATIONS.
5. ALL EXPOSED LINTELS SHALL BE PAINTED.
6. ATTACH CEILING TO BOTTOM OF BEAM OR TRUSS, UNLESS SPECIFIED OTHERWISE.



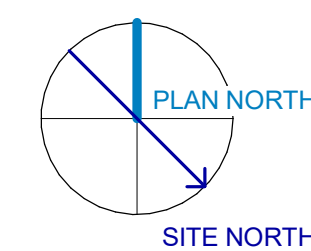
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6725 MONUMENT DRIVE.
WILMINGTON, NC 28405




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PROJ MGR: LML		

CEILING PLAN

A102



1

- | | |
|---|---|
|  | PVC ROOFING SYSTEM
OVER RIGID INSULATION |
|  | PVC ROOFING SYSTEM
OVER RIGID INSULATION |
|  | CRICKET |
| C.H. | CONDUCTOR HEAD |
| D.S. | DOWNSPOUT |
| S.B. | SPLASHBLOCK |

ROOF NOTES AND LEGEND

1. SLOPE ALL CRICKETS 1/2" / 12" MINIMUM, EXCEPT WHERE REQUIRED TO MAINTAIN MINIMUM 8" ROOFING/LASHING TURN-UP HEIGHT.
2. TIE DOWNSPOUTS INTO BOOT AT GRADE AND CONNECT TO STORMWATER SYSTEM, UNLESS OTHERWISE NOTED. REFER TO CIVIL DRAWINGS FOR CONTINUATION.
3. PROVIDE CRICKETS AT ALL ROOF TOP EQUIPMENT, FIRE VENTS, EXHAUST FANS, CURBS, ETC. AS REQUIRED TO MAINTAIN POSITIVE DRAINAGE.



OFFICE ANNEX

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WILMINGTON, NC 28405

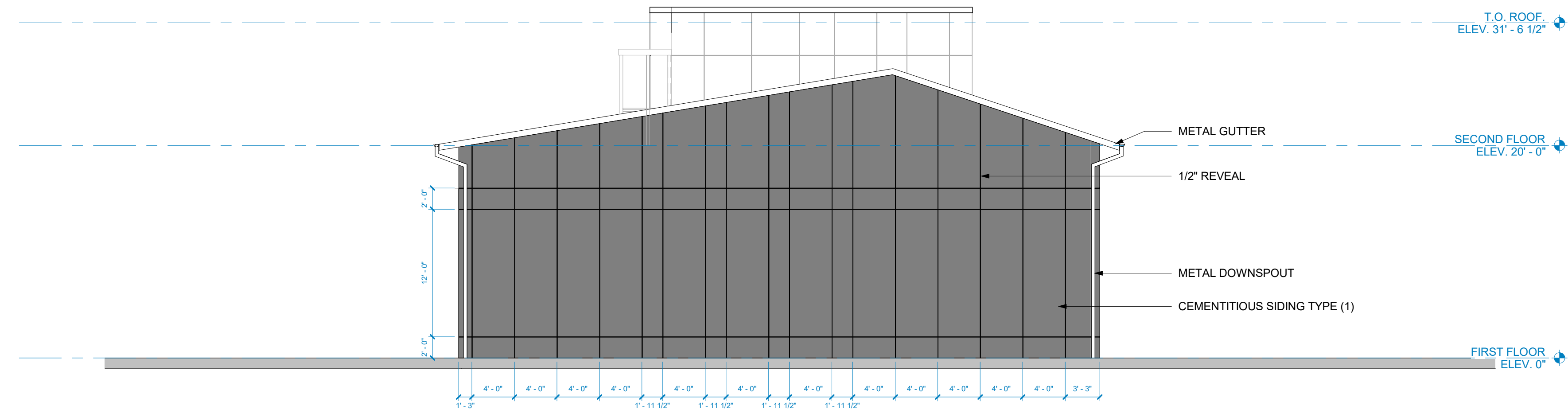
Mark	Date	Description
PROJECT NO: 23038		
DATE: 7/14/2023		
SCALE: As indicated		
DRAWN BY: OU		
PROJ MGR: LML		

ROOF PLAN

A103

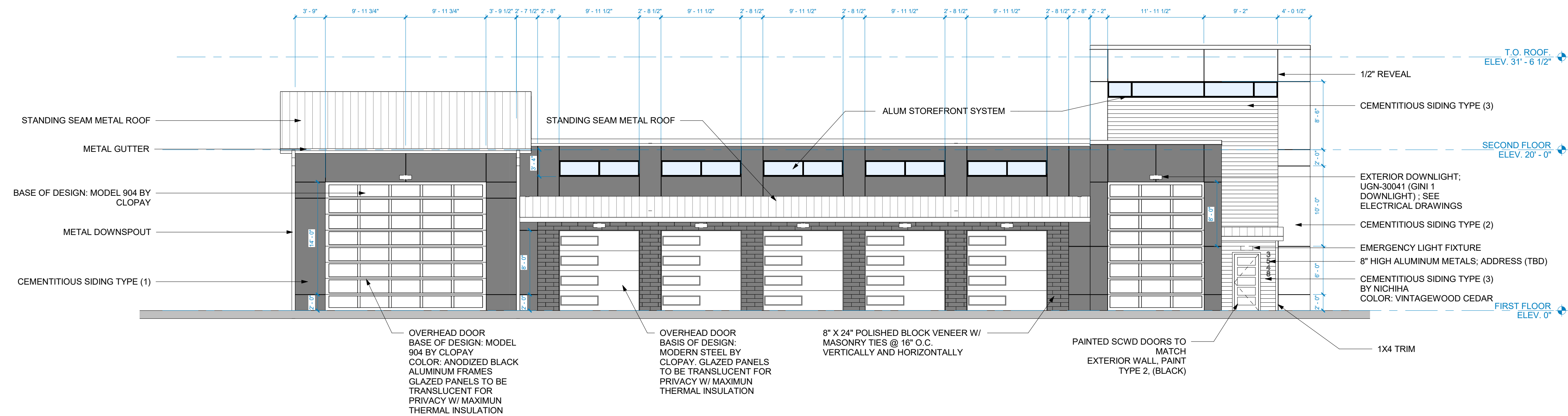


6725 MONUMENT DRIVE.
WILMINGTON, NC 28405



EAST ELEVATION
1/8" = 1'-0"

2



NORTH ELEVATION
1/8" = 1'-0"

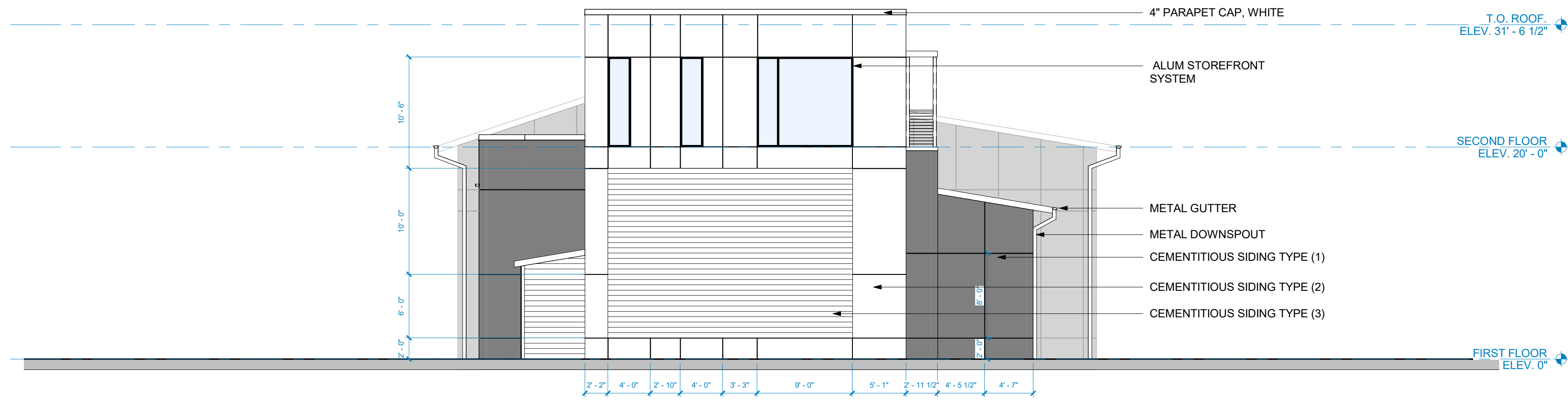
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EXTERIOR ELEVATIONS

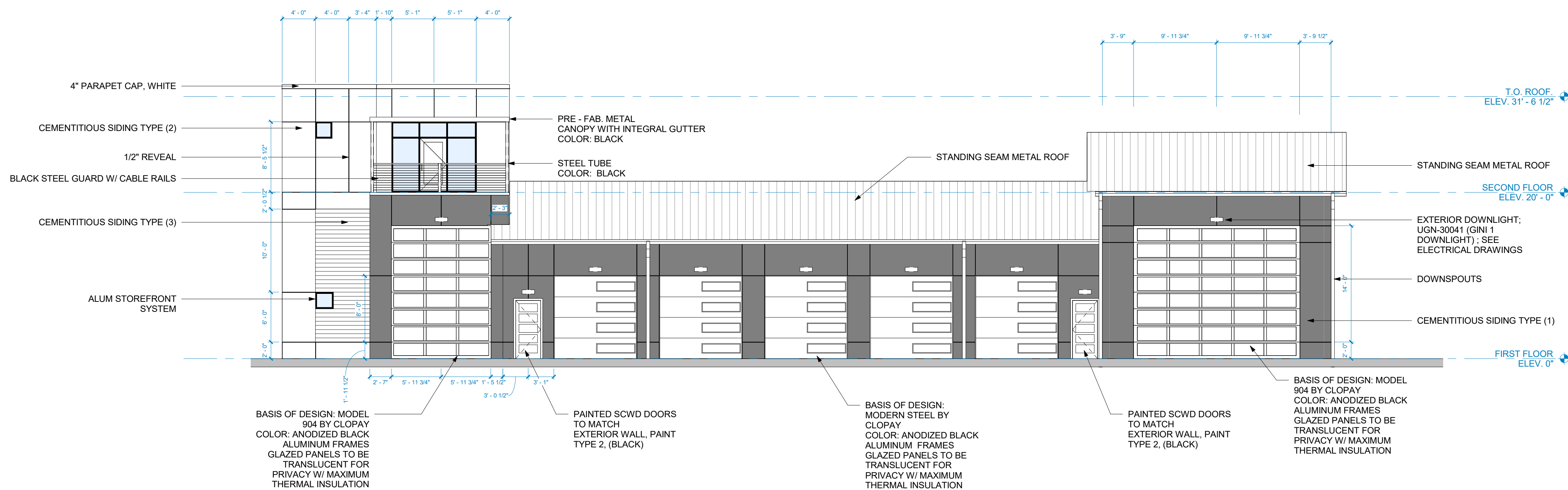
A201

7/14/2023 11:55:42 AM C:\Users\Lolu Uwadinma\Documents\23038_ZIMGARAGE_loluDTHA4.rvt



WEST ELEVATION
1/8" = 1'-0"

2



SOUTH ELEVATION
1/8" = 1'-0"

1

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PROJECT NO: 23038		
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SCALE: 1/8" = 1'-0"		
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PROJ MGR: LML		

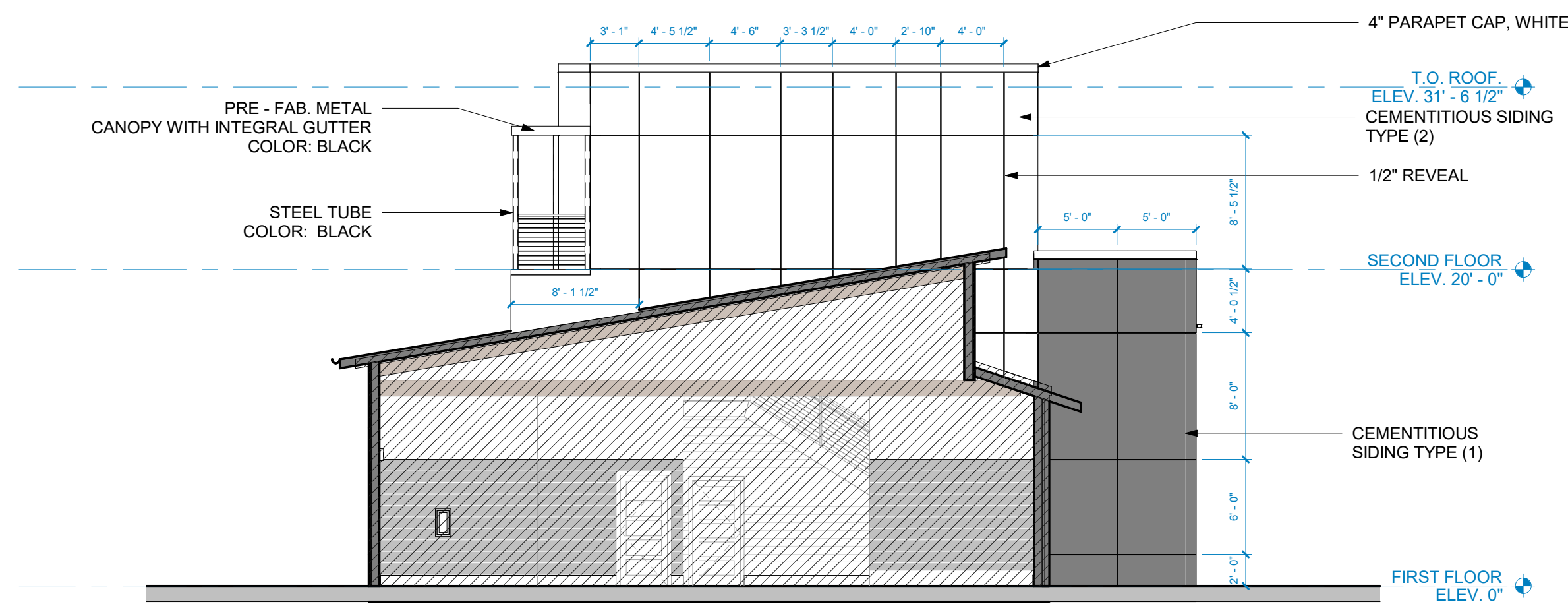
EXTERIOR
ELEVATIONS

A202

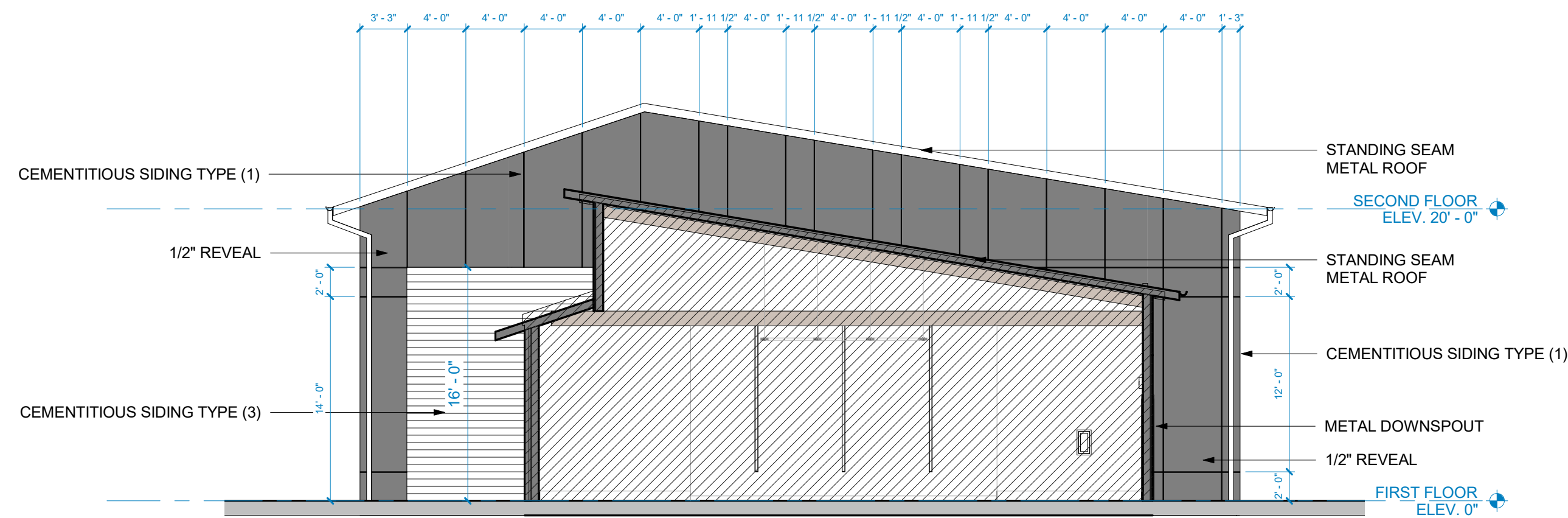
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EXTERIOR ELEVATIONS

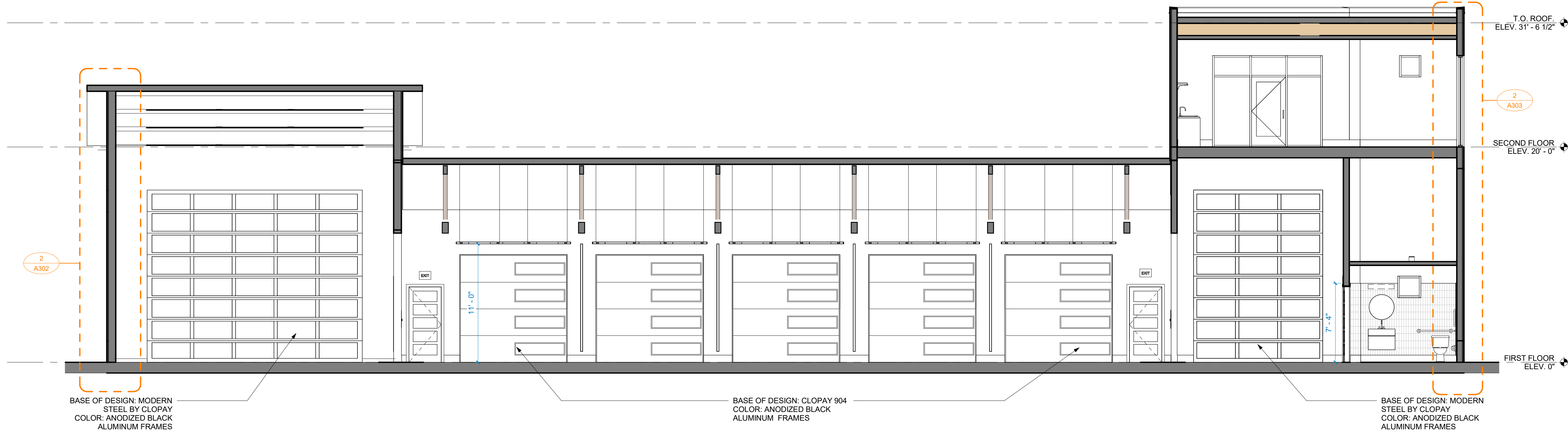
A203



EXTERIOR ELEVATION 2

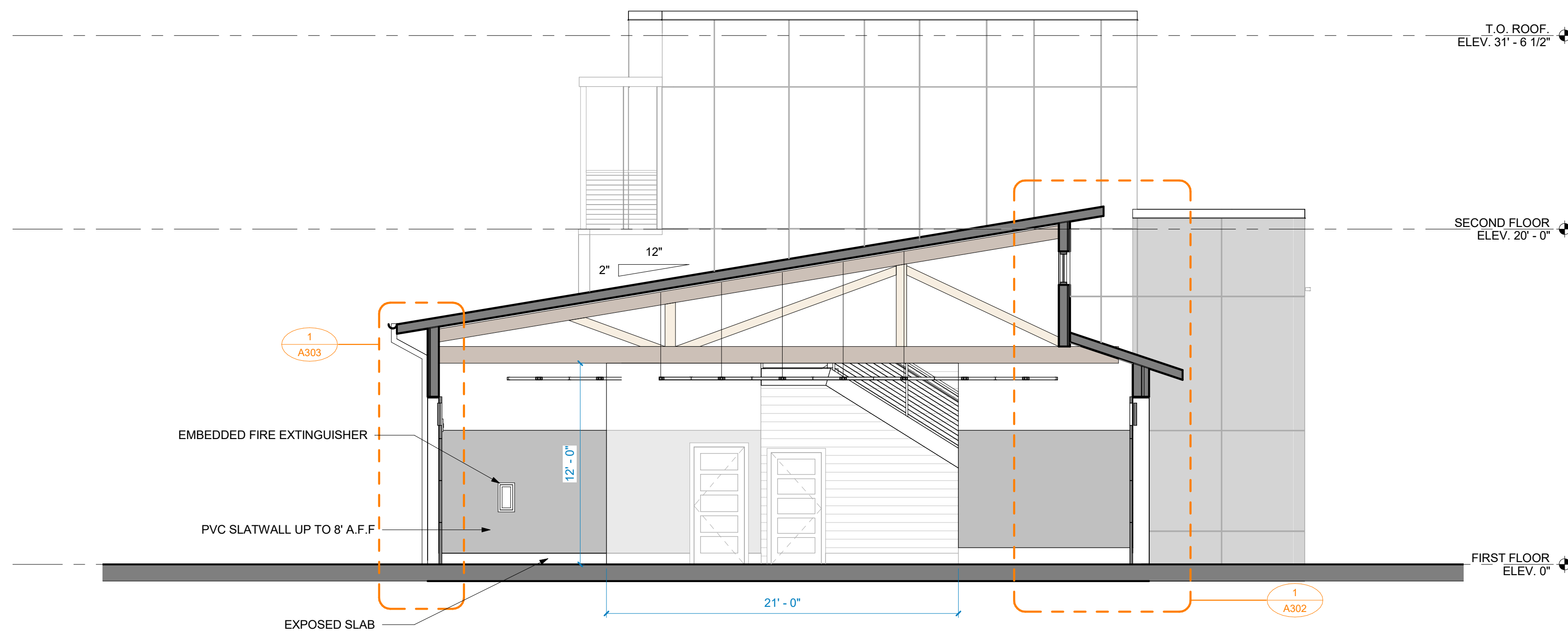


EXTERIOR ELEVATION 1



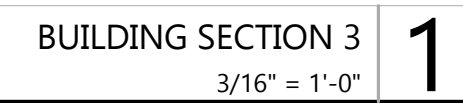
BUILDING SECTION 2
3/16" = 1'-0"

1

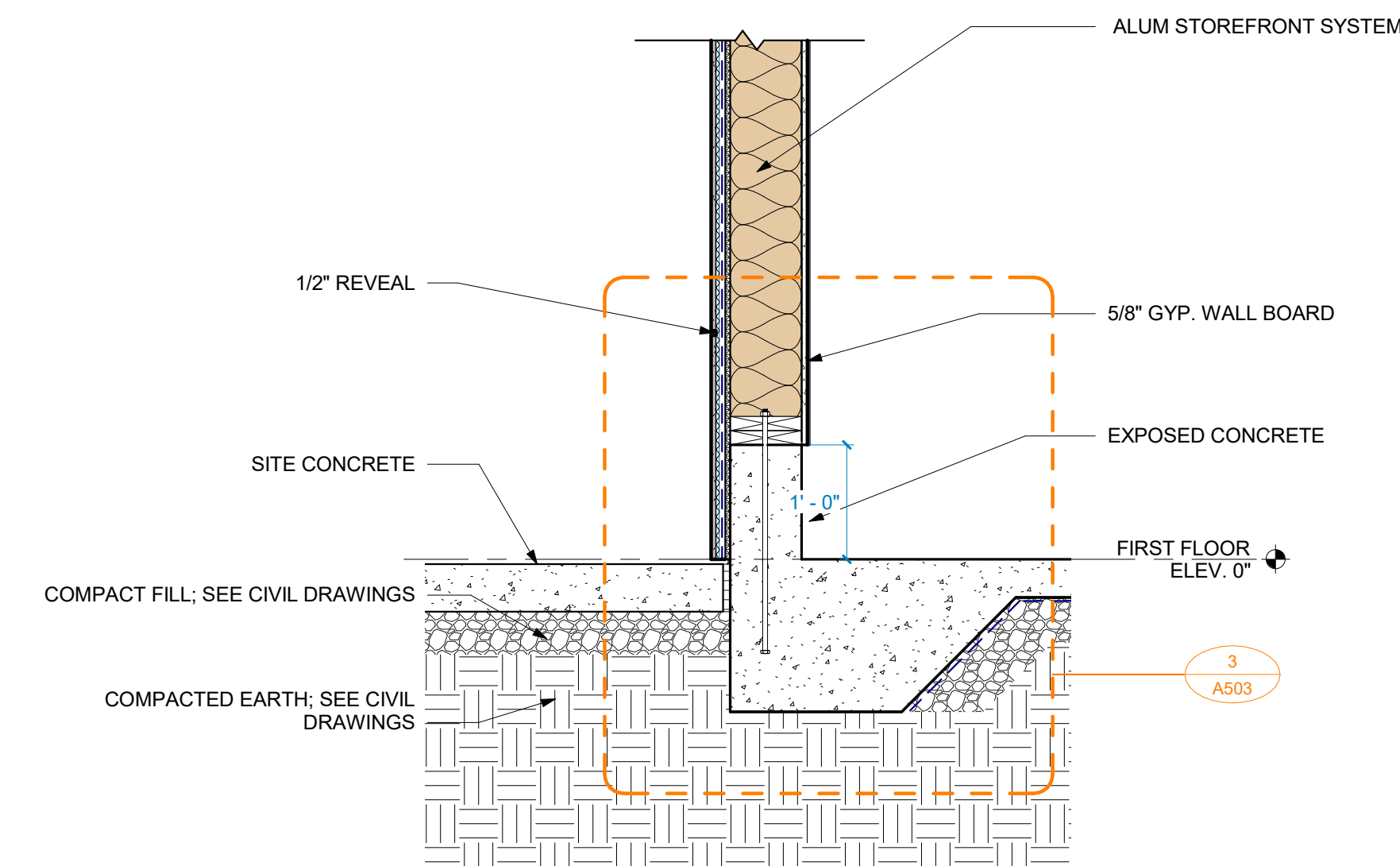
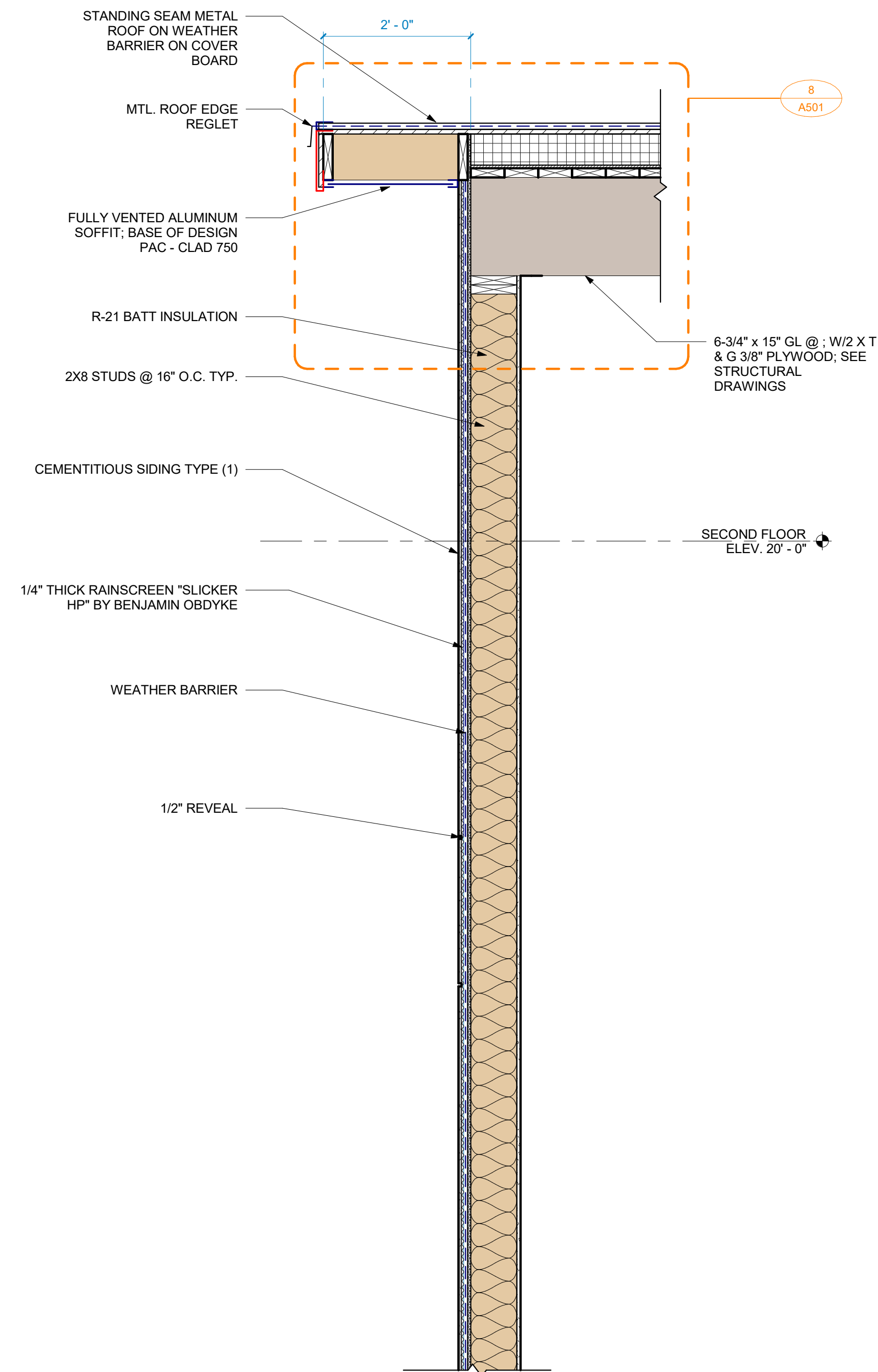


BUILDING SECTION 1
3/16" = 1'-0"

2

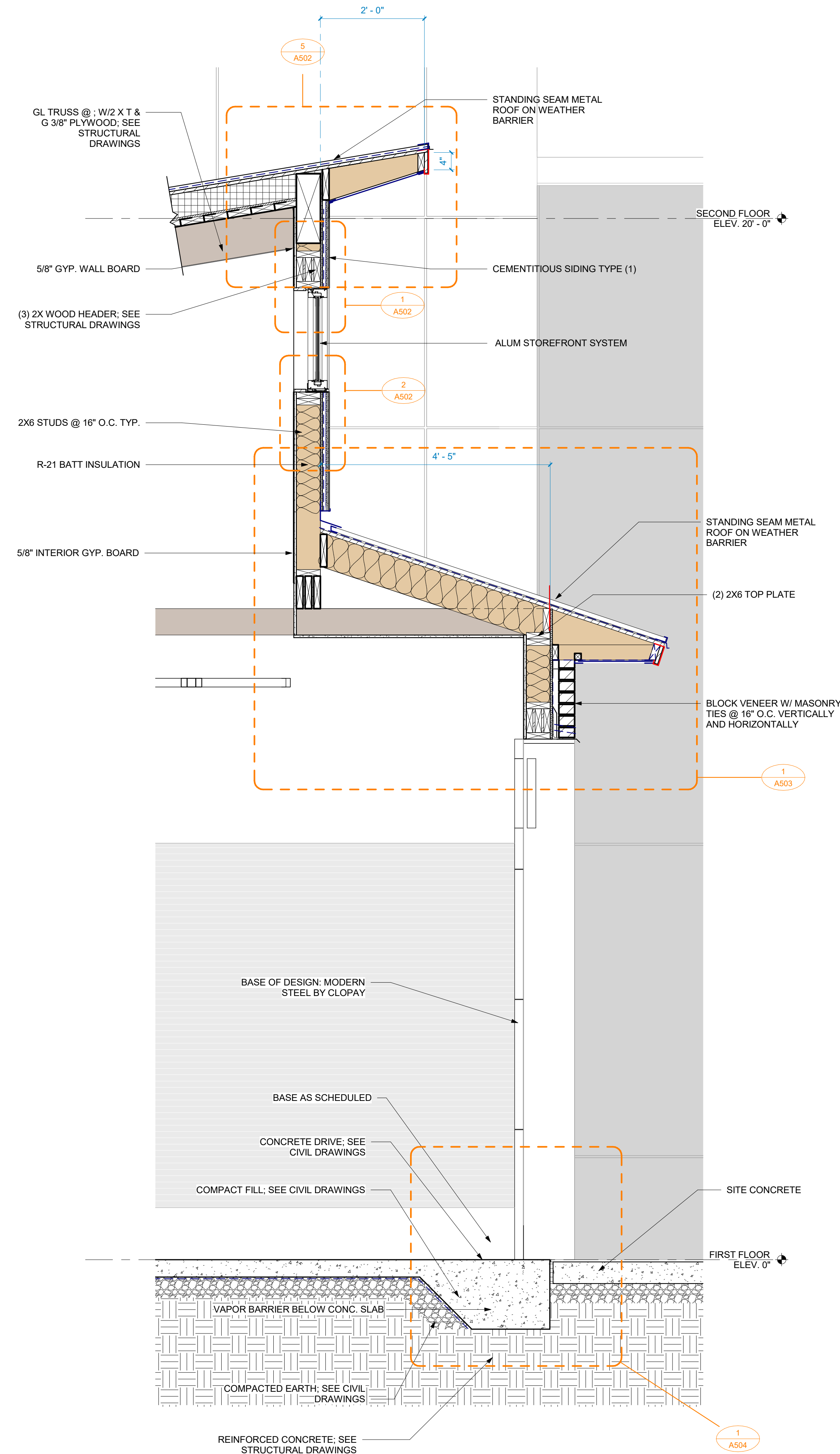


A301.B



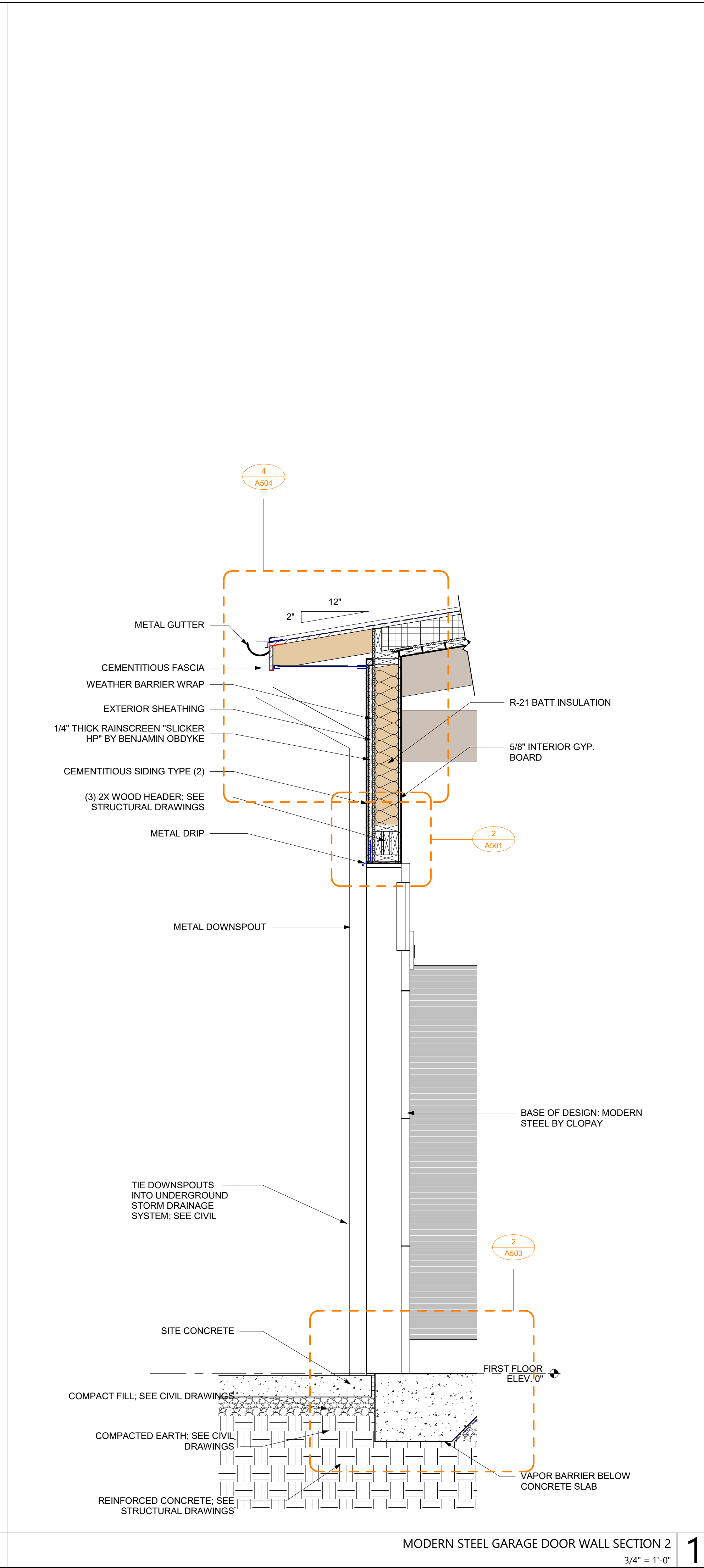
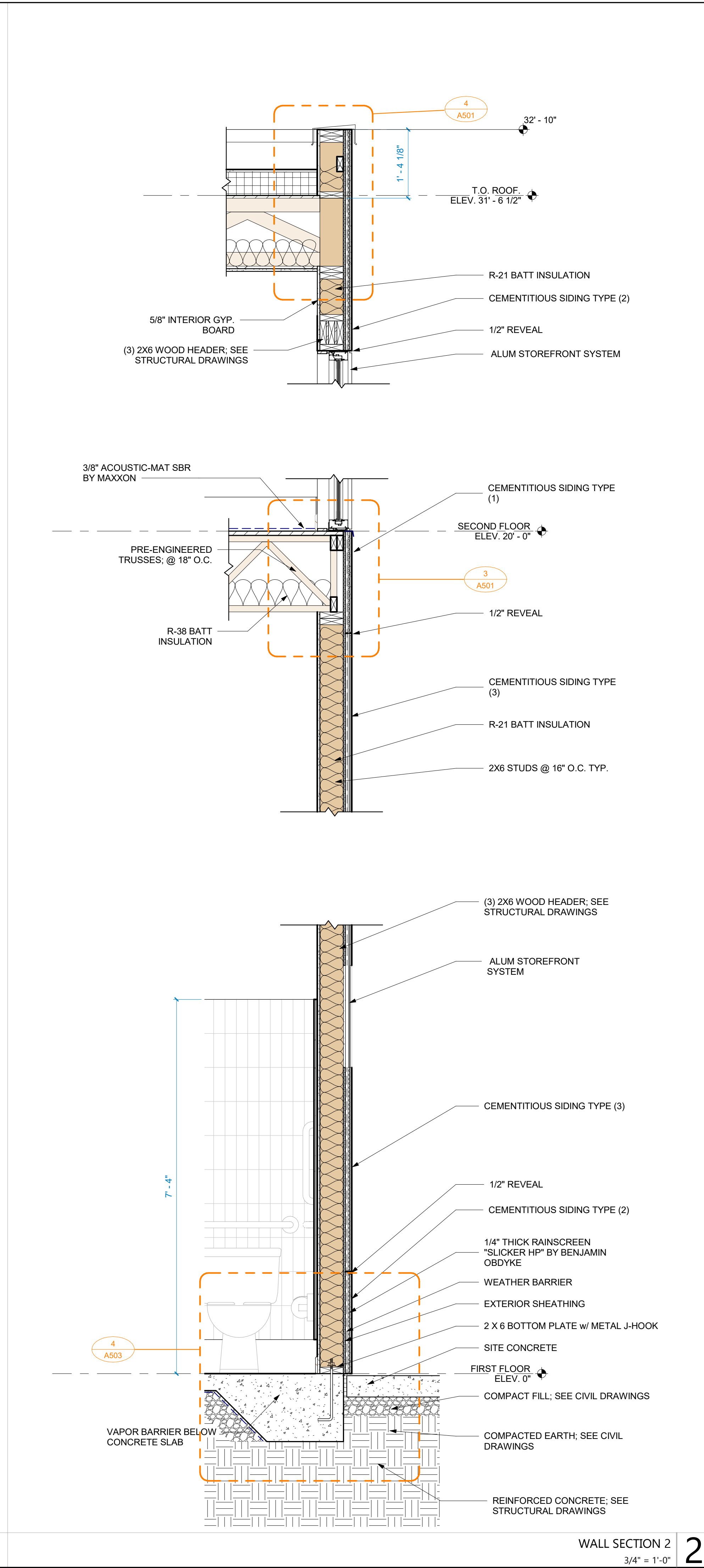
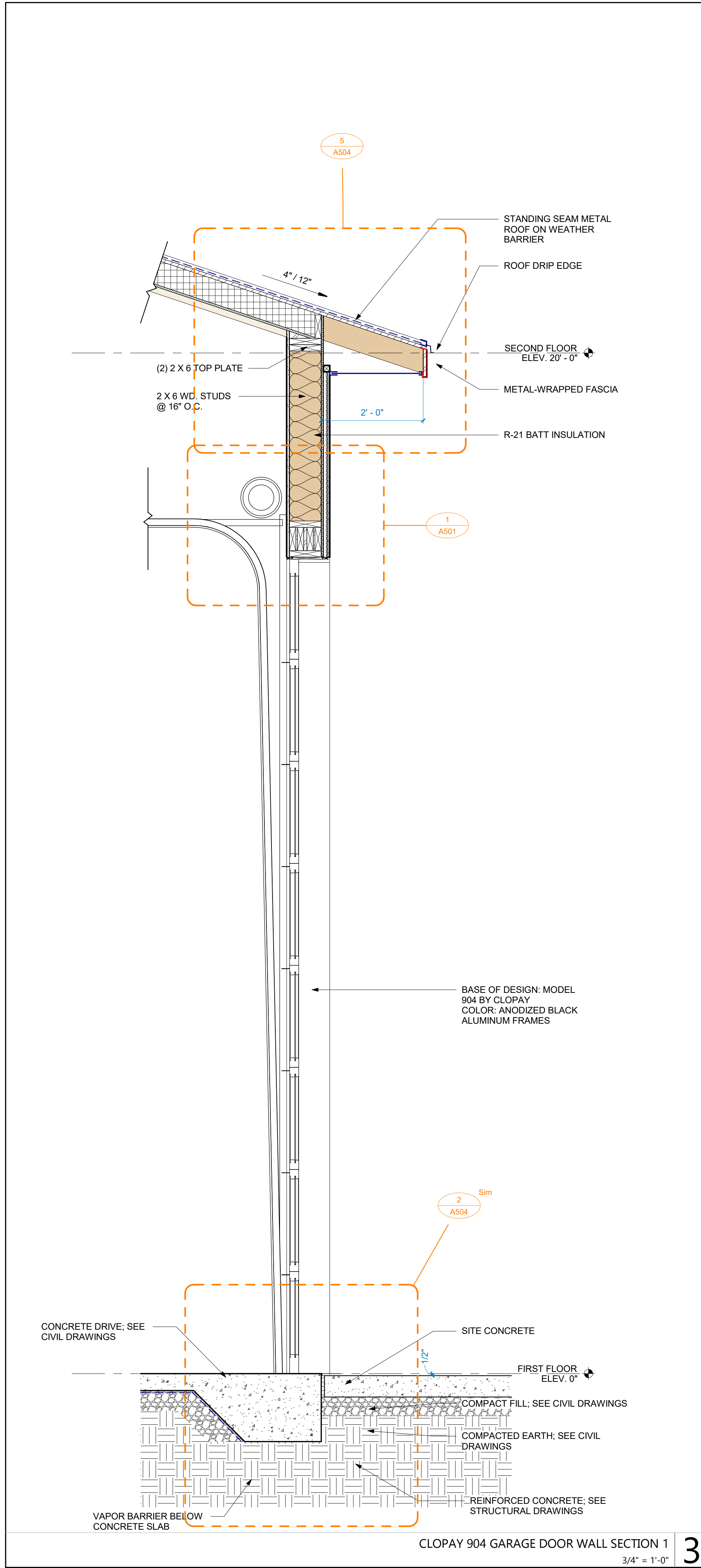
WALL SECTION AT STORGE 2
3/4" = 1'-0"

2



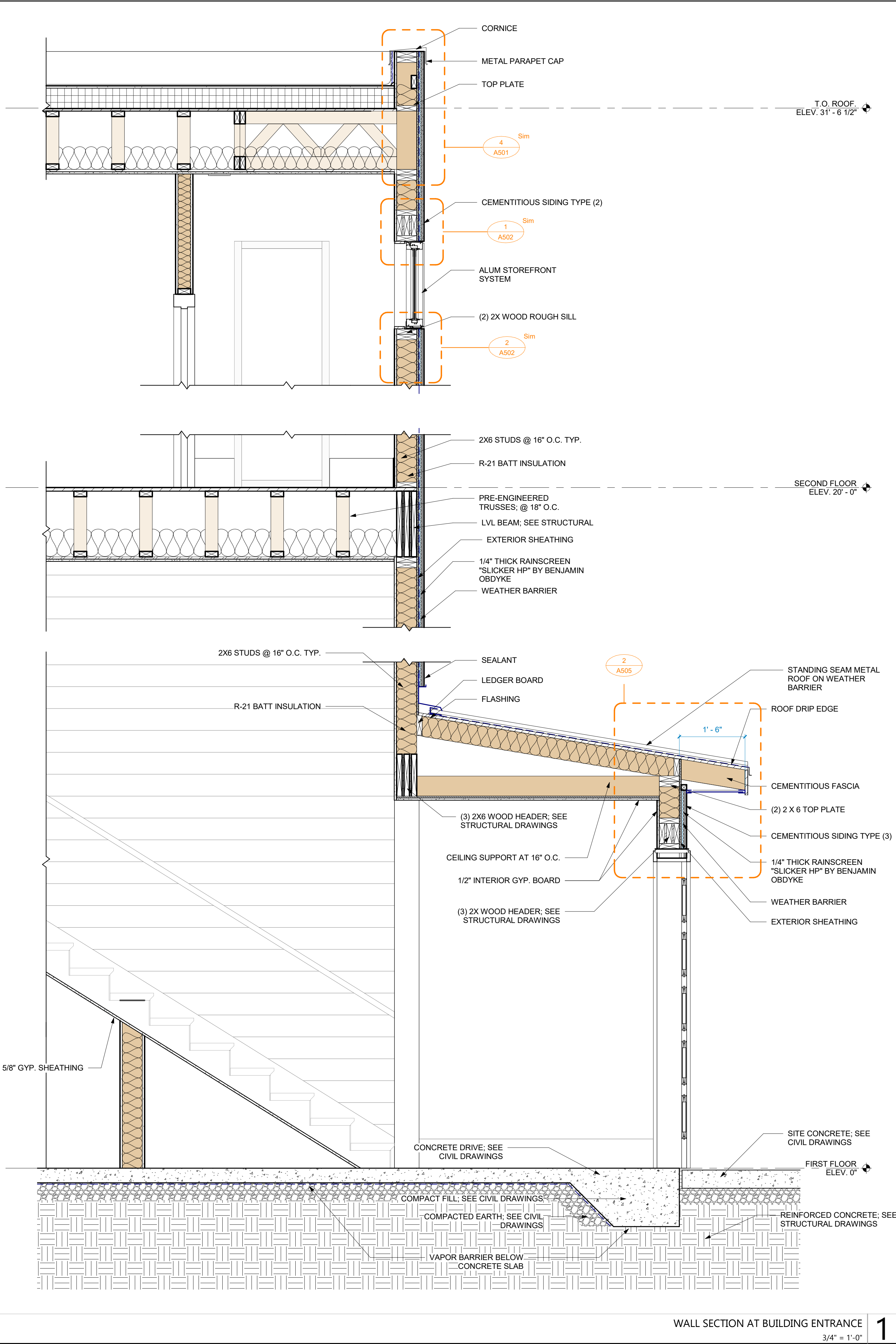
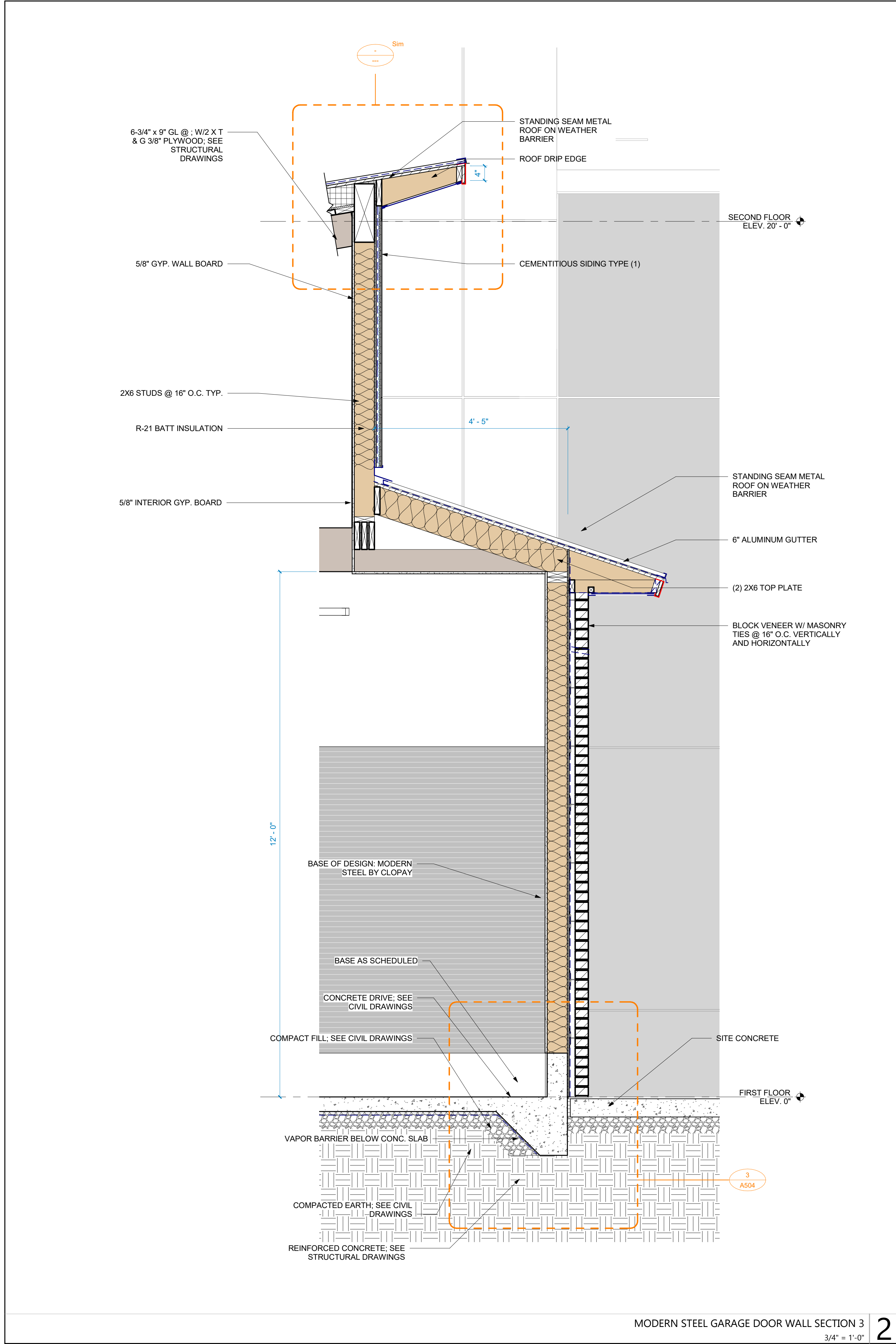
MODERN STEEL GARAGE DOOR WALL SECTION 1
3/4" = 1'-0"

1



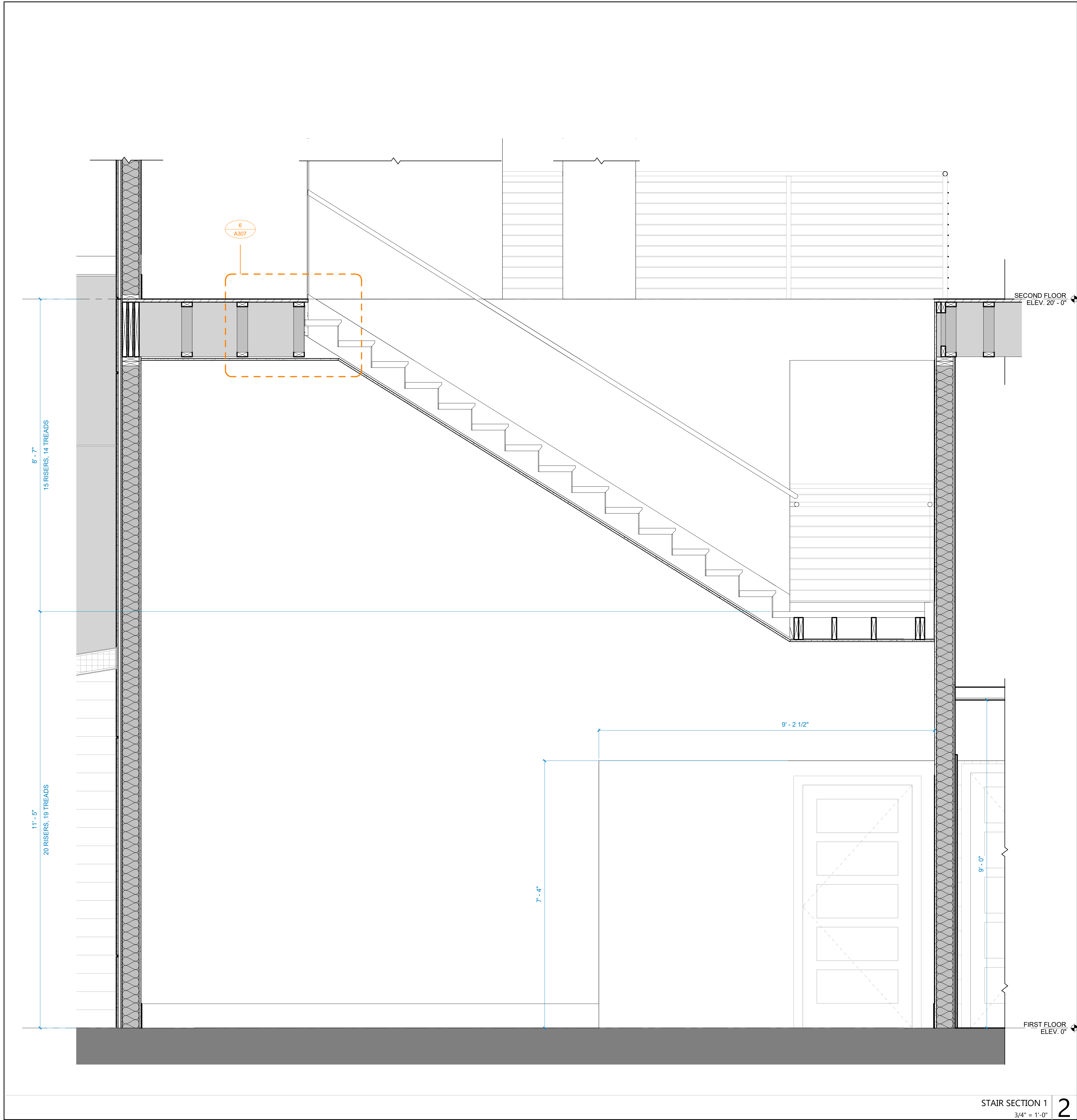
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SCALE: 3/4" = 1'-0"		
DRAWN BY: OU		
PROJ MGR: LML		

WALL SECTIONS

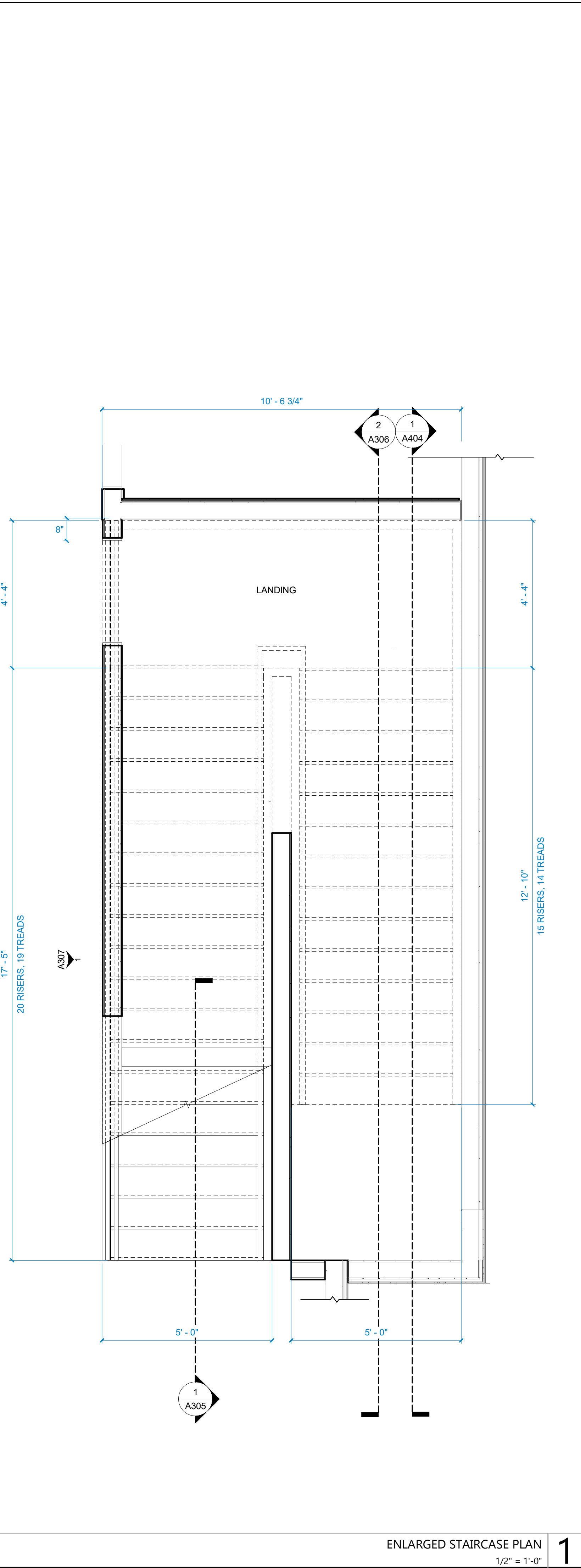


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SCALE: 3/4" = 1'-0"		
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WALL SECTIONS

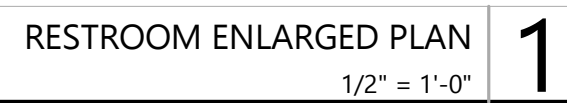
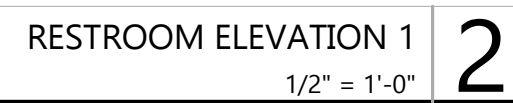
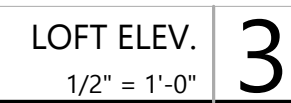


STAIR SECTION 1
3/4" = 1'-0"



ENLARGED STAIRCASE PLAN
1/2" = 1'-0"

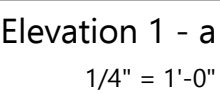
© 2023 MARK LOUDERMILK ARCHITECTURE, PLLC		
Mark	Date	Description
PROJECT NO: 23038		
DATE: 7/14/2023		
SCALE: As indicated		
DRAWN BY: OU		
PROJ MGR: LML		
STAIRCASE SECTION AND PLAN		
A306		



A	PROVIDED BY OWNER
B	18" VERTICAL GRAB BAR
C	42" HORIZONTAL GRAB BAR
D	36" HORIZONTAL GRAB BAR
E	TOILET PAPER DISPENSER
F	BASE AS SCHEDULED
G	CERAMIC TILE; UP TO 7" - 4"
H	VANITY LIGHT
I	2 X 6 BLOCKING FOR ADA STANDARD GRAB BAR



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3



2



1

INTERIOR ELEVATIONS

A402

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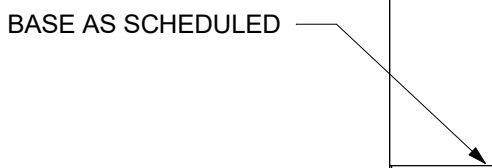
6725 MONUMENT DRIVE.
WILMINGTON, NC 28405

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INTERIOR ELEVATIONS

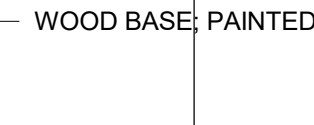
A403

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LOFT ELEVATION 3
1/2" = 1'-0"

3



LOFT ELEVATION 2
1/2" = 1'-0"

2

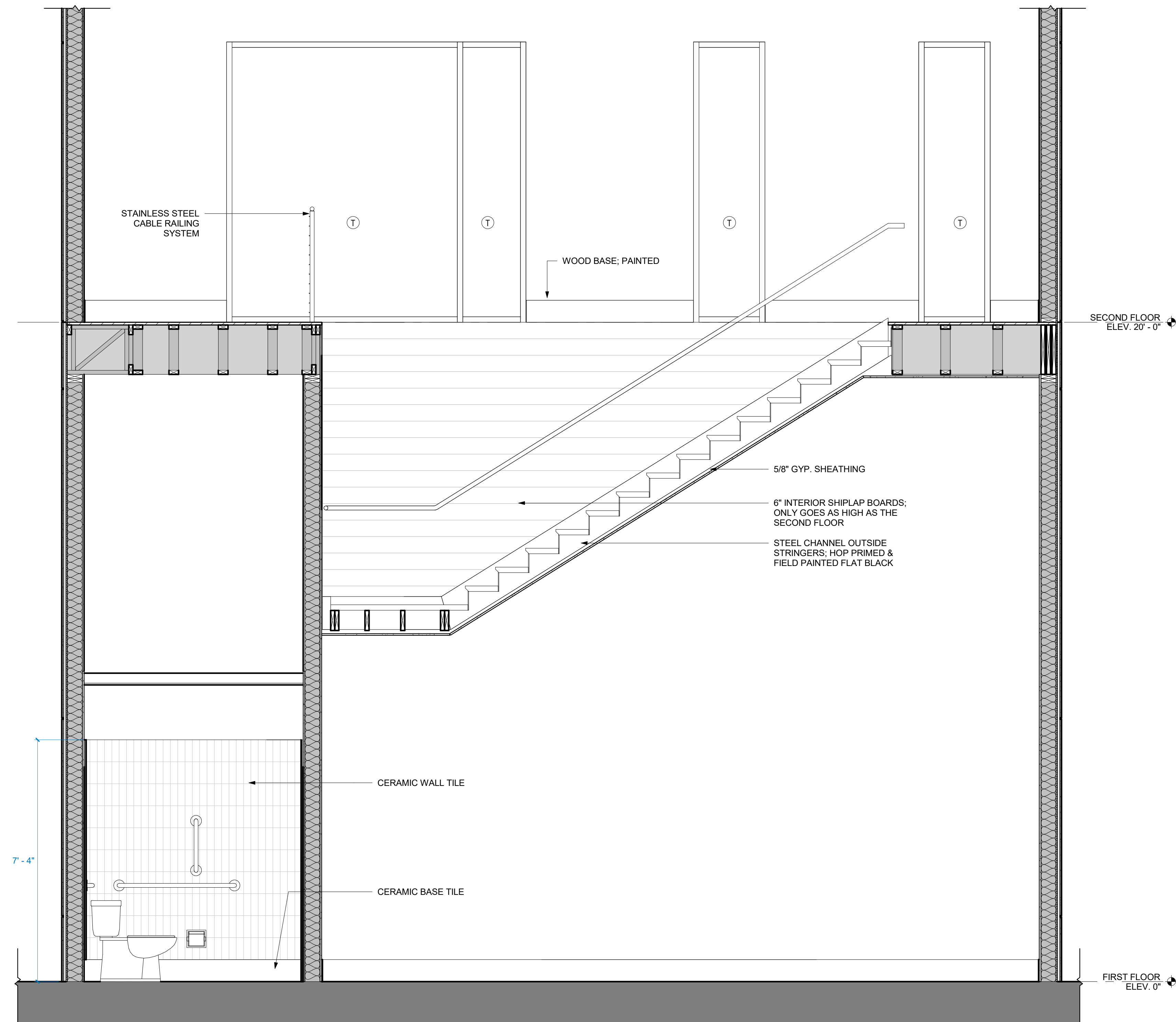


LOFT ELEVATION 1
1/2" = 1'-0"

1



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[illegible]

INTERIOR ELEVATIONS

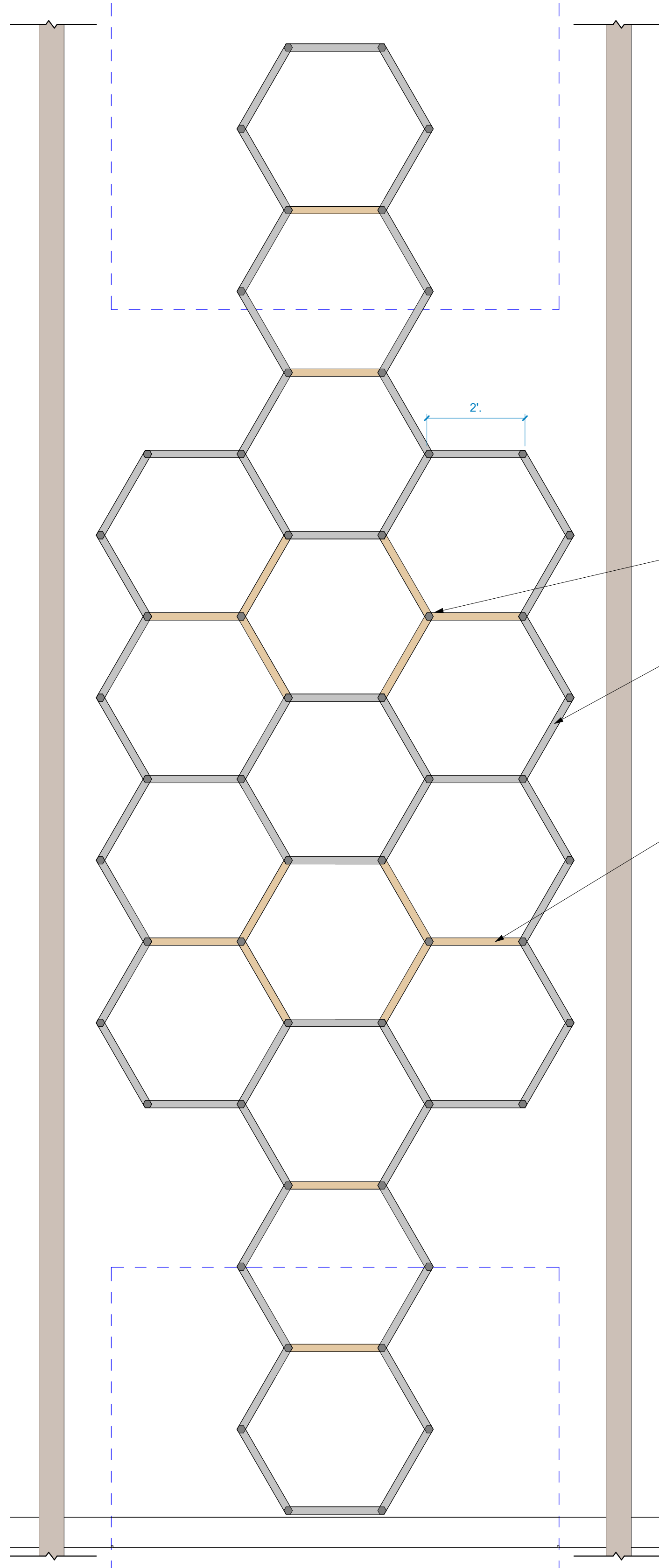
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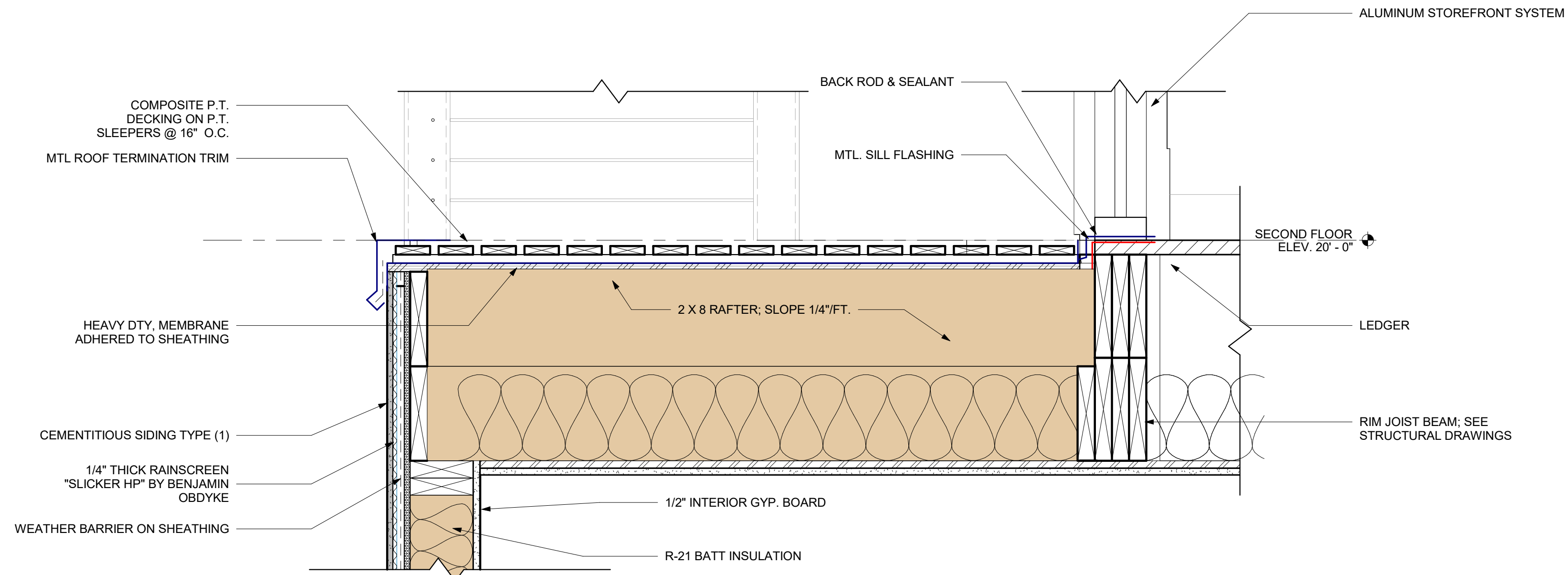


A501



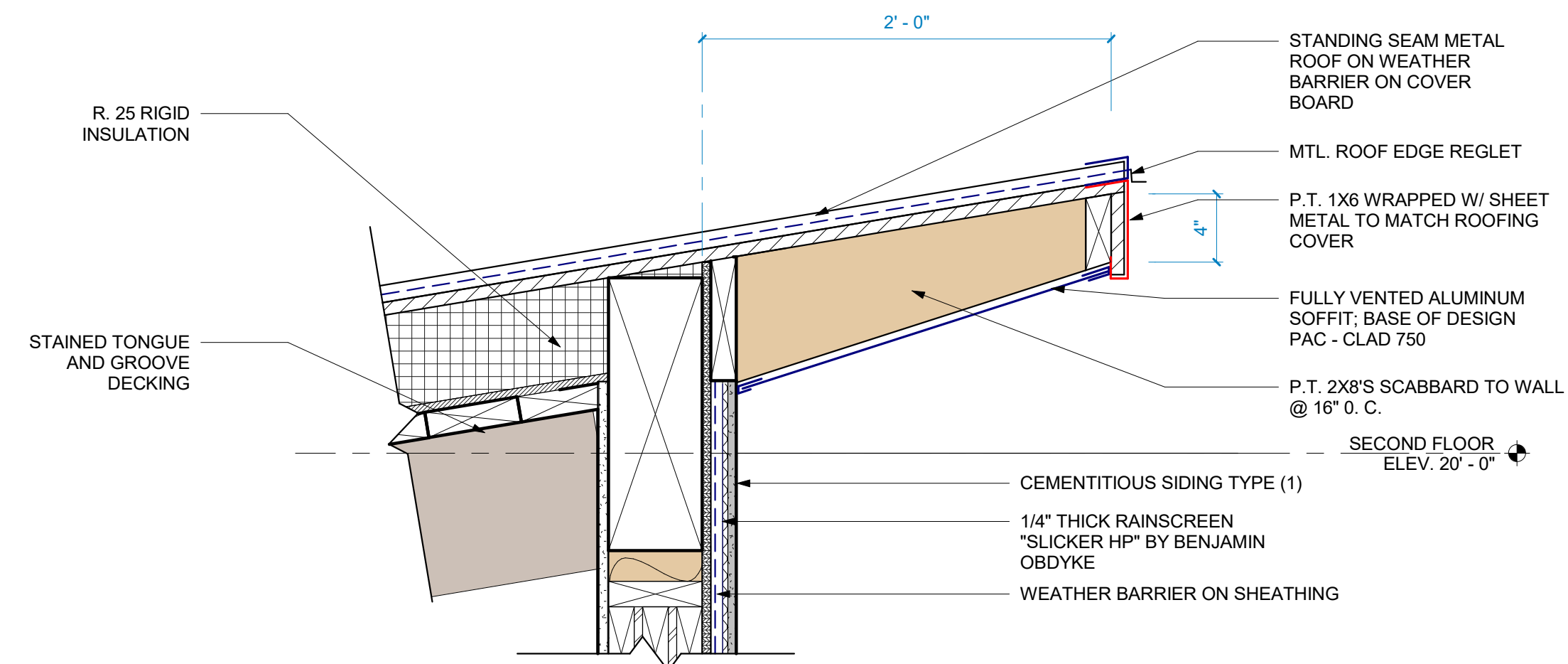
GO FIGURE (CUSTOM LIGHT) DETAIL
1/2" = 1'-0"

3



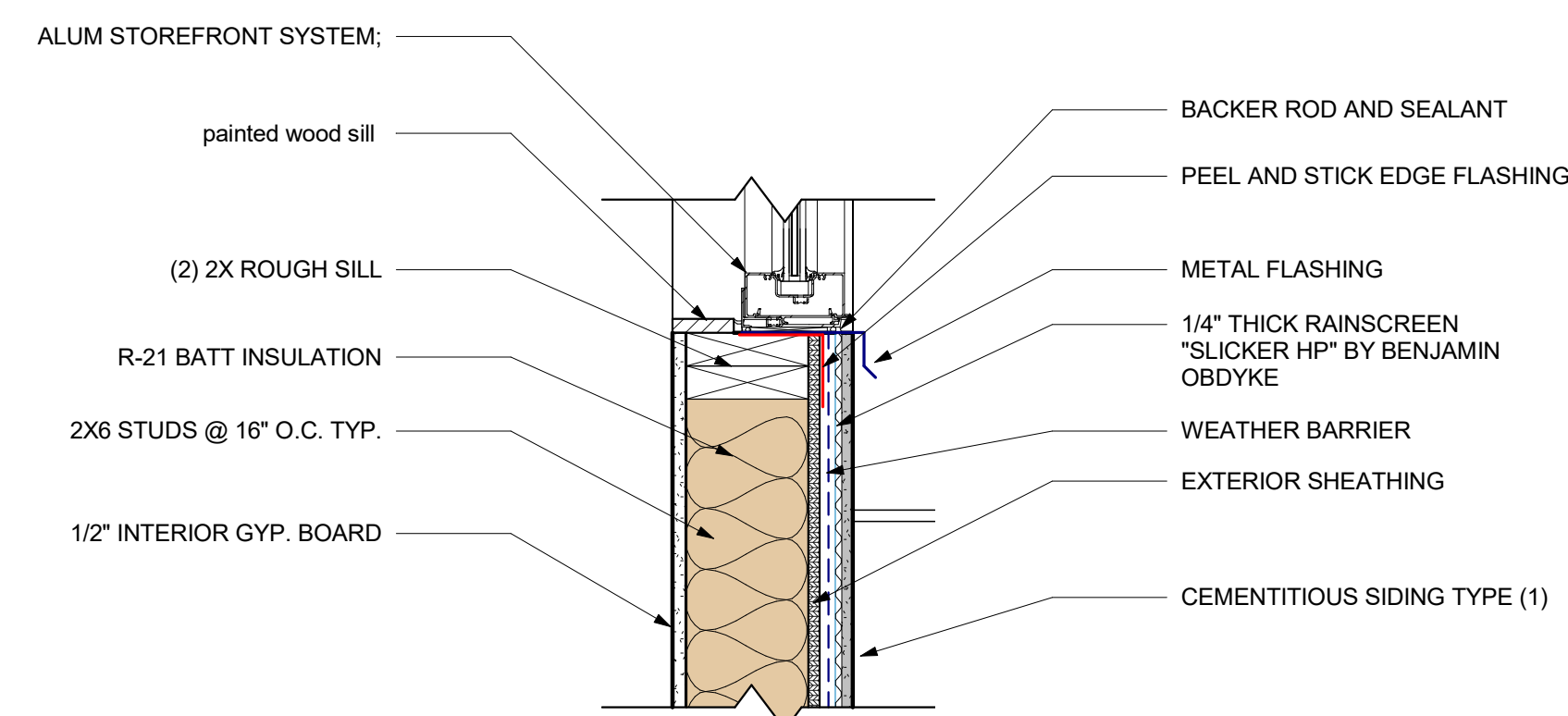
BALCONY DETAIL
1 1/2" = 1'-0"

6



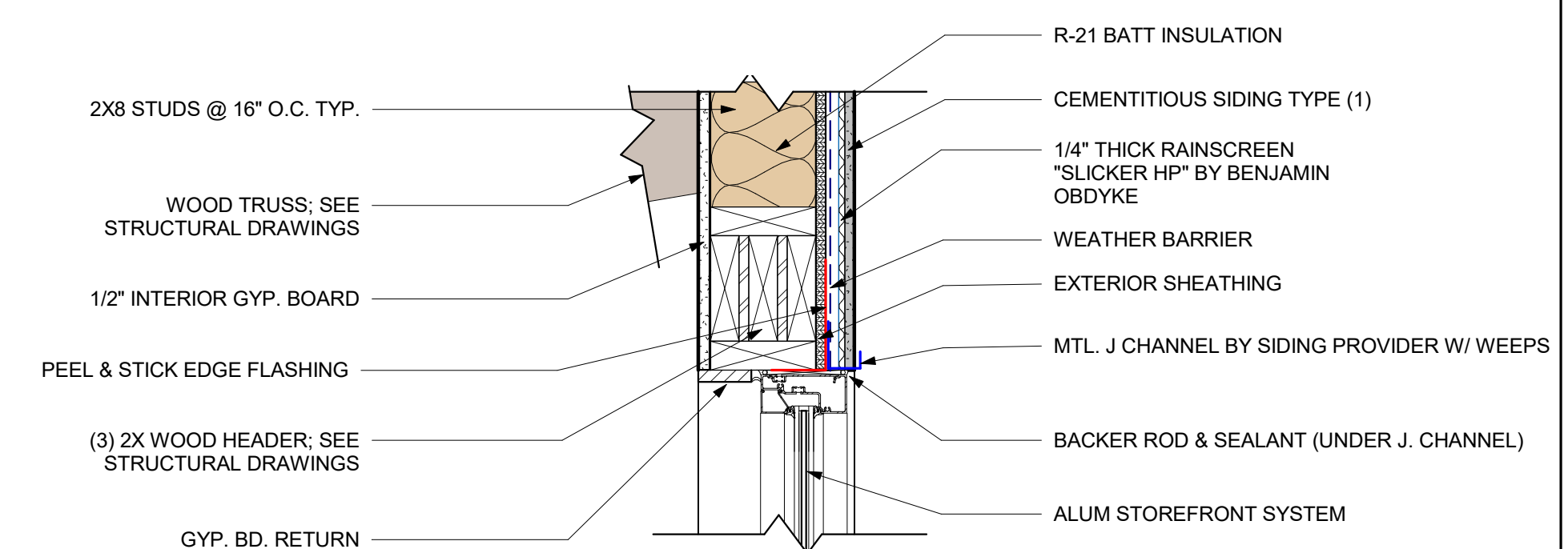
SOFFIT DETAIL
1 1/2" = 1'-0"

5



STOREFRONT SILL DETAIL (2X6)
1 1/2" = 1'-0"

2



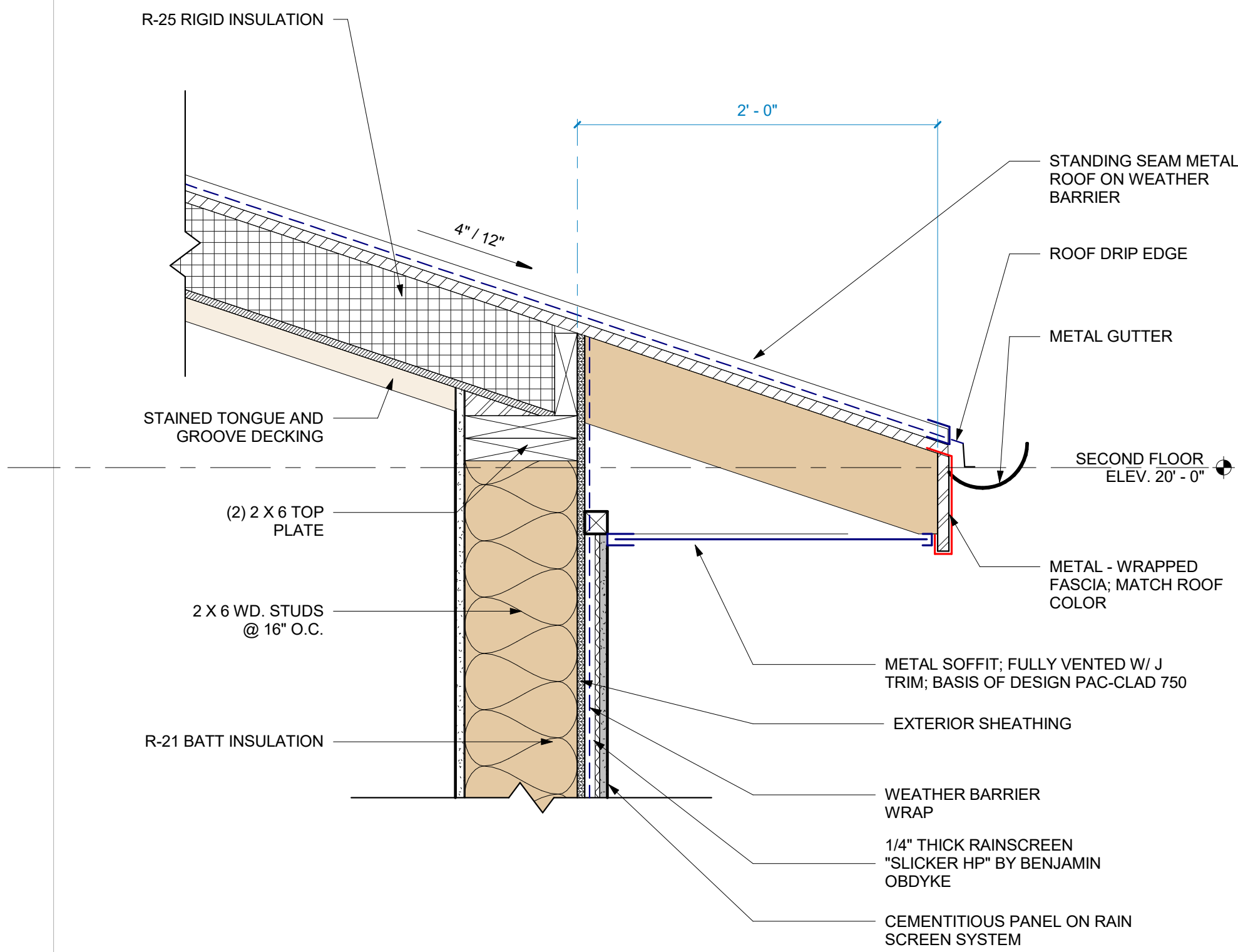
STOREFRONT HEADER DETAIL (2X6)
1 1/2" = 1'-0"

1

Mark	Date	Description
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DATE:	7/14/2023	
SCALE:	As indicated	
DRAWN BY:	BCS	
PROJ MGR:	LML	

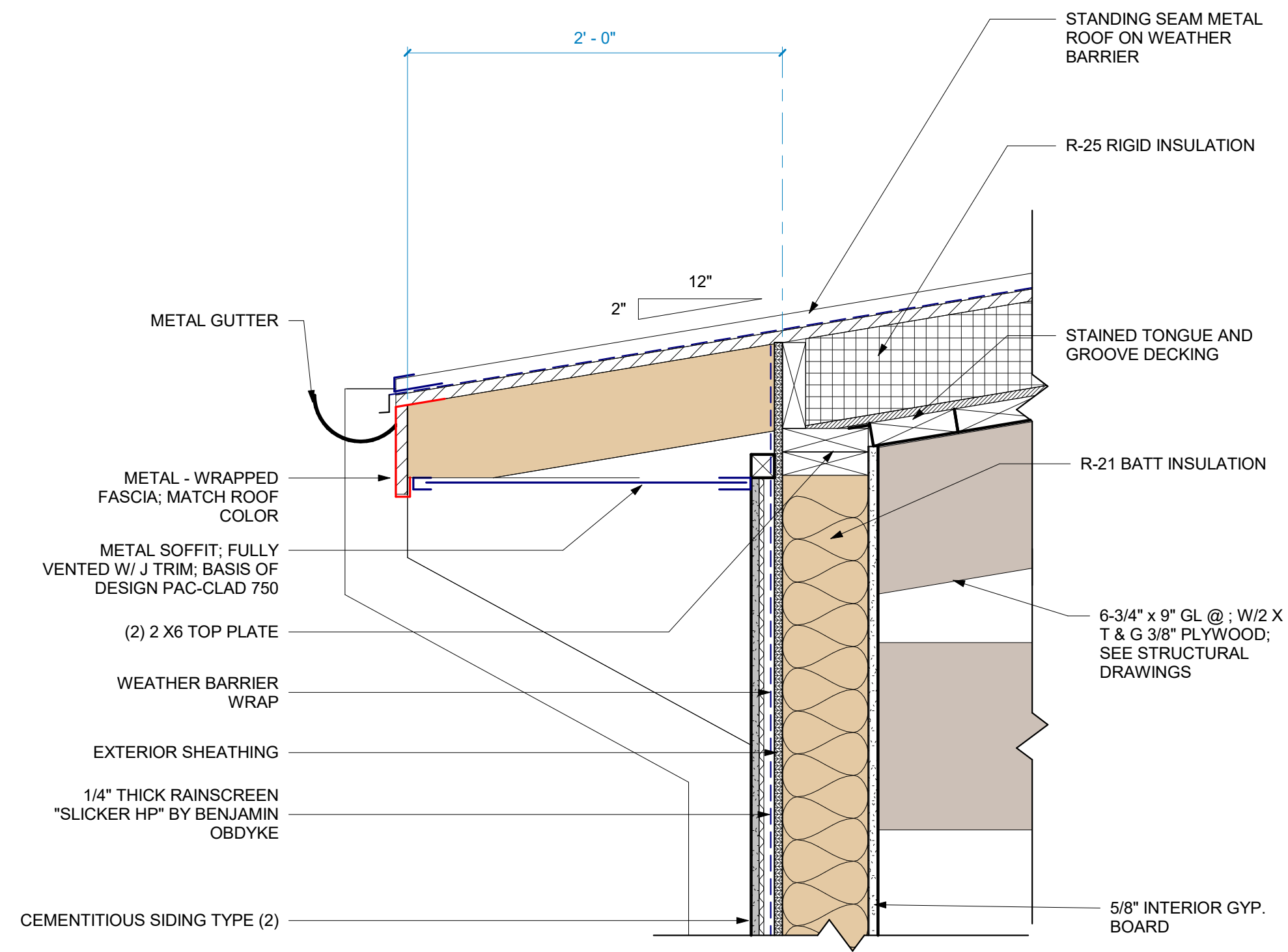
DETAILS

A502



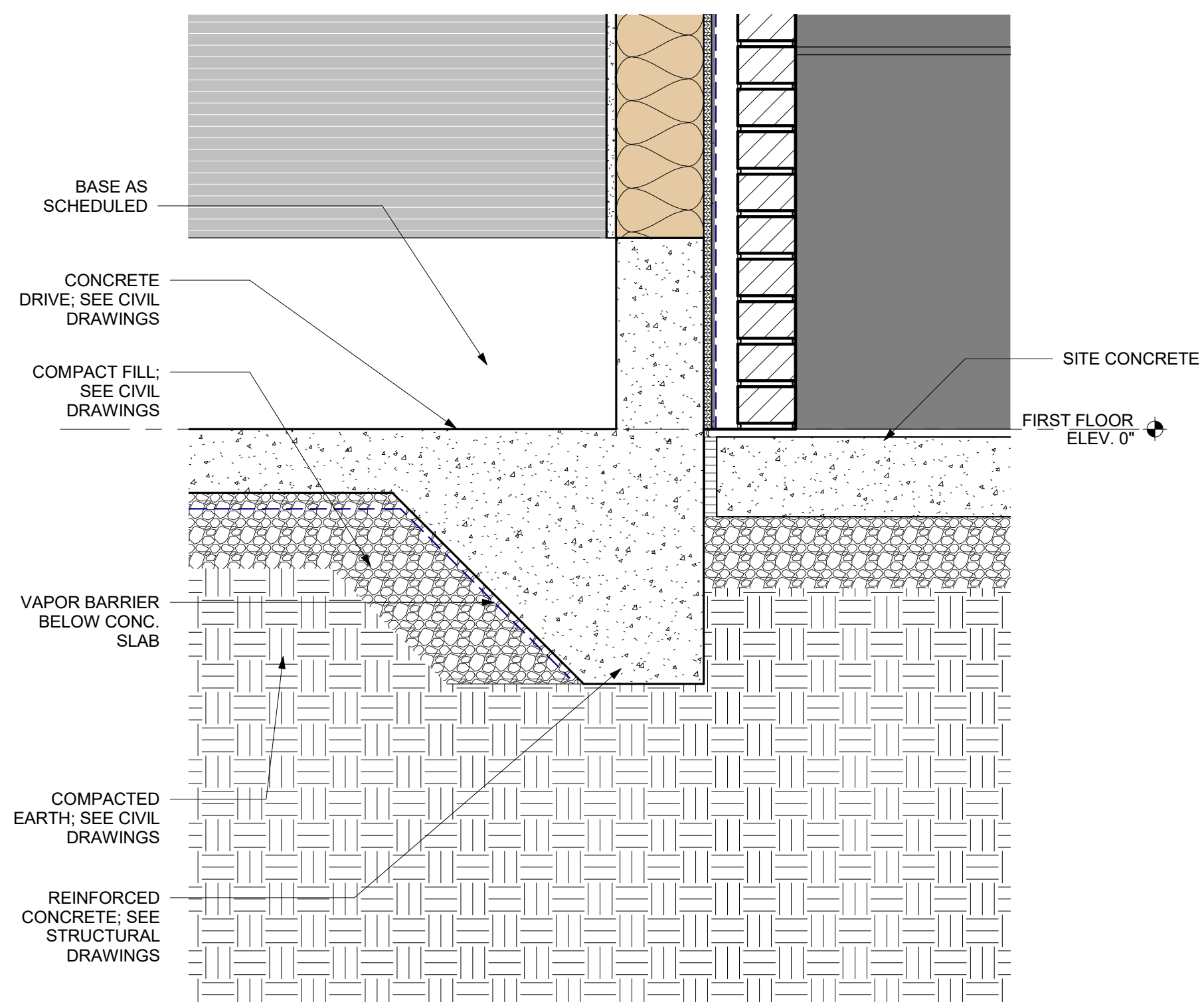
SOFFIT DETAIL IN STORAGE 2
1 1/2" = 1'-0"

5



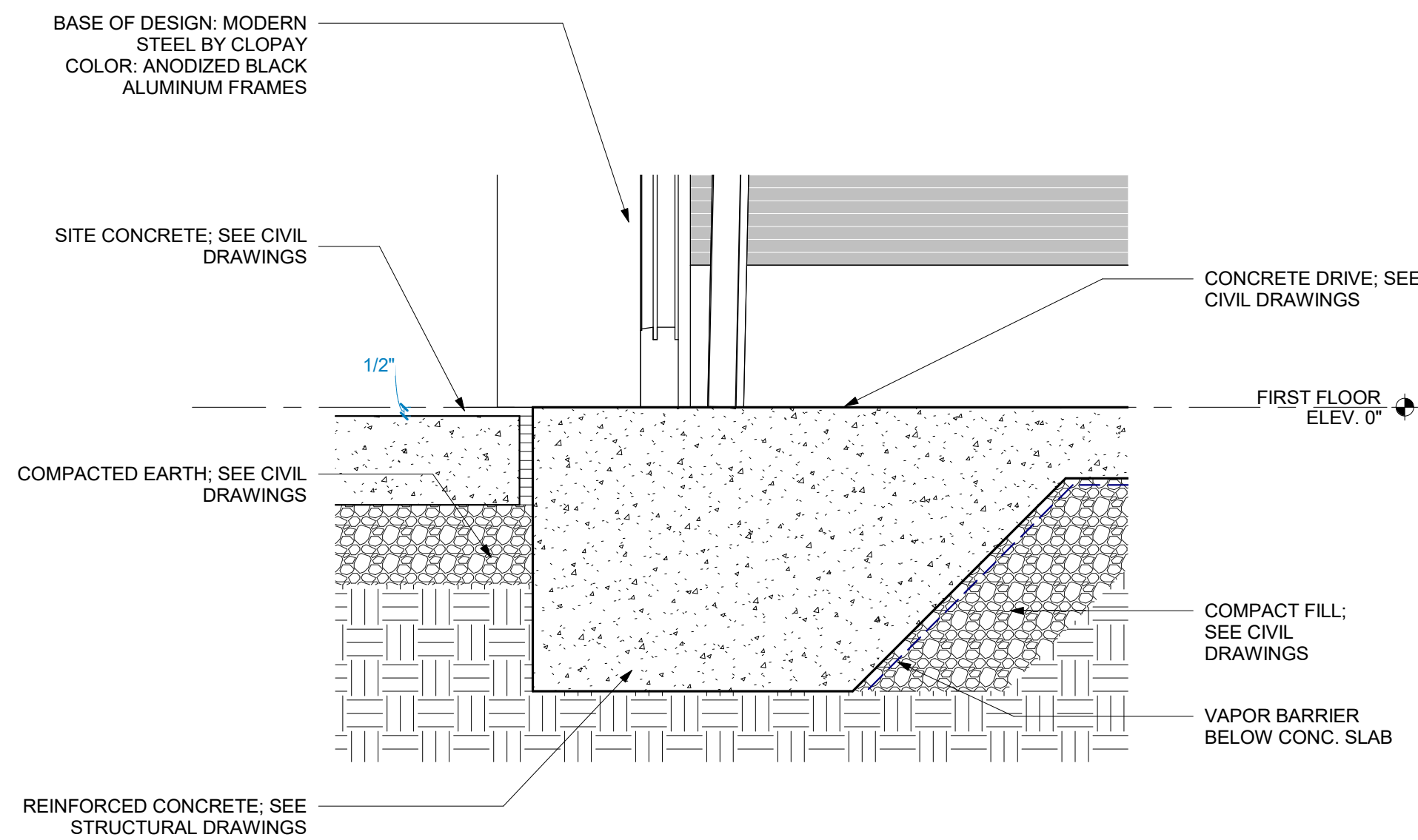
SOFFIT DETAIL AT STORAGE 1
1 1/2" = 1'-0"

4



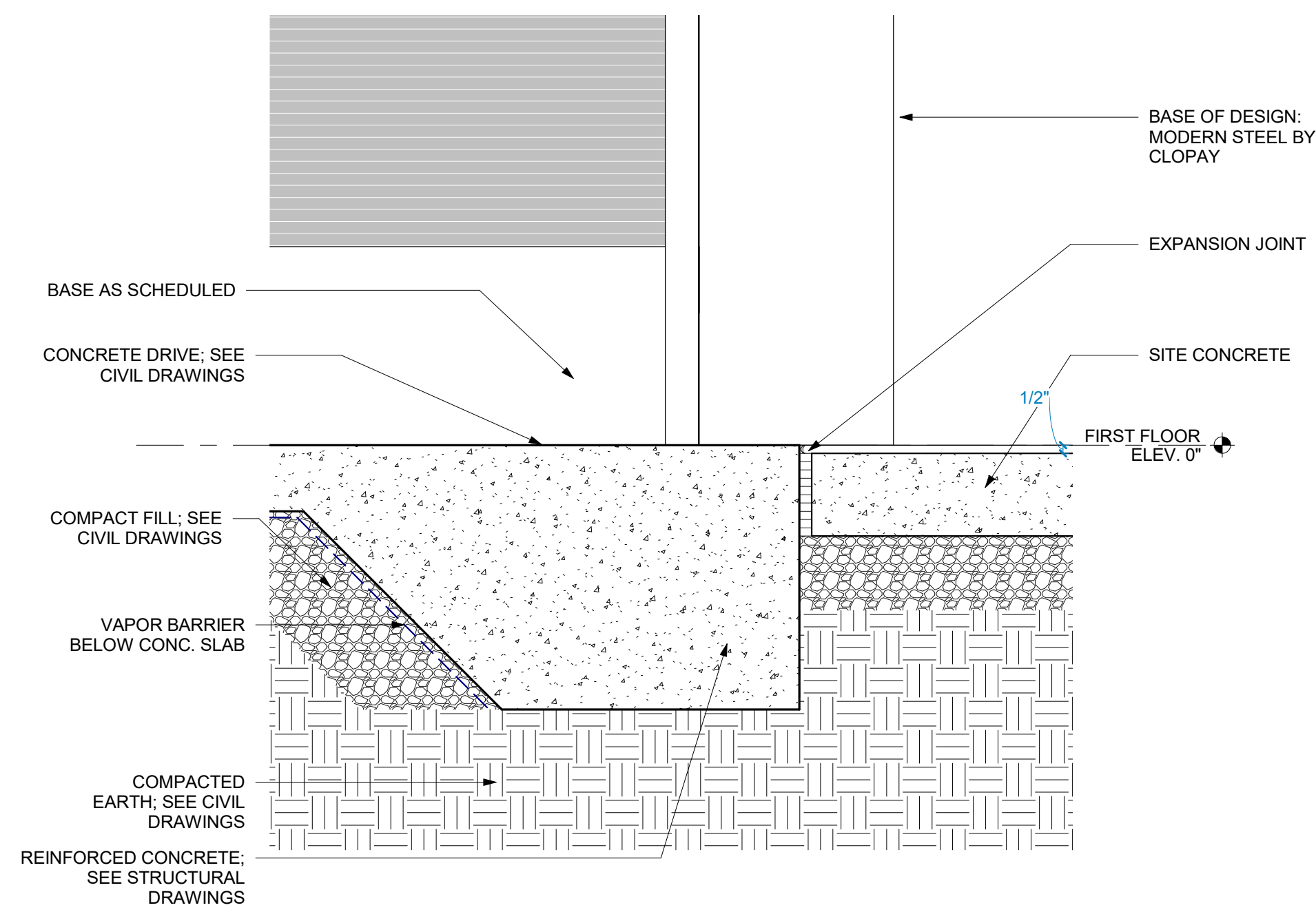
FOUNDATION DETAIL AT BRICK ON WOOD STUD WALL
1 1/2" = 1'-0"

3



FOUNDATION DETAIL AT CLOPAY 902 OVERHEAD DOOR IN OFFICE
1 1/2" = 1'-0"

2



FOUNDATION DETAIL AT MODERN STEEL OVERHEAD DOOR IN STORAGE 1
1 1/2" = 1'-0"

1

Mark	Date	Description
PROJECT NO:	23038	
DATE:	7/14/2023	
SCALE:	1 1/2" = 1'-0"	
DRAWN BY:	OU	
PROJ MGR:	LML	

DETAILS

A504

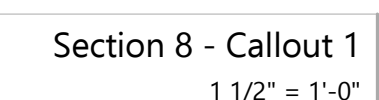


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2



1

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Mark	Date	Description
PROJECT NO: 23098		
DATE: 7/14/2023		
SCALE: 1 1/2" = 1'-0"		
DRAWN BY: OU		
PROJ MGR: LML		

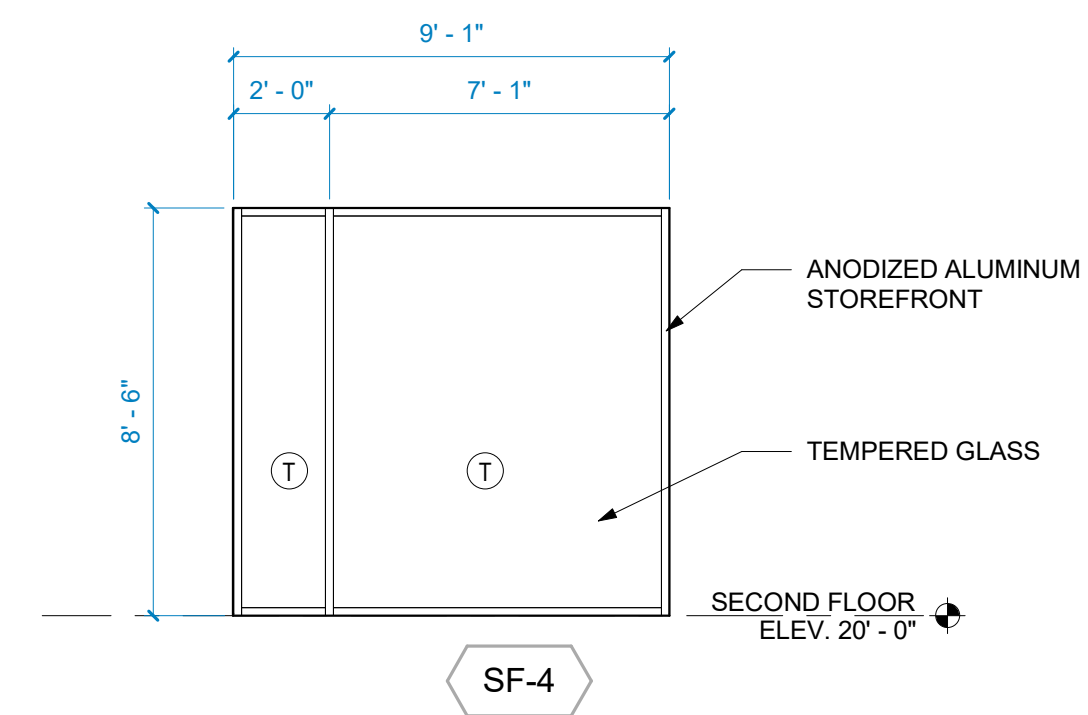
DETAILS

A505

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1.0 CODES AND STANDARDS:

- 1.1 "2018 North Carolina State Building Code" and "International Building Code", 2015.
- 1.2 "Minimum Design Loads for Buildings and other Structures" SE/ASCE 7-16.
- 1.3 "Building Code Requirements for Structural Concrete (ACI 318-14)" American Concrete Institute 2014.
- 1.4 "Manual of Standard Practice", Concrete Reinforcing Steel Institute, latest edition.
- 1.5 "Residential Code Requirements for Structural Concrete" (ACI 332-14) and Commentary
- 1.6 "National Design Specification for Wood Construction with 2015 NDS Supplement," ANSI/AWC NDS-2015.
- 2.0 DESIGN LOADS:
Project Located in: City of Wilmington, County of New Hanover, State of North Carolina.

2.1 Gravity Loads: (Reduced where allowed)

GRAVITY LOADS		
Location	Uniform (psf)	Concentrated (lbs) (Over 2.5'x2.5')
Roof Loads:		
Dead Load	20	
Live Load	20	300
Floor Loads:		
Dead Load	25	
Floor Live Loads:		
Ground Floor	100	
2nd Floor Office	50	2,000

2.2 Drifting Snow Loads per Referenced codes and standards

$P_g = 10 \text{ psf}$
 $T = 1.0$
 $C_e = 1.0$
 $C_t = 1.0$
 $R_x = 1.0$

2.3 Risk Category = II

2.4 Wind Loads per Referenced codes and standards

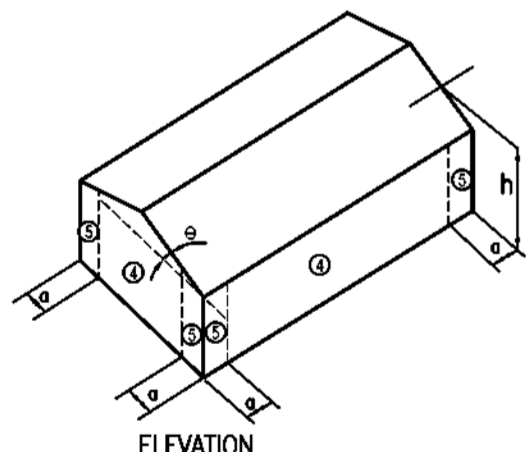
Main Wind Force Resisting System:
V 144 mph
Exposure Category "B"

Building is enclosed & Internal Pressure coefficient (GCpi) = +0.18 & -0.18
Topographic Factor Kzt = 1.0
Wind Directionality Factor, Kd = 0.85
Calculated Wind Base Shear (Vult For MWFRS):
Vx = 41.2k Vy = 104k

Components and Cladding:

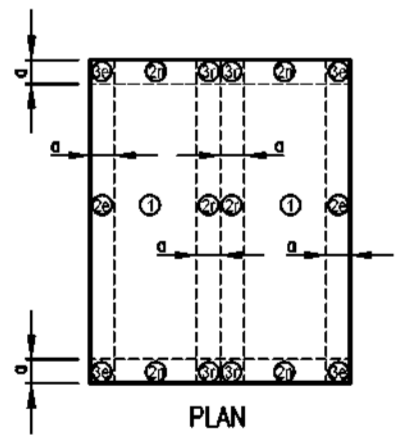
Components and Cladding Wind Pressure (psf)										
Walls	Area < 10ft ²		< 20ft ²		Area < 50ft ²		Area < 100ft ²		Area < 500ft ²	
Zone 4	37.8	-41.0	36.2	-39.4	33.8	-37.0	32.0	-35.4	28.2	-31.4
Zone 5	37.8	-50.6	36.2	-47.4	33.8	-42.6	32.0	-39.4	28.2	-31.4
Roof	Area < 10ft ²		Area < 20ft ²		Area < 50ft ²		Area < 100ft ²		Area < 500ft ²	
Zone 1	21.8	-69.8	20.2	-69.8	18.6	-41.0	16.0	-21.8	16.0	-21.8
Zone 2e	21.8	-69.8	20.2	-69.8	18.6	-41.0	16.0	-21.8	16.0	-21.8
Zone 2n	21.8	-101.9	20.2	-87.5	18.6	-69.8	16.0	-55.4	16.0	-37.8
Zone 2r	21.8	-101.9	20.2	-87.5	18.6	-69.8	16.0	-55.4	16.0	-37.8
Zone 3e	21.8	-101.9	20.2	-87.5	18.6	-69.8	16.0	-55.4	16.0	-37.8
Zone 3r	21.8	-121.1	20.2	-103.5	18.6	-79.5	16.0	-63.4	16.0	-63.4

- Notes:
- Areas noted are effective wind areas as per ASCE 7-16, 26.2 definitions.
 - See figures below for Zone locations.
 - Plus and minus signs signify pressures acting toward and away from surfaces, respectively.
 - Design pressures shown in table are Strength Design wind pressures. Allowable Stress Design wind pressures may be calculated by multiplying table pressures by 0.6.
 - Tributary area = greater of LxW or LxL/3.
 - Design for strength using loads from ASCE-7 or from this table. Deflections may be calculated based on 42% of these loads.



Corner Zone Dimensions

$a = 6 \text{ ft}$



COMPONENT & CLADDING ROOF PRESSURES

$h = 25 \text{ ft "corner zone"}$

2.5 Seismic Loads per referenced Codes and Standards

Risk Category = II
Site class = "D" (Per Geotech Report)
Spectral Response Coefficients:
SDS = 0.159g
SD1 = 0.106g
Cs = 0.024

Seismic Design Category = "B"
Seismic Importance Factor = 1.0
Basic Seismic - Force - Resisting System
Building Wall System:
Light framed wood walls sheathed with wood structural panels rated for shear resistance

RX=RY=6.5, QX=QY=3.0, CDX=CDY=4.0
Building Height Limit = NL
Analysis Procedure - 12.8.1 ASCE 7-16
Equivalent Lateral Force Procedure
Base Shear = 5k

2.6 Guardrail designed per referenced Codes and Standards

Guardrail:
Uniform load = 50 pf, any direction
Concentrated load = 200 lbs, any direction
Intermediate Rail: (all those expect handrail)

2.7 Flood Loads:
Project is not located in a flood zone.

3.0 FOUNDATIONS:

- 3.1 Foundation design is based on geotechnical report #22:29793 by ECS Southeast, LLP Engineering, Wilmington, NC dated December 22, 2020. This report is available for inspection at the office of the architect or owner. The recommendations contained in this report are herein made part of the requirements of these contract documents.
- 3.2 Top of footing (1/FTG) elevations are shown on the drawings or are to be determined by the Contractor in the field in accordance with the guidelines set forth in the drawings.
- 3.3 Bottom of exterior footings, shall bear at a minimum depth of 1'-0" below final grade to provide frost protection and protective embedment
- 3.4 Testing and Inspection:
- All areas to have slabs on grade shall be proof rolled in accordance with and under observation for the Geotechnical Engineer and approved prior to preparation for concrete placement.
 - All foundation bearing strata shall be inspected and approved by the Geotechnical Engineer prior to any concrete placement.
 - Geotechnical Engineer shall be the sole judge as to suitability of all foundation and/or slab bearing strata.
 - Footing bearing elevations shall be adjusted in the field as required to meet the design bearing pressures by additional excavation or compaction and/or backfilling or by other means acceptable to the Geotechnical Engineer.

3.5 Undercutting to remove existing fill beneath footings and slab shall be performed at the direction of the Geotechnical Engineer.

3.6 Footings shall bear on strata capable of sustaining a minimum bearing pressure of 2000 psf.

3.7 Engineered Fill: All fill material shall be selected in accordance with the Geotechnical Report Material shall be a clean, low plastic soil with a plasticity index less than 30 (less than 15 is preferred), liquid limit less than 50, and unit weight of 120 pcf (+ 5 pcf)

3.8 Compaction: All fill shall be placed in loose lifts not exceeding 8 inches in thickness and compacted to a minimum of 95 percent Standard Proctor (ASTM D-698) except that the top 12 inches shall be compacted to a minimum of 96 percent Standard Proctor. Moisture shall be controlled to within 3 percent above or below optimum content.

3.9 Contractor shall review all construction considerations as outlined in the Geotechnical report and bid accordingly.

4.0 CONCRETE:

4.1 Concrete Strength:
All concrete shall be in accordance with the American Concrete Institute (ACI) 301 and 318.

4.2 Concrete shall have a 28 day compressive strength and density as follows:

- Footings, and Interior Slab-on-grade.....3,000psi, Density = ±145pcf
- Exterior Slab on Grade.....4,000psi, Density = ±145pcf

4.3 Concrete Mix Designs:

- Submittals: Submit written reports of each proposed concrete mix not less than 15 days prior to the start of work.
- Mix designs, including water, cement ratios and slumps, shall be prepared in accordance with ACI 301-05, Section 4. Cement shall conform to ASTM C 150 Type 1 or at contractor's option, ASTM C 595 Type IP where fly ash is permitted. Normal weight aggregate shall conform to ASTM C 33 and light weight aggregate shall conform to ASTM C 330. No admixtures containing calcium chloride shall be permitted in any concrete.
- Aggregate size shall be #67 stone for supported slabs or other formed concrete elements; #57 stone for slabs on grade and footings or other concrete elements formed from and poured against earth; #76 stone for masonry grout.
- Water reducing admixture shall be used in all concrete.
- Air entraining admixture in accordance with ACI 301 shall be used in all concrete exposed freezing and thawing during construction or service conditions.
- Concrete subjected to freezing/thawing shall have a maximum water/cement ratio of 0.45 and shall contain the amount of air entraining agent specified in ACI 301-05 Section 4.

4.4 Curing:
See specifications for curing method options and apply within two (2) hours after completion of finishing to all concrete flatwork and walls, U.N.O., other than footings and grade beams.

4.4 Use a non-corrosive, non-chloride accelerating admixture in concrete exposed to temperatures below 40 degrees. Uniformly heat the water and aggregates to a temperature of not less than 50 degrees. Place and cure concrete in accordance with ACI 306.

4.5 When hot weather conditions exist, place and cure concrete in accordance with ACI 301. Cool ingredients before mixing to maintain concrete temp. at time of placement below 95 degrees.

4.6 Reinforcing in all abutting concrete, including footings shall be continuous through or around all corners or intersections. Dowels or splices shall be equal in size and spacing to the reinforcing in the abutting members.

4.7 Refer to architectural drawings for door and window openings, drips, reglets, washes, masonry anchors, brick ledge elevations, slab depressions and miscellaneous embedded plates, bolts, anchors, angles, etc.

4.8 Refer to plumbing, mechanical and electrical drawings for underfloor, perimeter and other drains and for sleeves, outlet boxes, conduit, anchors, etc. The various trades are responsible for their items.

4.9 Base plates, anchor bolts, support angles and other steel exposed to earth or granular fill shall be covered with a minimum of 3" of concrete.

4.10 Fill slabs, not shown on the structural drawings, shall be reinforced with a minimum of 6 x 6 x W2.0 x W2.0 WWM unless noted otherwise on other drawings.

4.11 Finishing tolerance shall be within Class B in accordance with ACI 301 and consideration shall be given to sequencing of concrete placement to facilitate control of finish elevations.

4.12 Non-shrink grout shall be pre-mixed, non-corrosive, non-metallic, non-staining containing silica sands, Portland cement, shrinkage compensating and water reducing agents. Product shall only require the addition of water. Minimum compressive strength shall be 2500 psi after one day and 7000 psi after 28 days. Grout shall be free of gas producing or air releasing and oxidizing agents and contain no corrosive iron, aluminum or gypsum.

4.13 Tolerance for anchor bolts and other embedded items shall be per the AISC Code of Standard Practice Section 7.5.

4.14 Unless otherwise shown in the architectural drawings, provide 1/4" chamfers at all column, wall, slab or beam edges that are exposed to view in the finished structure.

5.0 REINFORCING STEEL:

5.1 Reinforcing shall be domestic new billet steel conforming to ASTM A615, Grade 60 or 60S including stirrups and ties, except that reinforcing which is required to be welded shall conform to ASTM A706.

5.2 Field heat bending of concrete reinforcing steel is not permitted.

5.3 Welded wire mat and fabric shall conform to ASTM A184 and A185 respectively and shall be provided in flat sheets. Welded wire mat/fabric shall be lapped 0'-6" at all splices.

5.4 Bar Splices:

Bar Size	f'c = 3,000psi		f'c = 4,000psi		f'c = 5,000psi	
	Ld (in)	Class "B" Lap Splice (in)	Ld (in)	Class "B" Lap Splice (in)	Ld (in)	Class "B" Lap Splice (in)
#3	17	22	15	19	13	17
#4	22	29	19	25	17	23
#5	28	36	24	31	22	28
#6	33	43	29	37	26	34
#7	48	63	42	54	38	49
#8	55	72	48	62	43	56

- Values are based on normal weight concrete.
- Ld = minimum embed of rebar
- Class "B" lap splice refers to minimum distance bars must be lapped for a full tension splice.

7.0 GENERAL FRAMING NOTES:

- 7.1 All exterior and interior load bearing walls shall be SPF #2 u.n.o. see plans and load bearing wall schedule for locations, spacing and stud sizes.
All interior non-load bearing wall, shall be SPF #2, or approved equal.
All sill and top plates shall be SYP #2 or better. Sill plates shall be pressure treated.
All pressure treated 2x material shall be SYP #2 or better and shall be treated in accordance with AWPA Standard U1 to the requirements of Use Category 3B (UC3B) for above ground use and Use Category 4A (UC4A) for ground contact use.
All pressure treated Glulam (GL) members shall be Rosboro Treated X-Beam 2400F-1.9E or approved equal. All Glulams shall be Rosboro 24F-V4 or better.
All Laminated Veneer Lumber (LVL) shall be Louisiana Pacific, Gang-Lam 2950F-2.0E or approved equal. All LSL Stud Framing shall be 1.55E TimberStrand LSL or approved equal.

7.2 All roof and floor trusses shall be Builders First Source or approved equal. Truss supplier shall construct trusses to provide full bearing on all walls and girders. The truss supplier shall also submit drawings for review prior to fabrication. The shop drawings shall show the following:

- Layout plan
- Bearing locations
- Truss elevations
- Mechanical openings
- Structural calculations
- Professional engineer seal to certify design. Engineer must be licensed in the state where this project is located
- Hurricane clips and tie downs

7.3 Floor deck/diaphragm

- Floor deck shall be 3/4-inch Exposure 1 grade tongue and groove OSB or approved equal.
- Place long direction perpendicular to framing
- Stagger end joints
- Glue and nail panels down with 10d common

Provide the following nail pattern:

- 6" o.c. @ panel edge
- 12" o.c. @ interior of panel.

7.4 Wall Sheathing

- Exterior and shear wall sheathing shall be 5/8" OSB or plywood, or approved equal.
- See S5 Sheets for shear wall nailing requirements block all edges.
- All other non-shear Wall sheathing shall be nailed to supports w/ 8d @ 3"o.c. edges and 12"o.c. field.

7.5 Roof Deck/Diaphragm

- Roof sheathing shall be 5/8-inch exterior grade plywood or OSB u.n.o.
- Place long direction perpendicular to framing
- Stagger end joints
- Provide roof sheathing clips, Simpson PSCL/PSCA or approved equal at all unsupported edges.
- Nail to supporting members with 8d Ring shank @ 6" o.c. edges and 12" o.c. field.

7.6 See plan for location of Shear Walls and sheets S5.0 sheet series for framing requirements.

7.7 [X] number in box notes the required number of bundled studs in that location. Bundled studs shall rest on framing member below or provide solid blocking from sub-floor to plate or girder below. Good framing practices shall be used in all cases.

7.8 All strap and tie connections shall have z-max (g185) triple zinc coating (or hot-dipped galvanized). All nails shall be hot-dipped galvanized.

7.9 Do not bend coil straps.

7.10 Unless noted otherwise, connect all building components per table 2304.9.1 - fastening schedule, per referenced Codes and Standards

8.0 SHEAR WALL AND UPLIFT HOLDOWN SYSTEM:

8.1 See plans for shear wall locations and designations. See schedule on S5 Sheets for shear wall holdown requirements and typical details.

8.2 See roof plan and sections for uplift requirements.

9.0 CONSTRUCTION AND SAFETY:

9.1 Woods Engineering P.A.'s responsibility is limited to the details and information shown on these drawings. It is the responsibility of the Contractor to provide adequate safety measures required by local codes as well as OSHA Standards for the Construction Industry. This should include, but not be limited to the following:
Shoring to protect new as well as existing structures.
Necessary Scaffolding.
Material Handling Equipment.
Trench Boxing.

10.0 SHOP DRAWING SUBMITTAL:

10.1 Contractor shall submit Electronic copies (PDF format) of each shop drawing for review. Shop drawings shall be reviewed by the Contractor prior to submission to the Engineer. The Contractor shall allow 10 working days for shop drawing approval.

11.0 STRUCTURAL INSPECTIONS:

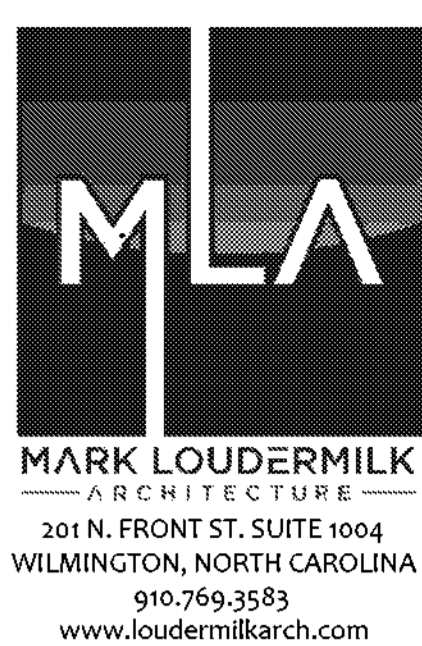
11.1 Special Inspections are not required for this project. However, material inspections per Chapter 17 of the 2018 NCSBC are required.

ABBREVIATIONS

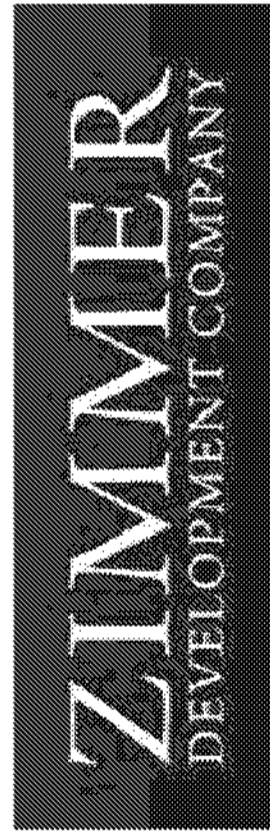
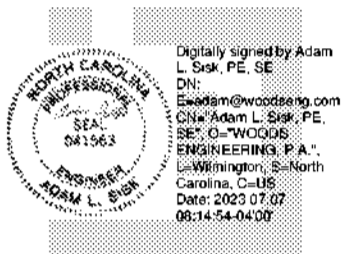
⊙	AT	IFM	INSIDE FACE OF MASONRY
&	AND	INT	INTERIOR
AB	ANCHOR BOLTS	JBE	JOIST BEARING ELEVATION
ACI	AMERICAN CONCRETE INSTITUTE	JT	JOINT
ADDL	ADDITIONAL	K	KIP-S
AFF	ABOVE FINISHED FLOOR	KB	KICKER BRACE
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	KSI	KIPS PER SQUARE INCH
ASI	AMERICAN IRON AND STEEL INSTITUTE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

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Length of members shall be based on dimensions shown on the architectural and structural plans and details.



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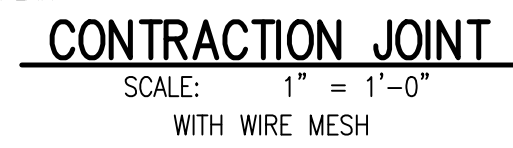
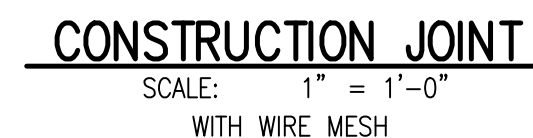
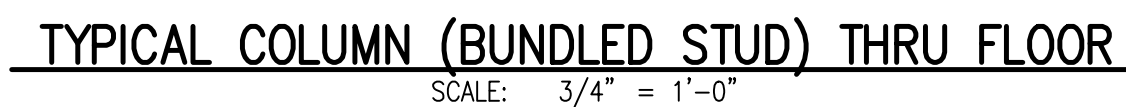
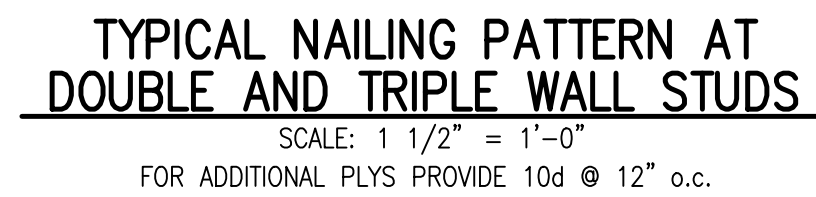
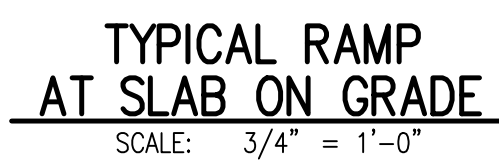
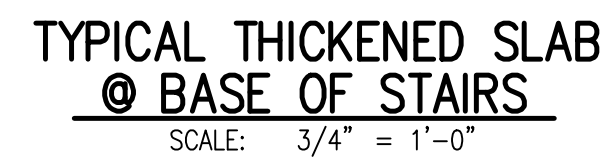
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WILMINGTON, NC 28405

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Mark	Date	Description
PROJECT NO: 23038		
DATE: 7/5/2023		
SCALE: -		
DRAWN BY: JM		
CHECKED BY: AS		

GENERAL NOTES

S101



NOTES:

1. WHERE LINTELS BEAR ON HOLLOW MASONRY UNITS FILL ALL CORES UNDER BEARING WITH GROUT FROM BOTTOM OF LINTEL TO 16" MINIMUM BELOW.
2. THESE LINTELS ARE NOT DESIGNED FOR MASONRY WALLS THAT CARRY FLOOR OR ROOF LOAD.
3. LINTELS ARE DESIGNED TO CARRY THE MAXIMUM HEIGHT OF BRICK LISTED IN SCHEDULE. IF STACKED BRICK HEIGHT EXCEEDS LISTED VALUE, THEN CONTACT STRUCTURAL ENGINEER FOR ALTERNATE DESIGN.
4. ALL STEEL LINTELS SHALL BE HOT DIP GALVANIZED AND PAINTED.
5. SEE DETAIL BELOW FOR REQUIREMENTS



HEADER SCHEDULE		JAMB REQUIREMENTS
MARK	HEADER REQUIREMENTS	
H1	(3) 2x8	2K/1J
H2	(3) 2x12	3K/1J
H3	(2) 2x6 VERTICAL BOX HEADER	2K/1J
H4	(3) 1½" x 9½" LVLs	4K/2J
H5	(3) 1½" x 11½" LVLs	4K/3J

JOIST SIZE	FLOOR JOIST HANGERS	ROOF RAFTER HANGERS
2x6	LUS26	HU26
2x8	LUS26	HU28
2x10	LUS28	HU210
2x12	LUS210	HU210

NOTES:
1. 2x's TO HAVE $\frac{7}{16}$ " OSB OR PLYWOOD BETWEEN PLYS TO FLUSH OUT WITH WALL FRAMING

JOIST SIZE	FLOOR JOIST HANGERS	ROOF RAFTER HANGERS
2x6	LUS26	HU26
2x8	LUS26	HU28
2x10	LUS28	HU210
2x12	LUS210	HU210

GENERAL NOTE:
DETAILS SHOWN ON THIS SHEET ARE GENERIC IN
NATURE AND MAY NOT PORTRAY EXACT CONDITIONS.
THESE DETAILS ARE INTENDED TO PROVIDE GENERAL
GUIDELINES FOR TYPICAL CONSTRUCTION CONDITIONS.

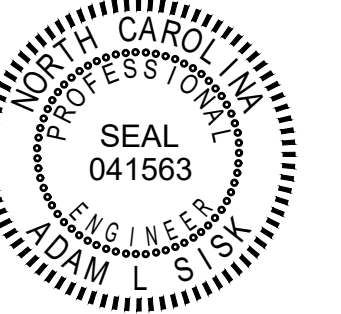
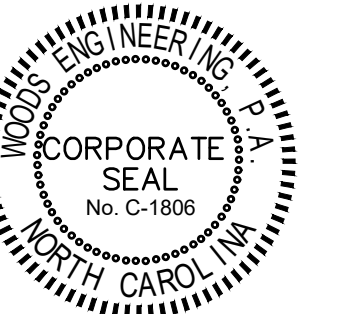


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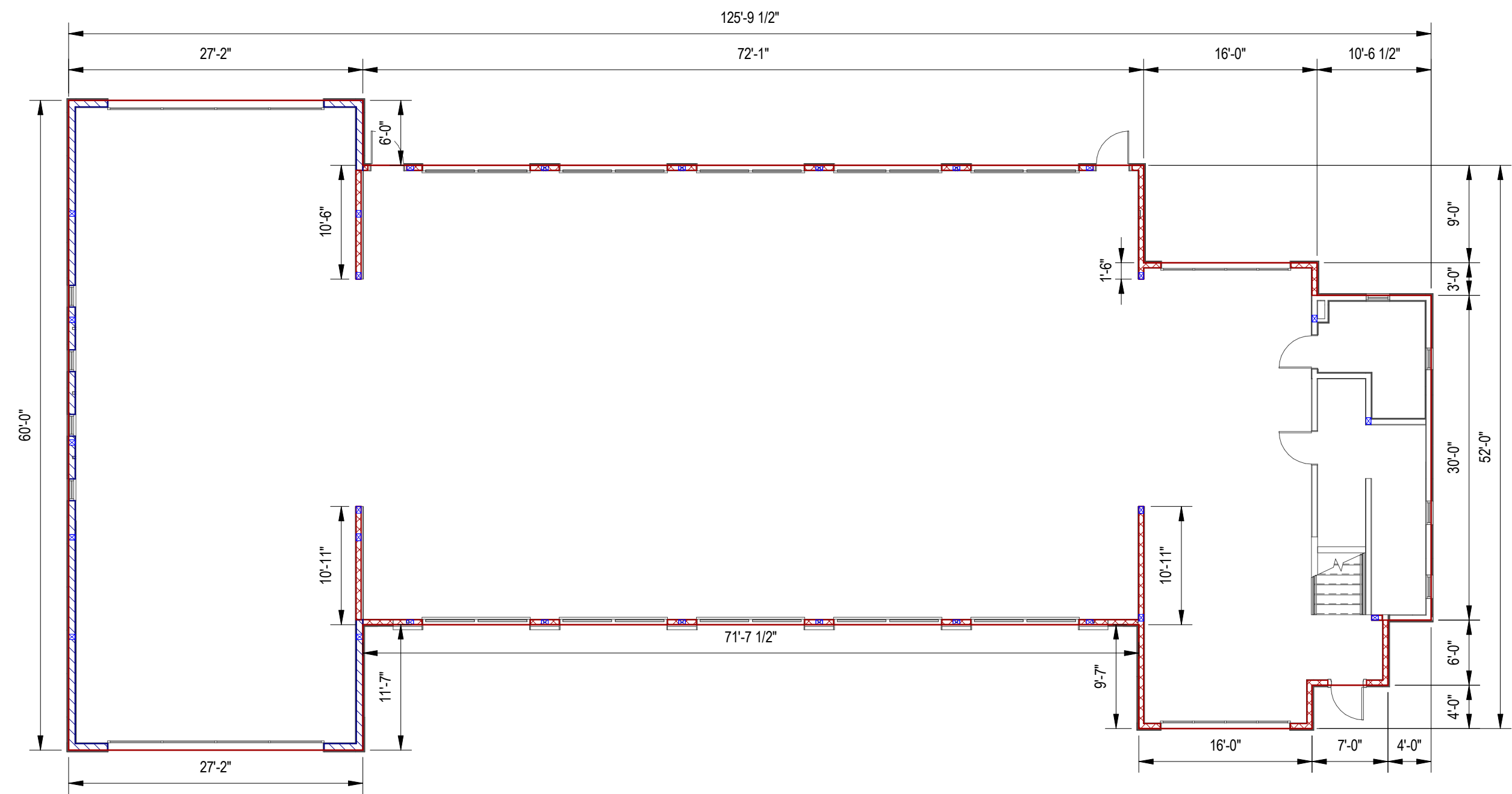
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TYPICAL CONCRETE AND WOOD DETAILS AND SCHEDULES

S102



SLAB DIMENSION LEGEND

INDICATES 5-1/2" WIDE CONCRETE CURB

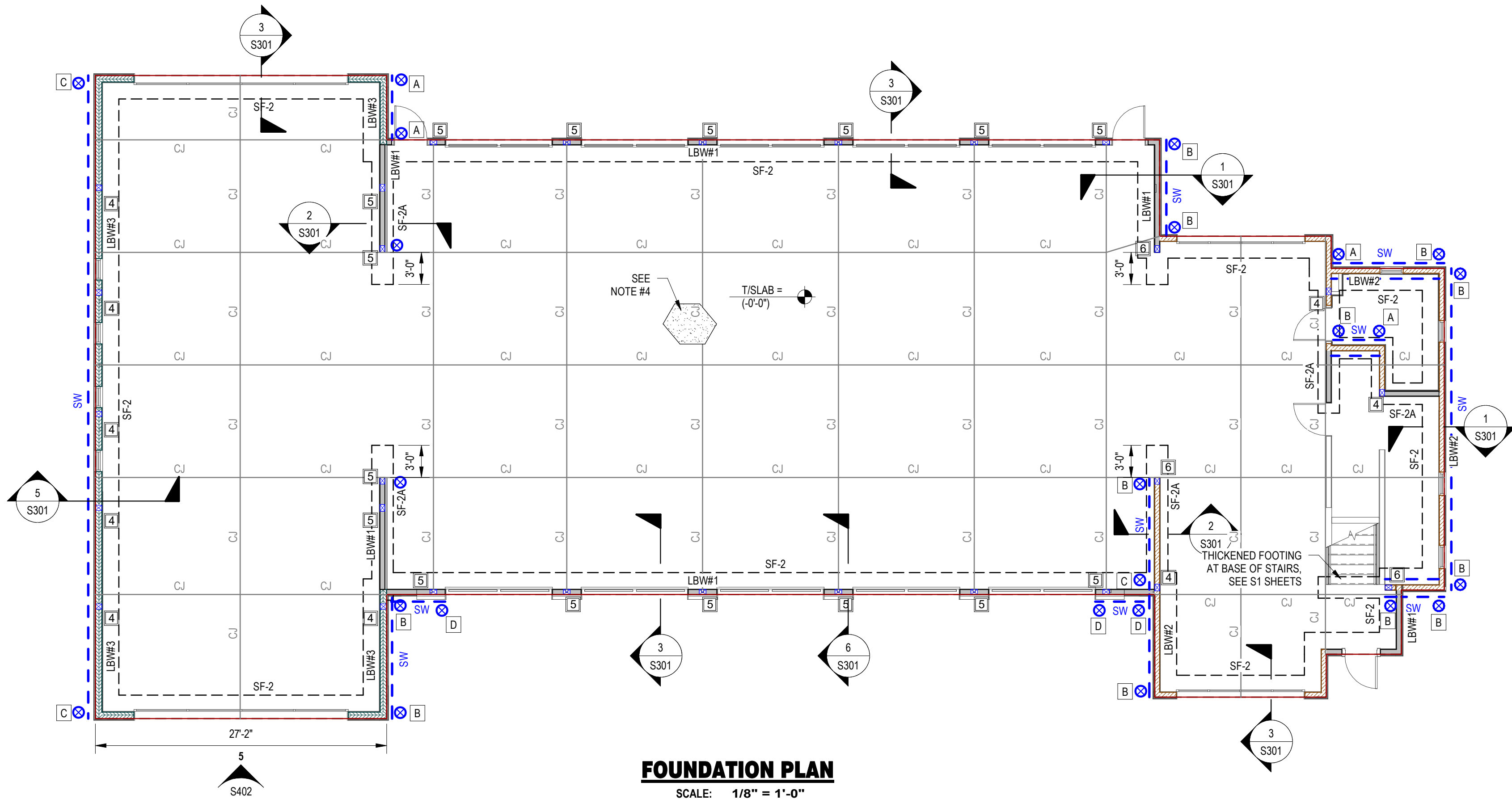
INDICATES 7-1/4" WIDE CONCRETE CURB

SLAB DIMENSION PLAN

SCALE: 3/32" = 1'-0"

- NOTES - FOUNDATION PLAN**
- SEE S1.0 SHEETS FOR ADDITIONAL GENERAL NOTES, FOUNDATION NOTES, CONCRETE NOTES, REINFORCING STEEL NOTES AND TYPICAL DETAILS. TYPICAL DETAILS ARE GENERALLY NOT SHOWN ON PLAN BUT RATHER ARE INTENDED TO DEFINE TYPICAL CONSTRUCTION CONDITIONS.
 - DATUM ELEVATION = TOP OF UPPER SLAB ELEVATION = ASSUMED 0'-0" OTHER ELEVATIONS ARE NOTED AS (+ OR -) FROM DATUM ELEVATION.
 - FOOTINGS SHALL BE MONOLITHIC W/ SLAB U.N.O.
 - SLAB-ON-GRADE SHALL BE 4" THICK 3000 psi CONCRETE WITH WWM6x6xW2.0xW2.0 ON 15 mil VAPOR RETARDER, ON 6" CLEAN SANDS WITH LESS THAN 20% FINES PASSING #100 SIEVE (SF,SW,SP-SM) OR APPROVED EQUAL ON WELL COMPACTED SUB GRADE.
 - REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND OTHER DISCIPLINE DRAWINGS FOR OPENINGS AND DEPRESSIONS NOT SHOWN ON THESE DRAWINGS.
 - SEE S5.0 SHEETS FOR SHEAR WALL INFORMATION AND REQUIREMENTS.
 - WHEN A SECTION IS CUT OR A DETAIL IS LABELED FOR A PARTICULAR CONDITION, THAT SECTION OR DETAIL SHALL APPLY FOR ALL SIMILAR CONDITIONS REGARDLESS OF WHETHER CUT OR LABELED, U.N.O.
 - DIMENSIONS SHOWN ARE TO E.O.S. AND O.F.B. (U.N.O.) COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS.
 - IF DISCREPANCYS EXIST NOTIFY (AOR) AND (EOR) FOR CLARIFICATIONS.

- FOUNDATION LEGEND**
- SPREAD FOOTING DESIGNATION SEE SCHEDULE S1 SHEETS
- STRIP FOOTING DESIGNATION SEE SCHEDULE S1 SHEETS
- LBW #1 2x6 @ 16" o.c. LOAD BEARING WALL
- LBW #2 1.75x5.5 LSL @ 12' o.c. LOAD BEARING WALL
- LBW #3 1.75x7.25 LSL @ 16" o.c. LOAD BEARING WALL
- 2x WALLS (ABOVE)
- WOOD SHEATHED SHEAR WALL SEE PLAN FOR SHEATHING SIDES SEE S5 SHEETS FOR NOTES & DETAILS AND ATTACHMENT REQUIREMENTS
- INDICATES APPROXIMATE LOCATION OF SHEAR WALL HOLDOWN SEE SCHEDULE ON S5 SHEETS
- WOOD POST - "X" DENOTES NUMBER OF BUNDLED STUDS TO MATCH LBW WALL STUD SIZE



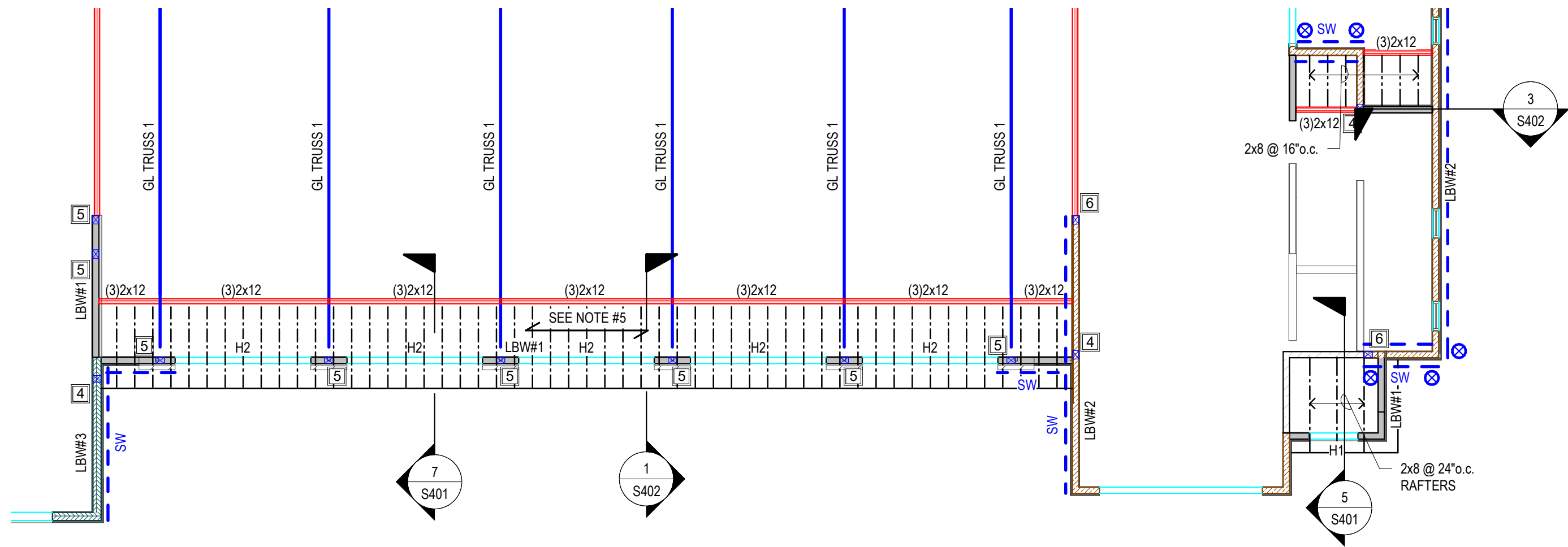
FOUNDATION PLAN

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

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FOUNDATION
PLAN

S201



STAIR LANDING AND LOW ROOF FRAMING PLAN
SCALE: 1/8" = 1'-0"

- NOTES - FLOOR AND ROOF PLAN**
- FOR GENERAL FRAMING INFORMATION, SEE S1.0 SHEETS.
 - HEADERS, BEAMS & LOAD BEARING WALLS SHOWN ARE FOR FRAMING BELOW THIS LEVEL. SHEAR WALLS REFER TO WALLS BELOW.
 - SUBFLOOR SHALL BE EXTERIOR GRADE 3/4" TONGUE AND GROOVE O.S.B.
 - DECK SUB FLOOR SHALL BE 3/4" PT PLYWOOD WITH WATERPROOFING MEMBRANE AND SLOPED SLEEPERS - SEE ARCH.
 - ROOF SHEATHING SHALL BE 5/8" O.S.B. SPAN AS NOTED ON PLAN.
 - WHEN A SECTION IS CUT OR A DETAIL IS LABELED FOR A PARTICULAR CONDITION, THAT SECTION OR DETAIL SHALL APPLY FOR ALL SIMILAR CONDITIONS REGARDLESS OF WHETHER CUT OR LABELED, U.N.O.
 - TRUSS DESIGNER TO COORDINATE WEIGHT AND LOCATION OF ROOF TOP MECHANICAL UNITS WITH MECHANICAL DRAWINGS. SEE DETAIL ON S4 SHEETS FOR TYPICAL ROOF TOP MECHANICAL CURB DETAIL.
 - ROOF DECK SHALL BE 3x SYP#1 (E=1.666) WITH 7/16" OSB ROOF SHEATHING ON TOP. SPAN AS SHOWN ON PLAN. ATTACH 3x DECKING TO SUPPORTING MEMBERS WITH (1) SIMPSON SDWS22600 @ EACH PLANK

NOTE: CONTRACTOR TO PROVIDE MIN. (3) STUDS UNDER ALL GIRDER TRUSSES UNLESS NOTED OTHERWISE.

- LEGEND - FLOOR AND ROOF PLAN**
- 18" FLOOR TRUSSES @ 24" o.c. U.N.O.
 - 2x8 PT @ 16" o.c. U.N.O.
 - INDICATES GIRDER TRUSS - SEE PLAN & SCHEDULE ON S1 SHEETS
 - HEADER - SEE PLAN & SCHEDULE ON S1 SHEETS
 - WOOD BEAM - SEE PLAN FOR SIZE
 - 2x6 @ 16" o.c. LOAD BEARING WALL
 - 1.75x5.5 LSL @ 12" o.c. LOAD BEARING WALL
 - 1.75x7.25 LSL @ 16" o.c. LOAD BEARING WALL
 - 2x WALLS (ABOVE)
 - 7/16" PLYWOOD SHEATHED SHEAR WALL SEE PLAN FOR SHEATHING SIDES. SEE S 5 SHEETS FOR NOTES & DETAILS AND ATTACHMENT REQUIREMENTS
 - INDICATES APPROXIMATE LOCATION OF SHEAR WALL HOLDOWN SEE SCHEDULE ON S5 SHEETS
 - WOOD POST - "X" DENOTES NUMBER OF BUNDLED STUDS TO MATCH LBW WALL STUD SIZE
 - STEEL TUBE COLUMN BY CANOPY SUPPLIER

WE
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Consulting Structural Engineers

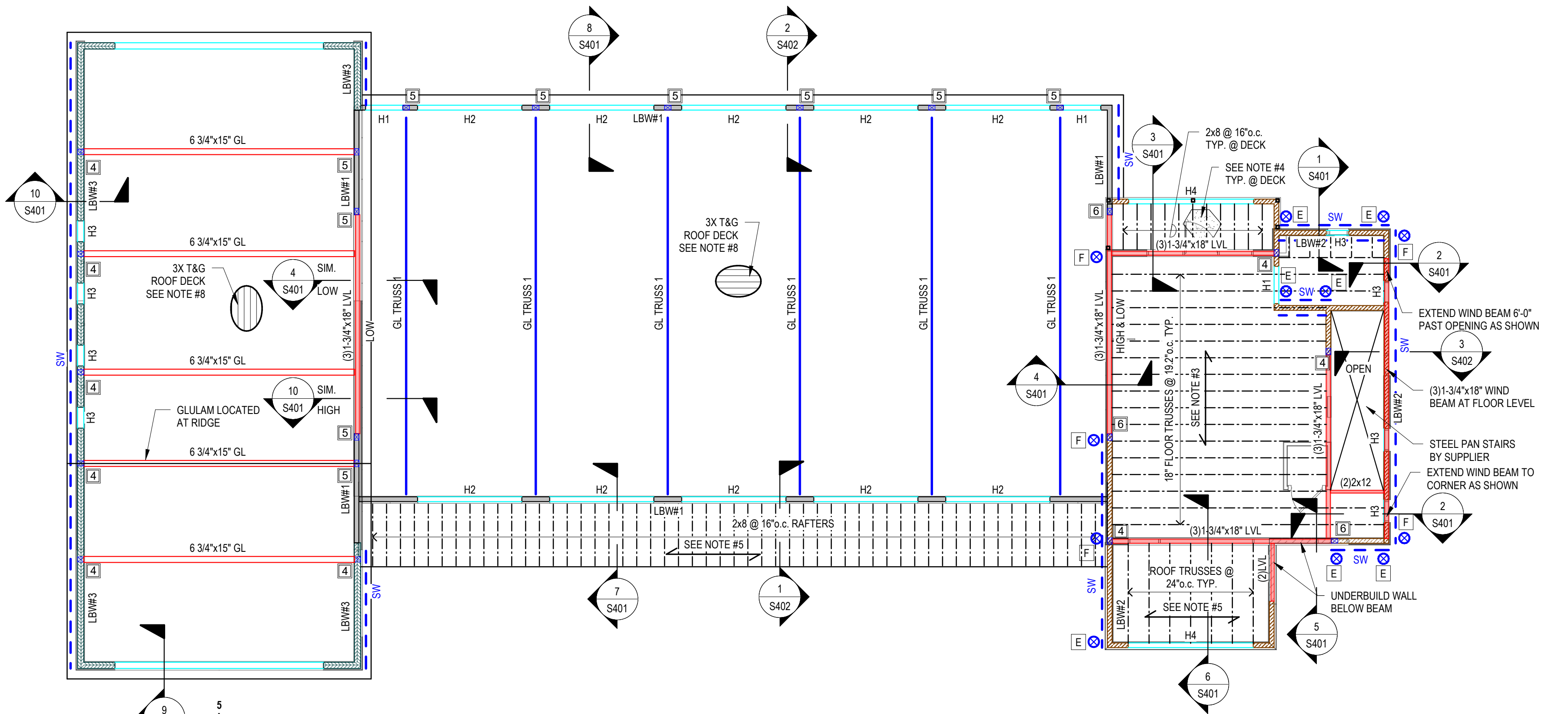
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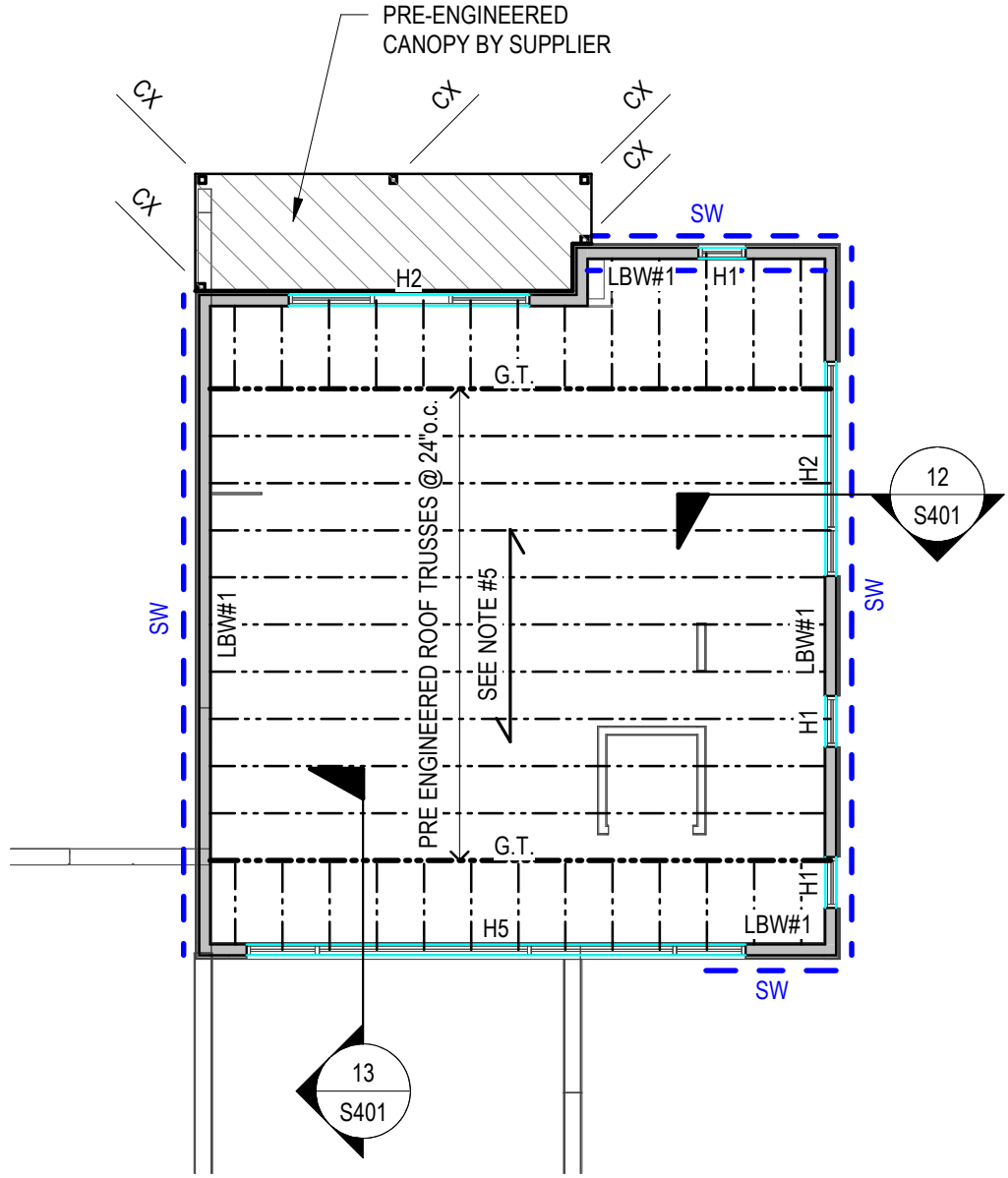
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WOODS ENGINEERING P.A.
CORPORATE SEAL
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NORTH CAROLINA
SEAL
041563
REGISTERED PROFESSIONAL ENGINEER
APRIL 15, 2018



SECOND FLOOR AND ROOF FRAMING PLAN
SCALE: 1/8" = 1'-0"



HIGH ROOF FRAMING PLAN
SCALE: 1/8" = 1'-0"

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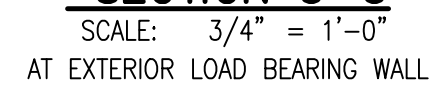
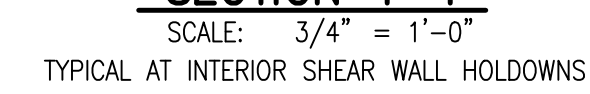
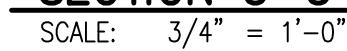
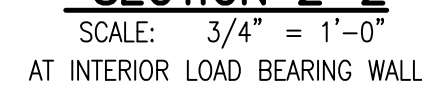
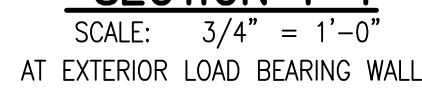
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ROOF FRAMING PLAN

S202

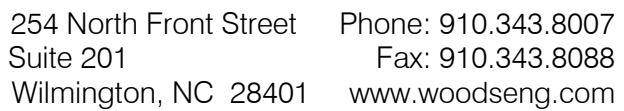


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FOUNDATION SECTIONS

S301



2x LOAD
BEARING WALL,
SEE SCHEDULE

REFER TO OTHER



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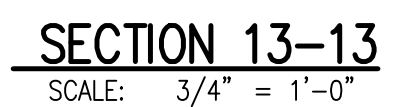
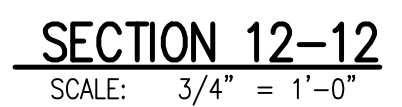
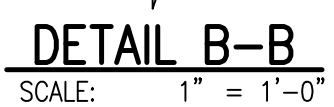
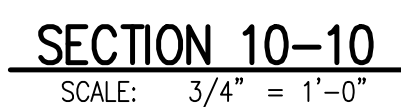
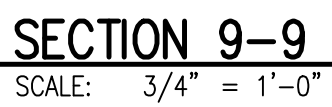
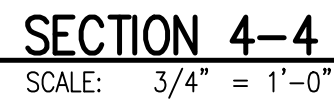
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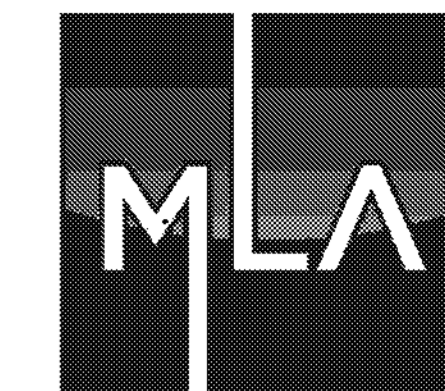
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ROOF FRAMING SECTIONS

S401



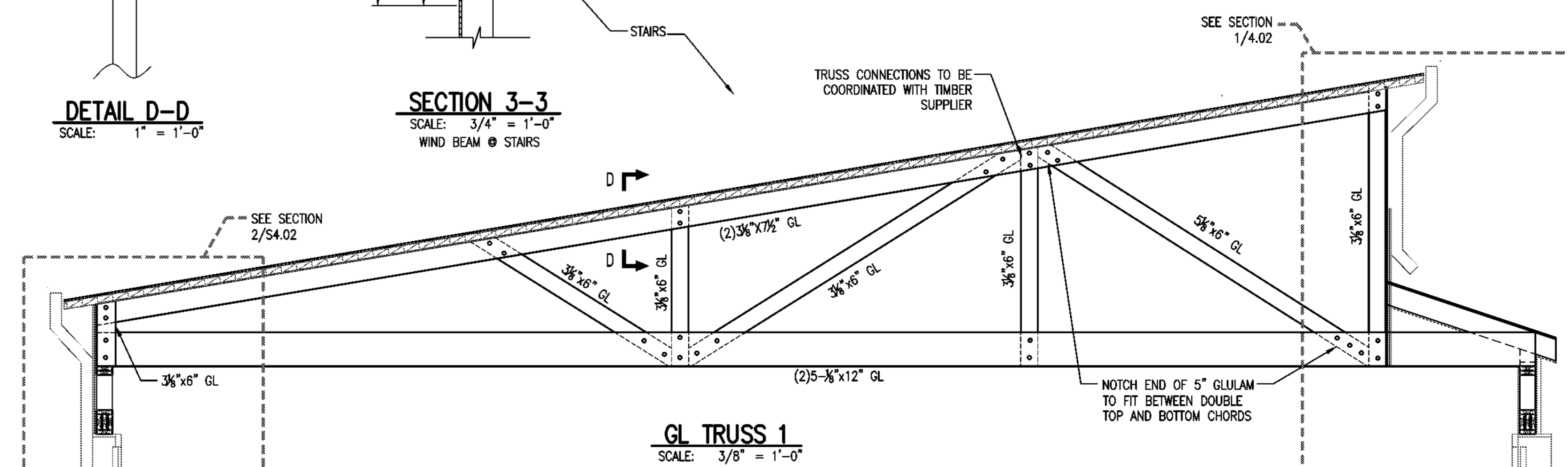
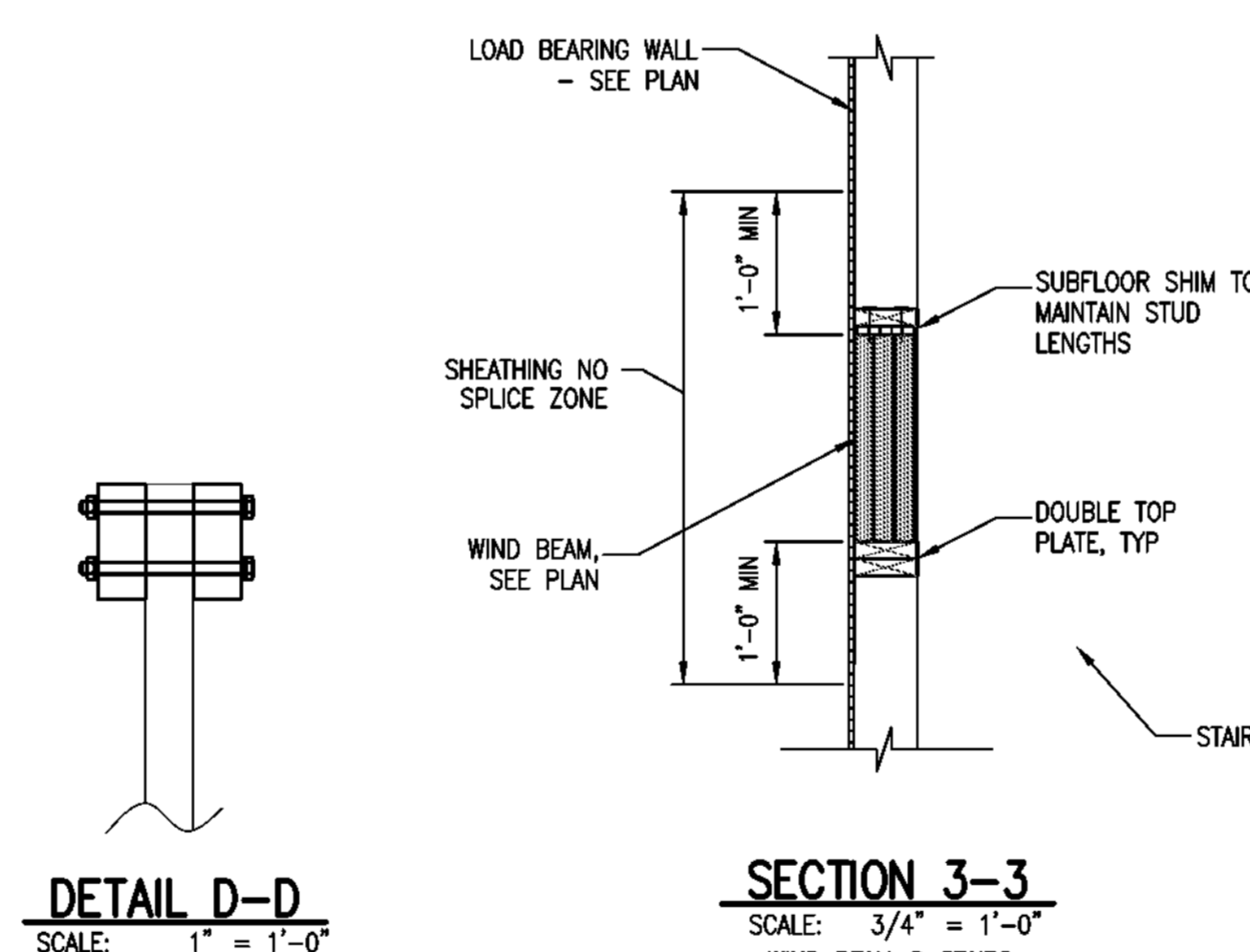
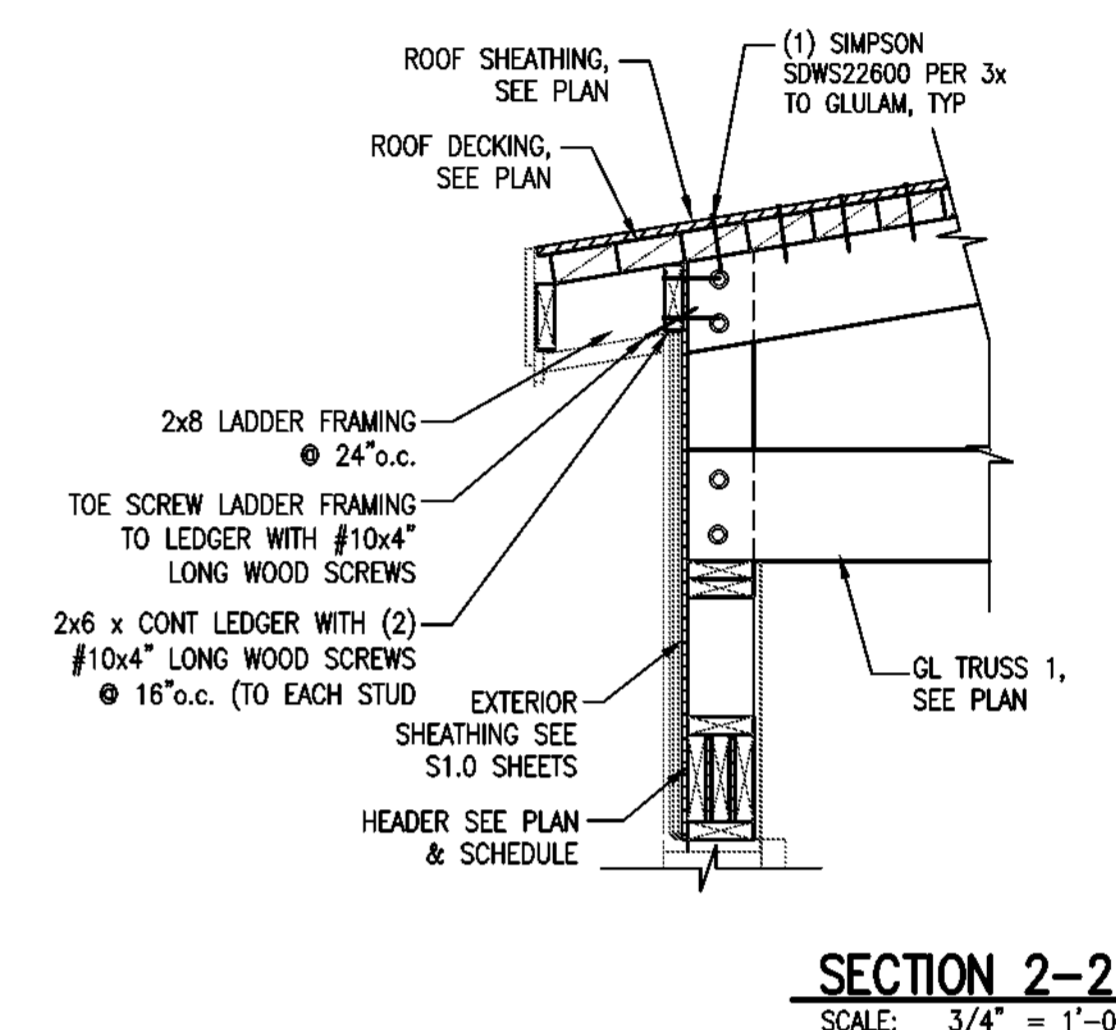


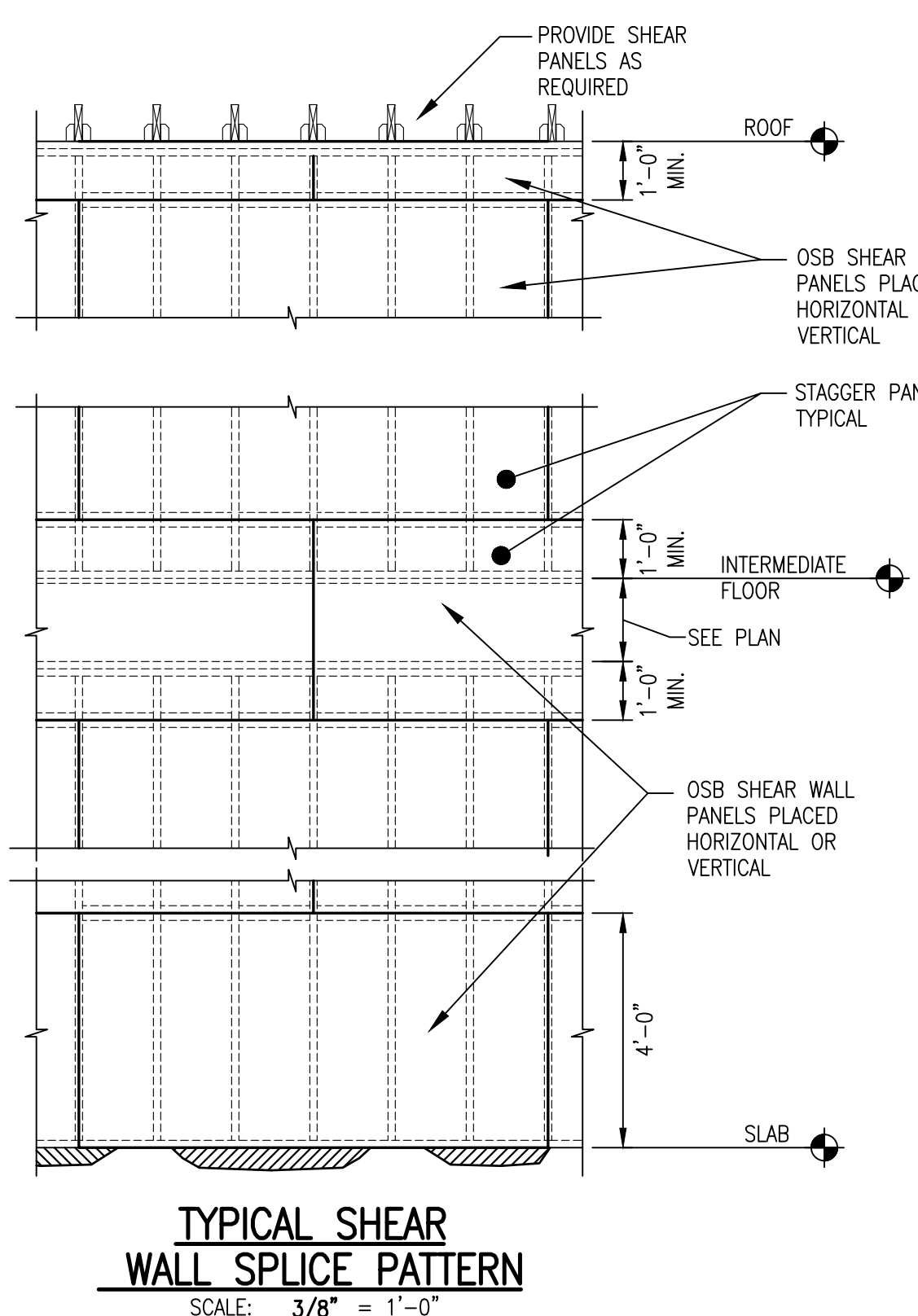
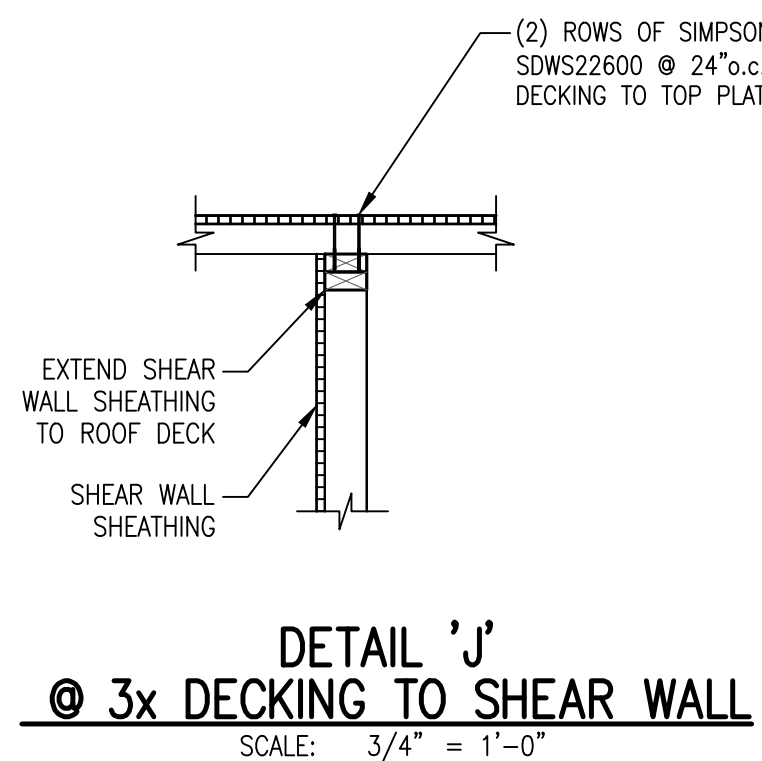
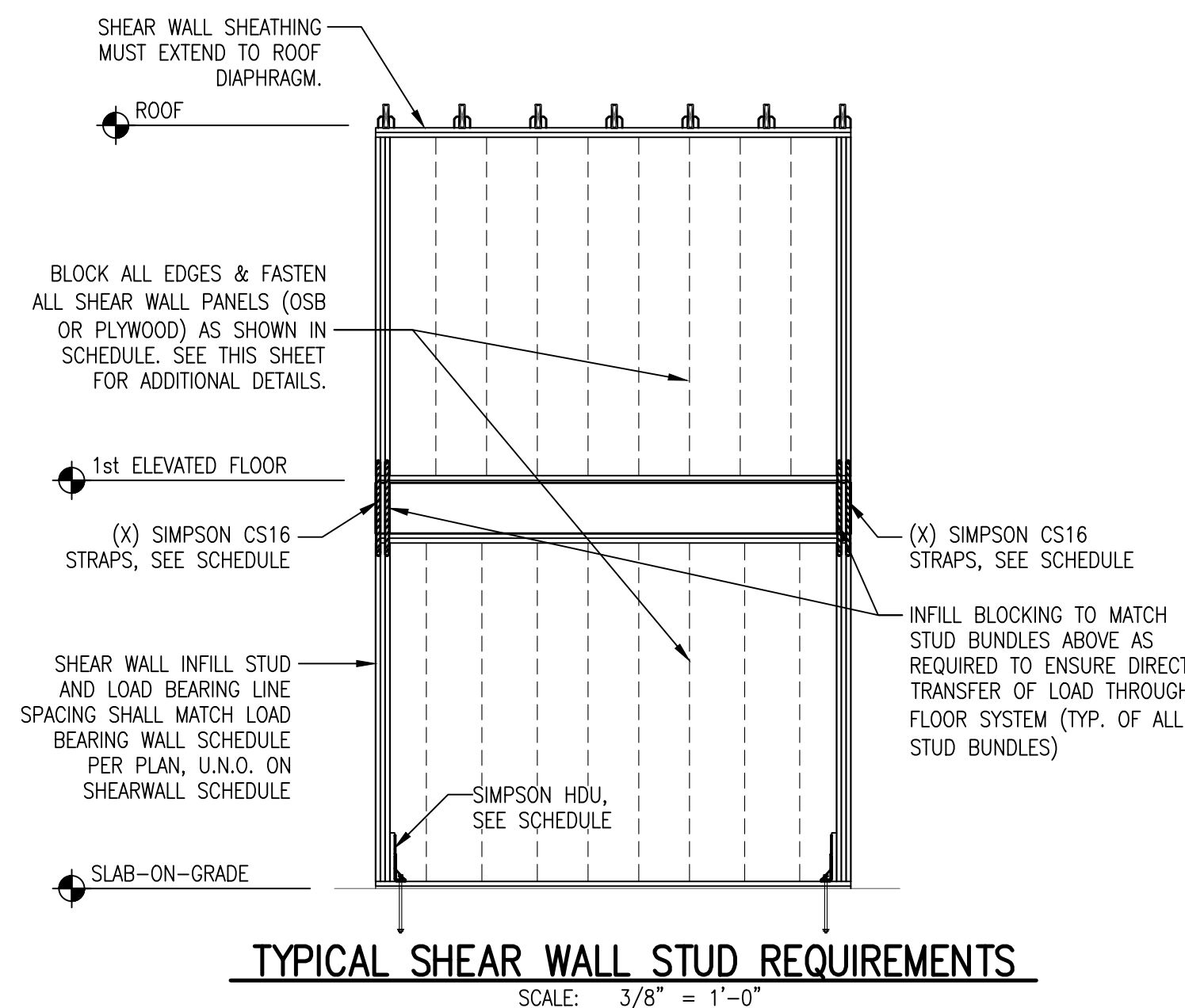
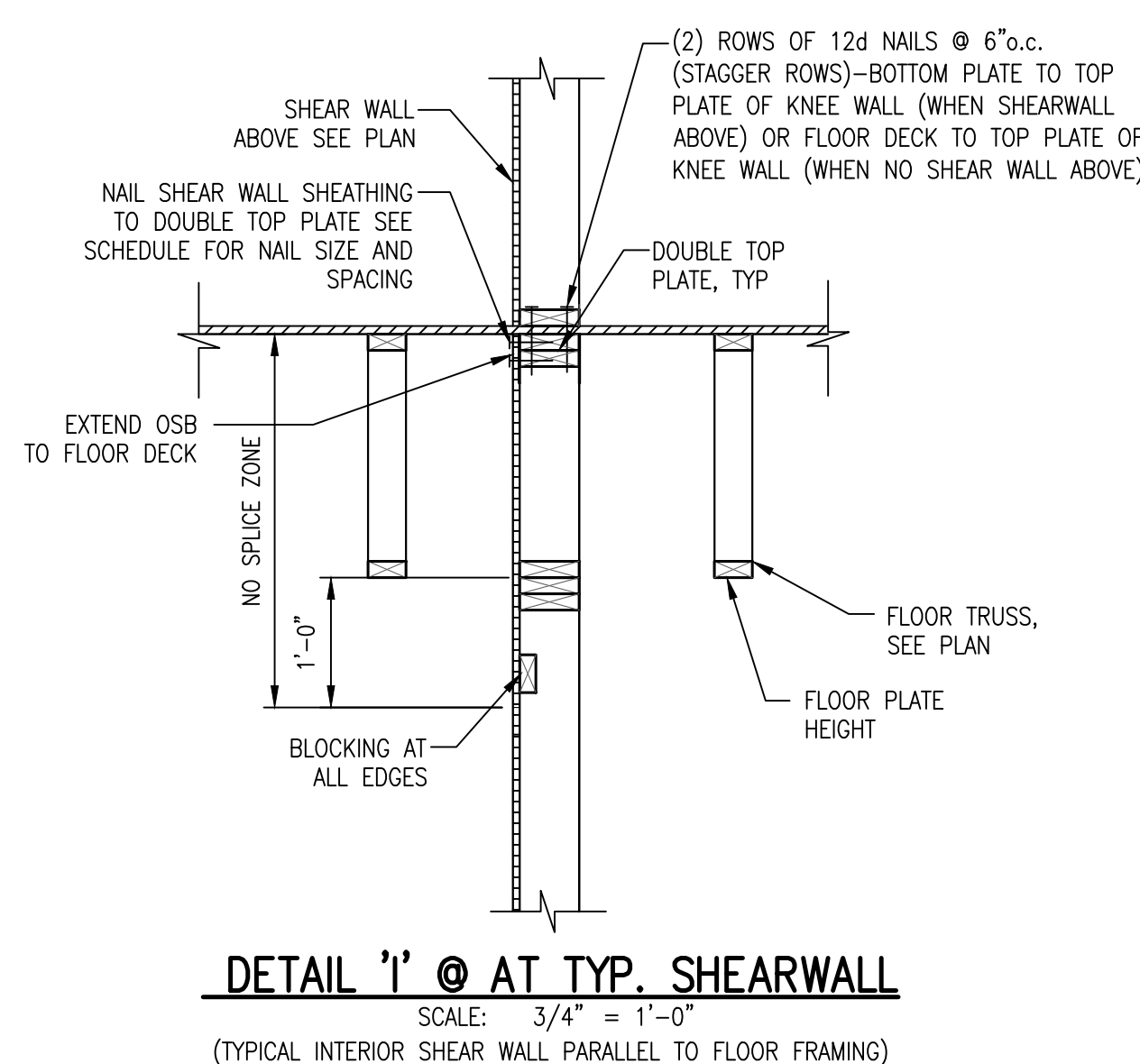
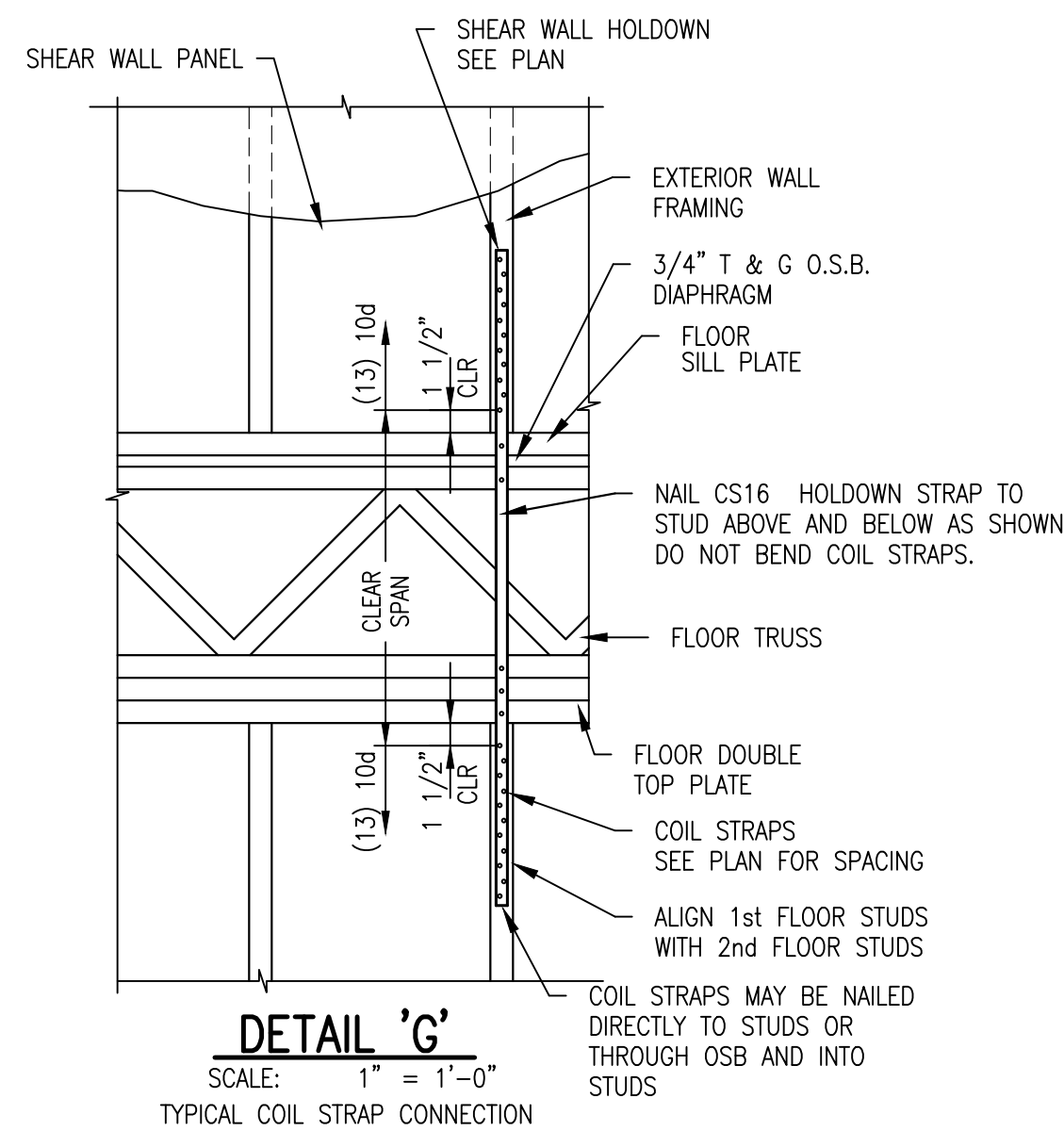
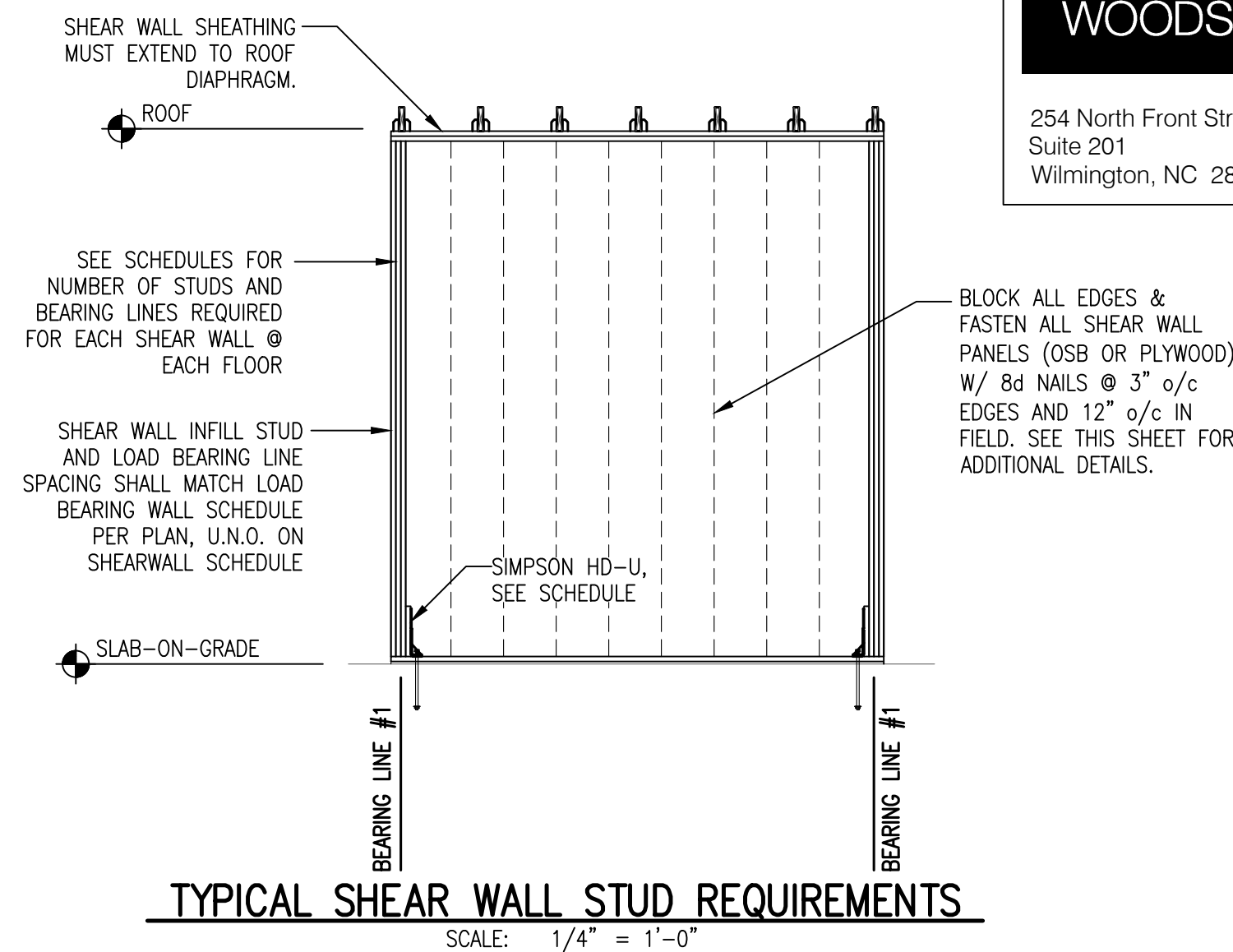
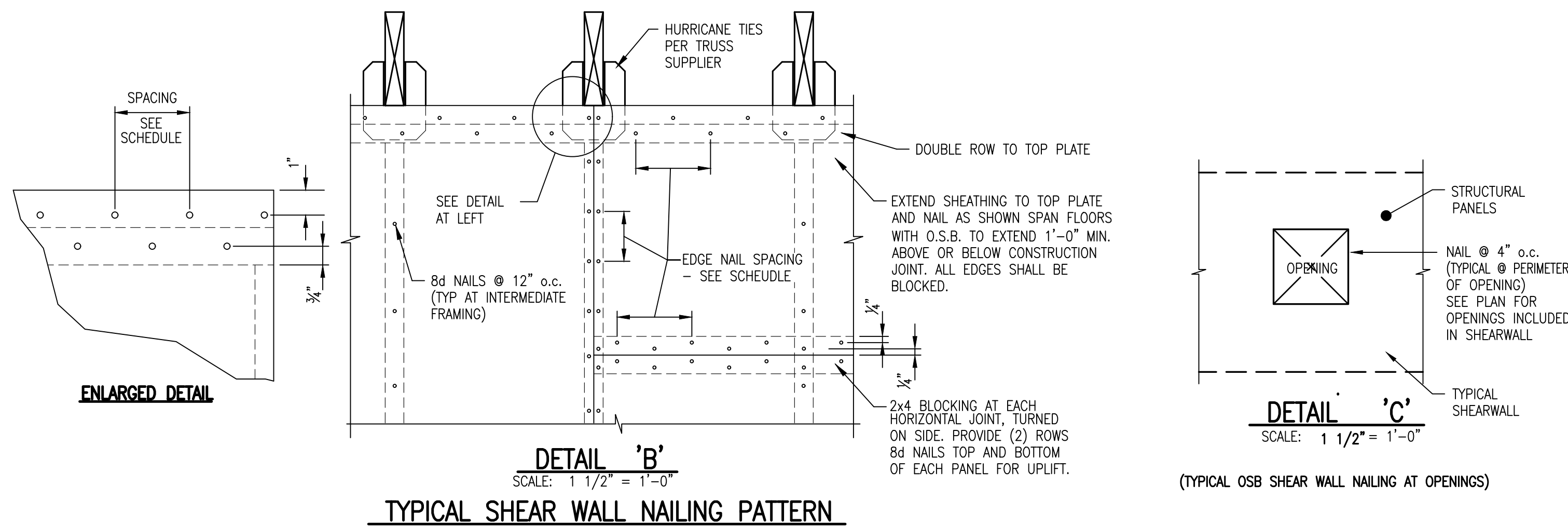
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c=us, o=Woodward Clyde, ou=Engineering, cn=Adam L. Sisk, PE, SE, email=asisk@woodwardclay.com
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ROOF FRAMING SECTIONS

S402





SHEAR WALL NOTES:

- FOR GENERAL FRAMING INFORMATION, SEE SHEET S1.01
- SEE DETAILS ON THIS SHEET SERIES FOR TYPICAL SHEAR WALL DETAILS.
- SHEAR WALL SHEATHING SHALL BE 1/8" OSB OR PLYWOOD WITH 8d NAILS @ 3" o.c. AT EDGES AND 12" o.c. IN FIELD.
- ALL RODS SHALL BE ASTM A36. (F_u=70Ksi)
- ALL STUDS SHALL MATCH LOAD BEARING WALL SPACING AND SPECIES.
- ALL HOLDOWNS TO BE LOCATED A MAXIMUM DISTANCE OF 6" FROM END OF WALL. (TYP. OF ALL SHEAR WALLS)
- EPOXY SHALL BE HILTI HY-200. SEE TABLE THIS SHEET FOR REQUIRED EMBEDMENT.
- ALL HOLDOWN RODS LOCATED ON EXTERIOR WALL SHALL BE CAST-IN-PLACE.

HOLDOWN AND COMPRESSION STUDS SCHEDULE @ SHEAR WALLS			
MARK	HOLDOWN/STRAPS	# COMPRESSION STUDS @ EACH HOLDOWN	ROD SIZE
A	(2) - SIMPSON HDU14-SDS2.5	(4)-1.75 x 5.5 LSL -TOTAL (8)	1"Ø
B	SIMPSON HDU14-SDS2.5	(5)-1.75 x 5.5 LSL / (4)-1.75 x 7.25 LSL	1"Ø
C	SIMPSON HDU11-SDS2.5	(4)-1.75 x 7.25 LSL / (5)-2X6	1"Ø
D	SIMPSON HDU8-SDS2.5	(3)-1.75 x 5.5 LSL	7/8"Ø
E	(2) - SIMPSON CSMTC16 STRAP	(4)-2X6	N/A
F	(2) - SIMPSON CS16 STRAP	(3)-2X6	N/A

1700 MECHANICAL SPECIFICATIONS

1701 GENERAL

- A. CODES, REGULATIONS AND STANDARD INSTALLATION ARE TO COMPLY WITH THE LATEST EDITION OF THE STATE BUILDING CODE, NFPA 90A, AND ALL OTHER APPLICABLE LOCAL AND NATIONAL CODES. IN THE CASE OF CONFLICT BETWEEN VARIOUS CODES, THEN THE MOST RESTRICTIVE SHALL TAKE PRECEDENT.
- B. FEES AND PERMITS: PROVIDE ALL LICENSES, FEES, PERMITS, INSURANCE, ETC., REQUIRED FOR THE EXECUTION OF THIS WORK.
- C. THE MECHANICAL CONTRACTOR SHALL PROVIDE ALL MATERIALS, PERFORM ALL WORK AND TEST AND PAY ALL FEES NECESSARY TO MAKE THE HEATING, AIR CONDITIONING AND VENTING SYSTEM OPERABLE AND READY FOR USE BY THE OWNER.
- D. GUARANTEE: ALL EQUIPMENT, MATERIALS AND INSTALLATION SHALL BE GUARANTEED TO BE FREE OF DEFECTS FOR A PERIOD OF ONE (1) YEAR AFTER FINAL ACCEPTANCE OF WORK OR IN ACCORDANCE WITH THE MANUFACTURER'S STANDARD GUARANTEE, IF LONGER. ALL COMPRESSORS SHALL HAVE A FIVE (5) YEAR GUARANTEE STARTING AFTER FINAL ACCEPTANCE OF WORK.
- E. IT IS UNDERSTOOD AND AGREED THAT THESE PLANS AND SPECIFICATIONS SHALL BE FULFILLED IN THEIR TRUE SPIRIT AND INTENT SO THAT ANY MINOR MATERIALS OR DEVICES ESSENTIAL TO PROPER AND CONVENIENT OPERATION, REQUIRED OR IMPLIED, SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR WITHOUT EXTRA CHARGE, EVEN THOUGH NOT SPECIFICALLY CALLED FOR.
- F. INSTALLATION SHALL COMPLY WITH OSHA STANDARDS.
- G. IN CASE OF CONFLICT BETWEEN THE PLANS AND SPECIFICATIONS OR CONFLICT BETWEEN INFORMATION PRESENTED ON THE PLANS OR IN THE SPECIFICATIONS, THEN THE MOST RESTRICTIVE SHALL TAKE PRECEDENT.
- H. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THIS OWN CLEAN UP AND REMOVAL OF SCRAP FROM THE JOB SITE. THE MECHANICAL CONTRACTOR SHALL MAINTAIN A CLEAN AND SAFE WORK AREA.
- I. DIVISION 1 SHALL BECOME A PART OF THESE SPECIFICATIONS BY REFERENCE.
- J. ALL MECHANICAL, ELECTRICAL, AND PLUMBING COMPONENTS SHALL BE INSTALLED, SUPPORTED, AND RESTRAINED IN ACCORDANCE WITH THE STATE BUILDING CODE REQUIREMENTS FOR SEISMIC DESIGN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RETAIN A PROFESSIONAL ENGINEER COMPETENT IN THIS FIELD FOR THIS DESIGN. FOR ONE POSSIBLE SOURCE FOR THIS SERVICE, CONTACT SEISMIC CONTROL AND ISOLATION, INC. PHONE: 910-799-5204. ALL REQUIRED INSPECTIONS FOR THESE DRAWINGS SHALL BE PERFORMED BY QUALIFIED INSPECTORS AND AGENCIES HIRED BY THE OWNER OR OWNER'S AGENT.
- K. THE ENGINEER IS NOT RESPONSIBLE FOR JOB SITE SAFETY.

1702 SCOPE

- WORK SHALL INCLUDE BUT NOT BE LIMITED TO:
- A. PROVIDE AND INSTALL SPLIT SYSTEM HEAT PUMP SYSTEMS, DUCT, DIFFUSERS, GRILLES, LOUVERS AND WEATHER CAPS.
- B. PROVIDE AND INSTALL VENT FANS, DUCT AND LOUVERS.
- C. PROVIDE AND INSTALL ALL CONTROLS.
- D. PROVIDE ALL INCIDENTAL MATERIALS AND EQUIPMENT FOR A COMPLETE AND FUNCTIONING HVAC SYSTEM.

1703 MATERIALS

- A. HEATING, VENTILATION AND AIR CONDITIONING DUCT SHALL BE:
1. ALL CONCEALED HEATING AND COOLING MAIN SUPPLY AND RETURN DUCT SHALL BE GALVANIZED SHEET METAL WITH FIBERGLASS WRAP WITH FOIL BACKING, UL LABELED FOR CLASS I AIR DUCT MEETING NFPA 90 FLAME SPREAD AND SMOKE GENERATION REQUIREMENTS. DUCT INSULATION SHALL COMPLY WITH ALL STATE ENERGY CODE REQUIREMENTS AND HAVE A MINIMUM R-VALUE AS SHOWN BELOW:
- 1.1. SUPPLY DUCTS INSIDE THERMAL ENVELOPE..... R=6.0
- 1.2. RETURN DUCTS INSIDE THERMAL ENVELOPE..... 1/2" DUCT LINER FOR NOISE SUPPRESSION
- 1.3. FRESH AIR INTAKE DUCTS..... R=6.0
- INSULATION SHALL MEET ALL CODE REQUIREMENTS.
2. ALL EXPOSED HEATING AND COOLING MAIN SUPPLY AND RETURN DUCT SHALL BE GALVANIZED SHEET METAL WITH DUCT LINER, UL LABELED FOR CLASS I AIR DUCT MEETING NFPA 90 FLAME SPREAD AND SMOKE GENERATION REQUIREMENTS. DUCT INSULATION SHALL NOT PROMOTE OR SUPPORT THE GROWTH OF MOLD, FUNGI OR BACTERIA (WHEN TESTED IN ACCORDANCE WITH UL 181, ASTM C1338, OR ASTM D3273), SHALL NOT BREAK AWAY, CRACK, PEEL FLAKE OFF, OR SHOW EVIDENCE OF DELAMINATION OR EROSION (WHEN TESTED IN ACCORDANCE WITH UL 181) AND SHALL COMPLY WITH ALL STATE ENERGY CODE REQUIREMENTS AND HAVE A MINIMUM R-VALUE AS SHOWN BELOW:
- 2.1. SUPPLY DUCTS..... R=4.0
- 2.2. RETURN DUCTS..... 1/2" DUCT LINER FOR NOISE SUPPRESSION
- INSULATION SHALL MEET ALL CODE REQUIREMENTS.
3. FLEX RUNOUTS SHALL BE FLEX DUCT BY ATCO OR EQUAL AND SHALL BE UL LABELED FOR CLASS I AIR DUCT MEETING NFPA 90 FLAME SPREAD AND SMOKE GENERATION REQUIREMENTS. MINIMUM R-VALUE SHALL BE R=6.0
4. RIGID RUN OUTS SHALL BE GALVANIZED SHEET METAL WITH FIBERGLASS WRAP WITH FOIL BACKING WHICH MEET REQUIREMENTS OF ITEM 1.
5. PROVIDE SINGLE THICKNESS TURNING VANES IN MAIN SUPPLY AND RETURN DUCT AT TEES AND 90° ELLS.
6. FRESH AIR MAKE-UP SHALL BE CLASS I DUCT WITH INSULATION WHICH MEET REQUIREMENTS OF ITEMS 1 AND 2.
7. VENT DUCT:
- 7.1. VENT DUCT SHALL BE 26 GA. MINIMUM GALVANIZED SHEET METAL.
- 7.2. THE FIRST 3'-0" OF DUCT FROM THE EXTERIOR WALL SHALL BE INSULATED WITH INSULATION MEETING REQUIREMENTS OF ITEM 1 (MINIMUM R-VALUE SHALL BE 8.0).
- 7.3. VENTILATION DUCT FOR EXHAUST FAN MAY BE UNINSULATED EXCEPT AS REQUIRED BY ITEM 7.2
- B. THERMOSTAT CABLE SHALL BE UL APPROVED FOR THE APPLICATION.
- C. CONDENSATE PIPE SHALL BE A MINIMUM OF 3/4" PVC (CPVC FOR PLENUM SPACES) WITH 1/2" ARMAFLEX TYPE INSULATION FOR INTERIOR RUNS.
- D. ALL RUNOUT SUPPLY DUCTS SHALL HAVE BALANCING DAMPERS.
- E. REFRIGERATION TUBING SHALL BE SIZED PER THE EQUIPMENT MANUFACTURERS RECOMMENDATION AND INSULATED WITH A MINIMUM THICKNESS OF 1 1/2" AND A INSULATION CONDUCTIVITY NOT TO EXCEED 0.27 BTU-IN/(HR*FT*F). DIFFERENT THICKNESSES AND CONDUCTIVITIES ARE ALLOWED THAT COMPLY THE REQUIREMENTS OF THE STATE ENERGY CODE. INSULATION SHALL MEET ALL MANUFACTURER'S RECOMMENDATIONS AND STATE ENERGY CODE REQUIREMENTS. ALL INSULATION EXPOSED TO SUNLIGHT SHALL BE PROVIDED WITH A UV PROTECTIVE COATING/COVERING.
- F. ALL SUPPLY AND RETURN GRILLES SHALL HAVE FULLY INSULATED BACK UNLESS NOTED OTHERWISE.
- G. ALL INTAKE OPENINGS SHALL BE PROTECTED WITH A CORROSION RESISTANT SCREEN WITH OPENINGS GREATER THAN 1/4" AND NOT GREATER THAN 1".
- H. ALL EXHAUST OPENINGS (EXCEPT DRYER EXHAUST) SHALL BE PROTECTED WITH A CORROSION RESISTANT SCREEN WITH OPENINGS NOT LESS THAN 1/4" AND NOT GREATER THAN 1/2".

1704 EXECUTION

- A. ALL HOLES SHALL BE DRILLED OR CUT, DO NOT BREAK HOLES.
- B. THE MECHANICAL CONTRACTOR SHALL DO ALL CUTTING AND PATCHING, AND PAINTING NECESSARY TO INSTALL ALL EQUIPMENT AS REQUIRED UNDER THIS CONTRACT, AND SHALL ESTABLISH ALL FINISHES WHEN CUTTING AND PATCHING OCCUR TO THEIR ORIGINAL CONDITION. QUALIFIED WORKERS SHALL DO ALL CUTTING AND PATCHING WORK (I.E. DRY WALL CUTTING AND PATCHING SHALL BE DONE BY QUALIFIED DRY WALL CRAFTSMEN.)
- C. CONTRACTOR SHALL BALANCE THE AIR CONDITIONING SYSTEM AS SHOWN ON THE PLANS WITHIN 10% OF THE NUMBER SHOWN. CONTRACTOR SHALL SUBMIT A BALANCING REPORT SHOWING THE ACTUAL CFM READINGS OF ALL SUPPLY REGISTERS TO THE ARCHITECT AT THE COMPLETION OF THE PROJECT.
- D. UNLESS NOTED OTHERWISE, THE DUCT DIMENSIONS SHOWN REFER TO THE DUCTS INSIDE FREE AIR SPACE DIMENSION. ROUND OR RECTANGULAR DUCT MAY BE USED IN PLACE OF THE TYPE OF DUCT SHOWN AS LONG AS THE FOLLOWING REQUIREMENTS ARE MET:
1. THE REPLACEMENT DUCT SIZE SHALL HAVE A STATIC PRESSURE DROP AND AVERAGE DUCT VELOCITY EQUAL TO OR LESS THAN THE DUCT SIZE SHOWN ON THE DRAWINGS.
2. THE CONTRACTOR SHALL TAKE RESPONSIBILITY FOR THE NEW DUCT DESIGN, INCLUDING BUT NOT LIMITED TO, FIT, CLEARANCES AND EFFECTS ON OTHER TRADES.
- E. CONTRACTOR SHALL SUPPLY ALL HANGERS AND SUPPORTS NECESSARY TO SUSPEND DUCT WORK AND EQUIPMENT AS PER GOOD INSTALLATION PRACTICE AND THE STATE MECHANICAL CODE.
- F. ALL DUCT SHALL BE CONSTRUCTED, SUPPORTED AND REINFORCED PER SMACNA STANDARDS.
- G. MECHANICAL CONTRACTOR SHALL PROVIDE ALL THERMOSTATS, CONTROL, RELAY, STARTERS ETC., FOR A COMPLETE CONTROL SYSTEM FOR THE HEAT PUMP UNITS.
- H. MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR PENETRATIONS AND PATCHING.
- I. MECHANICAL CONTRACTOR SHALL PROVIDE CONDENSATE PUMPS WHERE GRAVITY DRAINAGE OF CONDENSATE IS NOT POSSIBLE WITHOUT ADDITIONAL EXPENSE TO THE OWNER.
- J. INSTALLATION SHALL COMPLY WITH ALL STATE ENERGY CODE REQUIREMENTS.
- K. ALL REFRIGERATION PIPING AND CONDENSATE PIPING SHALL BE PROPERLY SUPPORTED AS PER MANUFACTURERS RECOMMENDATIONS, STATE BUILDING CODE, AND GOOD PIPING PRACTICES. PROPER DRAINAGE OF CONDENSATE LINES SHALL BE MAINTAINED.
- L. ALL MATERIALS AND EQUIPMENT SHALL BE PROPERLY INSTALLED AS PER MANUFACTURERS RECOMMENDATIONS AND GOOD PRACTICE.
- M. THERE WILL BE MINIMUM 10" CLEARANCE BETWEEN OUTSIDE AIR INTAKES AND ALL BUILDING EXHAUSTS AND PLUMBING VENTS.
- N. HORIZONTAL AIR HANDLER INSTALLATIONS SHALL INCLUDE VIBRATION ISOLATION SUPPORTS. VERTICAL FLOOR MOUNTED AIR HANDLERS SHALL BE SUPPORTED ON CORK PADS.
- O. AIR INTAKE AND EXHAUST WEATHER CAPS, GRILLES, AND LOUVERS SHALL BE SIZED TO PRODUCE A STATIC PRESSURE DROP OF 0.05" OR LESS AT DESIGN AIR FLOW. WEATHER CAPS SHALL BE ALUMINUM BY GREENHECK OR EQUAL.
- P. DUCT SYSTEMS SHALL BE SEALED STRICTLY AS PER THE STATE ENERGY CODE.
- Q. ALL DUCT WORK TRANSITIONS SHALL BE SUPPLIED AS REQUIRED FOR CONNECTION OF ALL DUCTED EQUIPMENT AND SYSTEM COMPONENTS.
- R. ALL OUTSIDE AIR INTAKE DUCTS (ONE FOR EACH AIR HANDLER) SHALL HAVE BACKDRAFT DAMPERS BALANCED TO OPEN AND ALLOW IN OUTSIDE AIR AS INDICATED ON DRAWINGS WHEN AIR HANDLER FAN IS RUNNING. THE USE OF ELECTRONICALLY DRIVEN DAMPERS TIED TO THE AIR HANDLER OPEN WHEN FAN IS ON, CLOSED WHEN FAN IS OFF, SHALL BE AN ACCEPTABLE ALTERNATE. ALL ELECTRICAL CONNECTIONS SHALL BE COORDINATED WITH ELECTRICIAN.
- S. PROVIDE OPERATION AND MAINTENANCE MANUALS TO THE BUILDING OWNER.

1705 ELECTRICAL CONNECTIONS

- ELECTRICAL CIRCUIT SIZES AND NUMBER ARE BASED ON THE MANUFACTURER OF THE EQUIPMENT SPECIFIED, AND IT SHALL BE THE RESPONSIBILITY OF THE HEATING AND AIR CONDITIONING CONTRACTOR TO CHANGE ANY AND ALL ELECTRICAL WORK IN ORDER TO FIT EQUIPMENT OTHER THAN THAT SPECIFIED. THE HEATING AND AIR CONDITIONING CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR AND THE OWNER TO ASSURE THAT ALL UNITS ARE PROPERLY CONNECTED AND SHALL CHECK THE WIRING PRIOR TO STARTING UNITS. TERMINATION OF ELECTRICAL POWER WILL BE AS FOLLOWS:
1. ELECTRICAL CONTRACTOR SHALL PROVIDE AND CONNECT ALL POWER TO THE MECHANICAL EQUIPMENT.
2. MECHANICAL CONTRACTOR SHALL PROVIDE AND INSTALL THE CONTROL AND THERMOSTAT SYSTEMS FOR THE HEATING, AIR CONDITIONING SYSTEMS.
3. MECHANICAL CONTRACTOR SHALL PROVIDE THE EMERGENCY SHUTDOWN CONTROLS AND COORDINATE WITH THE ELECTRICAL CONTRACTOR ON DUCT DETECTOR INSTALLATION AND AIR HANDLING UNIT SHUTDOWN.
4. MECHANICAL CONTRACTOR SHALL PROVIDE ANY REQUIRED ELECTRICAL CONNECTIONS FOR CONDENSATE PUMPS WITHOUT ADDITIONAL COST TO THE OWNER.

1706 TESTS

- A. ALL HEATING COOLING AND VENTILATION EQUIPMENT, UPON COMPLETION, SHALL BE TESTED FOR AT LEAST ONE (1) DAY AND SHALL BE SHOWN TO BE IN SATISFACTORY CONDITION ON BOTH HEATING AND COOLING.
- B. CONTRACTOR SHALL SUPPLY ALL NECESSARY LABOR AND EQUIPMENT FOR THE TEST.

1707 SUBSTITUTION

- ALL MATERIALS SHALL BE NEW UNLESS OTHERWISE SHOWN OR SPECIFIED AND SHALL BE OF THE VERY BEST QUALITY AS SPECIFIED. REQUESTS TO SUBSTITUTE OTHER MATERIALS OR PRODUCTS FOR THOSE SPECIFIED SHALL BE SENT IN WRITING TO THE OWNER. REQUESTS SHALL BE ACCOMPANIED BY ENGINEERING DATA, SPECIFICATION SHEETS, ETC., AS NECESSARY TO FULLY IDENTIFY AND APPRAISE THE PRODUCTS. APPROVAL OF THE EQUIPMENT WILL NOT RELIEVE THE CONTRACTOR OF NONCOMPLIANCE WITH THE SPECIFICATIONS, EVEN IF SUCH APPROVAL IS MADE IN WRITING, UNLESS THE ENGINEER IS CALLED TO THE NONCONFORMING FEATURES BY LETTER ACCOMPANYING THE SUBMITTAL DATA.

1708 VISIT TO SITE

- ALL BIDDERS ON THIS WORK SHALL VISIT THE SITE AND THOROUGHLY FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS BEFORE SUBMITTING THEIR BIDS. NO ALLOWANCE WILL BE MADE FOR LACK OF KNOWLEDGE OF EXISTING CONDITIONS.

1709 SHOP DRAWINGS

- AS SOON AS POSSIBLE (AND NOT MORE THAN 30 DAYS) AFTER CONTRACT IS SIGNED, THE CONTRACTOR SHALL SUBMIT FIVE (5) COPIES OF SHOP DRAWINGS OF HEAT PUMPS, REGISTERS, FANS, ANY SPECIAL EQUIPMENT WHICH HE INTENDS TO USE. FOUR (4) COPIES OF THIS DATA WILL BE RETURNED BY THE ENGINEER WHO WILL INDICATE APPROVAL OR OTHERWISE.

1710 FIRE RATED WALLS, FLOORS & CEILINGS

- CONTRACTOR SHALL DETERMINE LOCATION OF ALL FIRE AND SMOKE RATED WALLS, FLOORS AND CEILINGS FROM ARCHITECTURAL DRAWINGS. PIPING PENETRATIONS OF FIRE RATED ASSEMBLIES SHALL BE AS REQUIRED BY THE STATE BUILDING CODE, WITH APPROVED AND APPROPRIATELY RATED UL FIRESTOP SYSTEMS AT ALL PENETRATIONS. ALL DUCT PENETRATIONS SHALL BE PROPERLY PROTECTED WITH RADIATION OR FIRE DAMPERS WITH ALL INSTALLATION STRICTLY AS PER MANUFACTURERS RECOMMENDATIONS.

1711 PLACING IN SERVICE

- UPON COMPLETION OF THE ENTIRE SYSTEM, THE MECHANICAL CONTRACTOR SHALL INSTALL NEW AIR FILTERS AND LEAVE ENTIRE SYSTEM CLEAN AND READY FOR OPERATION. THE MECHANICAL CONTRACTOR SHALL DEMONSTRATE THE PROPER FUNCTION OF THE ENTIRE SYSTEM. THE MECHANICAL CONTRACTOR SHALL ACQUAINT THE OWNERS REPRESENTATIVE WITH THE PROPER OPERATION OF THE ENTIRE SYSTEM.

LOUVER SCHEDULE

SYMBOL	DESCRIPTION	SIZE	FREE AREA (ft ²)	CFM	MAX Δ P (w.g.)	RAIN	BACKDRAFT DAMPER	SCREEN	MATERIAL	PAINT	MFG. (NOTE 1)	MODEL	REMARKS
L-1	STATIONARY INTAKE	16Wx16H	0.5	250	0.10	YES	YES	YES	ALUMINUM	VERIFY	POTORFF	ECV-345	SEE NOTES
L-2	STATIONARY INTAKE	18Wx16H	0.5	325	0.10	YES	YES	YES	ALUMINUM	VERIFY	POTORFF	ECV-345	SEE NOTES
L-3	STATIONARY EXHAUST	12Wx12H	0.2	75	0.10	YES	NO	YES	ALUMINUM	VERIFY	POTORFF	ECV-345	SEE NOTES

NOTES:

1. EQUALS ARE RUSKIN, LOUVERS & DAMPERS AND GREENHECK.
2. GRAVITY BACKDRAFT DAMPERS SHALL BE COUNTER BALANCED.
3. LOUVERS SHALL COMPLY WITH AMCA 550.

SPLIT SYSTEM HEAT PUMP SCHEDULE - 15 SEER HP'S

COMPRESSOR								AIR HANDLING UNIT														GENERAL	
SYMBOL	COOLING CAPACITY (TONS)	ELECTRIC				MFG.	MODEL	SYMBOL	TYPE	HEATER		ELECTRIC				MFG.	MODEL	FAN CFM	FRESH AIR INTAKE (CFM)	FRESH AIR INTAKE DUCT SIZE	ESP (1 IN. OF H2O) VERT/H. R.	SEER HSPF	REMARKS
		VOLT	PHASE	MCA	MOCP					CAPACITY (KW)	STAGES	VOLT	PHASE	MCA	MOCP								
HP-1	5 TONS	240	1ø	36	60	TRANE	4TWR5060	AHU-1	HORIZ.	4.8/9.6	2	240	1ø	60/25	60/25	TRANE	GAM5B0C60	1,900	100	8"ø	0.5	14.50 8.50	SEE NOTES
HP-2	4 TONS	240	1ø	28	50	TRANE	4TWR5049	AHU-2	HORIZ.	7.68	1	240	1ø	48	50	TRANE	GAM5B0C48	1,600	150	8"ø	0.5	15.50 8.50	SEE NOTES
HP-3	4 TONS	240	1ø	28	50	TRANE	4TWR5049	AHU-3	HORIZ.	7.68	1	240	1ø	48	50	TRANE	GAM5B0C48	1,600	150	8"ø	0.5	15.50 8.50	SEE NOTES
HP-4	3½ TONS	240	1ø	23	40	TRANE	4TWR5042	AHU-4	VERT.	7.68	1	240	1ø	45	45	TRANE	GAM5A0C42	1,400	175	8"ø	0.5	15.25 9.00	SEE NOTES

NOTES:

1. PROVIDE GALVANIZED DRIP PANS AT EACH UNIT WITH PAN DRAINED TO OUTSIDE BUILDING OR PAN WITH FLOAT SWITCHES COMPLYING WITH UL 508. INSTALLATION SHALL BE SUCH THAT ALL INSULATION SHALL BE LOCATED ABOVE THE TOPE EDGE OF THE PAN.
2. PROVIDE SOLID STATE PROGRAMMABLE THERMOSTAT WITH SET BACK CONTROLS FOR TIME OF DAY AND DAY OF WEEK, AND CAPABLE OF TEMPORARY MANUAL OVERRIDE.
3. PROVIDE CONCRETE PAD FOR COMPRESSORS AND ANCHOR COMPRESSORS TO PADS.
4. CONTRACTOR SHALL CONSTRUCT FILTER HOUSING AND PROVIDE FILTERS AT EACH AHU. FILTER SHALL BE SIZED PER MANUFACTURERS RECOMMENDATIONS.
5. PROVIDE FRENCH DRAINS FOR CONDENSATE DISCHARGE.
6. PROVIDE MANUFACTURER RECOMMENDED CLEARANCES AROUND ALL INDOOR AND OUTDOOR UNITS.
7. CONSULT WITH COMPRESSOR MANUFACTURER FOR THE CORRECT SIZING OF REFRIGERANT LINES. PROVIDE MANUFACTURER RECOMMENDED EQUIPMENT FOR ANY LONG REFRIGERANT LINE LENGTHS.
8. PROVIDE CONTROLS THAT PREVENT AUXILIARY HEAT STRIPS FROM BEING ACTIVATED WHEN THE HEAT PUMP CAN HANDLE THE HEATING LOAD EXCEPT DURING DEFROST CYCLE.

COMPLIANCE SCHEDULE - MECHANICAL

METHOD OF COMPLIANCE	PRESCRIPTIVE
ENERGY COST BUDGET	
THERMAL ZONE	3
EXTERIOR DESIGN CONDITIONS	24°F WINTER DRY BULB 91°F SUMMER DRY BULB
INTERIOR DESIGN CONDITIONS	72°F WINTER DRY BULB 75°F SUMMER DRY BULB 50% RELATIVE HUMIDITY
BUILDING HEATING LOAD	154,253 BTU/HR
BUILDING COOLING LOAD	220,860 BTU/HR
MECHANICAL SPACING CONDITIONING SYSTEM UNITARY	
DESCRIPTION OF UNIT - HEATING EFFICIENCY - COOLING EFFICIENCY - HEAT OUTPUT OF UNIT - COOLING OUTPUT OF UNIT	SEE EQUIPMENT SCHEDULE
BOILER	
TOTAL BOILER OUTPUT (IF OVERSIZED STATE REASON)	N/A
CHILLER	
TOTAL CHILLER CAPACITY	N/A
LIST EQUIPMENT EFFICIENCIES	SEE EQUIPMENT SCHEDULE
EQUIPMENT SCHEDULES WITH MOTORS (MECHANICAL SYSTEM)	
MOTOR HORSEPOWER	N/A
NUMBER OF PHASES	N/A
MINIMUM EFFICIENCY	N/A
MOTOR TYPE	N/A
# OF POLES	N/A

DESIGNER STATEMENT
TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE MECHANICAL SYSTEM, SERVICE SYSTEMS AND EQUIPMENT REQUIREMENTS OF THE NORTH CAROLINA STATE ENERGY CODE.

SIGNED:

NAME: Christopher M. Lippincott, PE

TITLE: ENGINEER

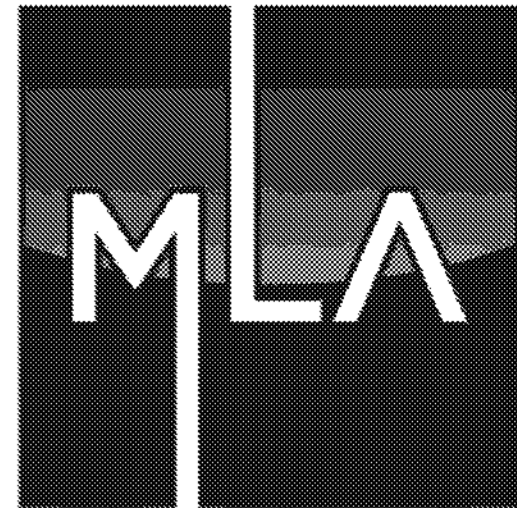
MECHANICAL LEGEND

	SUPPLY REGISTER - WALL
	SUPPLY REGISTER - CEILING
	RETURN REGISTER - CEILING
	A - DIFFUSER/GRILLE 100 - CFM
	THERMOSTAT
	COMBINATION THERMOSTAT/HUMIDISTAT
	REMOTE TEMPERATURE SENSOR
	RECTANGULAR DUCT - 20" WIDE INSIDE A/C SYSTEM - 10" HIGH INSIDE
	TURNING VANES
	RIGID ROUND DUCT - 10" I.D.
	FLEX DUCT - 10" I.D.
	BALANCING DAMPER
	REDUCER
	VENT FAN
	FRESH AIR DUCT
	VENTILATION DUCT



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STORAGE/OFFICE

MONUMENT DRIVE.
WILMINGTON, NC 28405

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Mark	Date	Description
PROJECT NO: 23038		
DATE: 5/19/2023		
SCALE: As indicated		
DRAWN BY: ---		
PROJ MGR: ---		

Mechanical
Schedules &
Specifications

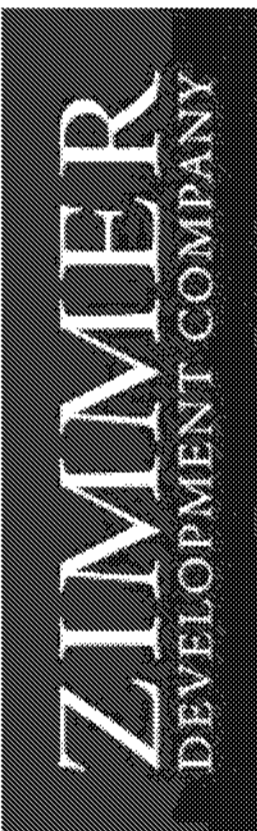
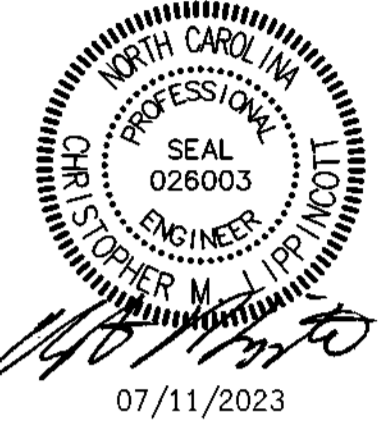
Mo.1

VENTILATION FAN SCHEDULE - EXISTING

SYMBOL	DESCRIPTION	CFM SETTING	S.P. (w.g.)	VOLT	PHASE	WATTS	MOUNTING	MFG. (NOTE 1)	MODEL	CONTROL	REMARKS
F-1	CABINET FAN	75	1/4"	120	1	16	CEILING	GREENHECK	SP-A90	THERMOSTAT	SEE NOTES

NOTES:

1. EQUALS ARE TWIN CITY, CAPTIVE-AIRE, PENNBARRY AND LOREN COOK.
2. PROVIDE BACKDRAFT DAMPER.



STORAGE/OFFICE

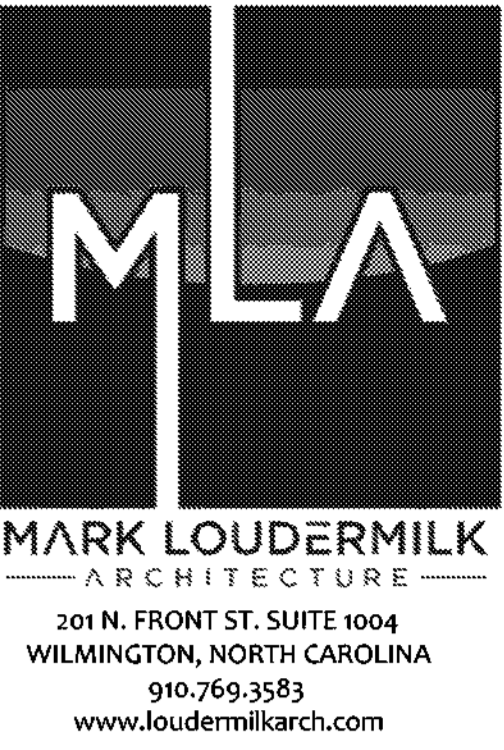
MONUMENT DRIVE.
WILMINGTON, NC 28405

Mark	Date	Description
PROJECT NO: 23038		
DATE:	5/19/2023	
SCALE:	As indicated	
DRAWN BY:	---	
PROJ MGR:	---	

Mechanical Plan

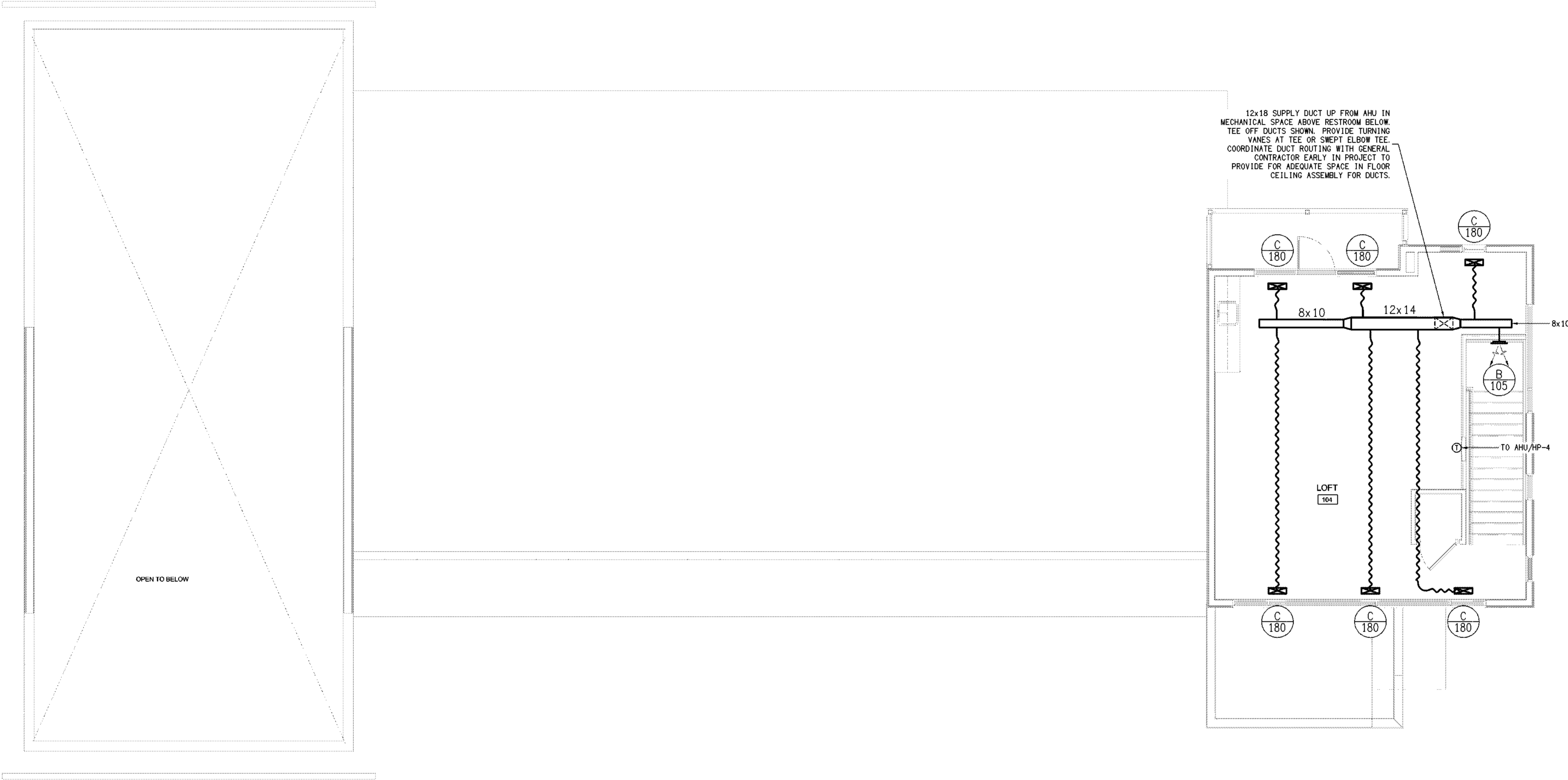
1st Floor

M1.1

[illegible]

Mechanical Plan 2nd Floor

M1.2



A	Mechanical Plan - 2nd Floor
M1.2	

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

PLUMBING SPECIFICATIONS:

1. GENERAL
- 1.1. CODES, REGULATIONS AND STANDARD INSTALLATIONS ARE TO COMPLY WITH THE LATEST EDITION OF THE STATE BUILDING AND PLUMBING CODES AND ALL OTHER APPLICABLE LOCAL AND NATIONAL CODES AND ORDINANCES. IN CASE OF CONFLICT BETWEEN THE CODE AND THE DRAWINGS AND SPECIFICATIONS OR BETWEEN VARIOUS CODES, THEN THE MOST RESTRICTIVE SHALL TAKE PRECEDENT.
- 1.2. FEES AND PERMITS: PROVIDE ALL LICENSES, FEES, PERMITS, HEALTH DEPARTMENT FEES, INSURANCE, ETC., REQUIRED FOR EXECUTION OF THIS WORK.
- 1.3. THE CONTRACT DRAWINGS ARE SCHEMATIC ONLY AND ARE NOT INTENDED TO SHOW ALL FITTINGS, BOLTS, CONNECTIONS, OFFSETS, ETC., UNLESS SPECIFICALLY DIMENSIONED. THE PLUMBING CONTRACTOR SHALL FOLLOW THE DRAWING AS CLOSELY AS POSSIBLE; HOWEVER, NECESSARY ADJUSTMENTS SHALL BE MADE AS REQUIRED TO CONFORM TO STRUCTURAL CONDITIONS, WORK OF OTHER CONTRACTORS AND THE INTENT OF THE DRAWINGS WITHOUT ADDITIONAL COST TO THE OWNER. THE DRAWINGS SHALL NOT BE SCALED. SECURE DIMENSIONS FROM ARCHITECTURAL DRAWINGS FOR FIXTURE LOCATIONS.
- 1.4. THE PLUMBING CONTRACTOR SHALL PROVIDE ALL MATERIALS, PERFORM ALL WORK AND TEST AND PAY ALL FEES NECESSARY TO MAKE THE PLUMBING SYSTEM OPERABLE AND READY FOR USE BY THE OWNER.
- 1.5. GUARANTEE: ALL NEW EQUIPMENT, NEW MATERIALS AND INSTALLATION SHALL BE GUARANTEED TO BE FREE OF DEFECTS FOR A PERIOD OF ONE (1) YEAR AFTER FINAL ACCEPTANCE OF WORK OR IN ACCORDANCE WITH THE MANUFACTURER'S STANDARD GUARANTEE, IF LONGER.
- 1.6. PLUMBING CONTRACTORS SHALL BE RESPONSIBLE FOR HIS OWN CLEAN UP AND REMOVAL OF SCRAP FROM JOB SITE. PLUMBING CONTRACTOR SHALL MAINTAIN A CLEAN AND SAFE WORK AREA.
- 1.7. IN CASE OF ANY CONFLICT BETWEEN INFORMATION FOUND IN THE PLANS, OR IN THE SPECIFICATIONS, THE MOST RESTRICTIVE INTERPRETATION SHALL TAKE PRECEDENT.
- 1.8. THE PLUMBING DRAWINGS AND SPECIFICATIONS DO NOT INCLUDE THE DESIGN FOR ROOF GUTTER SYSTEMS OR ROOF DRAIN SYSTEMS.
- 1.9. ALL PLUMBING COMPONENTS SHALL BE INSTALLED, SUPPORTED, AND RESTRAINED IN ACCORDANCE WITH THE STATE BUILDING CODE REQUIREMENTS FOR SEISMIC DESIGN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RETAIN A PROFESSIONAL ENGINEER COMPETENT IN THIS FIELD FOR THIS DESIGN. FOR ONE POSSIBLE SOURCE FOR THIS SERVICE CONTACT SEISMIC CONTROL AND ISOLATIONS, INC. PHONE: 910-799-5204. ALL REQUIRED INSPECTIONS FOR THESE DESIGNS SHALL BE PERFORMED BY APPROVED INSPECTORS AND AGENCIES PROVIDED BY OWNER OR OWNER'S AGENT.
- 1.10. ALL ROOF MOUNTED MECHANICAL, ELECTRICAL, AND PLUMBING COMPONENTS SHALL BE INSTALLED, SUPPORTED, AND RESTRAINED IN ACCORDANCE WITH THE STATE BUILDING CODE REQUIREMENTS FOR WIND DESIGN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RETAIN A PROFESSIONAL ENGINEER COMPETENT IN THIS FIELD FOR THIS DESIGN. FOR ONE POSSIBLE SOURCE FOR THIS SERVICE, CONTACT SEISMIC CONTROL AND ISOLATION, INC. PHONE: 910-799-5204. ALL REQUIRED INSPECTIONS FOR THESE DRAWINGS SHALL BE PERFORMED BY QUALIFIED INSPECTORS AND AGENCIES HIRED BY THE OWNER OR OWNER'S AGENT AS REQUIRED BY THE BUILDING CODE.
- 1.11. THE ENGINEER IS NOT RESPONSIBLE FOR JOB SITE SAFETY.
2. SCOPE
- 2.1. WORK SHALL INCLUDE BUT IS NOT LIMITED TO:
- 2.1.1. PROVIDE FIXTURES AND INSTALL AND CONNECT WASTE AND WATER PIPE AS SHOWN ON DRAWINGS.
- 2.1.2. CHLORINATE WATER SYSTEM.
- 2.1.3. COORDINATE WITH LOCAL AUTHORITIES ON PURCHASE AND INSTALLATION OF BACKFLOW PREVENTERS.
3. MATERIALS
- 3.1. SITE WATER PIPING SHALL BE SCH 40 CPVC PRESSURE PIPE WITH SOLVENT WELD JOINTS. USE INDUSTRIAL GRADE GLUE ONLY. ALL NSF APPROVED PIPING FROM TAP TO METER AND PIPING INSIDE ROAD RIGHT OF WAYS SHALL BE AS PER THE REQUIREMENTS OF THE LOCAL WATER AUTHORITY AND THE DEPARTMENT OF TRANSPORTATION.
- 3.1.1. WATER SERVICE PIPE OR TUBING, INSTALLED UNDERGROUND AND OUTSIDE OF STRUCTURE, SHALL HAVE A MINIMUM WORKING PRESSURE OF 160 PSI AT 73.4 DEG. F. WHERE THE WATER MAIN OR INCOMING WATER SOURCE PRESSURE EXCEEDS 160 PSI, PIPING MATERIAL SHALL HAVE A WORKING PRESSURE NOT LESS THAN THE HIGHEST AVAILABLE INCOMING WATER PRESSURE.
- 3.2. HANGERS:
- 3.2.1. SPACING FOR COPPER PIPE SHALL BE AS FOLLOWS:
UP TO 1": 6'-0" O.C.
1-1/4" & 1-1/2": 8'-0" O.C.
3" & LARGER: 10'-0" O.C.
- 3.2.2. SPACING FOR CARBON STEEL AND CAST IRON PIPING SHALL BE AS FOLLOWS:
UP TO 1": 7'-0" O.C.
1-1/2" & 2": 10'-0" O.C.
2-1/2" TO 4": 12'-0" O.C.
- 3.2.3. SPACING FOR PVC PIPE SHALL BE AS FOLLOWS:
UP TO 1-1/2": 2'-0" O.C.
2", 3'-0" O.C.
2-1/2" TO 4": 5'-0" O.C.
- 3.2.4. SPACING FOR CPVC PIPE SHALL BE AS FOLLOWS:
UP TO 1": 3'-0" O.C.
1-1/4" TO 2": 4'-0" O.C.
- 3.2.5. HANGERS FOR HORIZONTAL PIPING SHALL BE THE CLEVIS TYPE.
- 3.2.6. HANGERS FOR BARE COPPER PIPING SHALL BE COPPER PLATED.
- 3.2.7. HANGERS FOR INSULATED PIPING SHALL EXTEND AROUND THE INSULATION. PROVIDE 16 GAUGE GALVANIZED STEEL INSULATION PROTECTION SADDLES 12" LONG AT EACH HANGER ON ALL INSULATED LINES AND HARD INSULATION INSERTS AT SADDLES.
- 3.2.8. A HANGER SHALL BE FASTENED BY MEANS OF THREADED RODS TO BUILDING STRUCTURE. ALL HANGERS SHALL PERMIT ADEQUATE ADJUSTMENT AFTER ERECTION WHILE STILL SUPPORTING THE LOAD.
- 3.2.9. A HANGER SHALL BE PROVIDED WITHIN ONE FOOT OF EACH BEND IN HORIZONTAL PIPING.
- 3.2.10. SUPPORT MATERIAL SHALL BE PROPERLY CHOSEN TO AVOID ATMOSPHERIC CORROSION AND TO AVOID GALVANIC CORROSION DUE TO CONTACT OF SUPPORT AND ADJACENT MATERIALS.
- 3.3. HOT AND COLD WATER PIPES BEGINNING 5' FROM BUILDING WALL:
- 3.3.1. PIPE SHALL BE TYPE L COPPER TUBING ABOVE GRADE AND TYPE K BELOW GRADE.
- 3.3.2. FITTINGS SHALL BE MADE USING SOLDER AS PER THE STATE PLUMBING CODE FOR POTABLE WATER.
- 3.4. HOT AND COLD WATER PIPES INSIDE OF BUILDING:
- 3.4.1. PIPE AND PIPE FITTINGS SHALL BE MADE OF MATERIALS AND JOINED TOGETHER AS PER THE STATE PLUMBING CODE FOR POTABLE WATER
- 3.4.1.1. PIPE MATERIAL SHALL BE TYPE L COPPER TUBING ABOVE GRADE AND TYPE K BELOW GRADE. PIPE SIZING AS BASED ON THIS MATERIAL
- 3.4.2. ACCEPTABLE ALTERNATE:
- 3.4.2.1. PEX OR CPVC PIPING IS AN ACCEPTABLE ALTERNATE FOR ALL WATER PIPING. IF THESE MATERIALS ARE USED, CONTRACTOR IS RESPONSIBLE FOR RE-SIZING THE PIPE FOR THE MATERIAL CHOSEN.
- 3.4.2.2. PIPE AND FITTINGS SHALL BE SPECIFICALLY DESIGNED FOR INTENDED SERVICE.
- 3.4.2.3. FITTINGS SHALL BE MADE AS PER PIPE MANUFACTURER'S RECOMMENDATIONS AND AS PER THE STATE PLUMBING CODE FOR POTABLE WATER.
- 3.5. VENT AND WASTE PIPE:
- 3.5.1. WASTE AND VENT PIPE SHALL BE SCH 40 PVC-DWV AS PER ASTM 2865 D WITH SOLVENT WELD JOINTS EXCEPT AS NOTED BELOW.
- 3.5.2. PVC SHALL NOT BE USED IN A RETURN AIR PLENUM. FOR RETURN AIR PLENUMS CAST IRON SHALL BE USED. TRANSITION FROM PVC TO CAST IRON SHALL BE MADE WITH CODE APPROVED TRANSITION FITTINGS DESIGNED EXPRESSLY FOR THAT PURPOSE.
- 3.5.3. ALL FITTINGS SHALL BE SANITARY DRAINAGE PATTERN.
- 3.5.4. ALL WASTE AND SOIL STACKS SHALL BE PACKED WITH FIBERGLASS INSULATION FOR NOISE SUPPRESSION.
- 3.6. VALVES:
- 3.6.1. WATER GATE VALVES SHALL BE OF BRASS CONSTRUCTION WITH SOLDER JOINT FITTINGS.
- 3.6.2. ALL VALVES SHALL BE AS PER PLUMBING CODE.
- 3.7. TEMPERED WATER CONTROL:
- 3.7.1. TEMPERED WATER SHALL BE SUPPLIED THROUGH A WATER TEMPERATURE LIMITING DEVICE THAT CONFORMS TO ASSE 1070 AND SHALL LIMIT THE TEMPERED WATER TO A MAXIMUM TEMPERATURE AS SPECIFIED ON THE DRAWINGS.
- 3.7.2. A THERMOSTAT CONTROL FOR A WATER HEATER SHALL NOT SERVE AS THE TEMPERATURE LIMITING DEVICE FOR MAXIMUM ALLOWABLE HOT OR TEMPERED WATER DELIVERY AT FIXTURES.
- 3.8. INSULATION:
- 3.8.1. WATER PIPING IN UNCONDITIONED UTILITY ROOM, ATTIC SPACE OR INSTALLED OUTSIDE BUILDING INSULATION SHALL BE INSULATED WITH 2" THICK FIBERGLASS WITH VAPOR BARRIER JACKET. UTILITY ROOM INSULATION SHALL ALSO HAVE A PVC JACKET, STAPLED AND TAPED.
- 3.8.2. EXPOSED HOT AND COLD WATER LINES AND WASTE LINES UNDER HANDICAP LAVATORIES AND SINKS SHALL BE INSULATED WITH FULLY MOLDED, TRUEBRO, OR HANDI-LAV GAUGE INSULATION KIT.
- 3.8.3. UNDERGROUND LINES BELOW FROST LINE SHALL NOT BE INSULATED.
- 3.8.4. ALL OTHER WATER PIPING SHALL BE INSULATED AS FOLLOWS:
- 3.8.4.1. COLD WATER PIPING: COVER WITH 1" ARMAFLEX INSULATION.
- 3.8.4.2. NON-RECIRCULATING SYSTEM HOT WATER PIPING: COVER WITH 1" ARMAFLEX INSULATION (THE THERMAL CONDUCTIVITY OF THE INSULATION SHALL NOT BE LESS THAN 0.27 BTU*IN/(HR*FT²*°F)) FOR FIRST 8' OF PIPE FROM WATER HEATER AND 2" ARMAFLEX INSULATION EVERYWHERE ELSE.
- 3.8.4.3. RECIRCULATING SYSTEM HOT WATER SUPPLY, RETURN LINES, AND IN THE LOOP: COVER WITH 1" ARMAFLEX INSULATION (THE THERMAL CONDUCTIVITY OF THE INSULATION SHALL NOT BE LESS THAN 0.27 BTU*IN/(HR*FT²*°F)).
- 3.8.5. WASTE TRACS LOCATED WITHIN A CRAWL SPACE SHALL BE INSULATED WITH A MINIMUM 2" THICK FIBERGLASS INSULATION.
- 3.8.6. ALL ABOVE GROUND STORM DRAIN PIPING SHALL BE INSULATED WITH A FIBERGLASS INSULATION JACKET.
- 3.9. CLEANOUTS:
- 3.9.1. INTERIOR CLEANOUTS SHALL BE CAST IRON BODY WITH A BRONZE OR NICKEL ALLOY TOP, JOSAM OR EQUAL.
- 3.9.2. EXTERIOR CLEANOUTS SHALL BE CAST IRON WITH IRON TOPS. CLEANOUTS IN TRAFFIC AREAS SHALL BE TRAFFIC RATED, ZURN OR EQUAL. INSTALL CLEANOUTS IN 6" THICK 24" DIAMETER CONCRETE COLLARS.
- 3.9.3. WALL CLEANOUTS SHALL BE INSTALLED BEHIND STAINLESS STEEL COVER PLATES.
- 3.10. VENTS:
- 3.10.1. VENTS SHALL PENETRATE ROOF WITH FLEXIBLE BOOTS WITH FLASHING FLANGE.
4. EXECUTION:
- 4.1. ALL HOLES THROUGH WALLS, FLOORS AND CEILINGS ARE TO BE DRILLED, NOT BROKEN. ROUND ALL SHARP EDGES TO DRILLED EDGES.
- 4.2. LINES ARE NOT TO BE COVERED UNTIL INSPECTED BY THE ARCHITECT.
- 4.3. WRAP COPPER PIPE WITH DUCT TAPE WHERE IT PENETRATES THE FLOOR.
- 4.4. DO NOT MAKE A WATER LINE JOINT UNDER THE SLAB.
- 4.5. WATER HAMMER ARRESTORS SHALL COMPLY WITH ASSE 1010. WATER HAMMER ARRESTORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
- 4.5.1. A WATER HAMMER ARRESTOR SHALL BE INSTALLED AT FIXTURES THAT HAVE QUICK CLOSING VALVES WHEN METALLIC PIPE IS INSTALLED.
- 4.6. WASTE PIPES PASSING UNDER OR THROUGH FOUNDATIONS OR THROUGH LOAD BEARING SECTIONS OF A WALL SHALL BE ROUTED THROUGH D. I. SLEEVES AT LEAST TWO PIPE SIZES LARGER THAN THE WASTE PIPE.
- 4.7. SUFFICIENT HANGERS, SUPPORTS, CLAMPS, CLIPS, INSERTS AND MAINTAINING DEVICES SHALL BE PROVIDED TO SUPPORT ALL PIPING AS PER GOOD PIPING PRACTICE AND TO MAINTAIN PROPER DRAINAGE.
- 4.8. ALL EQUIPMENT SHALL BE INSTALL AS PER THE MANUFACTURER'S INSTRUCTIONS AND PERTINENT INFORMATION.
- 4.9. UNDERGROUND PIPING SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS.
- 4.9.1. ALL TRENCHES UNDERGROUND PIPING IS INSTALLED IN SHALL BE CLEAR OF ALL ROCKS AND OTHER ABRASIVE MATERIALS.
- 4.9.2. TRENCH BOTTOMS SHALL BE FULLY COMPACTED AND FULLY SUPPORT THE PIPE.
- 4.9.3. FILL DIRT TO 6" ABOVE TOP OF PIPE TO BE CLEAN AND FREE OF ABRASIVE MATERIALS. FOLLOW ALL MANUFACTURER'S RECOMMENDATIONS FOR PIPE BEDDING GIVEN SOIL CONDITIONS.
- 4.10. PLUMBING CONTRACTOR SHALL COORDINATE WITH GENERAL CONTRACTOR TO ASSURE THAT ALL PIPE INTERFERENCES (FOUNDATIONS, CABLES, OTHER PIPING, ETC.) ARE AVOIDED BY UNDERGROUND PLUMBING.
- 4.11. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THAT PLUMBING WALLS ARE CONSTRUCTED TO ALLOW INSTALLATION OF FIXTURE CARRIERS. PLUMBING CONTRACTOR SHALL COORDINATE WITH GENERAL CONTRACTOR PRIOR TO WALL CONSTRUCTION.
- 4.12. CONTRACTOR SHALL SUPPLY AND INSTALL FIXTURE HANGER AS REQUIRED FOR PROPER INSTALLATION.
- 4.13. WATER PIPE ROUTED THROUGH STUDS SHALL BE PROTECTED BY METAL STUD GUARDS.
- 4.14. INSTALL ALL WATER PIPING INSIDE OF BUILDING INSULATION IF POSSIBLE. WATER PIPING INSTALLED IN ATTIC SPACE MUST BE UNDER BATT INSULATION. IF BLOWN INSULATION IS USED IN ATTIC SPACE WATER PIPE SHALL BE INSULATED AS IF WERE IN AND UNCONDITIONED SPACE.
- 4.15. VENT TERMINALS SHALL NOT BE LOCATED WITHIN 10' OF ANY AIR INTAKE OPENING.
- 4.16. INSTALLATION OF PEX WATER PIPE SHALL BE STRICTLY AS PER MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. ALL PIPE EXPANSION PROVISIONS SHALL BE ADDED TO WATER PIPING LAYOUT AS RECOMMENDED BY MANUFACTURER.

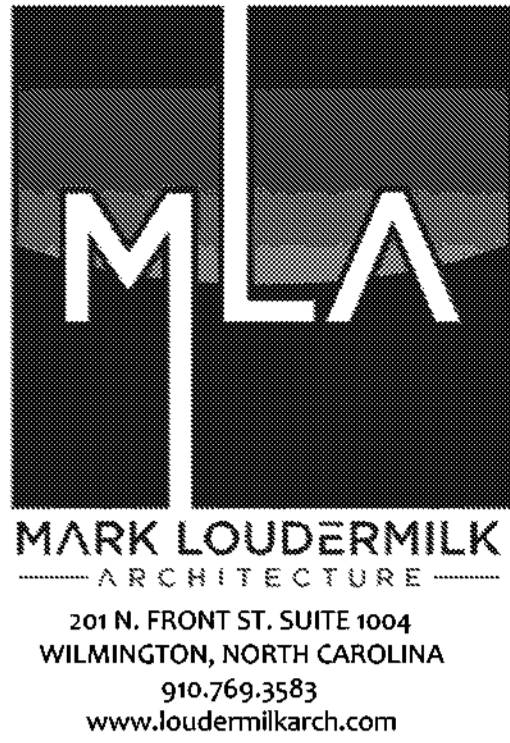
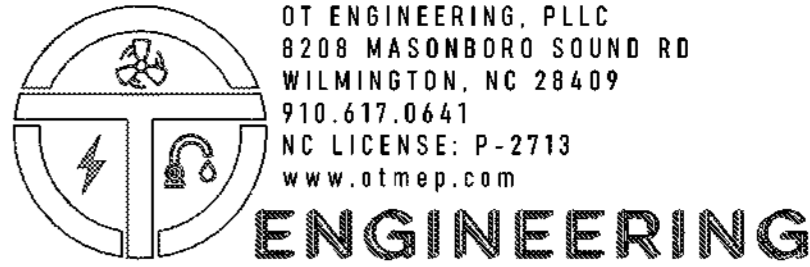
- 4.17. ALL PIPING SHALL BE LABELED WITH PLASTIC LABELS INDICATING PIPE TYPE (I.E. GAS, COLD WATER, HOT WATER, ETC.) AND DIRECTION OF FLOW. PLACE LABELS ON 25' CENTERS.
- 4.17.1. WHERE WATER DISTRIBUTION PIPING IS BUNDLED AT INSTALLATION, EACH PIPE IN THE BUNDLE SHALL BE IDENTIFIED USING COMMERCIAL PIPE LABELS. THE IDENTIFICATION SHALL INDICATE THE PIPE CONTENTS AND DIRECTION OF FLOW WITHIN THE PIPE. THE INTERVAL OF IDENTIFICATION MARKINGS SHALL BE AS DIRECTED IN 4.17 ABOVE. THERE SHALL NOT BE LESS THAN ONE IDENTIFICATION LABEL ON EACH PIPE IN EACH ROOM, SPACE, OR STORY.
5. ELECTRICAL CONNECTIONS:
- 5.1. ELECTRICAL CONTRACTOR SHALL DIRECT WIRE ALL EQUIPMENT REQUIRING POWER.
- 5.2. CONTROL WIRING SHALL BE INSTALLED BY THE PLUMBING CONTRACTOR.
6. TESTING:
- 6.1. HOT AND COLD WATER PIPING:
- 6.1.1. THE HOT AND COLD WATER PIPING SHALL HOLD A HYDROSTATIC TEST PRESSURE OF 100 PSI FOR A PERIOD OF AT LEAST 1-1/2 HOURS. ANY JOINT TO LEAK UNDER TEST SHALL BE BROKEN, REMADE AND RETESTED.
- 6.1.2. ANY EXISTING WATER LINES WHICH ARE TIED TO NEW WATER LINES SHALL MEET THE FOLLOWING:
- 6.1.2.1. VERIFY EXISTING LINES TIE PROPERLY TO EXISTING WATER SYSTEM.
- 6.1.2.2. VERIFY EXISTING WATER LINES ARE IN GOOD CONDITION AND FREE FROM LEAKS.
- 6.1.2.3. ANY REUSED EXISTING PIPE SHALL BE REPLACED AS NEEDED TO PROVIDE A PROPERLY OPERATING WATER SYSTEM.
- 6.2. WASTE PIPING:
- 6.2.1. ALL WASTE PIPING SHALL BE TESTED BY FILLING THE LINES TO OVERFLOWING. ANY JOINT FOUND TO LEAK UNDER TEST SHALL BE BROKEN, REMADE AND RETESTED.
- 6.2.2. ANY EXISTING WASTE LINES WHICH ARE TIED TO NEW LINES SHALL BE VERIFIED THAT:
- 6.2.2.1. EXISTING LINES TIE PROPERLY TO EXISTING WASTE SYSTEM.
- 6.2.2.2. EXISTING LINES ARE IN GOOD CONDITION AND FREE FROM LEAKS.
- 6.2.2.3. ANY REUSED EXISTING PIPE SHALL BE REPLACED AS NEEDED TO PROVIDE A PROPERLY OPERATING WASTE SYSTEM.
7. CHLORINATION:
- 7.1. ALL WATER PIPING SHALL BE CHLORINATED TO 50 PPM RESIDUAL CHLORINE AFTER TWENTY-FOUR HOURS AND TO THE SATISFACTION OF THE LOCAL HEALTH DEPARTMENT OR BUILDING INSPECTION DEPARTMENT.
8. SUBSTITUTION:
- 8.1. ALL MATERIALS AND EQUIPMENT SHALL BE NEW UNLESS OTHERWISE SHOWN OR SPECIFIED AND SHALL BE OF THE VERY BEST QUALITY AS SPECIFIED.
- 8.2. REQUESTS TO SUBSTITUTE OTHER MATERIALS OR PRODUCTS FOR THOSE SPECIFIED SHALL BE SENT IN WRITING TO THE OWNER. REQUESTS SHALL BE ACCOMPANIED BY ENGINEERING DATA, SPECIFICATION SHEETS, ETC., AS NECESSARY TO FULLY IDENTIFY AND APPRAISE THE PRODUCTS.
- 8.2.1. APPROVAL OF EQUIPMENT WILL NOT RELIEVE THE CONTRACTOR OF NONCOMPLIANCE WITH THE SPECIFICATIONS EVEN IF SUCH APPROVAL IS MADE IN WRITING, UNLESS THE ENGINEER IS CALLED TO THE NONCONFORMING FEATURES BY LETTER ACCOMPANYING THE SUBMITTAL DATA.
9. PLACING IN SERVICE:
- 9.1. UPON COMPLETION OF THE ENTIRE SYSTEM, THE PLUMBING CONTRACTOR SHALL FLUSH ALL LINES TO INSURE PROPER FLOWS. ALL FIXTURES SHALL BE LEFT CLEAN.
- 9.2. THE PLUMBING CONTRACTOR SHALL DEMONSTRATE THE PROPER FUNCTION OF THE ENTIRE SYSTEM.
- 9.3. THE PLUMBING CONTRACTOR SHALL ACQUAINT THE OWNER'S REPRESENTATIVE WITH THE PROPER OPERATION OF THE PLUMBING SYSTEM.
10. VISIT TO THE SITE:
- 10.1. ALL BIDDERS ON THIS WORK SHALL VISIT THE SITE AND THOROUGHLY FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS BEFORE SUBMITTING THEIR BIDS. NO ALLOWANCE WILL BE MADE FOR LACK OF KNOWLEDGE OF EXISTING CONDITIONS.
11. SHOP DRAWINGS:
- 11.1. AS SOON AS POSSIBLE (AND NOT MORE THAN 30 DAYS) AFTER THE CONTRACT IS SIGNED, THE CONTRACTOR SHALL SUBMIT FIVE (5) COPIES OF THE SHOP DRAWINGS COVERING FIXTURES, AND ANY SPECIAL EQUIPMENT WHICH HE INTENDS TO USE. FOUR (4) COPIES OF THIS DATA WILL BE RETURNED BY THE ENGINEER WHO WILL INDICATE APPROVAL OR OTHERWISE.
12. FIRE RATED WALLS, FLOORS, & CEILINGS:
- 12.1. CONTRACTOR SHALL DETERMINE LOCATION OF ALL FIRE AND SMOKE RATED WALLS, FLOORS AND CEILINGS FROM ARCHITECTURAL DRAWINGS. PIPING PENETRATIONS OF FIRE RATED ASSEMBLIES SHALL BE AS REQUIRED BY STATE BUILDING CODE, WITH APPROVED AND APPROPRIATELY RATED UL FIRESTOP SYSTEMS AT ALL PENETRATIONS.
- 12.1.1. ALL FIRESTOP SYSTEMS SHALL BE APPROVED FOR THEIR APPLICATION BY LOCAL INSPECTION AUTHORITIES PRIOR TO FIELD INSTALLATION.

PLUMBING FIXTURE SCHEDULE

SYM.	FIXTURE	CW	HW	DRAIN	STOPS & VALVES	MFR.	MODEL	REMARKS
P-1	WATER CLOSET TANK HANDICAP	1/2"	-	3"	1/2" x 3/8" ANGLE	AMERICAN STANDARD	204AA. 104	INCLUDE SUPPLY VALVE WITH CHROME PLATED RISER AND WALL FLANGE; ADA GRAB BARS; BEMIS CHURCH MODEL 9500SSCT SEAT. SEE NOTES 1, 2, 7, 11
P-2	LAVATORY HANDICAP	1/2"	1/2"	1-1/4"	1/2" X 3/8" ANGLE	AMERICAN STANDARD	0545. 000	INCLUDE SUPPLY VALVE WITH CHROME PLATED RISER AND WALL FLANGE & AMERICAN STANDARD FAUCET 7018.201 & 1-1/4" X 1-1/4" TUBULAR P-TRAP CP. PROVIDE MIX VALVE CONFORMING TO ASSE 1070. SEE NOTE 1, 3, 7
P-3	KITCHEN SINK	1/2"	1/2"	1-1/2"	-	AMERICAN STANDARD	185B6252211.075	INCLUDE SUPPLY VALVE WITH CHROME PLATED RISER AND WALL FLANGE; AMERICAN STANDARD FAUCET 4932.350 FAUCET; 1-1/4X1-1/4 TUBULAR P-TRAP CP. SEE NOTE 3, 7
P-4	REFRIGERATOR CONNECTION	3/8"	-	-	-	-	-	INCLUDE SHUTOFF VALVE AND RECESSED WALL BOX
P-5	HOSEBIBB EXTERIOR	1/2"	-	-	BALL	WOODFORD	25	SHALL BE FREEZE PROOF. INCLUDE A VACUUM BREAKER AND A SHUT OFF VALVE AS PER THE IPC CODE
P-6	EXTERIOR CLEANOUT	-	-	-	-	ZURN	Z-1449	WITH CAST IRON TOP; SEE EXTERIOR CLEANOUT DETAIL.
P-7	FINISHED FLOOR CLEANOUT	-	-	-	-	ZURN	ZS-1400	-
P-8	WALL CLEANOUT COVER PLATE	-	-	-	-	ZURN	Z-1469	STAINLESS STEEL
P-9	WATER HEATER	-	-	-	-	STATE WATER HEATER	PCE-10-10WSA-4	10 GALLONS; 18 GPH @ 100°F RECOVERY RISE; 4.5KW @ 240V. INCLUDE WATER HEATER PAN. PRESSURE RELIEF VALVE; INSULATED BLANKET IF NOT SUPPLIED WITH WATER HEATER. SEE NOTE 7, 10, & WATER HEATER DETAIL.
P-10	DIAPHRAGM TANK	3/4"	-	-	-	STATE WATER HEATER	ETC-2X	VERIFY TANK SELECTION FOR ACTUAL WATER HEATER CAPACITY; PROVIDE PRESSURE CHARGE AS PER MANUFACTURER INSTRUCTIONS

PLUMBING FIXTURE SCHEDULE NOTES:

1. MATERIAL AND INSTALLATION SHALL BE PER STATE HANDICAP CODE REQUIREMENTS AND ADA REQUIREMENTS.
2. TOILETS SHALL FLUSH ON A MAXIMUM OF 1.6 GALLONS PER FLUSH. THE USE OF OFFSET WATER IS PROHIBITED. MISALIGNED WATER CLOSET FLANGES MUST BE PIPED.
3. LAVATORIES SHALL HAVE 5 GPM FLOW AERATORS.
4. BOTH FIXED HEAD AND HAND HELD SHOWER HEAD SHALL HAVE FLOW RESTRICTOR TO PASS A MAXIMUM OF 2.5 GPM.
5. NOT USED.
6. NOT USED.
7. FOLLOW ALL MANUFACTURER'S RECOMMENDATIONS REGARDING FIXTURE INSTALLATION. PROVIDE WASTE AND WATER TRIM AND ACCESSORIES. IF SLIP JOINTS ARE USED FOR WASTE CONNECTION, AN ACCESS PANEL WITH STAINLESS STEEL COVER SHALL BE SUPPLIED TO ACCESS JOINTS.
8. PROVIDE A ADA COMPLIANT FOLDING SHOWER SEAT.
9. SHOWER VALVES MUST CONFORM TO THE REQUIREMENTS OF ASSE 1016 OR CSA 8125.
10. PLUMBING CONTRACTOR SHALL PROVIDE MATERIAL AND FIELD INSULATE HOT WATER TANK P26 WITH SYSTEM OF JOHNS MANVILLE MICROFLEX LARGE DIAMETER TANK AND PIPE WRAP. 3"THICK, R=12.5 WITH ASJ WHITE KRAFT PAPER JACKET. ALL INSTALLED AS PER MANUFACTURERS INSTRUCTIONS AND INDUSTRY STANDARDS AS SET BY MIDWEST INSULATION CONTRACTORS ASSOCIATION INSULATION SHALL BE STAPLED AND BANDED.
11. WATER CLOSET SPECIFIED IS LEFT SIDE FLUSH. PLUMBER SHALL INSTALL COMPARABLE MODEL WITH RIGHT SIDE FLUSH AS REQUIRED SO FLUSH HANDLE IS LOCATED ON OPEN SIDE OF WATER CLOSET IN CONFORMANCE WITH HANDICAP REQUIREMENTS.
12. NOT USED
13. NOT USED.



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MONUMENT DRIVE.
WILMINGTON, NC 28405

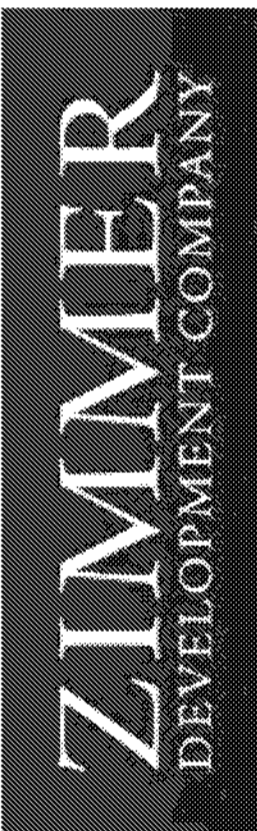
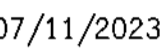
© 2023 MARK LOUDERMILK ARCHITECTURE, PLLC		
Mark	Date	Description
PROJECT NO: 23038		
DATE: 5/19/2023		
SCALE: As indicated		
DRAWN BY: ---		
PROJ MGR: ---		

Plumbing Schedule
& Specifications

P0.1

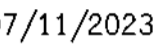


PLUMBING LEGEND	
	COLD WATER PIPE- ABOVE GRADE
	COLD WATER PIPE- BELOW GRADE
	HOT WATER PIPE- ABOVE GRADE
	HOT WATER PIPE- BELOW GRADE
	WASTE PIPE- SOIL
	VENT PIPE
	BRANCH BOTTOM CONNECTION
	BRANCH TOP CONNECTION
	ELBOW DOWN
	ELBOW UP
	EXTERIOR CLEANOUT
	INTERIOR CLEANOUT
	WALL CLEANOUT
	HUB DRAIN
	HOSE BIBB
	VENT TO ROOF
	PIPE REDUCER
	PIPE STRAINER
	UNION
	BALL VALVE
	CHECK VALVE
	GATE VALVE
	RELIEF VALVE
VTR	VENT THROUGH ROOF
AAV	AIR ADMITTANCE VALVE
CO	CLEAN OUT
F/A	FROM ABOVE
F/B	FROM BELOW
T/A	TO ABOVE
T/B	TO BELOW



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-
- DROP DOWN WALL
- 2" FROM SINK ON SECOND FLOOR, OFFSET 2" ABOVE CASED OPENING.
- 2"
- 2"
- 2"
- 3"
- P2
- P1
- P7
- P6
- 4" - SEE CIVIL DRAWING FOR CONTINUATION. VERIFY EXACT LOCATION TO UTILITY SEWER BEFORE INSTALLING ANY WASTE PIPING.

1 1/4" - SEE CIVIL DRAWING FOR CONTINUATION. VERIFY EXACT LOCATION TO UTILITY WATER BEFORE INSTALLING ANY WATER PIPING.

TURN UP INTO FLOOR/CEILING ASSEMBLY. COORDINATE ROUTING WITH MECHANICAL CONTRACTOR EARLY IN PROJECT TO AVOID CONFLICTS WITH DUCT ROUTING.

SHUT-OFF IN VALVE BOX

LOCATE WATER HEATER IN MECHANICAL SPACE ABOVE RESTROOM.

Diagram details: The schematic shows a water supply line entering from the top left, labeled '1 1/4"'. It passes through a valve labeled 'P5'. The line then splits into two horizontal branches. The upper branch is labeled '1"' and contains a valve labeled 'P2'. The lower branch is labeled '1/2"' and contains a valve labeled 'P9'. Both branches terminate in fixtures: a toilet on the left and a sink on the right. A 'SHUT-OFF IN VALVE BOX' is indicated on the right side of the diagram. A note points to the ceiling area, stating 'TURN UP INTO FLOOR/CEILING ASSEMBLY. COORDINATE ROUTING WITH MECHANICAL CONTRACTOR EARLY IN PROJECT TO AVOID CONFLICTS WITH DUCT ROUTING.' Another note points to the right side, stating 'LOCATE WATER HEATER IN MECHANICAL SPACE ABOVE RESTROOM.'

1/4" HOT AND COLD WATER FROM BELOW.
SEE B/P. 1 FOR CONTINUATION.

2" WASTE PIPE DOWN. VENT WITH AAV.
SEE A/P. 1 FOR CONTINUATION.

P3

VERIFY IF REFRIGERATOR IN ARE
REQUIRES WATER. IF SO PROVIDE
ITEM P4 AND ASSOCIATED WATER
LINE FROM SINK WATER SERVICE.

ZIMMER
DEVELOPMENT COMPANY

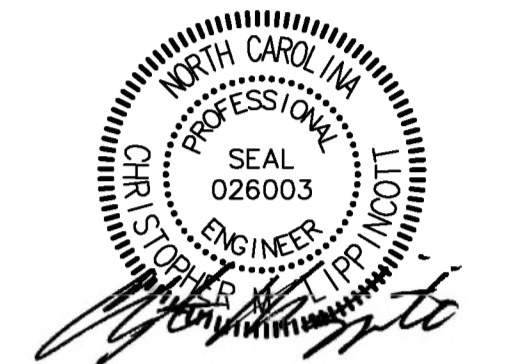
STORAGE/OFFICE

MONUMENT DRIVE.
WILMINGTON, NC 28405

[illegible]

Plumbing Plan

P1.1



07/11/2023

© 2023 MARK LOUDERMILK ARCHITECTURE, PLLC		
Mark	Date	Description
PROJECT NO: 23038		
DATE: 5/19/2023		
SCALE: As indicated		
DRAWN BY: --		
PROJ MGR: --		

Panel Schedules,
Electrical Riser and
Details

E0.2

PANEL NO.: A
USAGE: LIGHTING AND APPLIANCE
LOCATION: OFFICE
PHASES: 1
L-L VOLTS: 240V
L-G VOLTS: 120V
BUS AMPS: 400A
MAIN CB AMPS: 400A
AIC RATING: 10,000 MINIMUM

PROJECT: ZIMMER OFFICE ANNEX
CLIENT: -
MOUNTING: SURFACE
PANEL TYPE: NEMA 3R
ENGINEER: -
PROJECT NO.: 23013
FED FROM: CT

LOAD AMPS.	DESCRIPTION	NOTES	BREAKER POLE	AMP.	CT. #	CT. #	BREAKER AMP.	POLE	NOTES	DESCRIPTION	LOAD AMPS.
6.0	LTS - EXTERIOR		1	20	1	A 2	20	1		GARAGE DOOR - STORAGE 2	10.0
9.0	LTS - 1ST FLOOR		1	20	3	B 4	20	1		GARAGE DOOR - STORAGE 2	10.0
12.0	LTS - STORAGE 1		1	20	5	A 6	20	1		GARAGE DOOR - STORAGE 1	10.0
12.0	LTS - STORAGE 1		1	20	7	B 8	20	1		GARAGE DOOR - STORAGE 1	10.0
12.0	LTS - STORAGE 1		1	20	9	A 10	20	1		GARAGE DOOR - STORAGE 1	10.0
12.0	LTS - STORAGE 1		1	20	11	B 12	20	1		GARAGE DOOR - STORAGE 1	10.0
12.0	LTS - STORAGE 1		1	20	13	A 14	20	1		GARAGE DOOR - STORAGE 1	10.0
8.0	LTS - STORAGE 2		1	20	15	B 16	20	1		GARAGE DOOR - STORAGE 1	10.0
4.0	LTS - 1ST FLOOR		1	20	17	A 18	20	1		GARAGE DOOR - STORAGE 1	10.0
6.0	LTS - 1ST FLOOR		1	20	19	B 20	20	1		GARAGE DOOR - STORAGE 1	10.0
4.0	LTS - 2ND FLOOR		1	20	21	A 22	20	1		GARAGE DOOR - STORAGE 1	10.0
0.0	SPARE		1	20	23	B 24	20	1		GARAGE DOOR - STORAGE 1	10.0
5.0	SIGN		1	20	25	A 26	20	1		GARAGE DOOR - OFFICE	10.0
10.0	AREA OF REFUGE SYSTEM		1	20	27	B 28	20	1		GARAGE DOOR - OFFICE	10.0
30.0	EV		2	40	29	A 30	20	1		RECPT - 1ST FLOOR	14.0
30.0	EV		2	40	31	B 32	20	1		RECPT - 1ST FLOOR	12.0
30.0	EV		2	40	33	A 34	20	1		RECPT - PHONE/DATA	3.0
30.0	EV		2	40	35	B 36	20	1		RECPT - 1ST FLOOR	14.0
30.0	EV		2	40	37	A 38	20	1		RECPT - @HP'S/AHU'S	9.0
30.0	EV		2	40	39	B 40	20	1		RECPT - FLT. 1	2.0
0.0	SPARE		1	20	41	A 42	20	1		SPARE	0.0

LOAD SUMMARY	CON. KVA	%	DEM. KVA
RECEIPLACES	6.48	code	6.48
MISC	39.6	100%	39.6
LIGHTING	12.24	125%	15.3
HVAC	0	100%	0
HEAT STRIP	0	100%	0
REFRIGERATION	0	65%	0
KITCHEN	0	65%	0
COOKING	0	65%	0
WATER HEATING	0	100%	0
-	0	0%	0
TOTAL KVA	58 KVA		61 KVA
TOTAL AMPS	243 AMPS		256 AMPS

PANEL NOTES:

1. PROVIDE GROUND BUS
2. PROVIDE FULL SIZE NEUTRAL BUS UNLESS NOTED OTHERWISE
3. LO - INDICATES C.B. EQUIPPED WITH "LOCK-OUT" DEVICE
4. GFI - INDICATES C.B. IS GFI TYPE (30 mA FOR EQUIPMENT, 5 mA FOR PERSONNEL)
5. ST- INDICATES C.B. EQUIPPED WITH SHUNT TRIP DEVICE
6. IG - INDICATES CIRCUIT SHALL INCLUDE ADDITIONAL ISOLATED GROUND CONDUCTOR
7. AFCI - INDICATES COMBINATION TYPE AFCI C.B.

PANEL NO.: C
USAGE: LIGHTING AND APPLIANCE
LOCATION: OFFICE
PHASES: 1
L-L VOLTS: 240V
L-G VOLTS: 120V
BUS AMPS: 225A
MAIN CB AMPS: 225A
AIC RATING: 10,000 MINIMUM

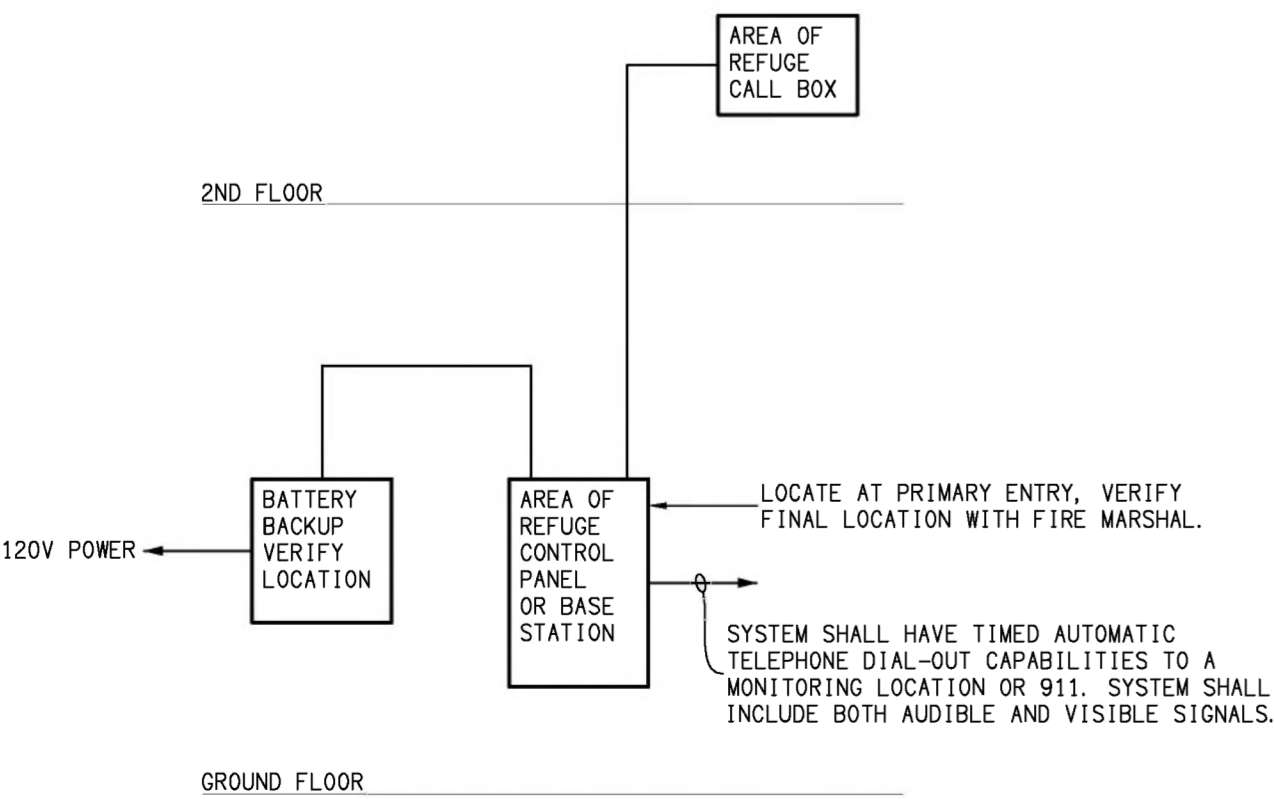
PROJECT: ZIMMER OFFICE ANNEX
CLIENT: -
MOUNTING: SURFACE
PANEL TYPE: NEMA 3R
ENGINEER: -
PROJECT NO.: 23013
FED FROM: CT

LOAD AMPS.	DESCRIPTION	NOTES	BREAKER POLE	AMP.	CT. #	CT. #	BREAKER AMP.	POLE	NOTES	DESCRIPTION	LOAD AMPS.
38.0	AHU-2		2	50	1	A 2	20	1		RECPT - 2ND FLOOR	14.0
38.0	AHU-3		2	50	3	B 4	20	1		UNDER COUNTER REFRIGERATOR	6.0
38.0	AHU-4		2	45	5	A 6	20	1		RECPT - 2ND FLOOR	2.0
38.0	AHU-4		2	45	7	B 8	20	1		RECPT - 2ND FLOOR	2.0
36.0	HP-4		2	40	9	A 10	20	1		SPARE	0.0
36.0	HP-4		2	40	11	B 12	20	1		SPARE	0.0
18.0	HP-4		2	40	13	A 14	40	2		EV	30.0
18.0	HP-4		2	40	15	B 16	40	2		EV	30.0
0.0	SPARE		1	20	17	A 18	20	1		SPARE	0.0
0.0	SPARE		1	20	19	B 20	20	1		SPARE	0.0
0.0	SPARE		1	20	21	A 22	20	1		SPARE	0.0
0.0	SPARE		1	20	23	B 24	20	1		SPARE	0.0

LOAD SUMMARY	CON. KVA	%	DEM. KVA
RECEIPLACES	2.18	code	2.18
MISC	7.92	100%	7.92
LIGHTING	0	125%	0
HVAC	18.24	100%	18.24
HEAT STRIP	12.96	100%	12.96
REFRIGERATION	0	65%	0
KITCHEN	0	65%	0
COOKING	0	65%	0
WATER HEATING	0	100%	0
-	0	0%	0
TOTAL KVA	41 KVA		41 KVA
TOTAL AMPS	172 AMPS		172 AMPS

PANEL NOTES:

1. PROVIDE GROUND BUS
2. PROVIDE FULL SIZE NEUTRAL BUS UNLESS NOTED OTHERWISE
3. LO - INDICATES C.B. EQUIPPED WITH "LOCK-OUT" DEVICE
4. GFI - INDICATES C.B. IS GFI TYPE (30 mA FOR EQUIPMENT, 5 mA FOR PERSONNEL)
5. ST- INDICATES C.B. EQUIPPED WITH SHUNT TRIP DEVICE
6. IG - INDICATES CIRCUIT SHALL INCLUDE ADDITIONAL ISOLATED GROUND CONDUCTOR
7. AFCI - INDICATES COMBINATION TYPE AFCI C.B.



B
E0.2
Area of Refuge Detail
Scale: NTS

AREA OF REFUGE NOTES:

1. SEE PLANS FOR LOCATION AND QUANTITY OF ALL EQUIPMENT.
2. ALL WIRING SHALL BE PER MANUFACTURER'S SPECIFICATIONS.
3. THE SYSTEM SHALL COMPLY WITH SECTIONS 4.3.11.4 AND 4.3.11.5 OF THE ADA AND STATE FIRE CODE.
4. ALL WIRING SHALL BE IN CONDUIT.
5. SYSTEM INSTALLATION SHALL BE BY A LICENSED CONTRACTOR.
6. SYSTEM WIRING SHALL COMPLY WITH ALL REQUIREMENTS OF NEC. WIRING SHALL MEET ALL STATE AND LOCAL ELECTRICAL CODES. ALL WIRING SHALL TEST FREE FROM SHORTS AND GROUNDED AS SPECIFIED.
7. CONTROL PANEL AND CALL BOX MOUNTING SHALL COMPLY WITH ADA REQUIREMENTS AND SPECIFICATIONS.
8. PROVIDE ILLUMINATED SIGN ABOVE AREA OF REFUGE AND INSTRUCTIONS ON THE USE OF THE AREA UNDER EMERGENCY CONDITIONS PER STATE FIRE CODE AND ADA.

PANEL NO.: B
USAGE: LIGHTING AND APPLIANCE
LOCATION: OFFICE
PHASES: 1
L-L VOLTS: 240V
L-G VOLTS: 120V
BUS AMPS: 225A
MAIN CB AMPS: 225A
AIC RATING: 10,000 MINIMUM

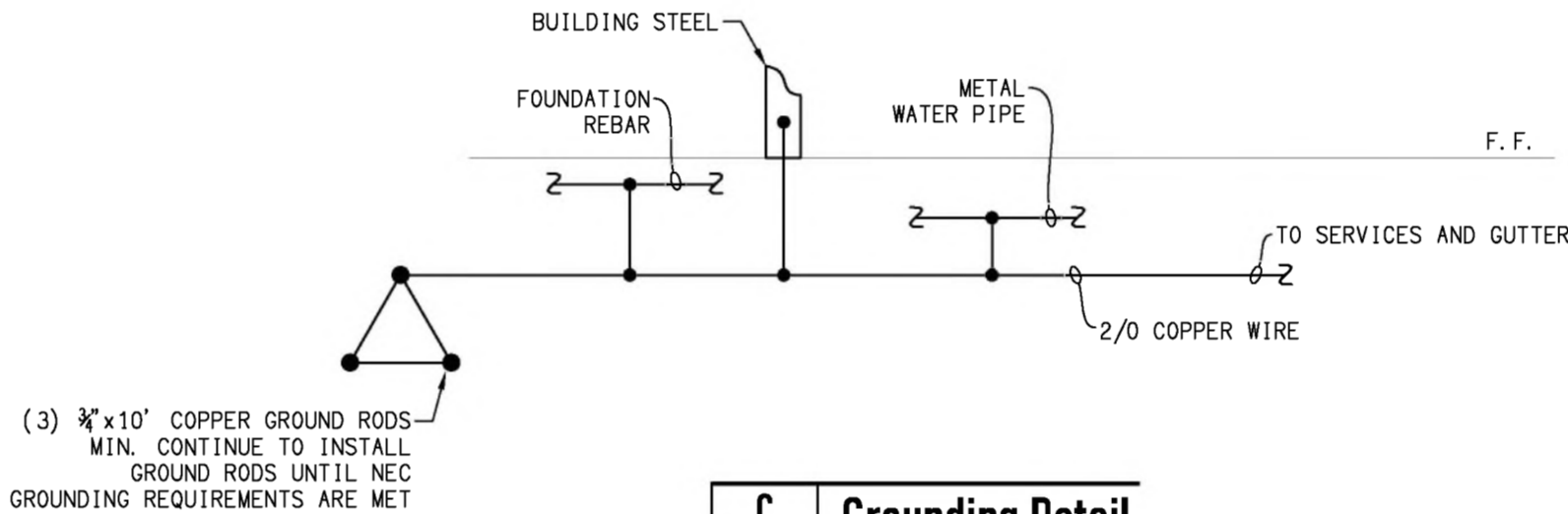
PROJECT: ZIMMER OFFICE ANNEX
CLIENT: -
MOUNTING: SURFACE
PANEL TYPE: NEMA 3R
ENGINEER: -
PROJECT NO.: 23013
FED FROM: CT

LOAD AMPS.	DESCRIPTION	NOTES	BREAKER POLE	AMP.	CT. #	CT. #	BREAKER AMP.	POLE	NOTES	DESCRIPTION	LOAD AMPS.
22.0	HP-2		2	50	1	A 2	25	2		HWT	19.0
22.0	HP-1		2	60	3	B 4	50	2		HP-3	22.0
28.0	HP-1		2	60	5	A 6	50	2		HP-3	22.0
68.0	AHU-1		2	90	7	B 8	35	2		DU-1/DAHU-1	19.0
68.0	AHU-1		2	90	9	A 10	35	2		DU-1/DAHU-1	19.0
0.0	SPARE		1	20	11	B 12	20	1		SPARE	0.0
0.0	SPARE		1	20	13	A 14	20	1		SPARE	0.0
0.0	SPARE		1	20	15	B 16	20	1		SPARE	0.0
0.0	SPARE		1	20	17	A 18	20	1		SPARE	0.0
0.0	SPARE		1	20	19	B 20	20	1		SPARE	0.0
0.0	SPARE		1	20	21	A 22	20	1		SPARE	0.0
0.0	SPARE		1	20	23	B 24	20	1		SPARE	0.0

LOAD SUMMARY	CON. KVA	%	DEM. KVA
RECEIPLACES	0	code	0
MISC	0	100%	0
LIGHTING	0	125%	0
HVAC	22.98	100%	22.98
HEAT STRIP	16.22	100%	16.22
REFRIGERATION	0	65%	0
KITCHEN	0	65%	0
COOKING	0	65%	0
WATER HEATING	4.56	100%	4.56
-	0	0%	0
TOTAL KVA	43 KVA		43 KVA
TOTAL AMPS	179 AMPS		179 AMPS

PANEL NOTES:

1. PROVIDE GROUND BUS
2. PROVIDE FULL SIZE NEUTRAL BUS UNLESS NOTED OTHERWISE
3. LO - INDICATES C.B. EQUIPPED WITH "LOCK-OUT" DEVICE
4. GFI - INDICATES C.B. IS GFI TYPE (30 mA FOR EQUIPMENT, 5 mA FOR PERSONNEL)
5. ST- INDICATES C.B. EQUIPPED WITH SHUNT TRIP DEVICE
6. IG - INDICATES CIRCUIT SHALL INCLUDE ADDITIONAL ISOLATED GROUND CONDUCTOR
7. AFCI - INDICATES COMBINATION TYPE AFCI C.B.



C
E0.2
Grounding Detail
Scale: NTS

WIRE SIZE LEGEND

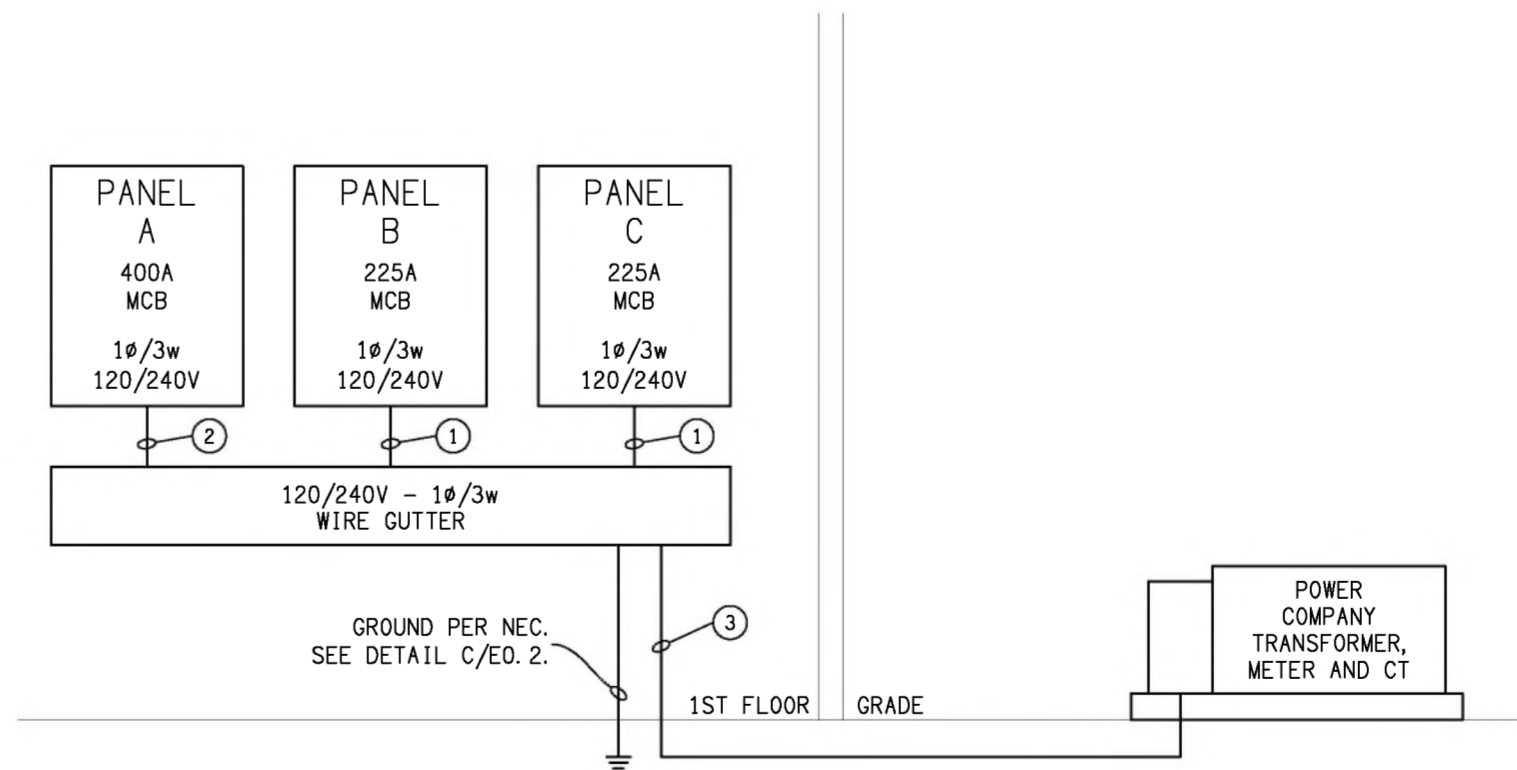
- ① 3-4/0, 1#10 IN 2½"C
- ② 3-500, 1#10 IN 3½"C
- ③ TWO SETS 3-500 IN 3½"C

RISER LOAD

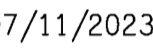
PANEL	A#	B#
A	241	245
B	179	179
C	176	168
TOTAL	596	592
MAX. CONNECTED LOAD = 596A SIZE GUTTER AND SERVICE FOR 800A		

RISER NOTES:

1. CONTRACTOR SHALL PROVIDE CONCRETE PAD, PLUS ALL LABOR, MATERIALS AND PAY ALL POWER COMPANY CONNECTION FEES TO PROVIDE A COMPLETE AND OPERATING SYSTEM FOR THE OWNER.
2. THE ELECTRICAL CONTRACTOR SHALL PROVIDE A PLAQUE STATING THE FAULT CURRENT AT THE MAIN SERVICE DISCONNECT. THE CONTRACTOR SHALL PROVIDE VERIFICATION FROM THE POWER COMPANY BEFORE PLAQUE IS PLACED. THIS DESIGN ASSUMES A ??? FAULT CURRENT AT THE POWER COMPANY TRANSFORMER. IF FAULT CURRENT IS LARGER THAN SHOWN THEN CONTRACTOR SHALL CONTACT THIS ENGINEER.
3. MAIN SERVICE DISCONNECT(S) SHALL BE SERIES RATED TO ALLOW SECONDARY BREAKERS TO BE AS FOLLOWS:
300A - 400A 22,000AIC
225A & SMALLER 10,000AIC
4. CONNECT ALL AVAILABLE GROUNDING MEANS PER NEC 250.50.



A
E0.2
Electrical Riser
Scale: NTS



ZIMMER
DEVELOPMENT COMPANY

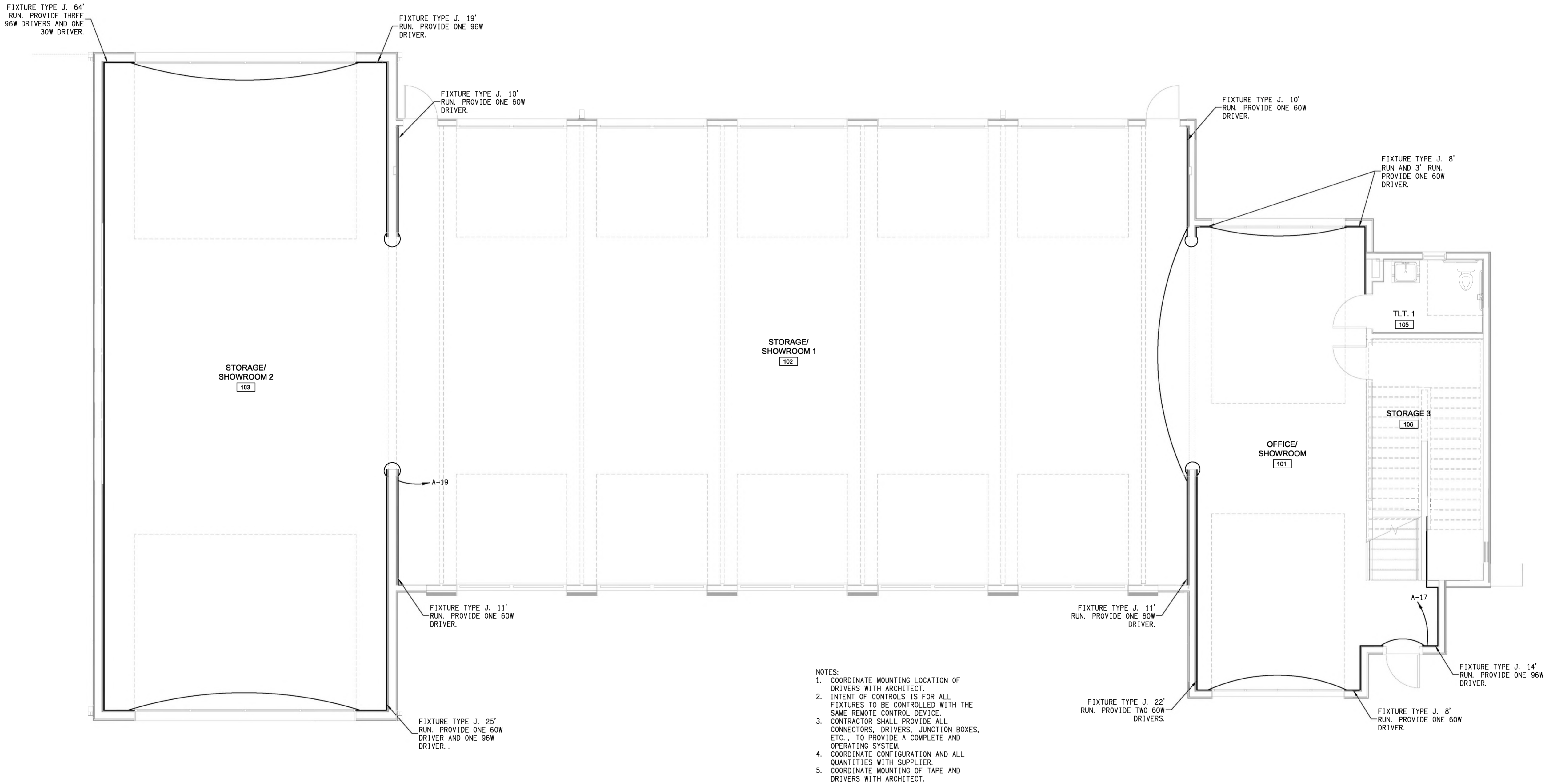
STORAGE/OFFICE

MONUMENT DRIVE.
WILMINGTON, NC 28405

Mark	Date	Description
PROJECT NO: 23038		
DATE:	5/19/2023	
SCALE:	As indicated	
DRAWN BY:	---	
PROJ MGR:	---	

Partial Lighting Plan - 1st Floor

E1.1



A	Partial Lighting Plan - 1st Floor
E1.2	Scale: 3/16" = 1'-0"

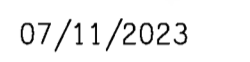
© 2023 MARK LOUDERMILK ARCHITECTURE, PLLC		
Mark	Date	Description
PROJECT NO: 23038		
DATE: 5/19/2023		
SCALE: As indicated		
DRAWN BY: —		
PROJ MGR: —		



OT ENGINEERING, PLLC
8208 MASONBORO SOUND RD
WILMINGTON, NC 28409
910.617.0641
NC LICENSE: P-2713
www.otmep.com



201 N. FRONT ST. SUITE 1004
WILMINGTON, NORTH CAROLINA
910.769.3583
www.loudermilkarch.com



A	Lighting Plan - 2nd Floor
E1.3	Scale: 3/16" = 1'-0"

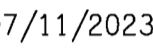


MONUMENT DRIVE.
WILMINGTON, NC 28405

Mark	Date	Description
PROJECT NO:	23038	
DATE:	5/19/2023	
SCALE:	As indicated	
DRAWN BY:	---	
PROJ MGR:	---	

Lighting Plan - 2nd Floor

E1.3



KEY NOTES

①	JUNCTION BOX AND SWITCH FOR BUILDING SIGN. IF A SWITCH IS PROVIDED WITH THE SIGN THEN ONE SHOWN CAN BE REMOVED. VERIFY LOCATION AND CONNECTION. PHOTOCELL/ CLOCK CONTROLLED.
②	PROVIDE 2" WITH PULL STRING TO PHONE CO. POINT OF DELIVERY AND 2" WITH PULL STRING TO CATV POINT OF DELIVERY. VERIFY CONDUIT SIZE, LOCATION AND ROUTING.
③	PROVIDE ALL REQUIRED CONDUIT AND WIRING BETWEEN DU AND DAHU. COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT REQUIREMENTS.

ZIMMER
DEVELOPMENT COMPANY

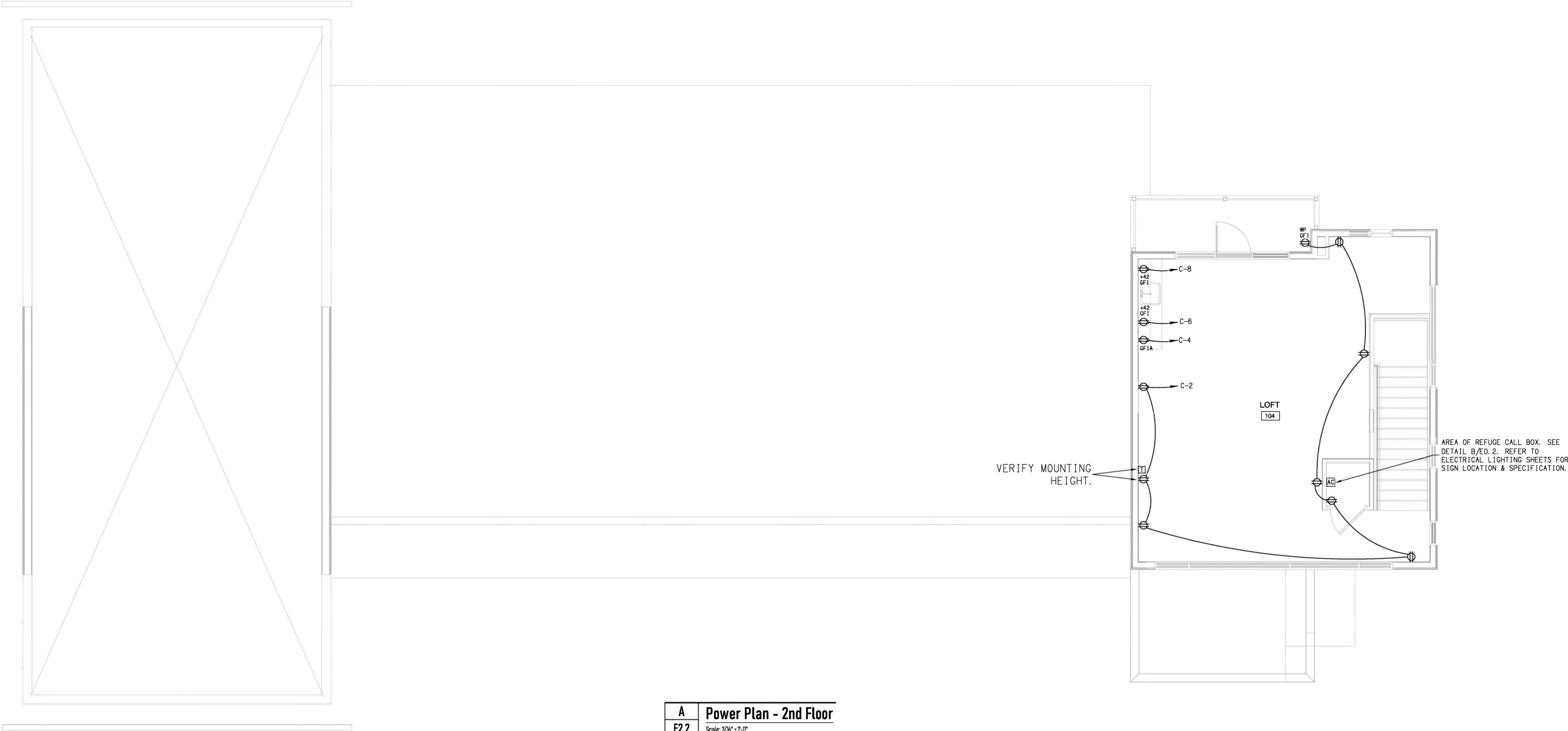
STORAGE/OFFICE

MONUMENT DRIVE.
WILMINGTON NC 28405

Mark	Date	Description
PROJECT NO:	23038	
DATE:	5/19/2023	
SCALE:	As indicated	
DRAWN BY:	---	
PROJ MGR:	---	

Power Plan - 1st Floor

E2.1



A	Power Plan - 2nd Floor
E2.2	Scale: 3/16" = 1'-0"