

SURF'S UP MINIATURE GOLF STRUCTURES

1360 BRIDGE BARRIER RD.
CAROLINA BEACH, NC 28428

CONSTRUCTION DOCUMENTS

09/26/2024

DESIGN TEAM

ARCHITECT

MARK LOUDERMILK ARCHITECTURE

STRUCTURAL ENGINEER

RPA ENGINEERING

PLUMBING, MECHANICAL, & ELECTRICAL ENGINEERS

CBHF ENGINEERING

DRAWING LIST

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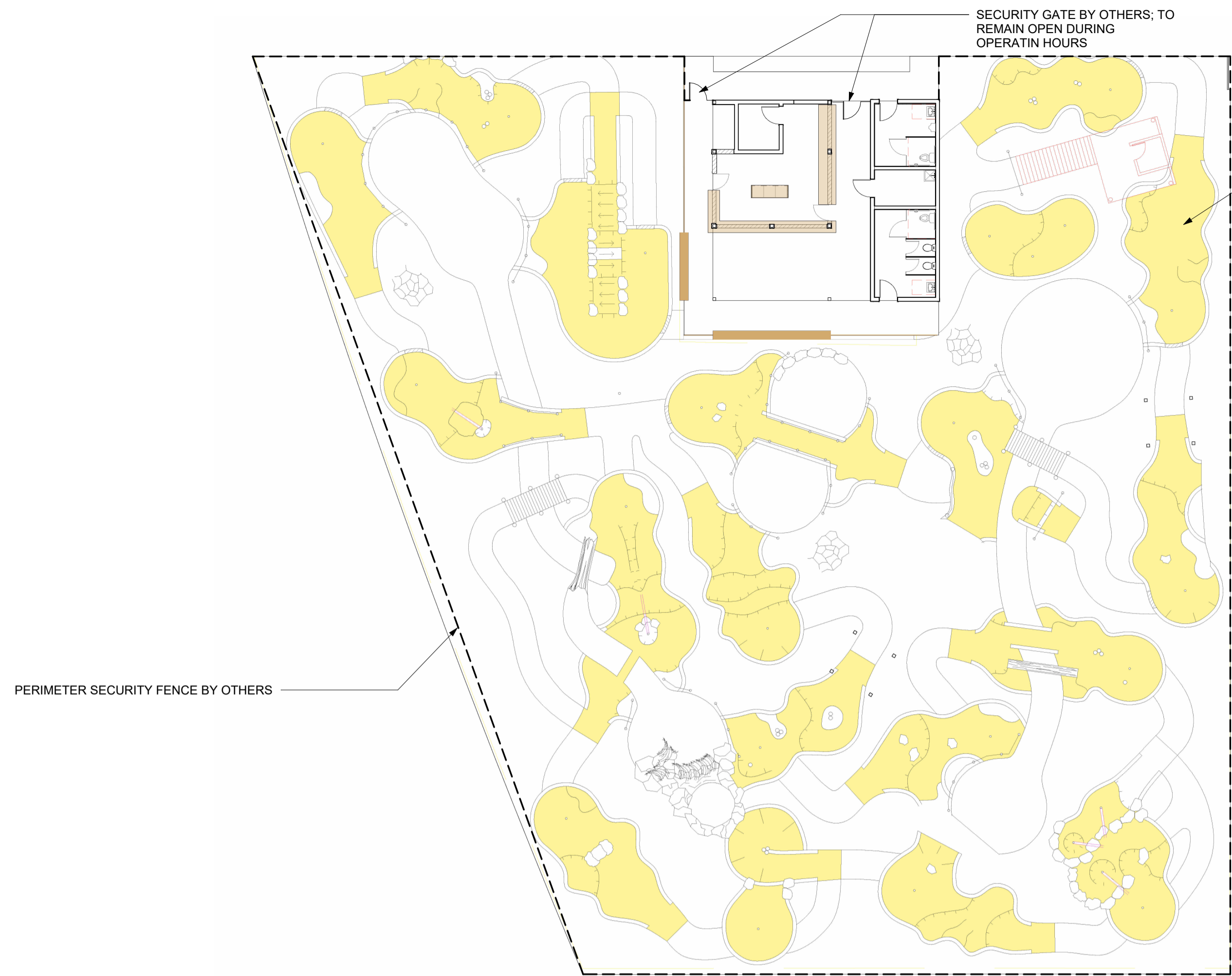
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Mark	Date	Description

PROJECT NO: 24074
DATE: 09/26/2024
SCALE:
DRAWN BY: LU
PROJ MGR: WB

COVER SHEET

G001



YELLOW SHADE INDICATES UTILITY GREEN AREAS (OCCUPIED AREAS)

A5 (AMUSEMENT PARK STRUCTURES)
TOTAL OCCUPANCY
= 7,202 / 50 = 144 OCCUPANTS

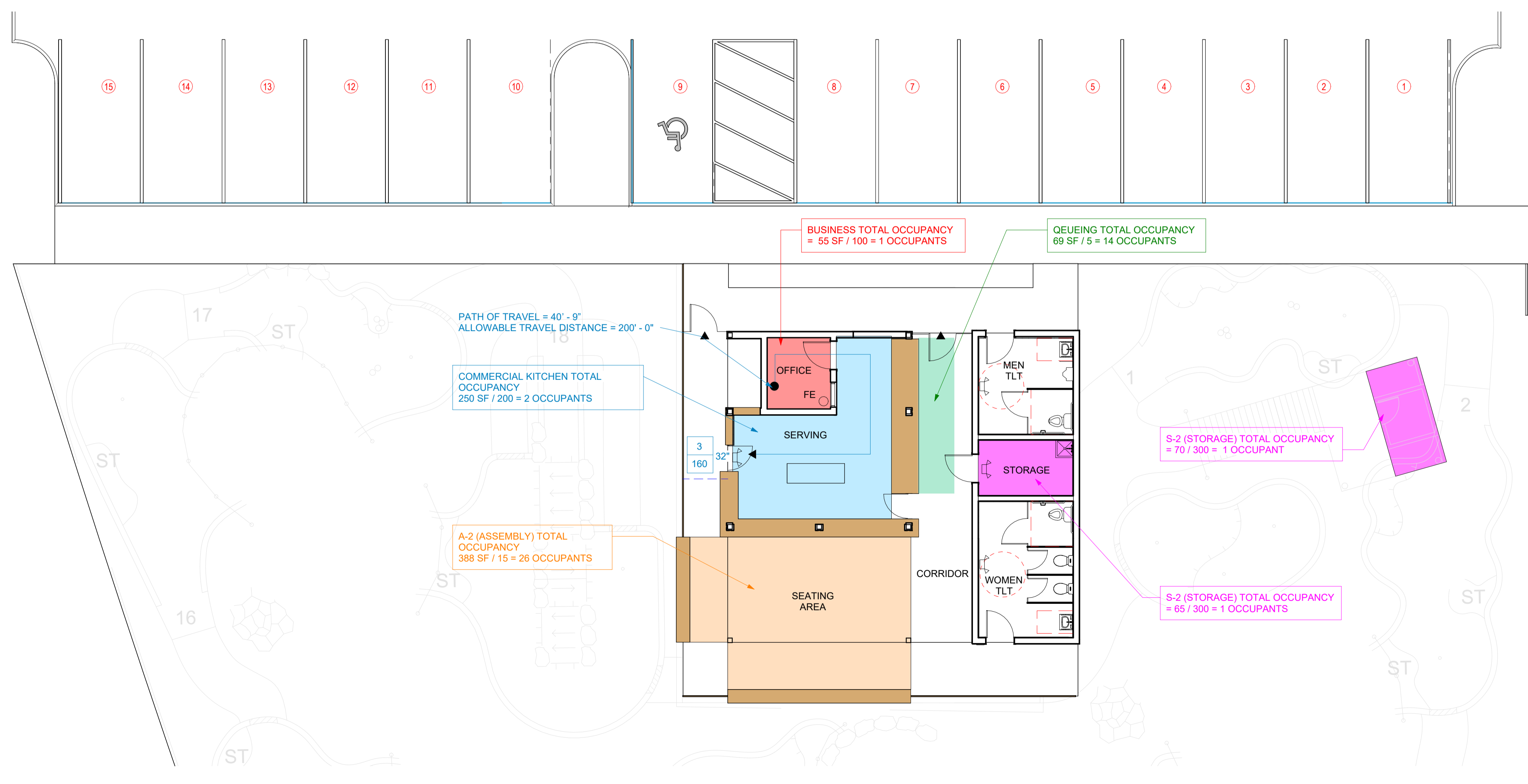
LIFE SAFETY PLAN LEGEND

- PATH OF EXIT ACCESS TRAVEL
- COMMON PATH TRAVEL
- OCCUPANT LOAD
- DOOR OPENING WIDTH
- DOOR EGRESS CAPACITY
- EXIT
- ROOM**
 ROOM NAME & NUMBER
- EXIT SIGN
- EXIT SIGN EMERGENCY LIGHTING WALL MOUNTED
- EMERGENCY LIGHTING
- SEMI-RECESSED FIRE EXTINGUISHER
- WALL MOUNTED FIRE EXTINGUISHER
- EMERGENCY STROBE LIGHTING

LIFE SAFETY PLAN NOTES

1. PROVIDE NEW FIRE EXTINGUISHERS IN CABINETS (CE) AS SHOWN ON FLOOR PLANS. PROVIDE NEW FIRE EXTINGUISHERS IN KITCHEN (TYPE K), MECHANICAL, ELECTRICAL (TYPE B-C), FIRE PUMP, AND ELEVATOR MACHINE ROOMS, AND AS INDICATED.
2. FIRE EXTINGUISHER SHALL BE MINIMUM 3A-40BC RATING. MARK ALL RATED WALLS AND PARTITIONS PER 2018 IBC 703.7 AND AS DETAILED.
- 3.

LIFE SAFETY PLAN - A5
1/16" = 1'-0" **2**



LIFE SAFETY PLAN **1**
1/8" = 1'-0"

	A2 (ASSEMBLY)	A-2 (ASSEMBLY) TOTAL OCCUPANCY 388 SF / 15 = 26 OCCUPANTS
	BUSINESS	BUSINESS TOTAL OCCUPANCY = 54 SF / 100 = 1 OCCUPANTS
	COMMERCIAL KITCHEN	KITCHEN TOTAL OCCUPANCY 250 SF / 200 = 2 OCCUPANTS
	QUEUEING	QUEUEING TOTAL OCCUPANCY 69 SF / 5 = 14 OCCUPANTS
	S-2 STORAGE	S-2 (STORAGE) TOTAL OCCUPANCY = 135 / 300 = 2 OCCUPANTS
	A5 (AMUSEMENT PARK STRUCTURES)	A5 (AMUSEMENT PARK STRUCTURES) TOTAL OCCUPANCY = 7202 SF / 50 = 144 OCCUPANTS
		TOTAL OCCUPANCY = 189 OCCUPANTS



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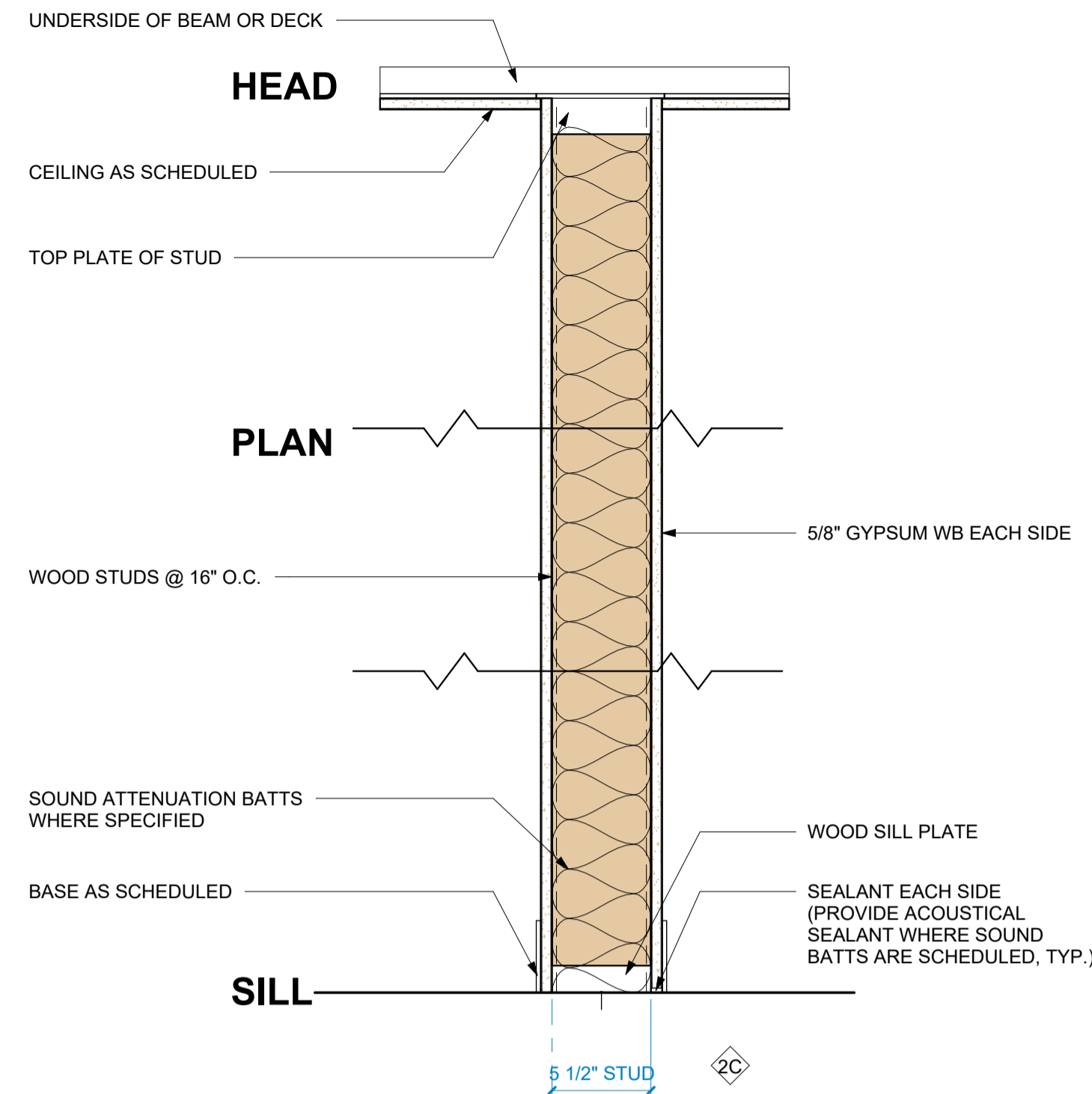
LIFE SAFETY PLAN

G102

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WALL TYPE GENERAL NOTES

- SEE CODE SHEETS, G100- AND G500-SERIES, FOR REQUIRED FIRE RATINGS OF ALL WALL ASSEMBLIES. MULTIPLE LAYERS OF GWB MAY BE REQUIRED AT RATED PARTITIONS. COORDINATE WITH UI DESIGN(S)
- PROVIDE SOUND-ATTENUATING FIRE BATT INSULATION IN RATED STUD-FRAMED PARTITIONS AND FIBERGLASS SOUND BATT INSULATION IN NON-RATED STUD PARTITIONS.
- PROVIDE MOLD AND MOISTURE RESISTANT GWB AT ALL STUD-FRAMED PARTITIONS IN WET LOCATIONS, INCLUDING TOILET ROOMS, AND AT SINKS AND LAVATORIES. EXTEND TO END OF CASEWORK RUN, INCLUDING SIDEWALLS WHERE ADJACENT TO SINKS.
- BRACE NON-STRUCTURAL METAL STUD PARTITIONS WHERE NOT ATTACHED TO STRUCTURE ABOVE OR WHERE HEIGHT OF STRUCTURE EXCEEDS MANUFACTURER'S LIMITING HEIGHT FOR 5PSF @ 16" O.C. OR PROVIDE COLD-FORM FRAMING. SEE SPECIFICATIONS AND STRUCTURAL DRAWINGS.
- SEE STRUCTURAL FOR BRACING OF PART-HEIGHT MASONRY PARTITIONS, INCLUDING MASONRY PARTITIONS WITH METAL STUD PARTITIONS CONTINUING ABOVE.
- SEE STRUCTURAL AND SPECIFICATIONS FOR MASONRY TIES IN MULTIPLE-WYTHE MASONRY WALLS AND PARTITIONS. CORRUGATED AND MESH TIES ARE NOT ACCEPTABLE.
- PROVIDE BULLNOSE MASONRY UNITS AT OUTSIDE CORNERS AND PER SPECIFICATIONS.
- PROVIDE SPECIAL-SHAPED MASONRY UNITS PER DETAILS AND SPECIFICATIONS.
- FILL ALL CORES IN MASONRY UNITS AT THE FOLLOWING LOCATIONS: MECHANICAL ROOMS / MEZZANINES / PENTHOUSES / EQUIPMENT PLATFORMS, ELEVATOR MACHINE ROOMS, AND AS INDICATED. SEE SPECIFICATIONS.
- PROVIDE ACOUSTICAL SEALANT AT PARTITIONS IN THE FOLLOWING LOCATIONS: MECHANICAL ROOMS / MEZZANINES / PENTHOUSES / EQUIPMENT PLATFORMS, AND ELEVATOR MACHINE ROOM. SEE SPECIFICATIONS.
- PROVIDE CONTROL JOINTS IN MASONRY WALLS AS INDICATED ON PLANS, ELEVATIONS, DETAILS, AND AS SPECIFIED. WHERE JOINTS ARE NOT SHOWN, PROVIDE ACCORDING TO B.I.A AND N.C.M.A. TEK NOTES. SUBMIT SHOP DRAWING FOR ARCHITECT'S APPROVAL.



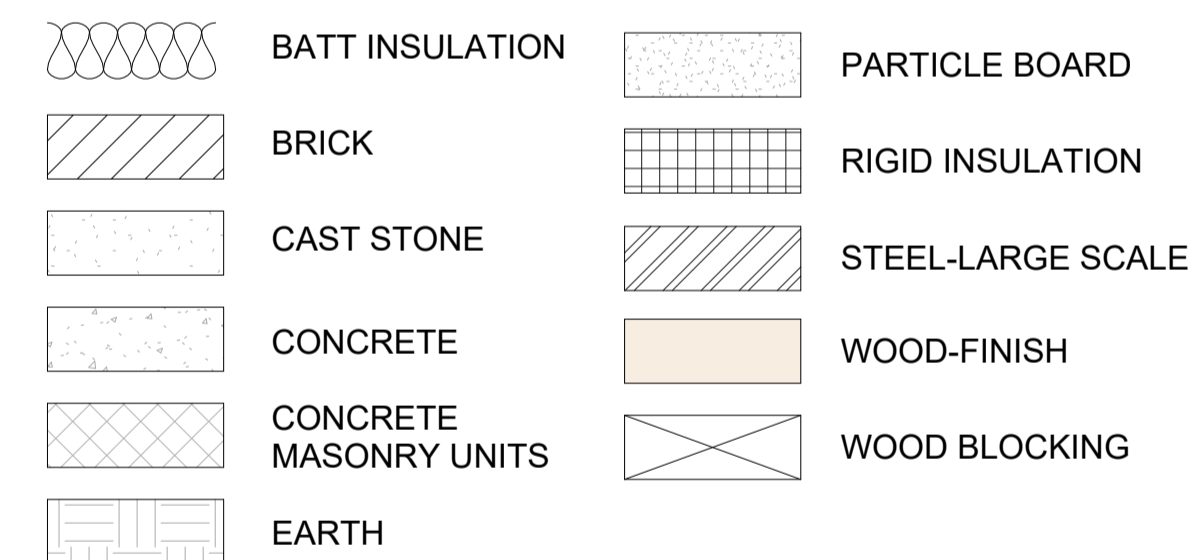
WALL TYPES - WOOD

WALL TYPE GENERAL NOTES

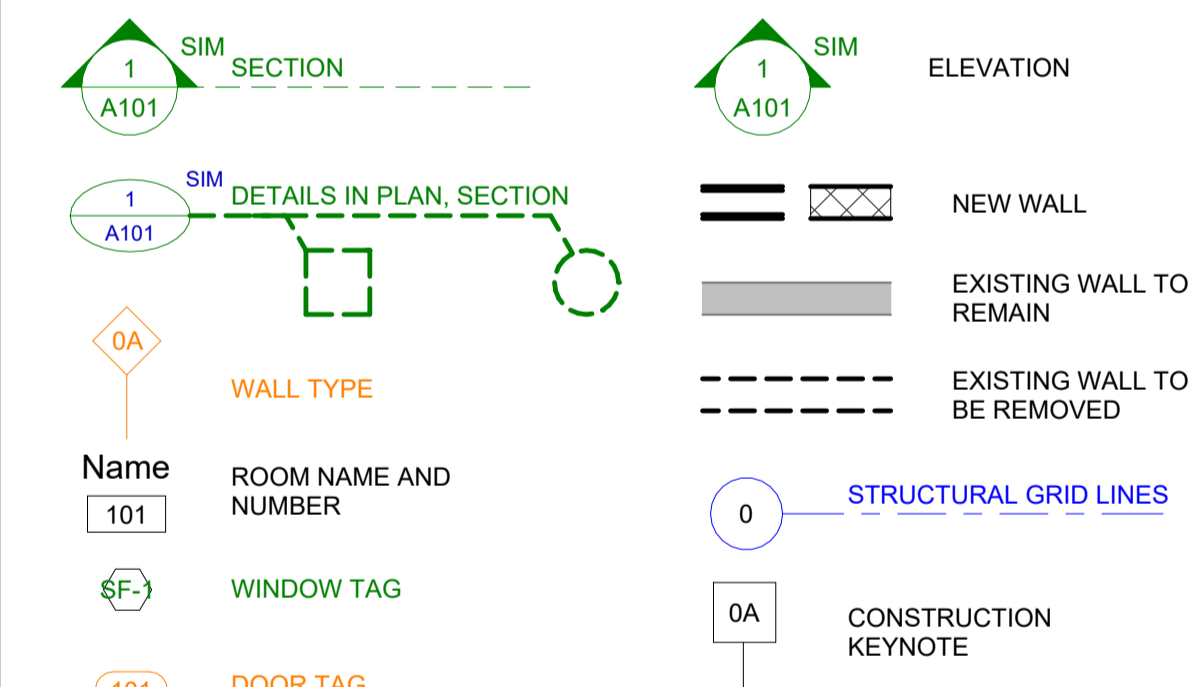
GENERAL PROJECT NOTES

- 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.
- CONTRACT:** GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION (STANDARD AIA DOCUMENT A201, 2007 EDITION) APPLIES TO ALL WORK UNDER THIS CONSTRUCTION CONTRACT.
- 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.
- SCHEDULING:** THE CONTRACTOR SHALL REVIEW AND COORDINATE THE SCHEDULING OF ALL CONSTRUCTION WITH THE BUILDING OWNER, SUBMIT DETAILED CONSTRUCTION SCHEDULE PRIOR TO DOING WORK INCLUDING PHASED CONSTRUCTION AND AFTER-HOURS WORK.
- 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 THE 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:** THE 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.
- PUBLIC:** THE CONTRACTOR SHALL TAKE ADEQUATE PRECAUTIONS TO PROTECT BUILDING OCCUPANTS AND MATERIALS THROUGHOUT ALL PHASES OF CONSTRUCTION. NOISE, SECURITY AND DUST BARRIERS BETWEEN CONSTRUCTION AREA AND AREAS WHICH ARE PUBLIC OR OTHERWISE OCCUPIED SHALL BE MAINTAINED BY THE CONTRACTOR. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL EXITS, EXIT LIGHTING, FIRE PROTECTION DEVICES AND ALARMS TO CONFORM TO LOCAL BUILDING CODE REQUIREMENTS.
- INSPECTIONS:** THE 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 CONCEALED WOOD BLOCKING (FIRE RETARDANT WHERE REQUIRED BY CODE) INSIDE PARTITIONS FOR SECURING WALL-HUNG CABINETS PROVIDED BY FURNITURE VENDOR, SHELVING, TRIM, MILLWORK AND OTHER ELEMENTS ATTACHED TO PARTITIONS AS REQUIRED TO ENSURE FLUSH, STRAIGHT, WELL-SECURED CONDITIONS. PROVIDE CORROSIVE RESISTANT FASTENERS FOR FIRE-RETARDANT TREATED WOOD.
- WALLS:** CHASE WALLS SHALL MATCH ADJACENT CONSTRUCTION; TYPICAL, UNLESS OTHERWISE NOTED. NEW GYPSUM BOARD CONSTRUCTION MEETING EXISTING CONSTRUCTION IN SAME PLANE SHALL BE FLUSH WITH NO VISIBLE JOINT. PROVIDE WATER RESISTANT GYPSUM BOARD OR APPROVED EQUAL AT ALL NEW PLUMBING WALLS. IN LIEU OF GYPSUM WALL BOARD, PROVIDE CEMENT BOARD AT ALL STUD WALLS SLATED TO RECEIVE A TILE FINISH. PROVIDE GYPSUM BOARD ASSEMBLIES IN ACCORDANCE WITH ASTM C840, LEVEL 4 FINISH, UNLESS OTHERWISE NOTED.
- 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:** THE CONTRACTOR SHALL PROVIDE HURRICANE TIES AND CONSTRUCTION CONNECTORS PER CODE AND AS REQUIRED BY THE 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.
 - WHERE DOORS IN STUD PARTITIONS ARE NOT SPECIFICALLY LOCATED ON THE PLANS WITH DIMENSION STRINGS, PROVIDE A HINGE SIDE JAMB DIMENSION OF 6". WHERE DOORS APPEAR TO BE CENTERED WITHIN PARTITIONS, LOCATE THE DOOR IN THE CENTER OF THE PARTITION.
- 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. THE CONTRACTOR SHALL MAKE REVISIONS AND/OR ADDITIONS IN ACCORDANCE WITH FIRE MARSHAL'S INSPECTION.
- FIRE RATING:** THE CONTRACTOR SHALL MAINTAIN THE RATING OF ALL REQUIRED RATED WALLS AT ALL INTERSECTIONS, CONNECTIONS, AND PENETRATIONS FIRE RATED PARTITIONS INDICATED ON THE FLOOR PLANS ARE COMPONENTS OF CONTINUOUS RATED ASSEMBLIES CONSISTING OF BUT NOT LIMITED TO, WALLS, FLOOR, DOORS, INTERIOR BORROWED LIGHTS, MECHANICAL PENETRATIONS AND CEILINGS. REFER TO PLANS AND SPECIFICATIONS FOR METHODS OR ACHIEVING THE NECESSARY RATINGS. WHERE THE SPECIFIC METHOD OF ACHIEVING THE RATING IS NOT INDICATED, OBTAIN CLARIFICATION FROM ARCHITECT PRIOR TO CONSTRUCTION. FIRE-RATED PARTITIONS SHALL BE IDENTIFIED AS SUCH IN LARGE RED STENCIL ABOVE FINISHED CEILING.
- 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:** THE CONTRACTOR SHALL INSULATE AND PROTECT PIPES AS REQUIRED BY CODE, AND AS REQUIRED TO PROTECT PIPING EXPOSED TO EXTERIOR CONDITIONS.
- CIVIL:** CONTRACTOR SHALL COORDINATE SITE GRADING TO COMPLY WITH CODES AND ORDINANCES, AND TO MAINTAIN POSITIVE DRAINAGE AWAY FROM BUILDING. ALL SITE ELEMENTS (PLANT WORK, LANDSCAPING, CONCRETE STAIRS, ETC.) ARE SHOWN FOR REFERENCE ONLY. REFER TO CIVIL DRAWINGS FOR DESIGN AND CONSTRUCTION METHODS.
- KEYING:** THE CONTRACTOR SHALL COORDINATE ALL KEYING REQUIREMENTS, INCLUDING MASTER AND SUB-MASTER SETS, WITH THE OWNER.
- FINISHES:** TRANSITIONS OF FLOOR MATERIALS TO BE LOCATED AT CENTERLINE OF DOORS IN CLOSED POSITION; TYPICAL, UNLESS OTHERWISE NOTED. PAINT BACK SIDES OF REMOVABLE ACCESS PANELS AND HINGED COVERS TO MATCH EXPOSED SURFACE. CAULK ALL JOINT OR CRACKS WHICH OCCUR WHERE DISSIMILAR MATERIALS INTERSECT PERPENDICULAR TO EACH OTHER AND THE INTERSECTION IS EXPOSED TO VIEW UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
- CLEANING:** ALL FINISHES (CARPET, VCT, CEILINGS, ETC.) SHALL BE CLEANED UTILIZING EFFECTIVE CLEANING METHODS WHICH WILL PRODUCE THE MOST DESIRABLE RESULTS POSSIBLE.
- ACCESSORIES:** GO TO INSTALL WALL-MOUNTED ACCESSORIES AFTER FINAL COAT OF PAINT HAS BEEN APPLIED. COORDINATE FINAL LOCATIONS OF ACCESSORIES WITH OWNER. GO TO FURNISH AND INSTALL NEW ROOM SIGNAGE THROUGHOUT, IF NEEDED.

SYMBOLS OF MATERIALS



DRAWING KEYS



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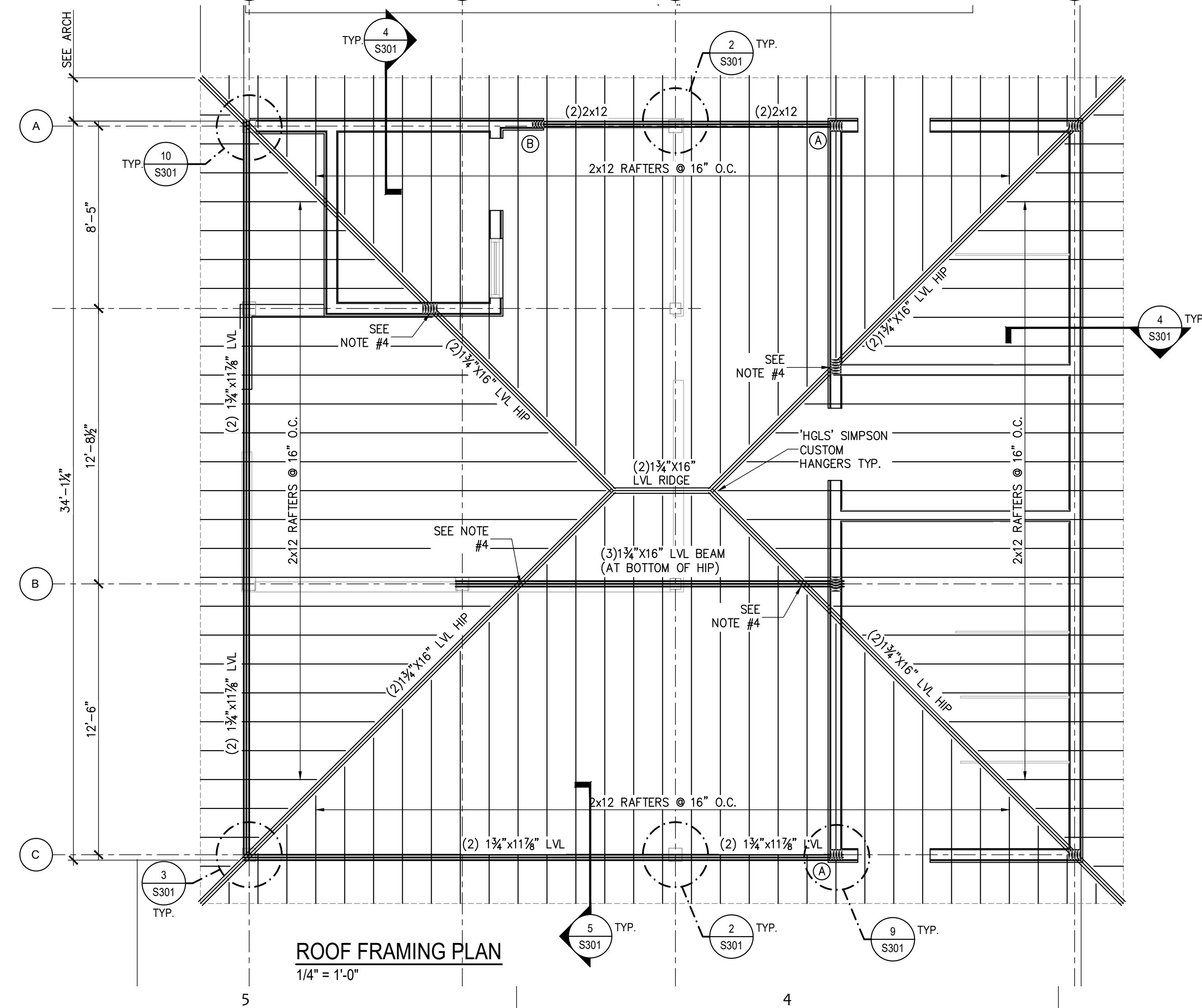
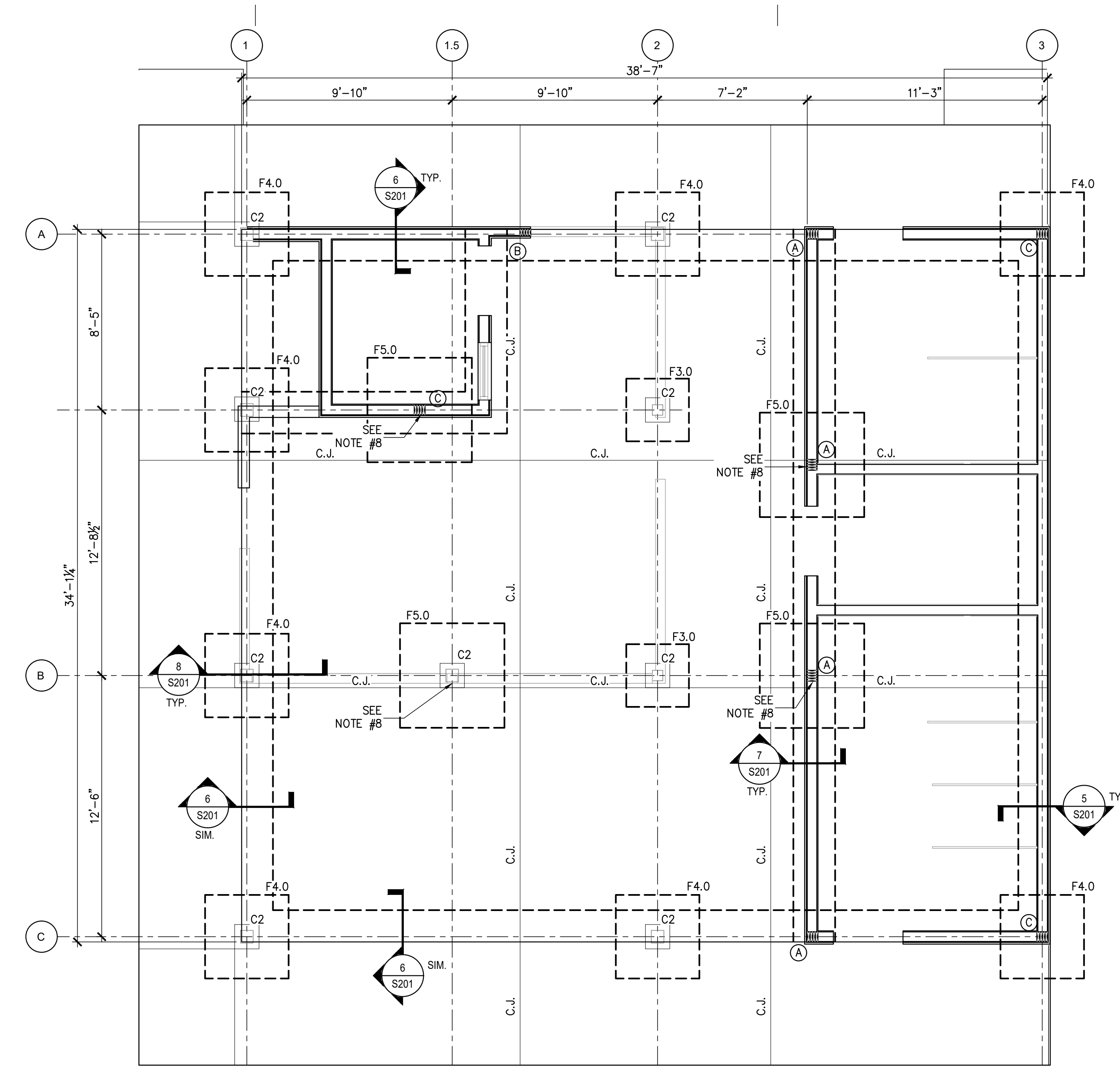
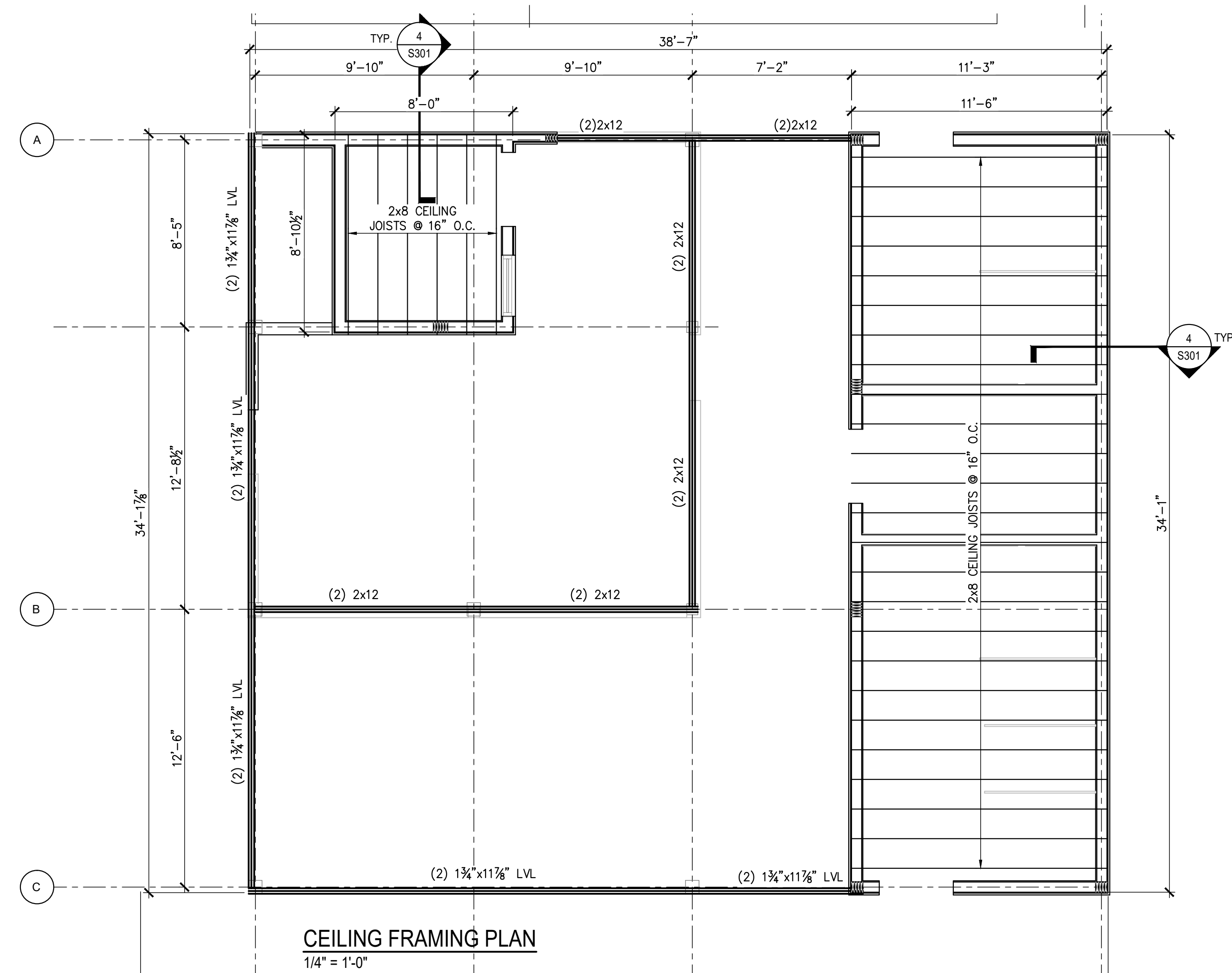
Mark	Date	Description
PROJECT NO:	24074	
DATE:	09/26/2024	
SCALE:	As indicated	
DRAWN BY:	OU	
PROJ MGR:	WB	

GENERAL NOTES

G103



SURF'S UP MINIATURE GOLF STRUCTURES
 1360 BRIDGE BARRIER ROAD
 CAROLINA BEACH, NC 28428



FOUNDATION PLAN
 1/4" = 1'-0"

FOUNDATION PLAN NOTES:

- SEE SHEET S301 FOR DESIGN CRITERIA, GENERAL STRUCTURAL NOTES & SCHEDULES.
- TOP OF SLAB REFERENCE ELEVATION = 0'-0" UNLESS NOTED OTHERWISE. SEE ARCHITECTURAL AND CIVIL DRAWINGS FOR ACTUAL SITE ELEVATIONS.
- CONCRETE FLOOR SLAB IS 4" THICK WITH 6 x 6 - W 2.1 x W 2.1 WELDED WIRE FABRIC. PROVIDE 10 MIL VAPOR BARRIER AND 4" COMPACTED GRANULAR BASE UNDER SLAB. SEE 1/S102.
- SEE 4/S102 FOR SLAB CORNER REINFORCEMENT DETAIL. SEE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR MASONRY OPENINGS NOT SHOWN.
- VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS.
- SEE ARCH DWGS FOR ADDITIONAL DIMENSIONS, WALL OPENINGS, AND SIDEWALKS/OUTSIDE CURBS.
- PROVIDE 'HDU4-SDS2.5' SIMPSON HOLDOWN EA. SIDE OF STUD PACK. INSTALL PER MRF'S SPEC.

FOUNDATION PLAN LEGEND

F4.0	DENOTES COLUMN CONCRETE SPREAD FOOTING WITH FOOTING MARK - SEE FOOTING SCHEDULE ON S101 FOR SIZE AND REINFORCING
C1	DENOTES STEEL WOOD COLUMN MARK. SEE COLUMN SCHEDULE ON S101 FOR COLUMN SIZE & SEE DETAIL 8/S201 FOR ADDITIONAL INFORMATION
C.J.	DENOTES SLAB ON GRADE CONSTRUCTION OR SAWCUT CONTROL JOINT - SEE DETAILS 3/S102 AND 2/S102 FOR ADDITIONAL INFORMATION
U.O.N.	DENOTES 'UNLESS OTHERWISE NOTED'

FOOTING SCHEDULE

MARK	FTG. SIZE	REINFORCEMENT	REMARKS
F3.0	3'-0" x 3'-0" x 1'-0"	(4) #5 EA. WAY, TOP & BOT.	-
F4.0	4'-0" x 4'-0" x 1'-0"	(5) #5 EA. WAY, TOP & BOT.	-

COLUMN SCHEDULE

MARK	COL. SIZE	COLUMN BASE	THRU BOLT DIA.	REMARKS
C1	6x6 P.T. WOOD	'CB66'	(2) 5/8"	SIMPSON OR EQUAL
C2	8x8 P.T. WOOD	'CB88'	(2) 5/8"	SIMPSON OR EQUAL

NOTE: INSTALL COLUMN BASE PER MRF'S SPECIFICATIONS. U.N.O.

CEILING/ROOF FRAMING PLAN NOTES:

- SEE SHEET S301 FOR DESIGN CRITERIA, GENERAL STRUCTURAL NOTES & SCHEDULES.
- COORDINATE ROOF OPENINGS WITH MECHANICAL AND PLUMBING DRAWINGS.
- TOP OF BEAM ELEVATIONS ARE REFERENCED FROM FINISHED FLOOR REFERENCE ELEVATION 0'-0". SEE ARCHITECTURAL & CIVIL DRAWINGS FOR ACTUAL FINISHED FLOOR ELEVATION.
- CONNECT BEAM ABOVE TO BOTH SIDES OF COLUMN OR SUPPORT BEAM BELOW WITH (2) 'HDU4-SDS2.5'. (2) TOTAL PER CONNECTION, CONNECT WITH 3/8" Ø THREADED ROD.

CEILING/ROOF FRAMING PLAN LEGEND

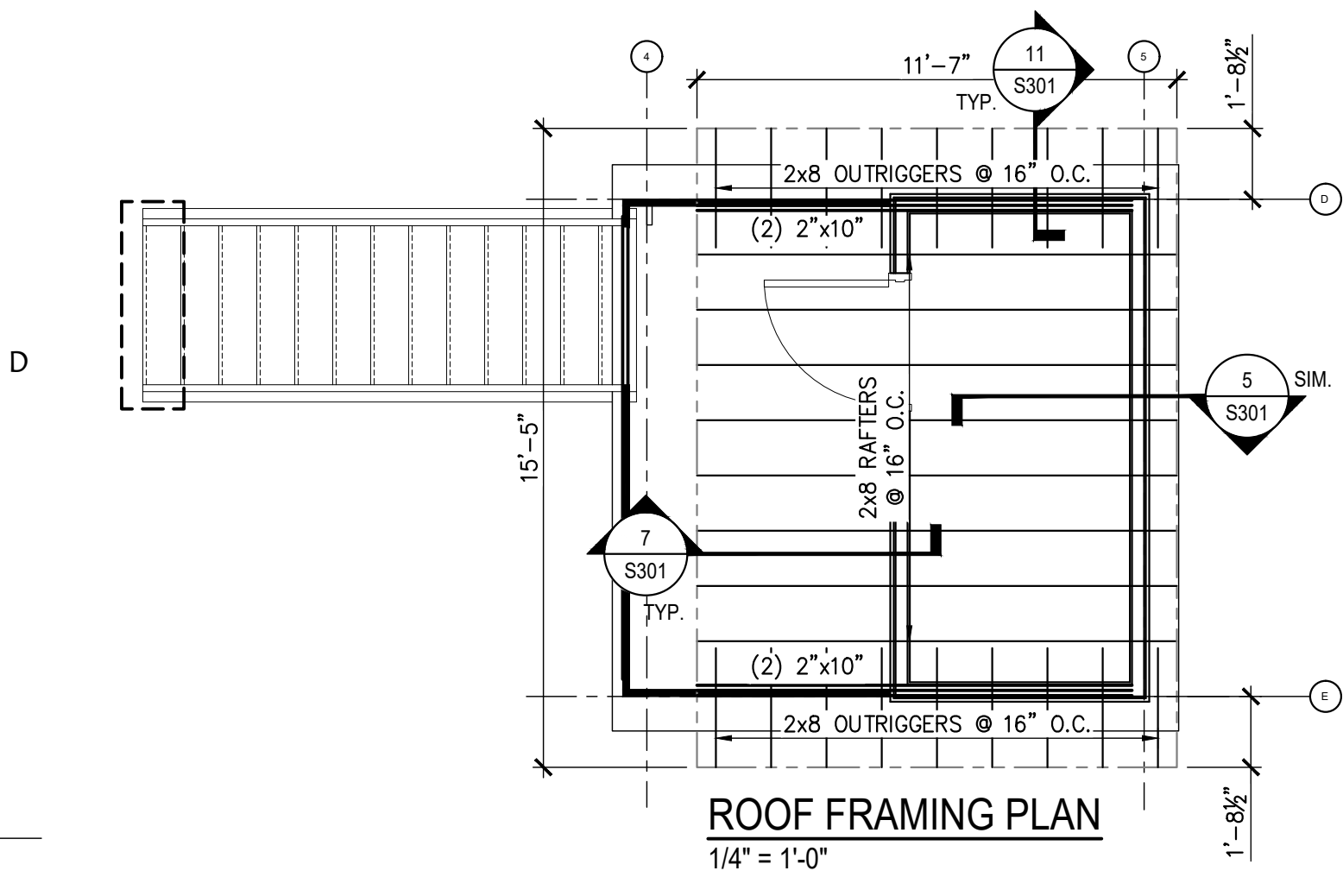
(A)	DENOTES (4) 2x6 STUD PACK
(B)	DENOTES (4) 2x4 STUD PACK
(C)	DENOTES (5) 2x6 STUD PACK
K.B.	DENOTES KNEE BRACING SEE DETAIL 8/S301
U.N.O.	DENOTES 'UNLESS NOTED OTHERWISE'

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MARK	DATE	DESCRIPTION
0	00.00.0000	ISSUE FOR CONSTRUCTION
MARK	DATE	DESCRIPTION
PROJECT NO:	24074	
DATE:	10/15/2024	
SCALE:	AS NOTED	
DRAWN BY:	RPA / GBP	
CHK'D BY:	RPA / BTW	

FOUNDATION & FRAMING PLANS AND PLAN NOTES

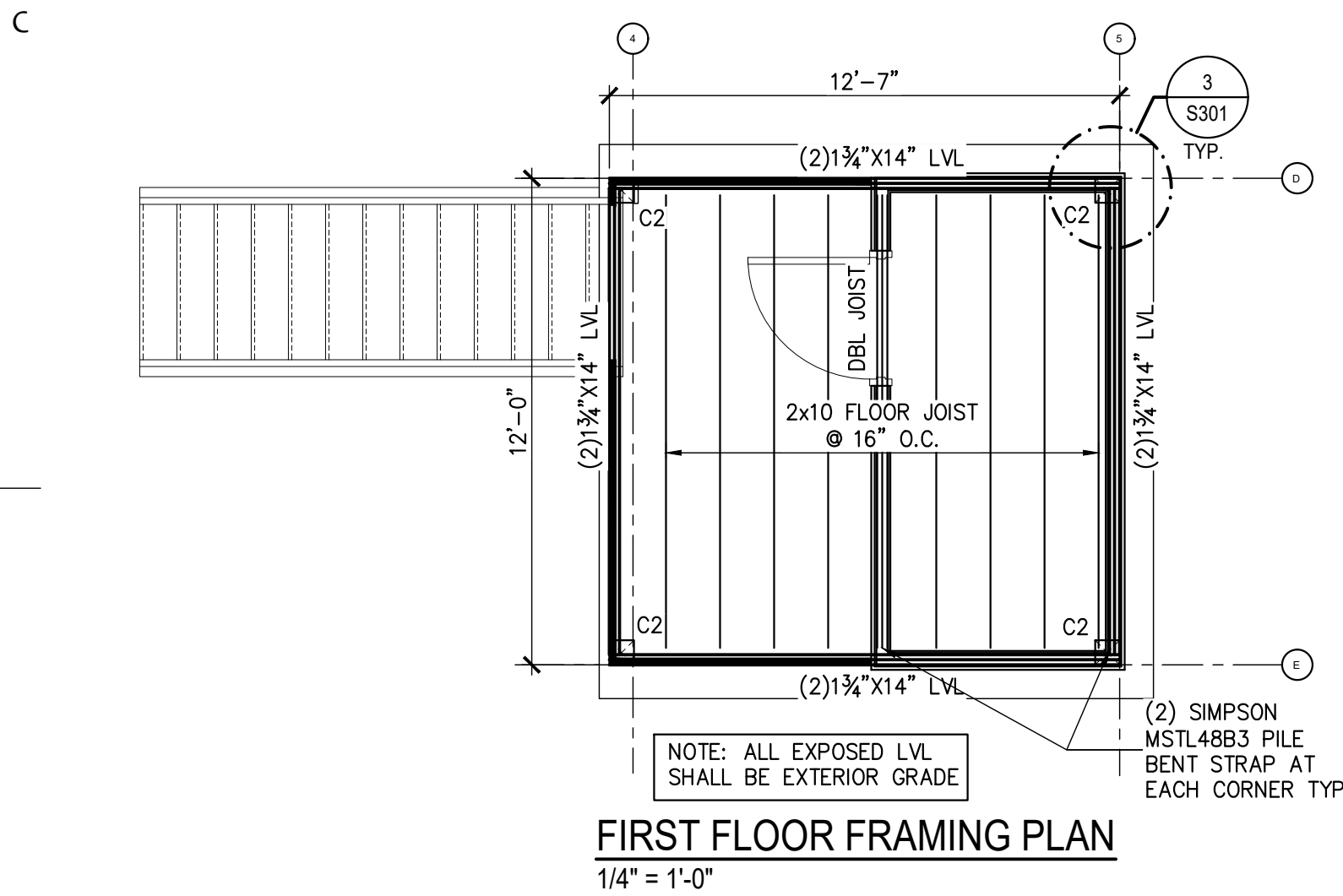
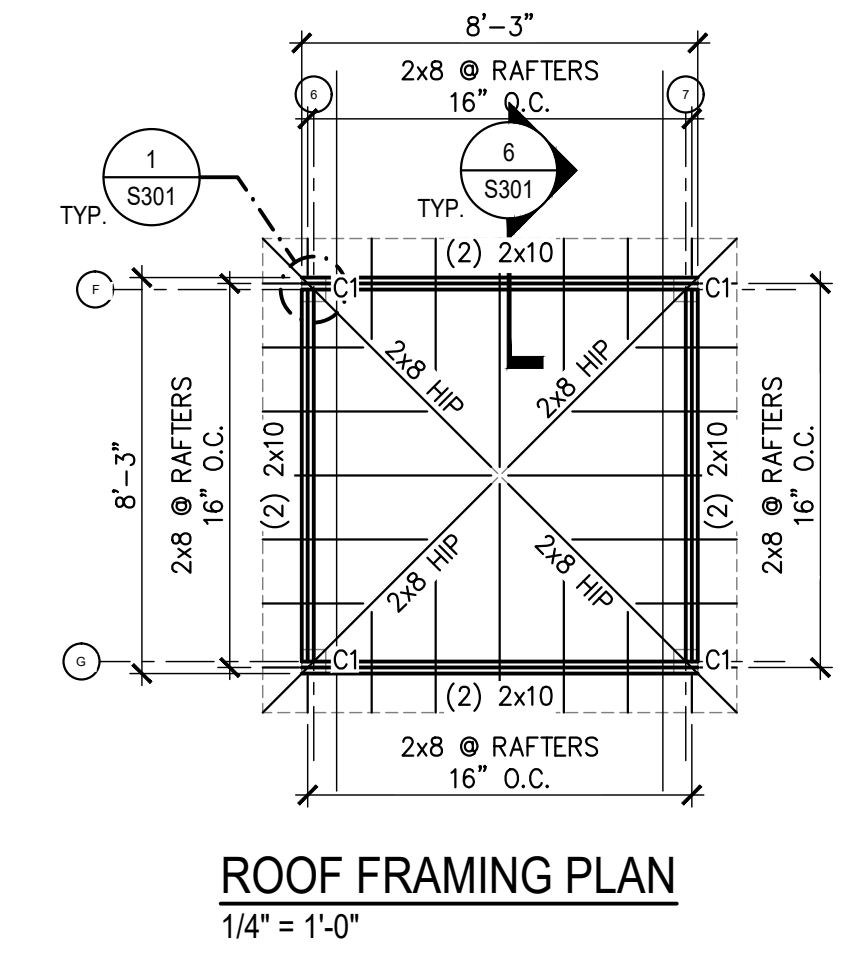


ROOF FRAMING PLAN NOTES:

- SEE SHEET S301 FOR DESIGN CRITERIA, GENERAL STRUCTURAL NOTES AND SCHEDULES.
- COORDINATE ROOF OPENINGS WITH MECHANICAL AND PLUMBING DRAWINGS.
- TOP OF BEAM ELEVATIONS ARE REFERENCED FROM FINISHED FLOOR REFERENCE ELEVATION 0'-0". SEE ARCHITECTURAL & CIVIL DRAWINGS FOR ACTUAL FINISHED FLOOR ELEVATION.

ROOF FRAMING PLAN LEGEND

U.N.O.	DENOTES 'UNLESS NOTED OTHERWISE'
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FOUNDATION PLAN NOTES:

- SEE SHEET S301 FOR DESIGN CRITERIA, GENERAL STRUCTURAL NOTES & SCHEDULES.
- TOP OF SLAB REFERENCE ELEVATION = 0'-0" UNLESS NOTED OTHERWISE. SEE ARCHITECTURAL AND CIVIL DRAWINGS FOR ACTUAL SITE ELEVATIONS.
- CONCRETE FLOOR SLAB IS 4" THICK WITH 6 x 6 - W 2.1 x W 2.1 WELDED WIRE FABRIC. PROVIDE 10 MIL VAPOR BARRIER AND 4" COMPACTED GRANULAR BASE UNDER SLAB. SEE 1/S201
- SEE 4/S201 FOR SLAB CORNER REINFORCEMENT DETAIL.
- SEE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR MASONRY OPENINGS NOT SHOWN.
- VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS.
- SEE ARCH DWGS FOR ADDITIONAL DIMENSIONS, WALL OPENINGS, AND SIDEWALKS/OUTSIDE CURBS.

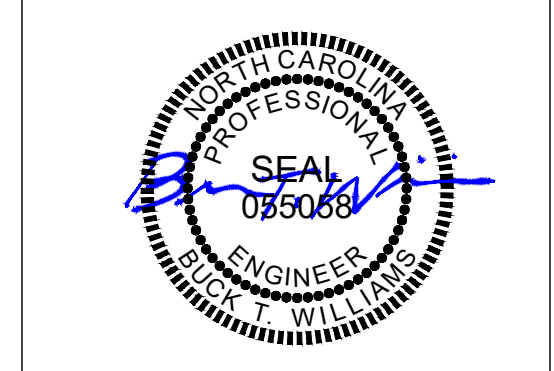
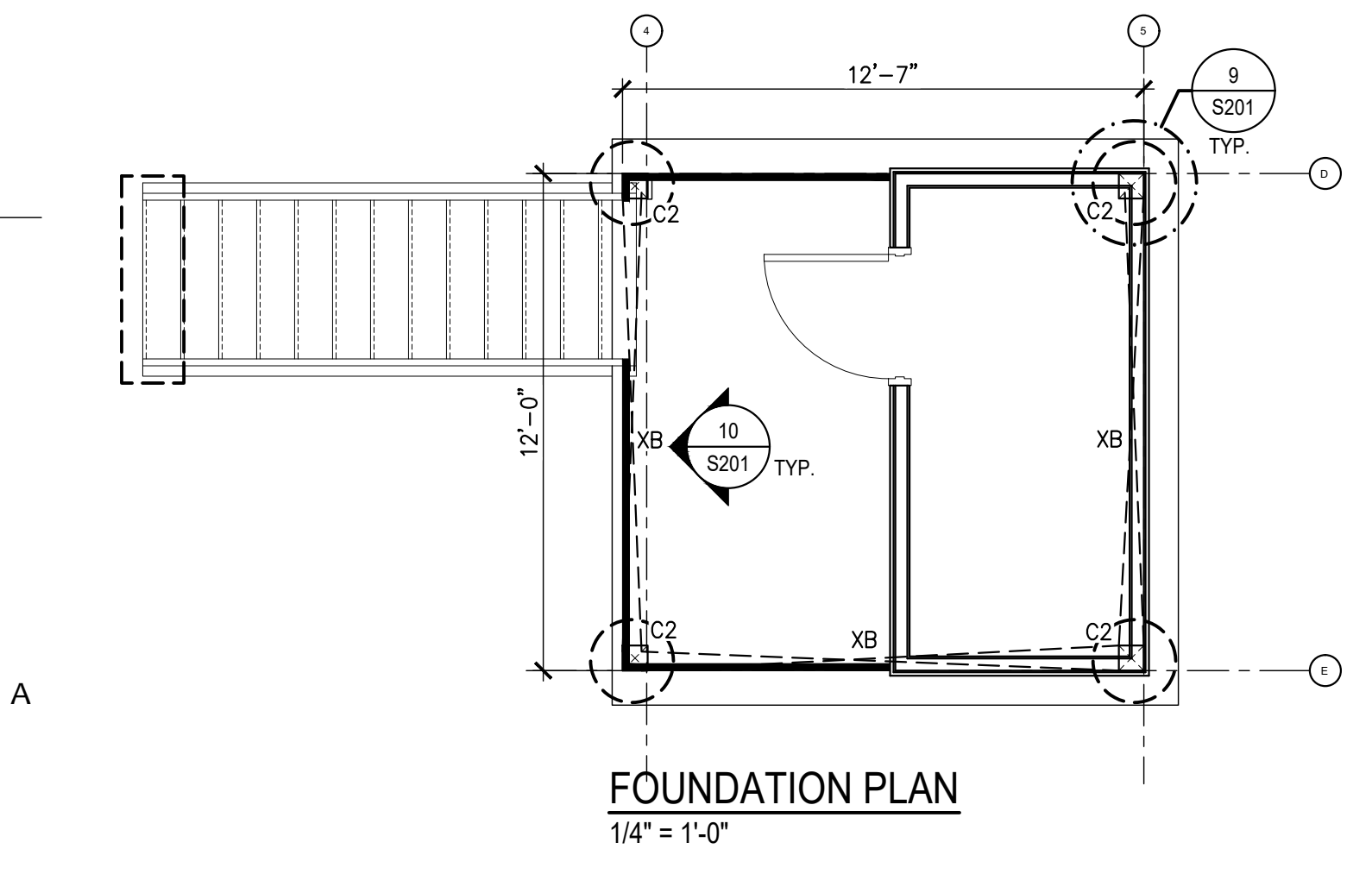
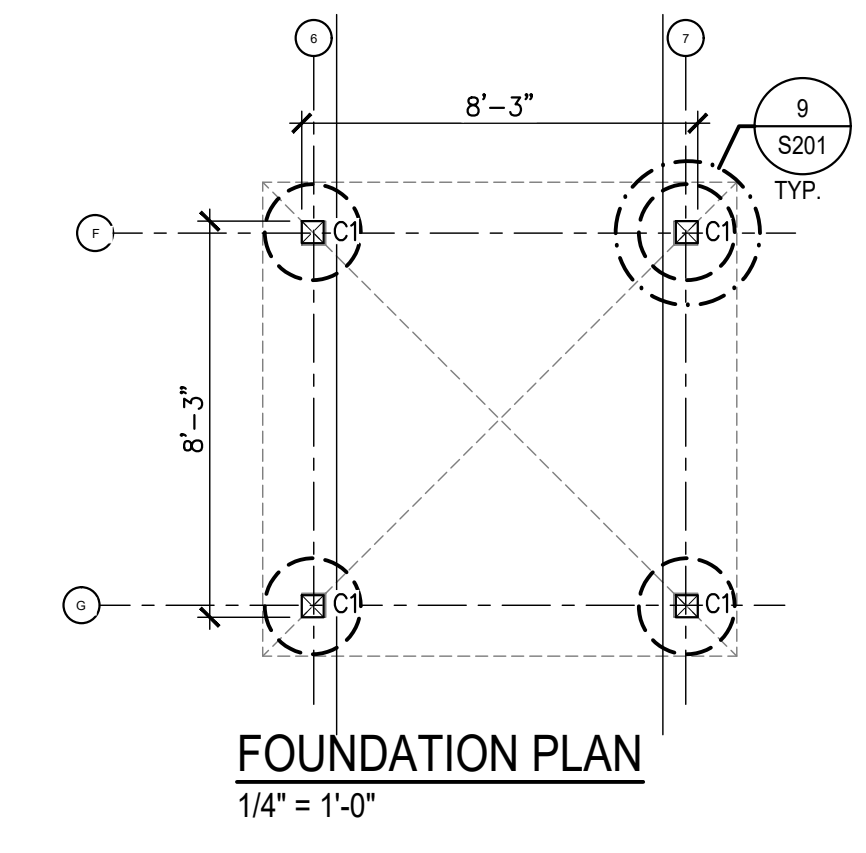
FOUNDATION PLAN LEGEND

	DENOTES COLUMN CONCRETE SPREAD FOOTING WITH FOOTING MARK - SEE FOOTING SCHEDULE ON S101 FOR SIZE AND REINFORCING
C.J.	DENOTES SLAB ON GRADE CONSTRUCTION OR SAWCUT CONTROL JOINT - SEE DETAILS 3/S201 AND 2/S201 FOR ADDITIONAL INFORMATION
XB	DENOTES 'CROSS BRACING' SEE DETAIL 11/S201
U.O.N.	DENOTES 'UNLESS OTHERWISE NOTED'

COLUMN SCHEDULE

MARK	COL. SIZE	COLUMN BASE	THRU BOLT DIA.	REMARKS
C1	6x8 P.T. WOOD	'CB66'	(2) 3/8"	SIMPSON OR EQUAL
C2	8x8 P.T. WOOD	'CB88'	(2) 3/4"	SIMPSON OR EQUAL

NOTE: INSTALL COLUMN BASE PER MRF'S SPECIFICATIONS. U.N.O.



SURF'S UP MINIATURE GOLF STRUCTURES
1360 BRIDGE BARRIER ROAD
CAROLINA BEACH, NC 28428

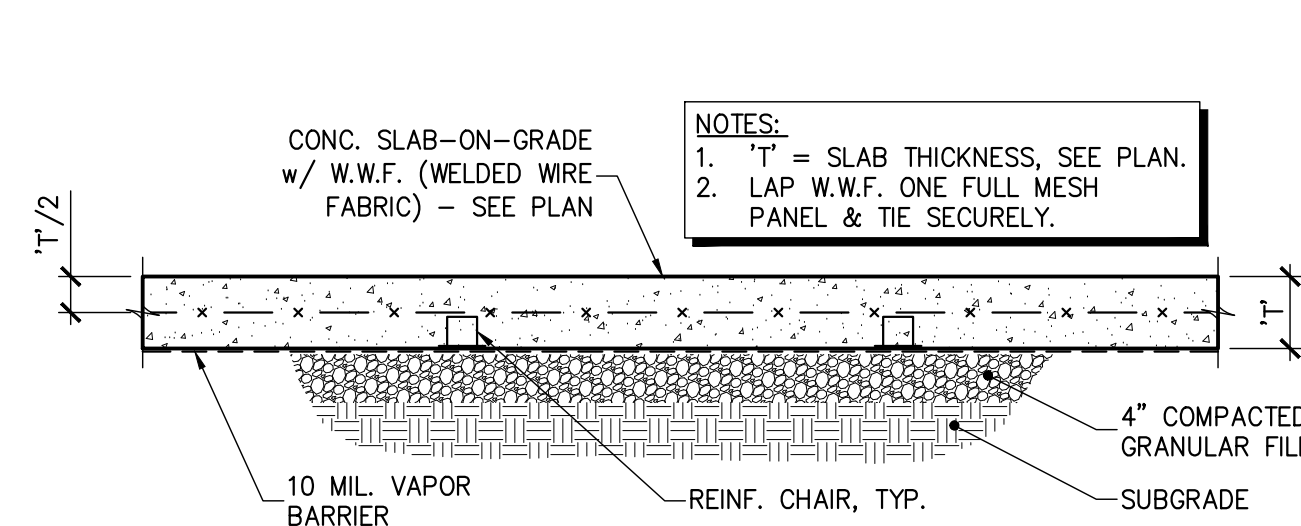
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MARK	DATE	DESCRIPTION
0	00.00.0000	ISSUE FOR CONSTRUCTION
PROJECT NO:	24074	
DATE:	10/15/2024	
SCALE:	AS NOTED	
DRAWN BY:	RPA / GBP	
CHK'D BY:	RPA / BTW	

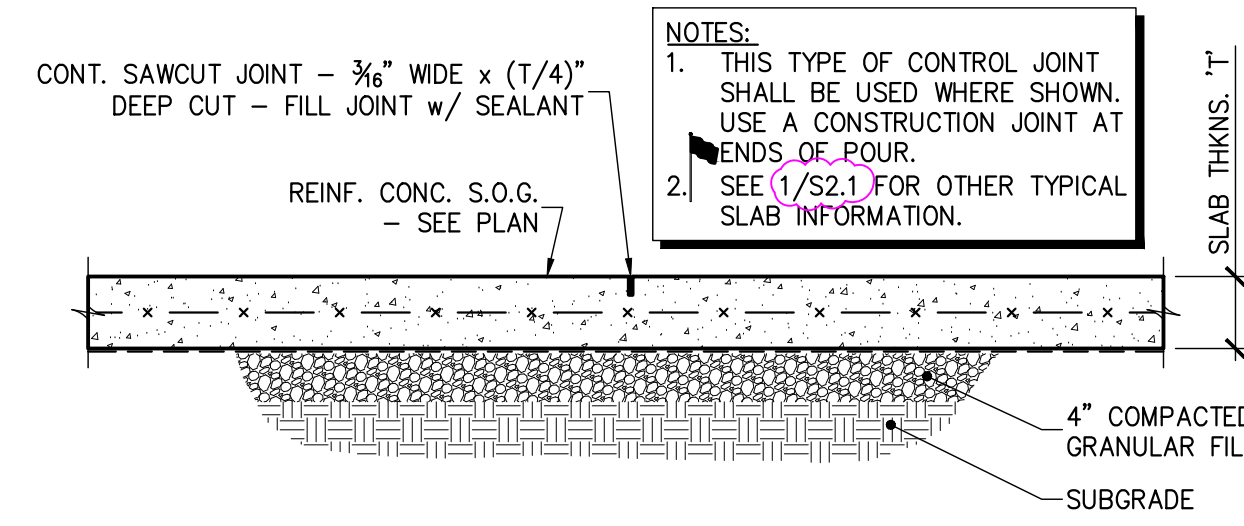
FOUNDATION & FRAMING PLANS AND PLAN NOTES

RPA ENGINEERING, P.A.
Structural Engineering Solutions
Engineering License Certificate No. C-2734
1 Commerce Square, Suite 202, Washington, NC 27889
Phone: 252-321-6027, Fax: 252-355-2179
RPA Project No.: 2024197

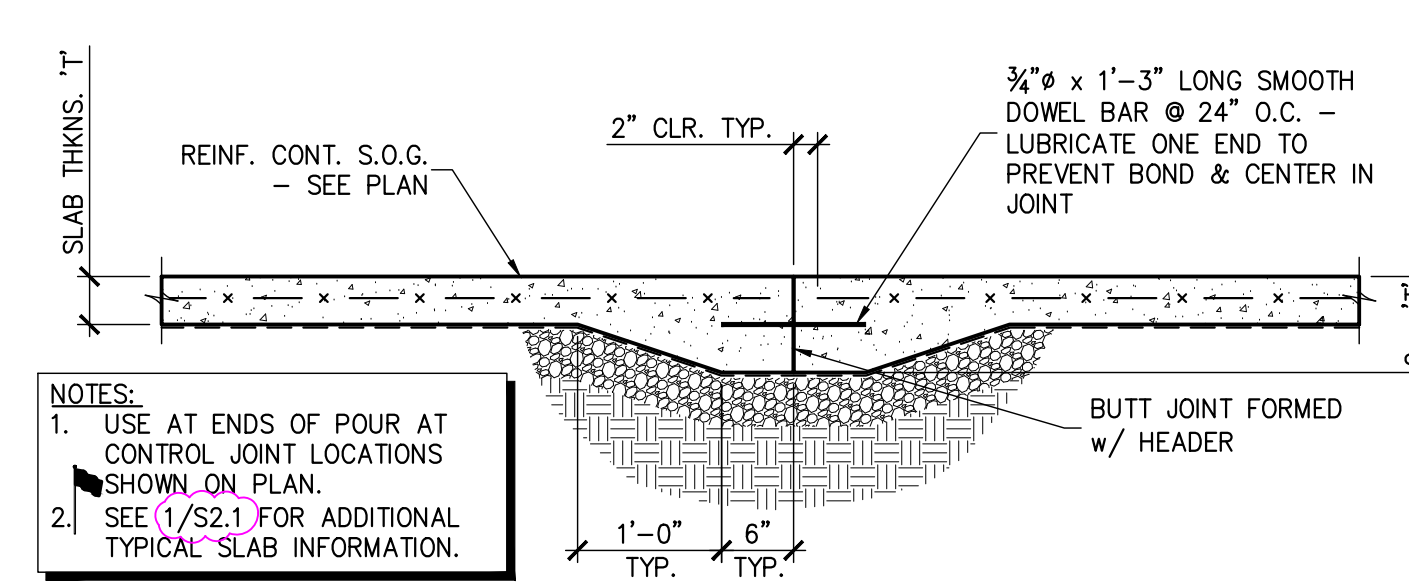
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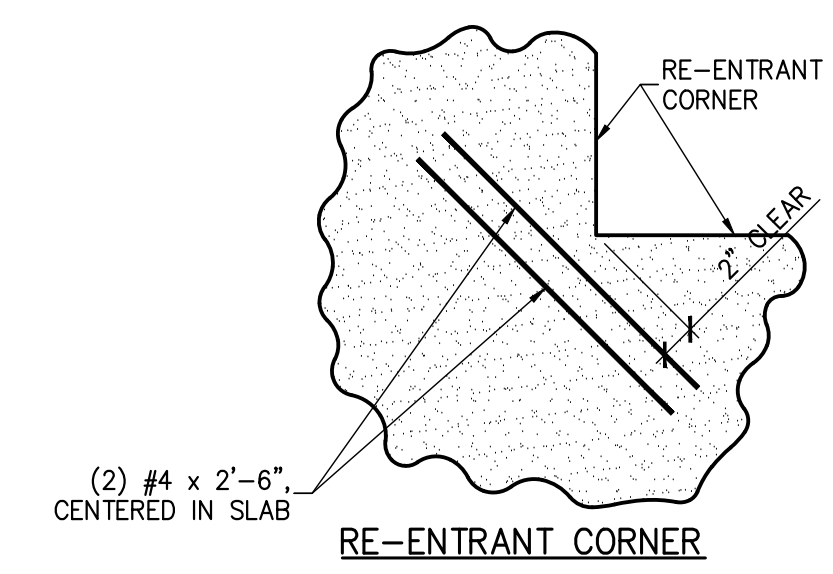
1 SECTION - TYP. SLAB ON GRADE
S201 3/4" = 1'-0"



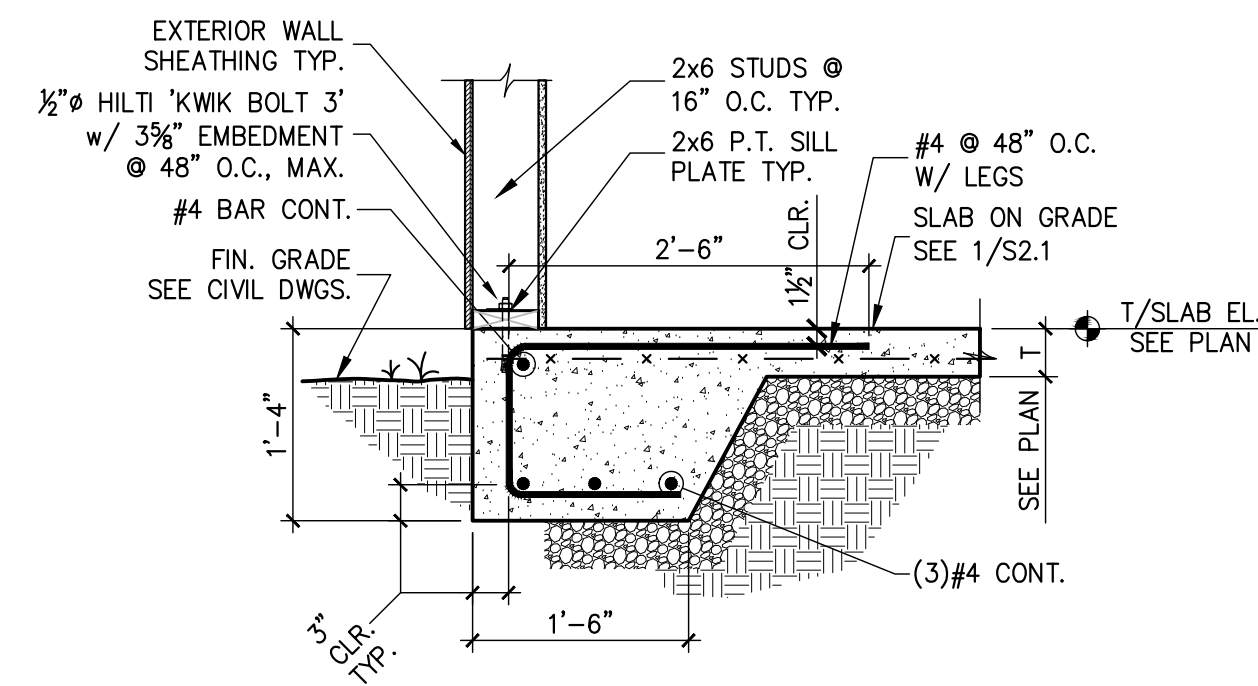
2 SECTION - TYP. CONTROL JOINT
S201 3/4" = 1'-0"



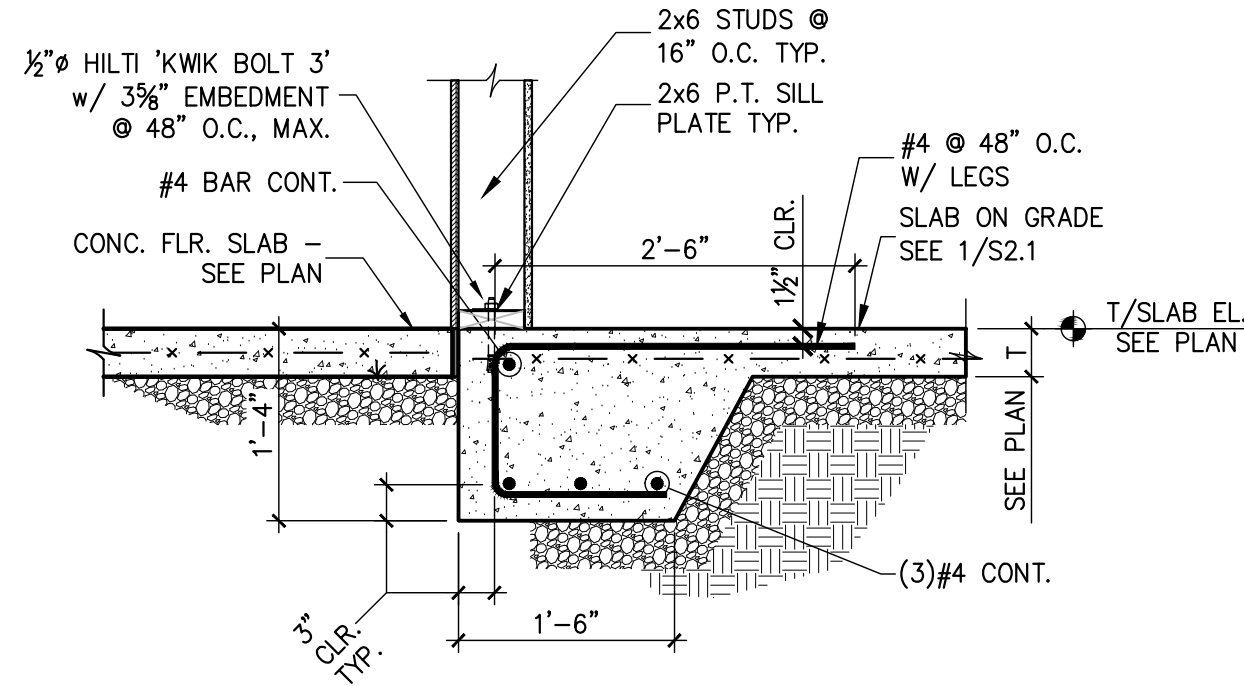
3 SECTION - TYP. CONSTRUCTION JOINT
S201 3/4" = 1'-0"



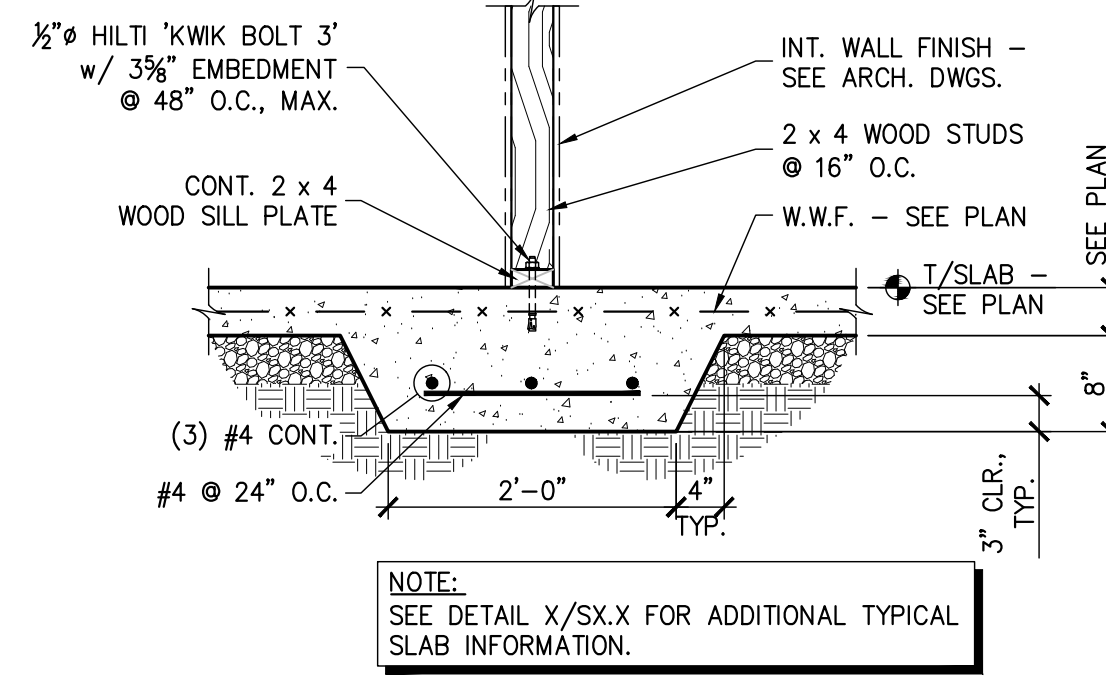
4 DETAIL - TYP. REINF. @ SLAB CORNERS
S201 3/4" = 1'-0"



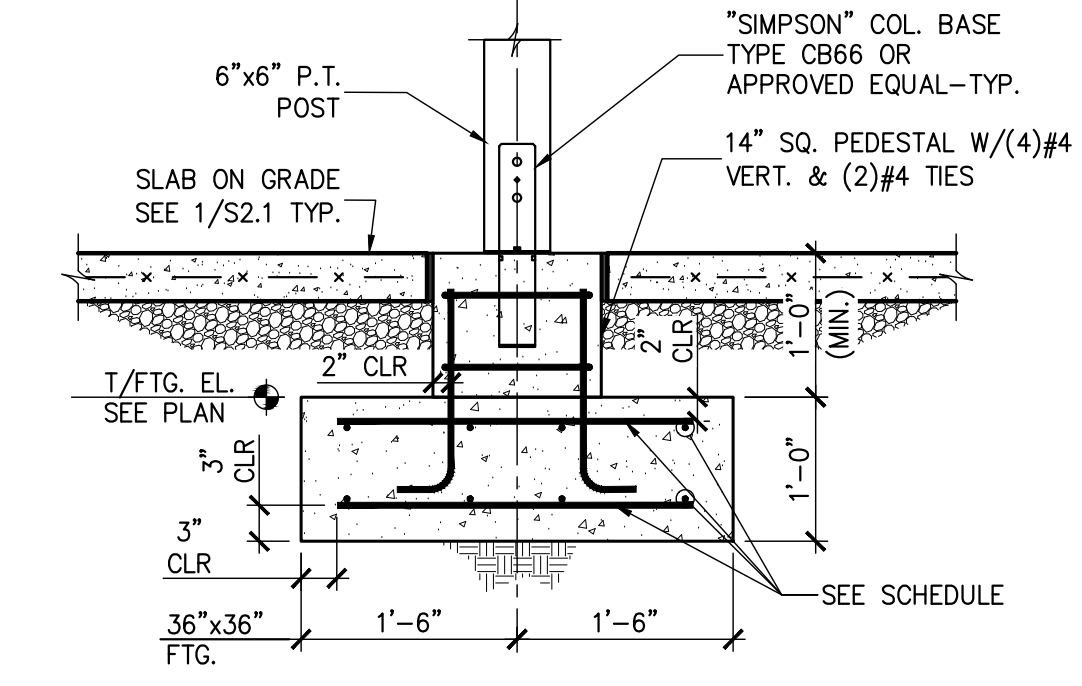
5 SECTION - TYP. SLAB EDGE w/ TURN-DOWN
S201 3/4" = 1'-0"



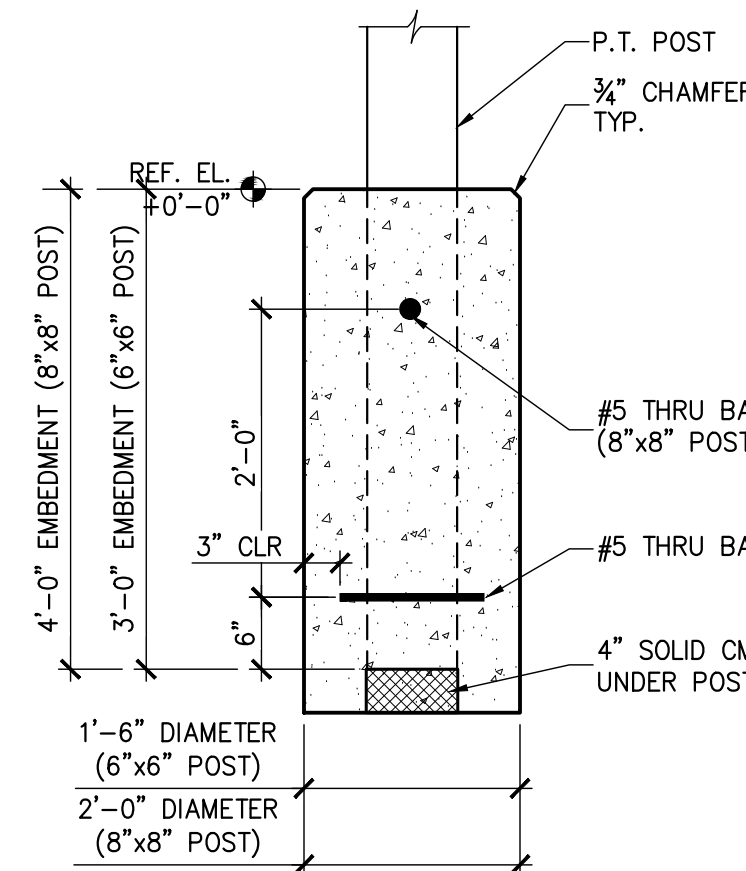
6 SECTION - TYP. SLAB EDGE w/ TURN-DOWN
S201 3/4" = 1'-0"



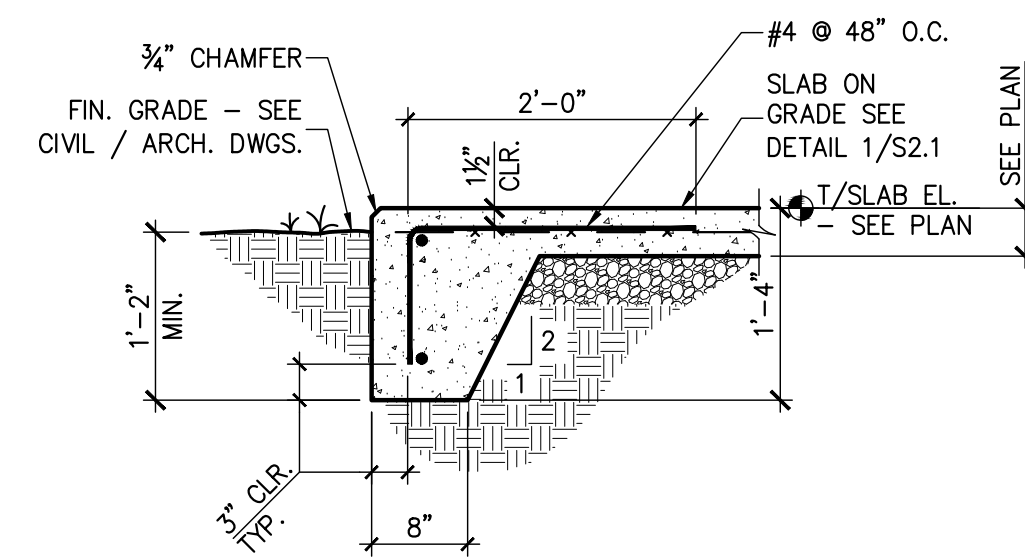
7 SECTION @ LOAD-BRG. STUD WALL w/ THICKENED SLAB
S201 3/4" = 1'-0"



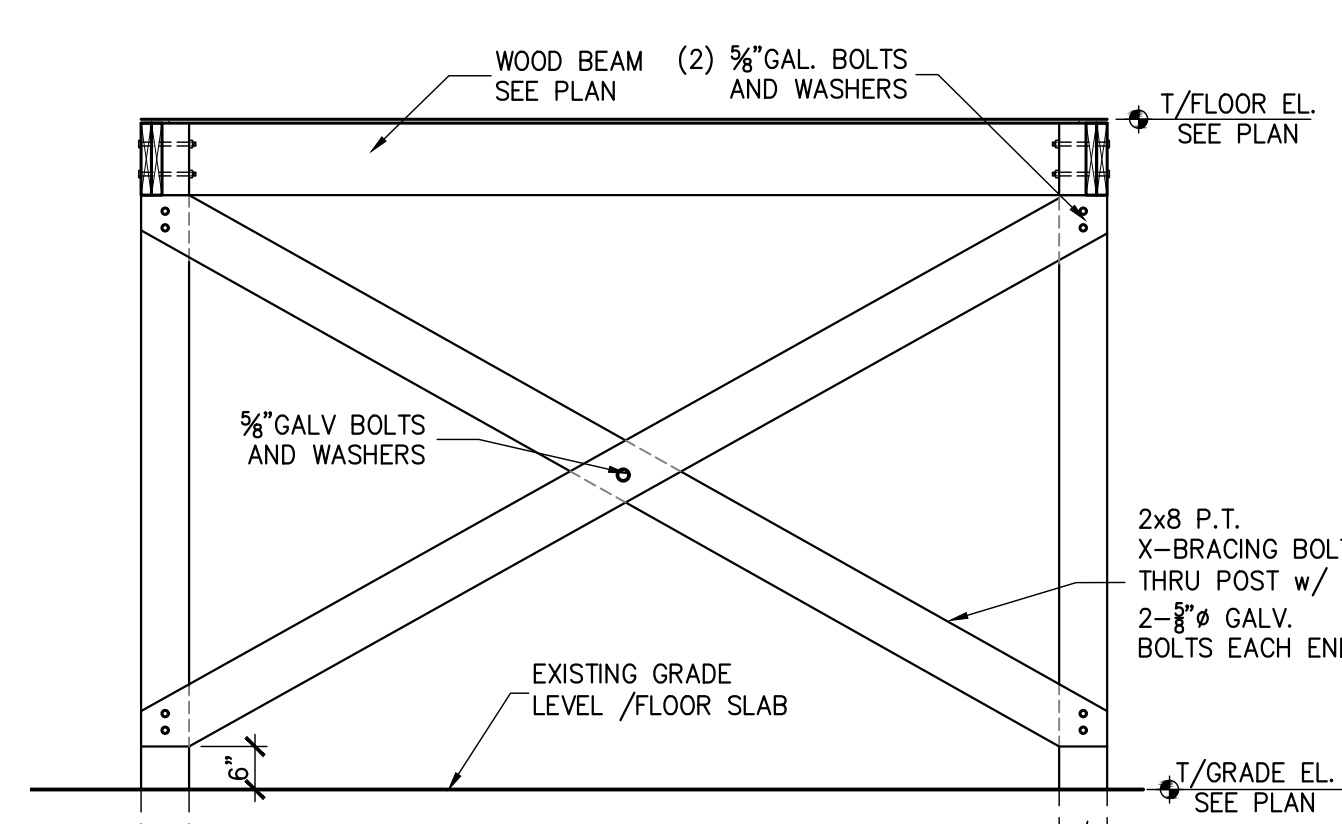
8 WOOD COLUMN FOOTING - SECTION
S201 3/4" = 1'-0"



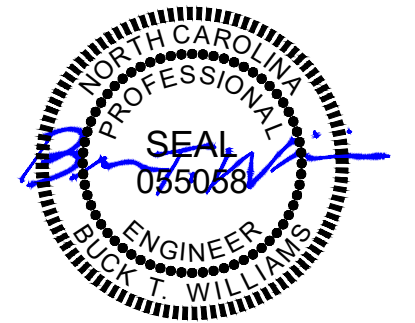
9 TYP. POST FOOTING
S201 3/4" = 1'-0"



10 SECTION - TYP. SLAB EDGE w/ TURN-DOWN
S201 3/4" = 1'-0"



11 CROSS BRACING AT POST
S201 3/8" = 1'-0"



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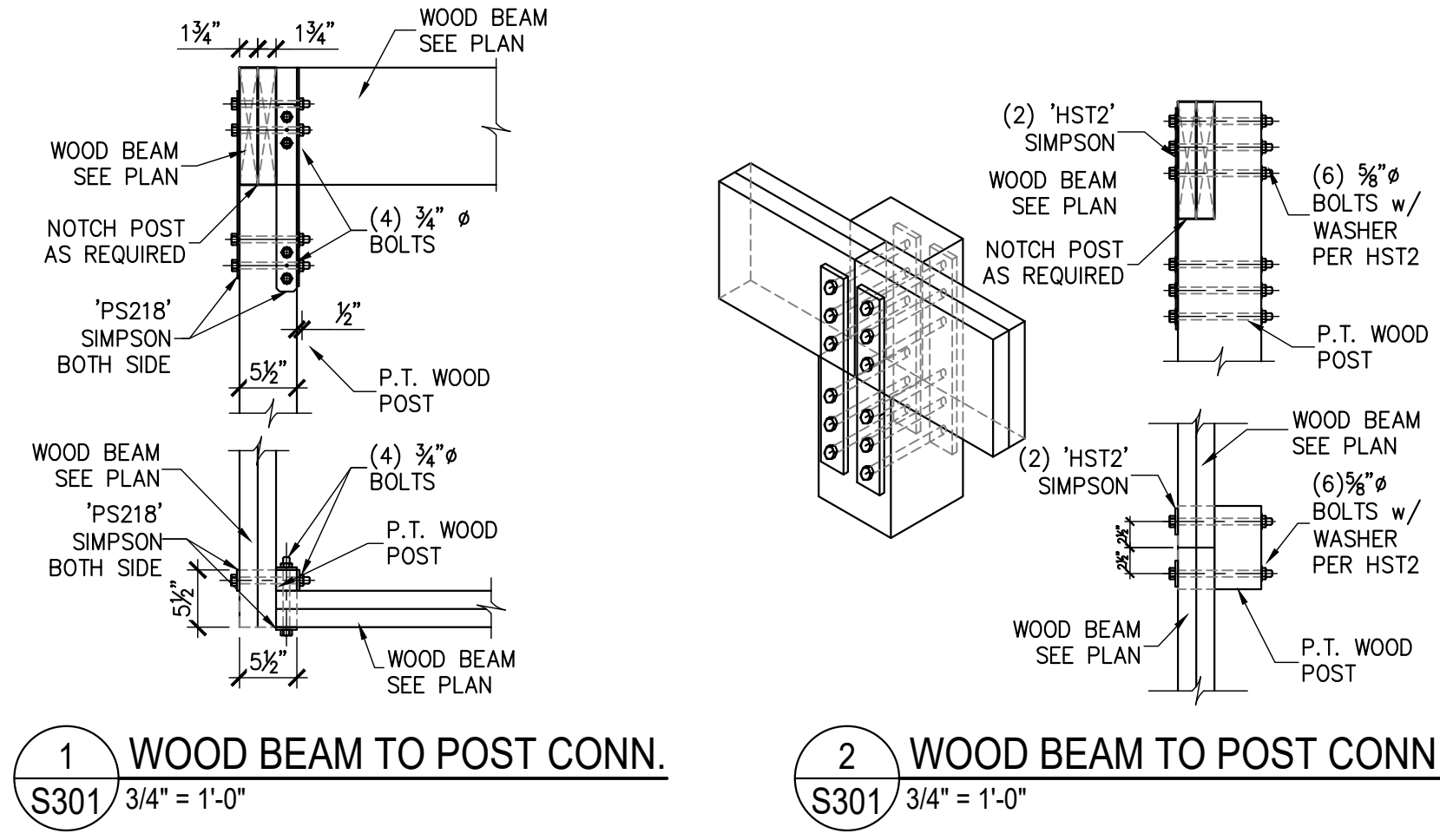
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FOUNDATION DETAILS & SECTIONS

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Engineering License Certificate No. C-2734
1 Commerce Square, Suite 202, Washington, NC 27889
Phone: 252-321-6027, Fax: 252-355-2179
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S201

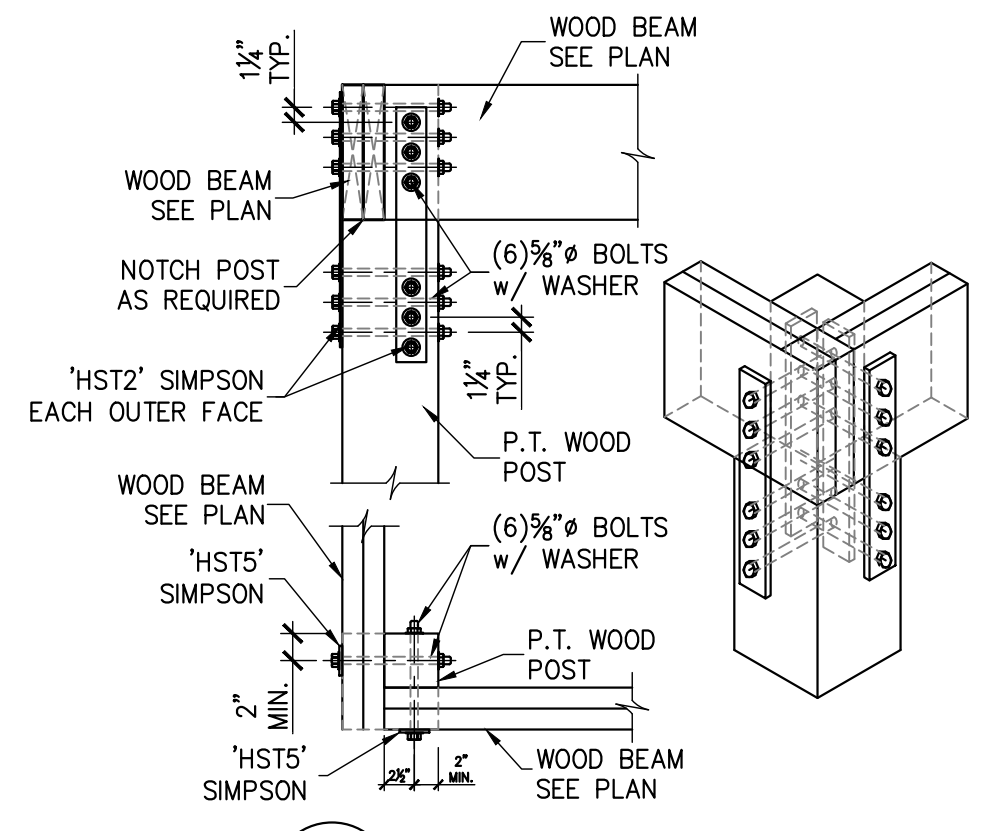
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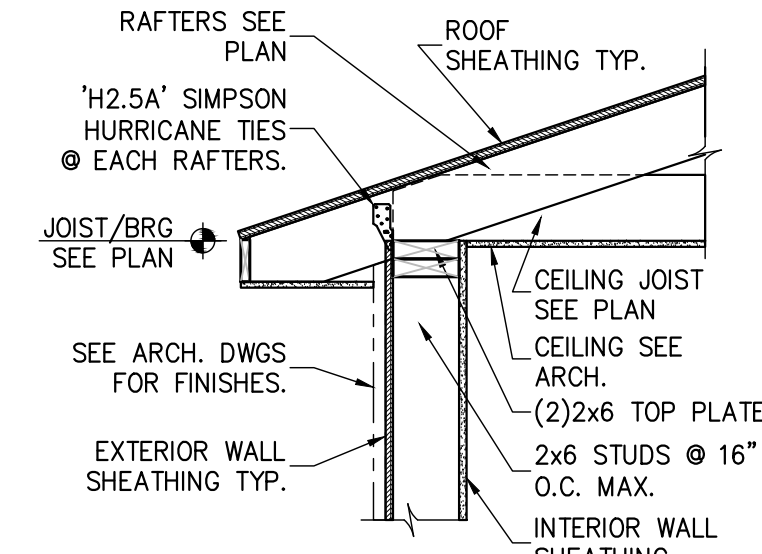
1 WOOD BEAM TO POST CONN.
S301 3/4" = 1'-0"

2 WOOD BEAM TO POST CONN.
S301 3/4" = 1'-0"

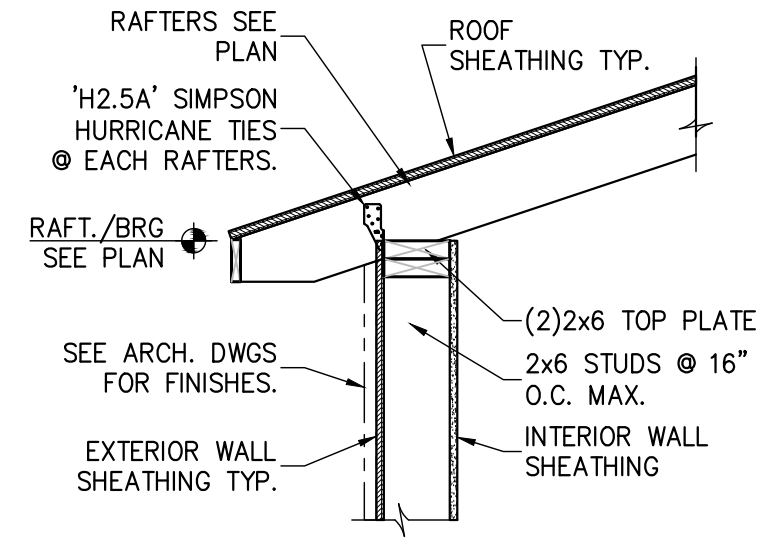
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3 WOOD BEAM TO POST CONN.
S301 3/4" = 1'-0"

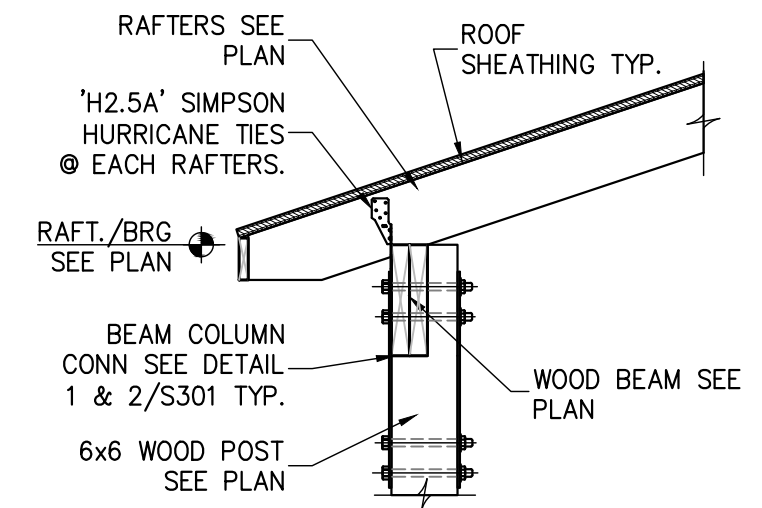


4 SECTION AT STUD WALL
S301 3/4" = 1'-0"

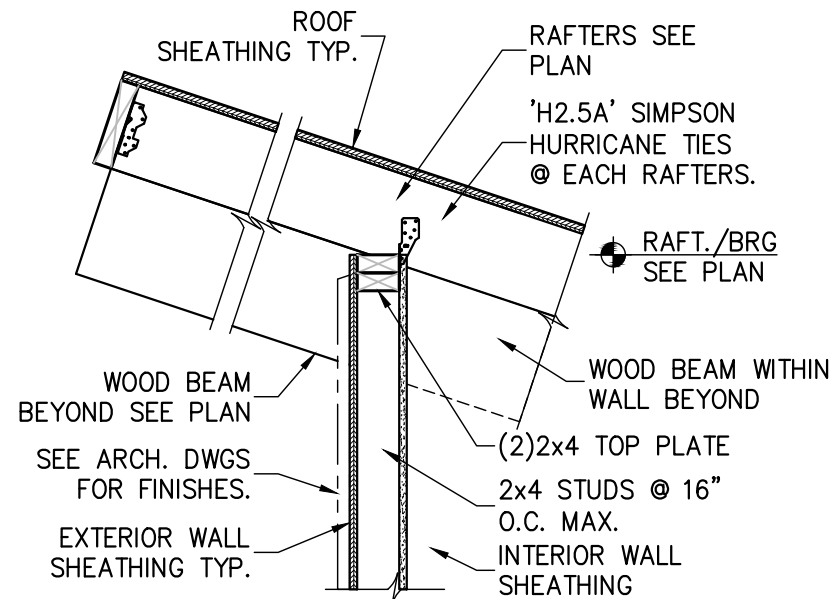


5 SECTION AT STUD WALL
S301 3/4" = 1'-0"

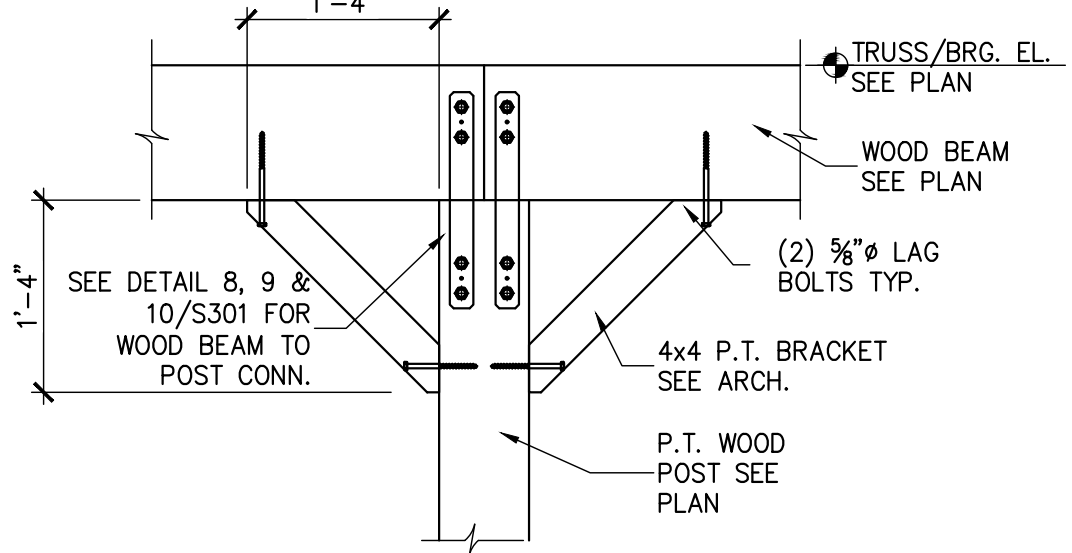
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6 SECTION AT WOOD POST
S301 3/4" = 1'-0"

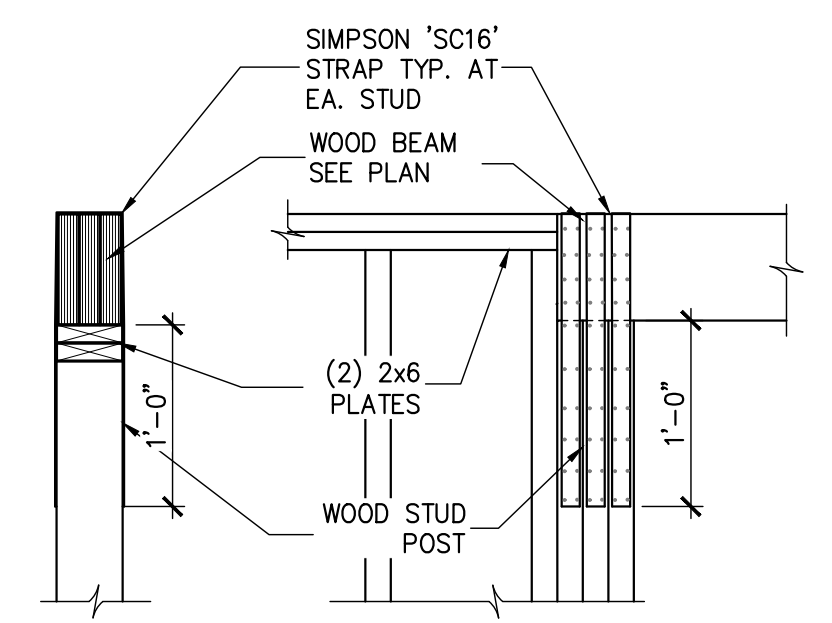


7 SECTION AT STUD WALL
S301 3/4" = 1'-0"

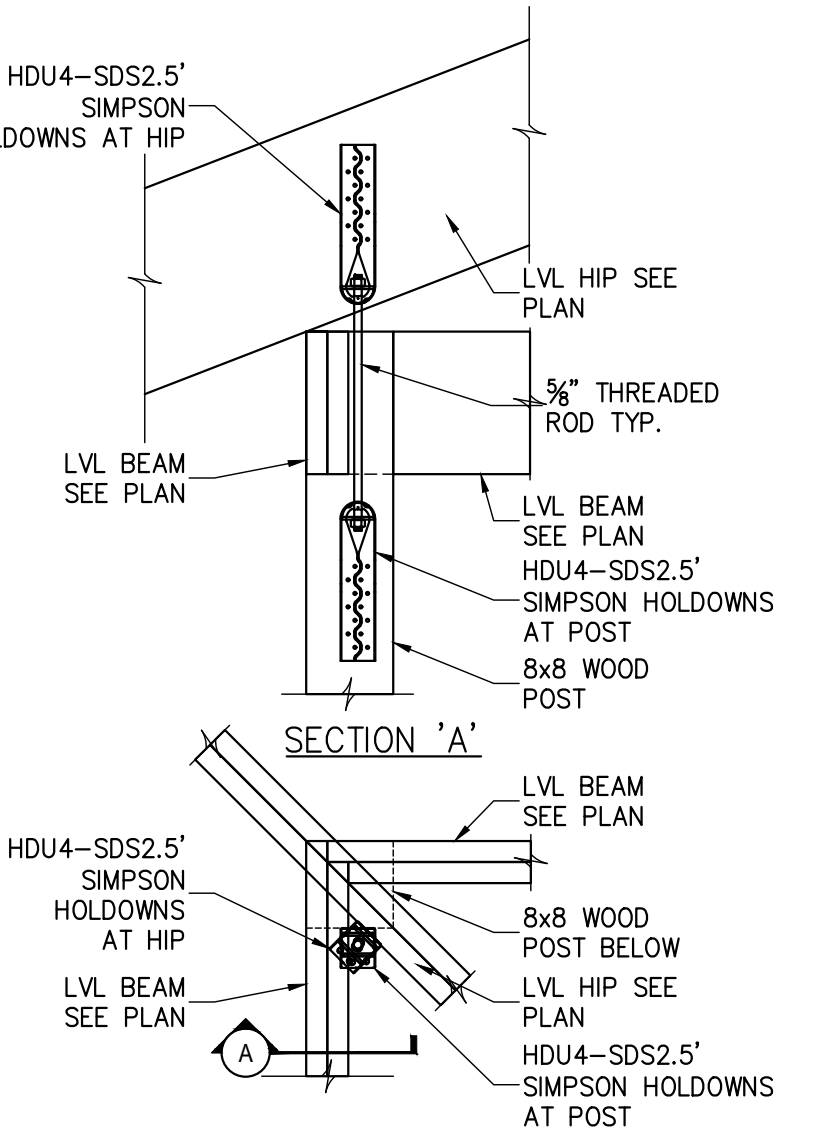


8 DETAIL AT KNEE BRACING
S301 3/4" = 1'-0"

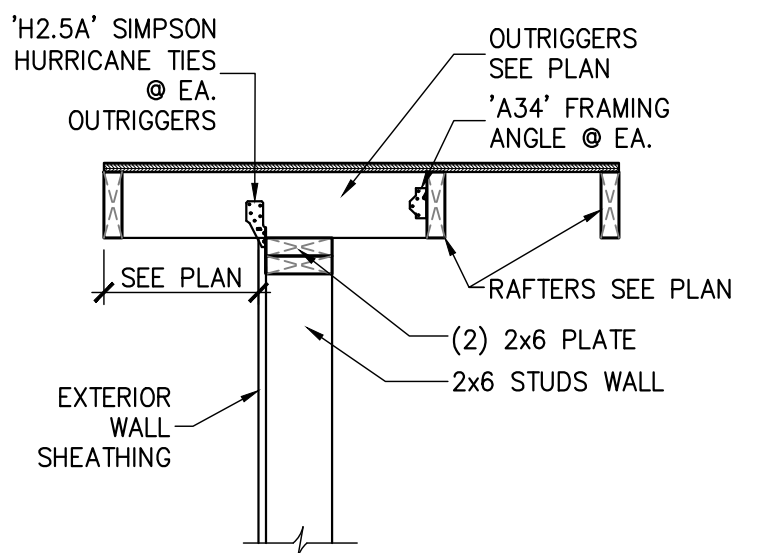
A



9 BEAM BEARING AT WOOD STUD WALL
S301 3/4" = 1'-0"



10 HIP AT WOOD POST
S301 3/4" = 1'-0"



11 OUTLOOKERS @ GABLE END WALL
S301 3/4" = 1'-0"

GENERAL STRUCTURAL NOTES:

1. GENERAL NOTES

- 1.1. METHODS, PROCEDURES AND SEQUENCES OF CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO MAINTAIN AND INSURE THE INTEGRITY OF THE STRUCTURE AT ALL STAGES OF CONSTRUCTION.
- 1.2. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR SLEEVES, CURBS, INSERTS OR OPENINGS NOT HEREIN INDICATED. COORDINATE THESE DRAWINGS WITH THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND CIVIL DRAWINGS.
- 1.3. VERIFY ALL FLOOR AND ROOF OPENING SIZES AND LOCATIONS, EQUIPMENT PAD SIZES AND LOCATIONS, ANCHOR BOLT LAYOUTS, ETCETERA, WITH EQUIPMENT SELECTED.
- 1.4. VERIFY BUILDING LOCATION AND ORIENTATION WITH OWNER AND LOT SETBACK REQUIREMENTS BEFORE ANY CONSTRUCTION IS STARTED ON THE PROJECT.

2. FOUNDATION

- 2.1. ALL FOOTINGS SHALL BE ON UNDISTURBED SOIL OR 98% COMPACTED FILL PER ASTM D698.
- 2.2. NO FOOTINGS OR SLABS SHALL BE POURED INTO OR AGAINST SUBGRADE CONTAINING FREE WATER, FROST, ICE OR LOOSE MATERIAL.
- 2.3. EXCAVATIONS FOR FOOTINGS SHALL HAVE THE SIDES AND BOTTOMS TEMPORARILY LINED WITH 6 MIL. POLYETHYLENE IF PLACEMENT OF CONCRETE DOES NOT OCCUR WITHIN 24 HRS OF THE EXCAVATION OF THE FOOTING.
- 2.4. ADVERSE FOUNDATION CONDITIONS NOTED DURING CONSTRUCTION SUCH AS SOFT SOILS, ORGANIC MATTER, ETCETERA, SHALL BE REPORTED TO THE ENGINEER BEFORE FURTHER CONSTRUCTION IS ATTEMPTED.
- 2.5. IF UNDERMINING OF FOOTINGS OCCURS, FILL VOIDS WITH LEAN CONCRETE MIX. DO NOT ATTEMPT TO REPLACE AND RECOMPACT SOIL.

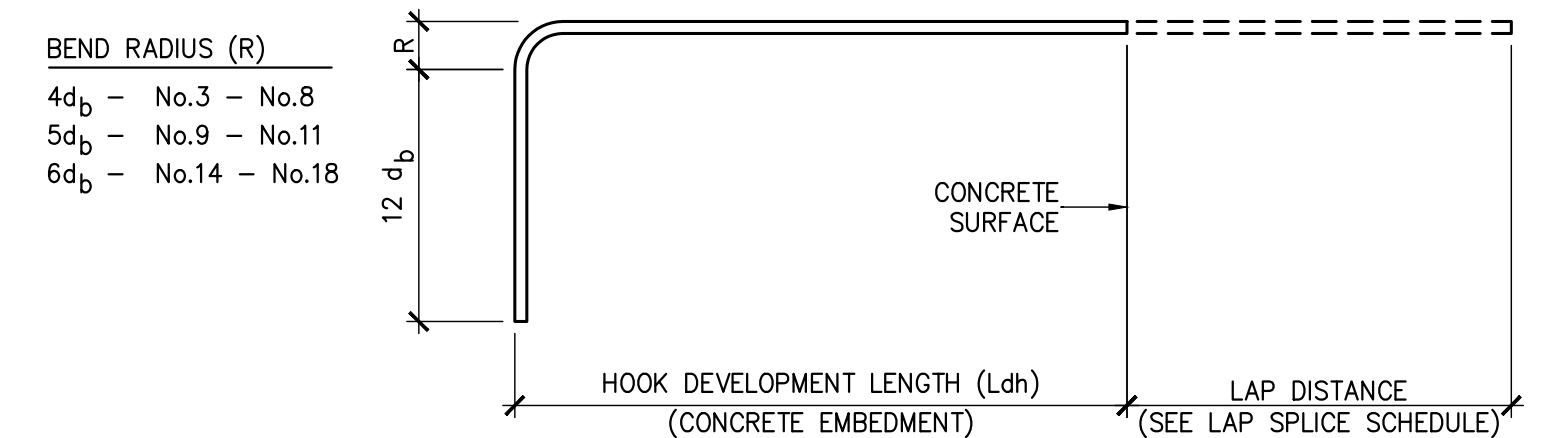
3. CONCRETE

- 3.1. ALL PLACED CONCRETE, SHALL HAVE NORMAL WEIGHT COURSE AGGREGATES UNLESS OTHERWISE NOTED, AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) AT 28 DAYS AS SHOWN ON THE CONCRETE MATERIALS SCHEDULE.
- 3.2. GROUT FOR BASE PLATES SHALL BE NON-METALLIC, NON-SHRINKABLE GROUT, AND SHALL HAVE A MINIMUM SPECIFIED COMPRESSIVE STRENGTH, AT 28 DAYS, OF 5000 PSI.
- 3.3. NO CALCIUM CHLORIDE SHALL BE USED IN ANY CONCRETE.
- 3.4. CHAMFER ALL EXPOSED EXTERNAL CORNERS OF CONCRETE WITH 3/4" x 45 DEGREE CHAMFER, UNLESS OTHERWISE NOTED.
- 3.5. HORIZONTAL FOOTING AND HORIZONTAL WALL REINFORCING SHALL BE CONTINUOUS, AND SHALL HAVE 90 DEGREE BENDS AND EXTENSIONS, OR CORNER BARS OF EQUIVALENT SIZE LAPPED, WITH A CLASS B TENSION SPLICE, AT CORNERS AND INTERSECTIONS. TOP BAR CRITERIA SHALL APPLY IF 12" OR MORE OF FRESH CONCRETE IS PLACED BELOW BAR.
- 3.6. SEE ARCHITECTURAL DRAWINGS FOR ALL WATERPROOFING / DAMPPROOFING DETAILS.
- 3.7. ALL DOWELS SHALL MATCH SIZE AND NUMBER OF MAIN REINFORCING, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- 3.8. SEE ARCHITECTURAL DRAWINGS FOR TYPE AND LOCATION OF FLOOR FINISHES.
- 3.9. SEE MECHANICAL, ELECTRICAL, PLUMBING AND CIVIL DRAWINGS FOR ADDITIONAL WALL / SLAB OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS.
- 3.10. ALL REINFORCING SHALL CONFORM TO ASTM A615, GRADE 60.
- 3.11. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.
- 3.12. DETAIL AND FABRICATE REINFORCING STEEL IN ACCORDANCE WITH THE ACI DETAILING MANUAL.
- 3.13. AT CORNERS AND INTERSECTIONS, PROVIDE BARS OF THE SAME NUMBER AND SIZE AS THE LONGITUDINAL BARS IN THE FOOTING.
- 3.14. CONCRETE MATERIALS SHALL BE AS FOLLOWS:
 - 3.14.1. USE TYPE I/II PORTLAND CEMENT CONFORMING TO ASTM C150
 - 3.14.2. AGGREGATE SHALL CONFORM TO ASTM C33 (FINE AND COURSE AGGREGATES)
 - 3.14.3. AIR ENTRAINING ADMIXTURE SHALL CONFORM TO ASTM C260
 - 3.14.4. PLASTICIZER CAN BE USED TO IMPROVE WORKABILITY IF REQUIRED
- 3.15. CONCRETE MIX DESIGN:
 - 3.15.1. MAXIMUM WATER/CEMENT RATIO - 0.50 FOR SLAB, 0.55 FOR FOOTINGS AND OTHER CONCRETE UNLESS OTHERWISE NOTED.
 - 3.15.2. SLUMP SHALL BE 4 INCHES TO 6 INCHES (WITHOUT PLASTICIZER)
 - 3.15.3. AIR ENTRAINMENT SHALL BE 4% TO 6% (EXTERIOR CONCRETE)
 - 3.16. CONCRETE SLAB SHALL BE CURED USING A WATER-BASED CURING COMPOUND. CURING COMPOUND SHALL BE APPLIED TO ALL HORIZONTAL SURFACES, ONCE THE SURFACE WATER DISSIPATES AND THE SURFACE IS NOT MARRIED BY WALKING, APPLY PER MANUFACTURER'S SPECIFICATIONS.
 - 3.17. CONDUCT SLUMP, AIR, AND STRENGTH TESTS OF CONCRETE IN ACCORDANCE WITH THE FOLLOWING PROCEDURES:
 - 3.17.1. SECURE SAMPLES IN ACCORDANCE WITH "METHOD OF SAMPLING FRESH CONCRETE" (ASTM C 172). MOLD AND CURE FIVE SPECIMENS FROM EACH SAMPLE IN ACCORDANCE WITH "METHOD OF MAKING AND CURING CONCRETE COMPRESSION AND FLEXURE SPECIMENS IN THE FIELD" (ASTM C 31). FIVE SPECIMENS COMPRISE ONE TEST. TEST TWO SPECIMENS AT 7 DAYS (ASTM C 39). TEST TWO SPECIMENS AT 28 DAYS IN ACCORDANCE WITH "METHOD OF TEST FOR COMPRESSIVE STRENGTH OF MOLDED CONCRETE CYLINDERS" (ASTM C 39). TEST EVALUATION SHALL BE CONDUCTED IN ACCORDANCE WITH PROVISIONS OF ACI 318-05. KEEP ONE SPECIMEN IN RESERVE.
 - 3.17.2. MAKE ONE STRENGTH TEST FOR EACH 100 CUBIC YARDS OR FRACTION THEREOF FOR EACH MIX DESIGN OF CONCRETE PLACED IN ONE DAY, EXCEPT THAT IN NO CASE SHALL A GIVEN MIX DESIGN BE REPRESENTED BY LESS THAN THREE TESTS.

4. WOOD FRAMING

- 4.1. ALL STRUCTURAL WOOD MEMBERS SHALL BE No. 2 SOUTHERN YELLOW PINE, 19% MAXIMUM MOISTURE CONTENT, UNLESS OTHERWISE NOTED. INTERIOR NON BEARING PARTITIONS MAY BE No. 2 SPRUCE (SPF).
- 4.2. ALL WOOD FRAMING, DIRECTLY EXPOSED TO WEATHER, OR IN DIRECT CONTACT WITH MASONRY, SOIL OR CONCRETE, SHALL BE PRESSURE TREATED, UNLESS OTHERWISE NOTED.
- 4.3. ALL LVLs, DIRECTLY EXPOSED TO WEATHER, OR IN DIRECT CONTACT WITH MASONRY, SOIL OR CONCRETE, SHALL BE EXTERIOR GRADE, UNLESS NOTED OTHERWISE.
- 4.4. ALL METAL CONNECTORS SHALL BE HOT DIP GALVANIZED. INSTALL ALL CONNECTORS PER THE MANUFACTURER'S RECOMMENDATIONS. METAL CONNECTOR DESIGNATIONS INDICATED ON PLANS, ARE FOR "SIMPSON STRONG-TIE" ANCHORS. ANCHORS FROM OTHER MANUFACTURERS MAY BE USED, PROVIDED THEY HAVE EQUIVALENT STRENGTH.
- 4.5. ALL NAILED CONNECTIONS SHALL BE IN ACCORDANCE WITH NORTH CAROLINA STATE BUILDING CODE TABLE 2304.9.1. - FASTENING SCHEDULE, UNLESS OTHERWISE NOTED.
- 4.6. FRAMING CONNECTIONS THAT ARE BOLTED OR SCREWED, SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL DESIGN SPECIFICATION FOR WOOD.
- 4.7. PROVIDE STUDS AND HEADERS AT ALL EXTERIOR WALLS AND INTERIOR BEARING WALLS AS FOLLOWS, UNLESS OTHERWISE NOTED:

OPENING WIDTH	STUDS	HEADER
0'-0" TO 6'-0"	2 KING STUDS, 1 JACK STUD	(2) 2 x 10 @ 2 x 4 WALL (3) 2 x 10 @ 2 x 6 WALL
6'-1" TO 8'-0"	2 KING STUDS, 2 JACK STUDS	(2) 2 x 10 @ 2 x 4 WALL (3) 2 x 10 @ 2 x 6 WALL
8'-1" TO 12'-0"	3 KING STUDS, 2 JACK STUDS	(2) 2 x 12 @ 2 x 4 WALL (3) 2 x 12 @ 2 x 6 WALL



STANDARD HOOKS IN TENSION (PER ACI 318-02)

BAR SIZE	HOOK DEVELOPMENT LENGTH Ldh (INCHES)		
	f'c 3000 psi	f'c 4000 psi	f'c 5000 psi
#3	9	7	7
#4	11	10	9
#5	14	12	11
#6	17	15	13

- NOTES:**
- 1. CONCRETE IS NORMAL WEIGHT CONCRETE. IF LIGHTWEIGHT CONCRETE IS USED, MULTIPLY LENGTHS IN TABLE BY 1.3.
 - 2. BAR YIELD STRENGTH (fy) IS 60 KSI.
 - 3. SIDE COVER REQUIREMENTS OF ACI SECTION 25.4.3.2 ARE ASSUMED TO NOT BE MET.
 - 4. TIE OR STIRRUP REQUIREMENTS OF ACI SECTION 25.4.3.2 ARE ASSUMED TO NOT BE MET.
 - 5. REDUCTION OF EXCESS REINFORCEMENT IS NOT TAKEN.
 - 6. HOOK DEVELOPMENT LENGTH IS VALID FOR 180° HOOKS ALSO.

db = BAR DIAMETER

STRUCTURAL DESIGN CRITERIA:

1. DESIGN LOADS:

	MAX	MIN (FOR UPLIFT)
ROOF DEAD LOAD	4 PSF	2 PSF
ROOF MEMBRANE & INSULATION	3 PSF	2 PSF
SHEATHING	5 PSF	3 PSF
ROOF FRAMING	3 PSF	0 PSF
PIPING, DUCT, ETC.	3 PSF	0 PSF
TOTAL	15 PSF	7 PSF

2. LIVE LOADS

ROOF LIVE LOAD - ALL AREAS GREATER OF 20 PSF MINIMUM OR SNOW LOAD. LIVE LOAD REDUCTION CAN BE USED IN ACCORDANCE WITH 2018 NCBC, SECTION 1607.10
1ST FLOOR LIVE LOAD = 100 PSF

3. SNOW LOAD
GROUND SNOW LOAD = 10 PSF (CAROLINA BEACH, NC)
SNOW LOAD IMPORTANCE FACTOR: I = 1.0
SNOW EXPOSURE FACTOR = 1.0
SNOW THERMAL FACTOR = 1.0
ROOF SNOW LOAD = 7 PSF
BASIC DESIGN ROOF SNOW LOAD = 7.0 PSF

4. WIND LOAD
BASIC WIND SPEED: Vult = 150 MPH (CAROLINA BEACH, NC)
RISK CATEGORY: I II III IV
WIND EXPOSURE CATEGORY: 'C' (ASCE 7-10)
WIND BASE SHEAR (FOR MWFRS): Vx = 15K Vy = 14K
INTERNAL PRESSURE COEFFICIENT: ±0.55

5. SEISMIC LOADS (N.C. STATE BLDG. CODE):
SEISMIC IMPORTANCE FACTOR: I = 1.0
RISK CATEGORY: X II III IV
SEISMIC DESIGN CATEGORY: A B C D
MAPPED SPECTRAL RESPONSE ACCELERATION: Ss 22.4% g S1 4.3% g
SPECTRAL RESPONSE COEFFICIENTS: Sds 23.9% Sdr 14.9%
SEISMIC RESPONSE COEFFICIENT: Cs 0.112
RESPONSE MODIFICATION FACTOR, R 2.00 (ORDINARY CONCENTRICALLY BRACED FRAME)
SITE CLASSIFICATION: A B C X D E F

BASIC STRUCTURAL SYSTEM:
X BEARING WALL DUAL w/ SPECIAL MOMENT FRAME
BUILDING FRAME DUAL w/ INTERMEDIATE R/C OR SPECIAL STEEL
MOMENT FRAME INVERTED PENDULUM
SEISMIC BASE SHEAR Vx = 5K Vy = 5K
ANALYSIS PROCEDURE: SIMPLIFIED X EQUIVALENT LATERAL FORCE MODAL
LATERAL DESIGN CONTROL: EARTHQUAKE X WIND

6. FOUNDATION DESIGN CRITERIA:

- 2.1. MINIMUM FOOTING BEARING DEPTH BELOW GRADE IS 12 INCHES.
- 2.2. FOUNDATION DESIGN IS BASED ON A PRESUMPTIVE MAXIMUM ALLOWABLE SOIL BEARING CAPACITY OF 1,500 PSF.
- 2.3. CONTRACTOR SHALL FIELD VERIFY THE SOIL BEARING CAPACITY PRIOR TO START OF CONSTRUCTION.

BAR SIZE	CONCRETE REBAR SPLICE SCHEDULE		
	LAP LENGTH (in.)		
	f'c = 3000 psi	f'c = 4000 psi	f'c = 5000 psi
#4	22	19	17
#5	28	24	21
#6	32	29	26

- NOTES:**
- 1. CONCRETE IS NORMAL WEIGHT CONCRETE. IF LIGHTWEIGHT CONCRETE IS USED, MULTIPLY LENGTHS IN TABLE BY 1.3.
 - 2. BAR YIELD STRENGTH (fy) IS 60 KSI.
 - 3. BAR SPACING AND COVER REQUIREMENTS OF ACI SECTION 25.4.2.2 ARE ASSUMED TO BE MET. IF NOT, MULTIPLY LENGTHS IN TABLE BY 1.5.
 - 4. REDUCTION OF EXCESS REINFORCEMENT NOT TAKEN.
 - 5. IF MORE THAN 12" OF FRESH CONCRETE IS CAST IN MEMBER BELOW HORIZONTAL SPLICE, MULTIPLY LENGTHS IN TABLE BY 1.3.

CONCRETE MATERIALS SCHEDULE		
LOCATION	MINIMUM COMPRESSIVE STRENGTH (AT 28 DAYS)	REMARKS
FOUNDATIONS	3000 PSI	-
SLAB ON GRADE	4000 PSI	-
MISCELLANEOUS	3000 PSI	-



SURF'S UP MINIATURE GOLF STRUCTURES

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S301

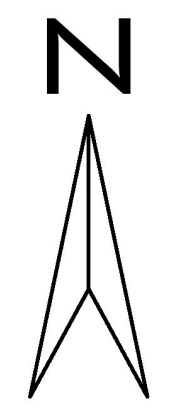
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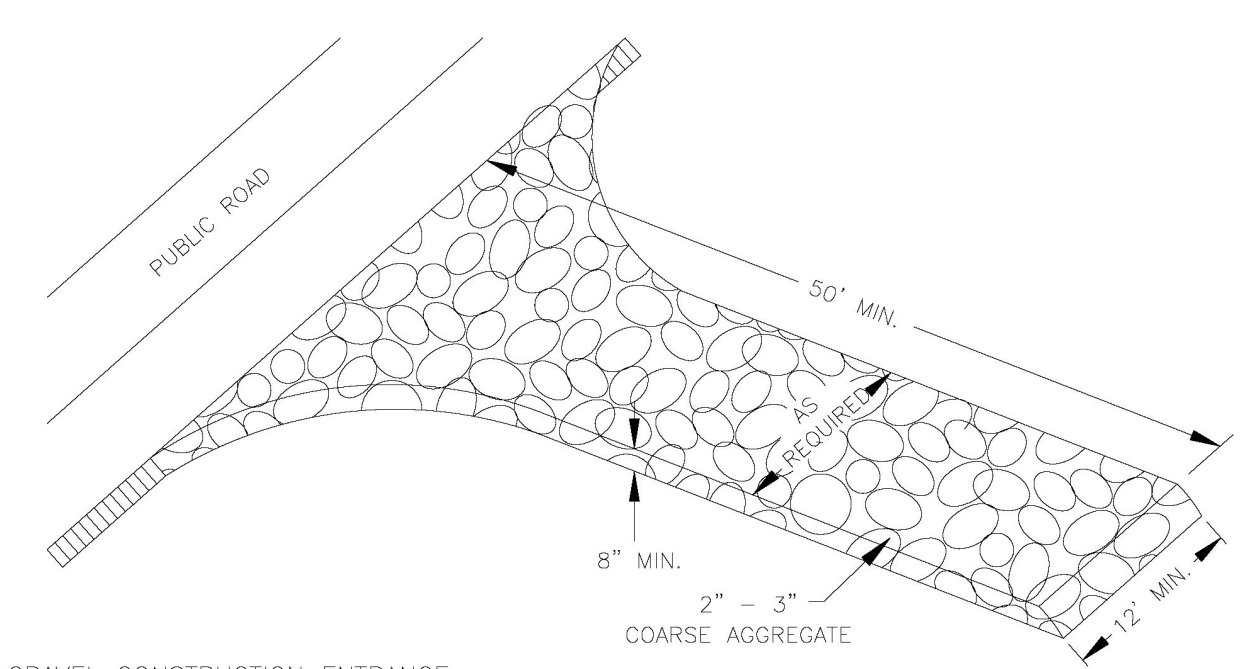
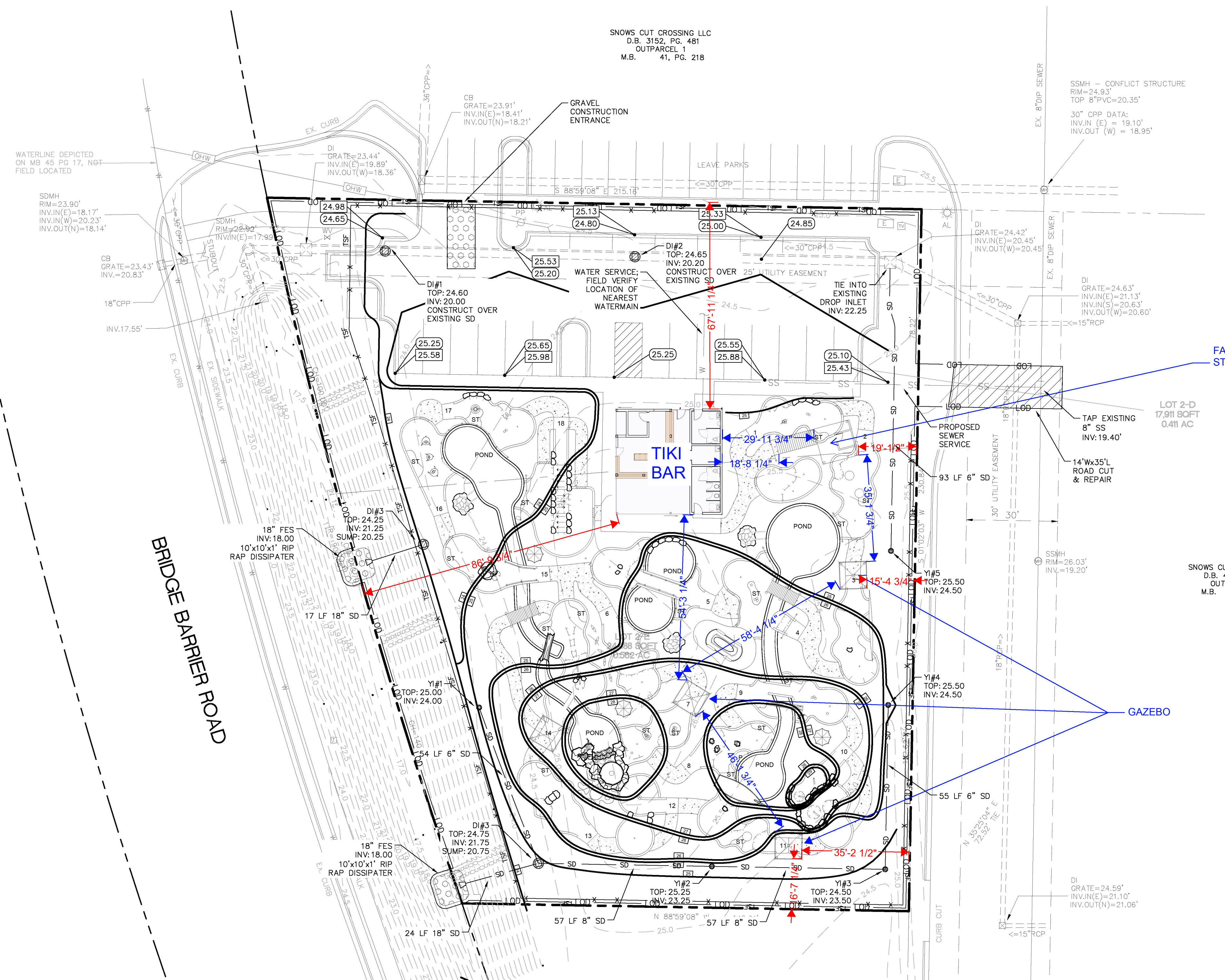
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2

1



SNOWS CUT CROSSING LLC
 D.B. 3152, PG. 481
 OUTPARCEL 1
 M.B. 41, PG. 218



CONSTRUCTION SPECIFICATION:
 1. CLEAR THE ENTRANCE AND EXIT AREA OF ALL VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL AND PROPERLY GRADE IT.
 2. PLACE THE GRAVEL TO THE SPECIFIC GRADE AND DIMENSIONS SHOWN ON THE PLANS, AND SMOOTH IT.
 3. PROVIDE DRAINAGE TO CARRY WATER TO A SEDIMENT TRAP OR OTHER SUITABLE OUTLET.
 4. USE GEOTEXTILE FABRICS BECAUSE THEY IMPROVE STABILITY OF THE FOUNDATION IN LOCATIONS SUBJECT TO SEEPAGE OR HIGH WATER TABLE.

MAINTENANCE:
 MAINTAIN THE GRAVEL PAD AS A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH 2 INCH STONE. AFTER EACH RAINFALL, INSPECT ANY STRUCTURE USED TO TRAP SEDIMENT AND CLEAN IT OUT AS NECESSARY. IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS.

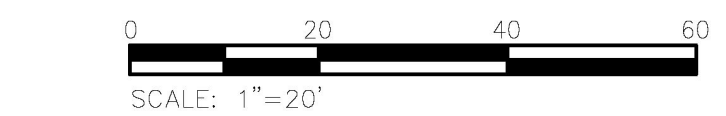
TEMPORARY GRAVELLED CONSTRUCTION ENTRANCE
 NTS

- CONSTRUCTION SEQUENCE**
- SCHEDULE PRE-CONSTRUCTION MEETING WITH DEQ-DEMLR WILMINGTON REGIONAL OFFICE UPON THE COMMENCEMENT OF & DISTURBED ACTIVITIES ON THE SITE
 - INSTALL GRAVEL CONSTRUCTION ENTRANCE
 - INSTALL TEMPORARY SILT FENCE - IF REQUIRED
 - BEGIN CLEARING & GRUBBING
 - CONTINUE CONSTRUCTION
 - STABILIZE & SEED DISTURBED AREAS
 - MAINTAIN INLET PROTECTIONS & ALL OTHER ASPECTS MENTIONED IN APPROVED SEDIMENTATION & EROSION CONTROL PERMIT

LEGEND

	EXISTING CONTOUR
	PROPERTY LINE
	ROW LINE
	STORMDRAIN
	TEMPORARY SILT FENCE
	PROPOSED CONTOUR
	TOP OF CURB ELEVATION
	BOTTOM OF CURB ELEVATION

- NOTES:**
- THERE ARE NO SURFACE WATERS, WETLANDS, PROTECTED VEGETATED SETBACKS, OR PROTECTED RIPARIAN BUFFERS ON THIS SITE.
 - SCM IMPACTED BY SEDIMENTATION AND EROSION CONTROL DURING THE CONSTRUCTION PHASE SHALL BE CLEANED OUT AND CONVERTED TO ITS APPROVED DESIGN STATE.
 - ALL BUA ASSOCIATED WITH THE PROPOSED PROJECT SHALL DRAIN TO THE SCM VIA SHEET FLOW, ROOF DRAINS, OR STORM DRAINS.
 - ALL INLETS TO HAVE INLET PROTECTION. SEE DETAIL.



FAUX LIFE GUARD STAND STORAGE/SIGN

GAZEBO

SURF'S UP
 MINIATURE GOLF STRUCTURES
 1360 BRIDGE BARRIER RD.
 CAROLINA BEACH, NC 28428

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Mark	Date	Description

PROJECT NO:	24074
DATE:	09/26/2024
SCALE:	
DRAWN BY:	OU
PROJ MGR:	WB

SITE PLAN

AS101



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 WILMINGTON, NORTH CAROLINA
 910.769.3583
 www.loudermilkarch.com



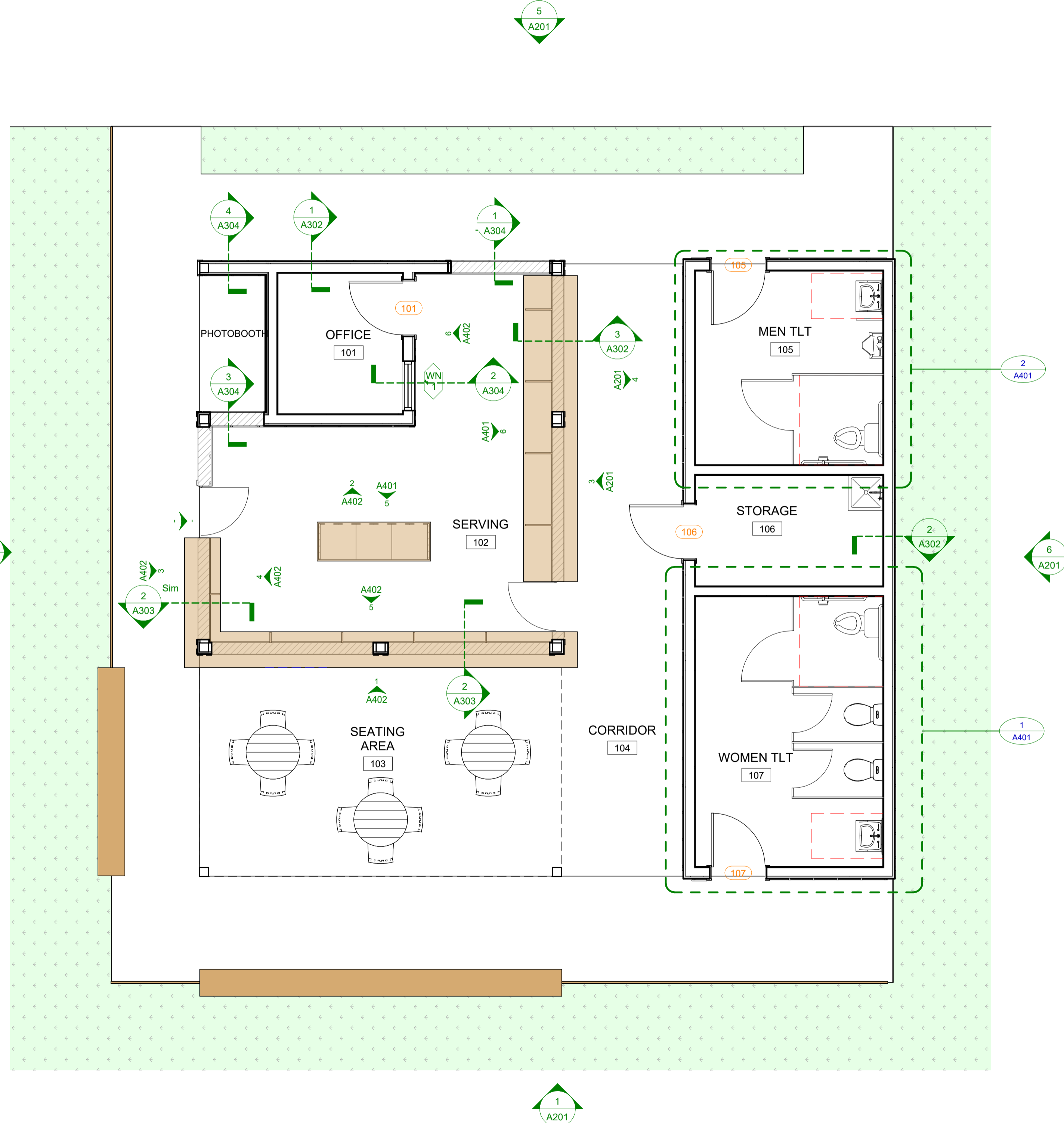
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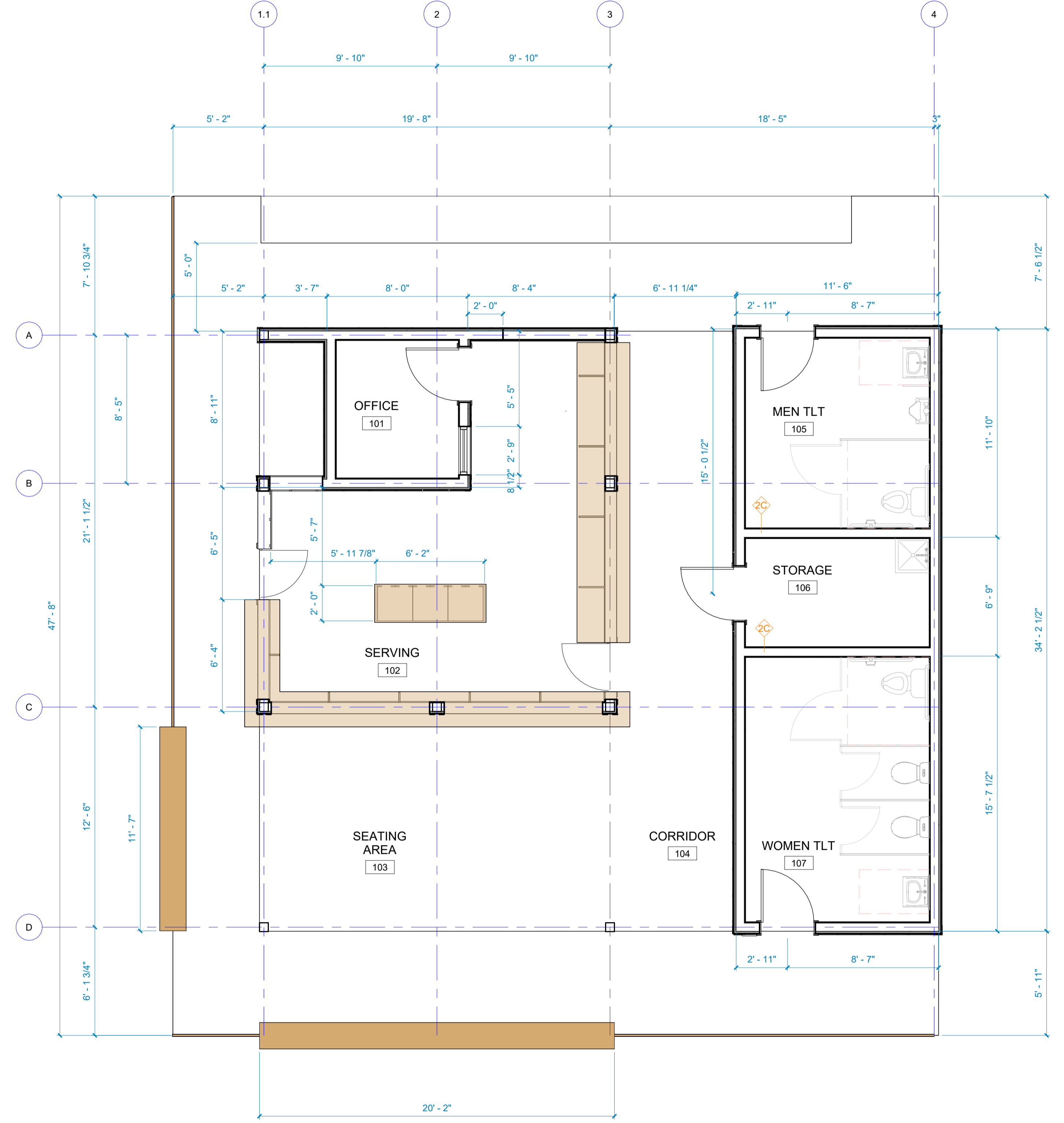
Mark	Date	Description
PROJECT NO:	24074	
DATE:	09/26/2024	
SCALE:	1/4" = 1'-0"	
DRAWN BY:	OU	
PROJ MGR:	WB	

FLOOR & FRAMING PLANS

A101A



FIRST FLOOR PLAN
 1/4" = 1'-0" **2**



FIRST FLOOR WALL FRAMING PLAN
 1/4" = 1'-0" **1**

9/26/2024 1:32:55 PM C:\Users\lelu\OneDrive\Documents\24074_Surf'sUp\Golf_Loudermilk\A101A.rvt



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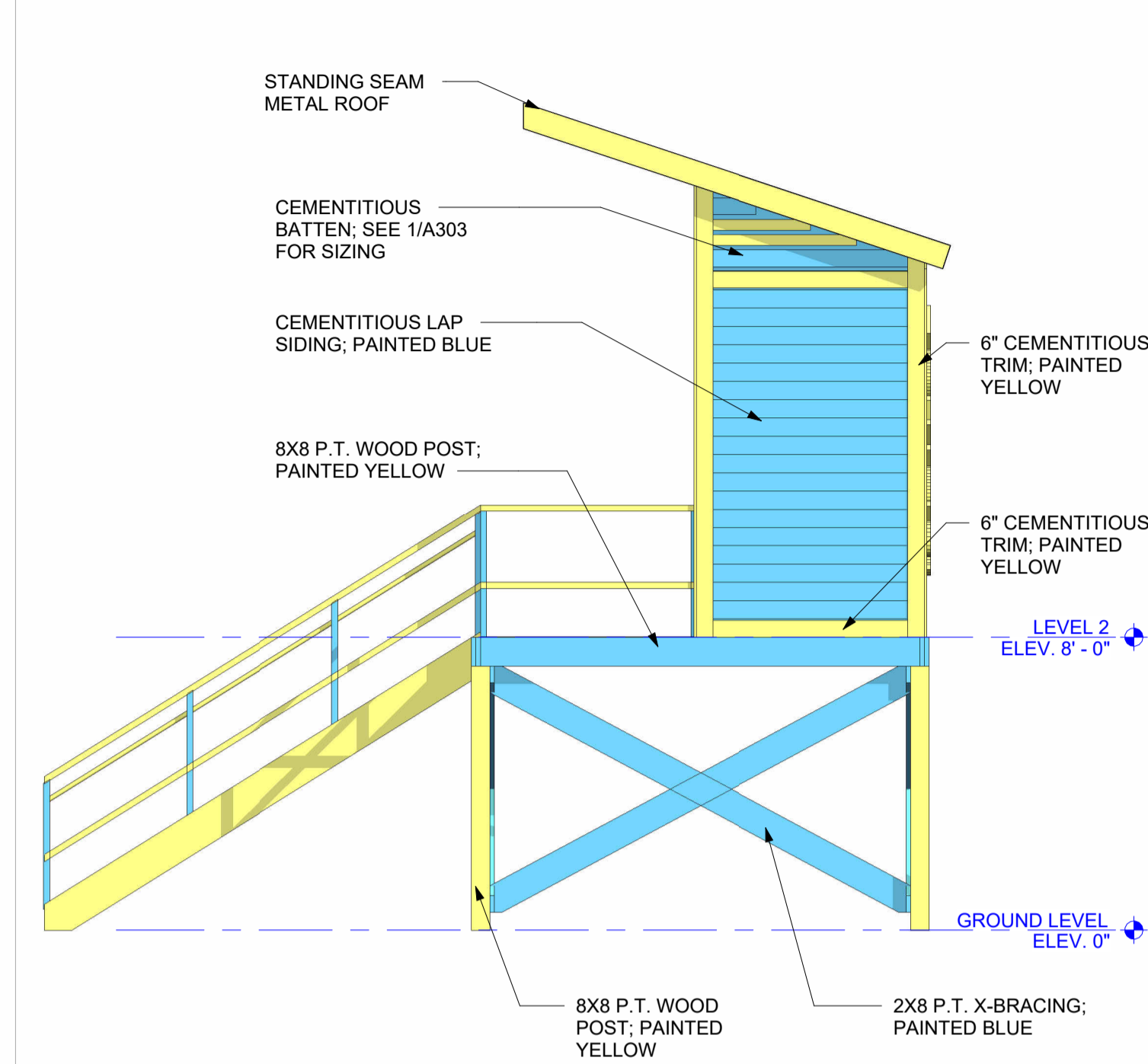
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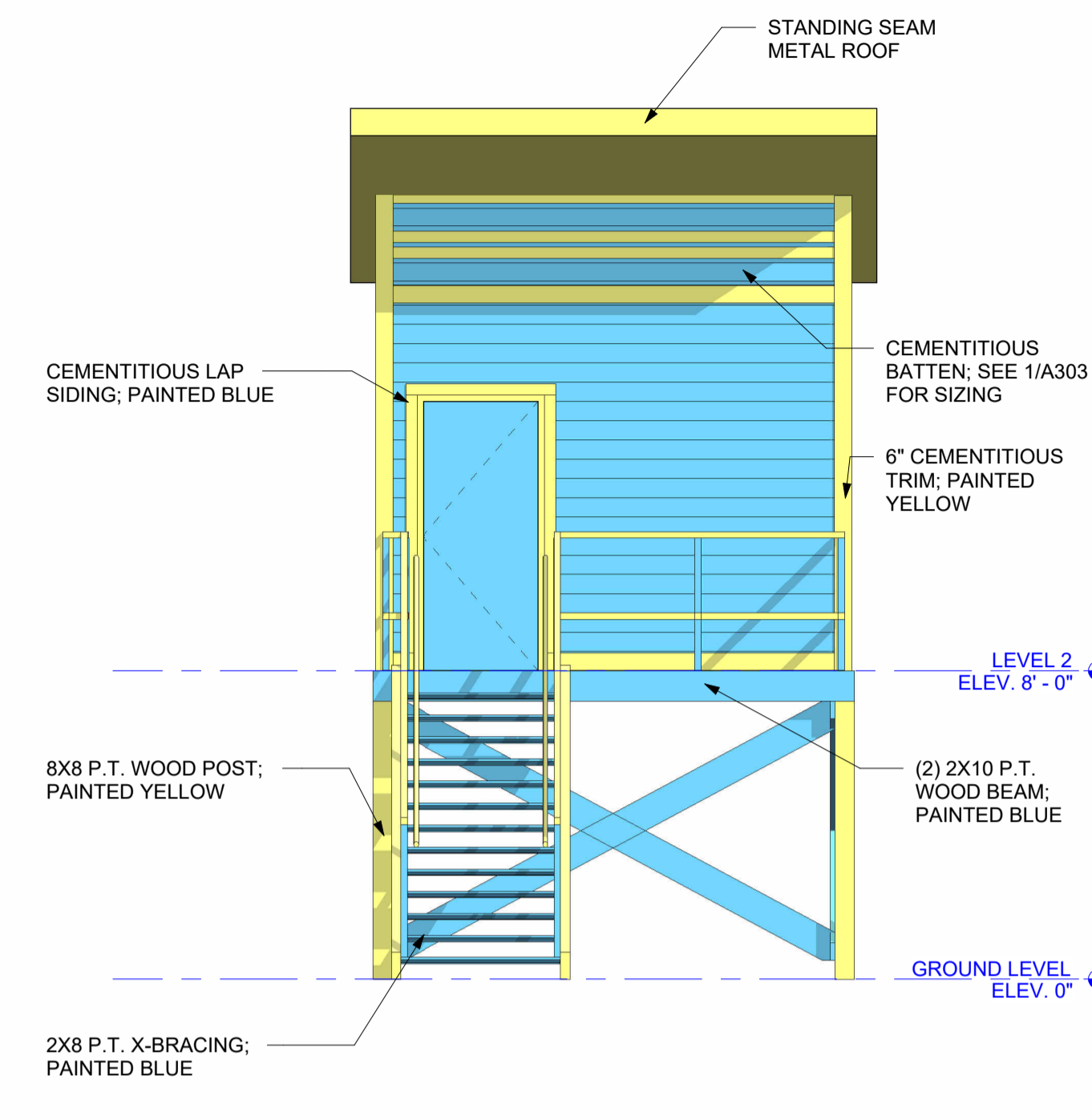
Mark	Date	Description
PROJECT NO:	24074	
DATE:	09/26/2024	
SCALE:	As indicated	
DRAWN BY:	OU	
PROJ MGR:	WB	

LIFEGUARD STORAGE STRUCTURE

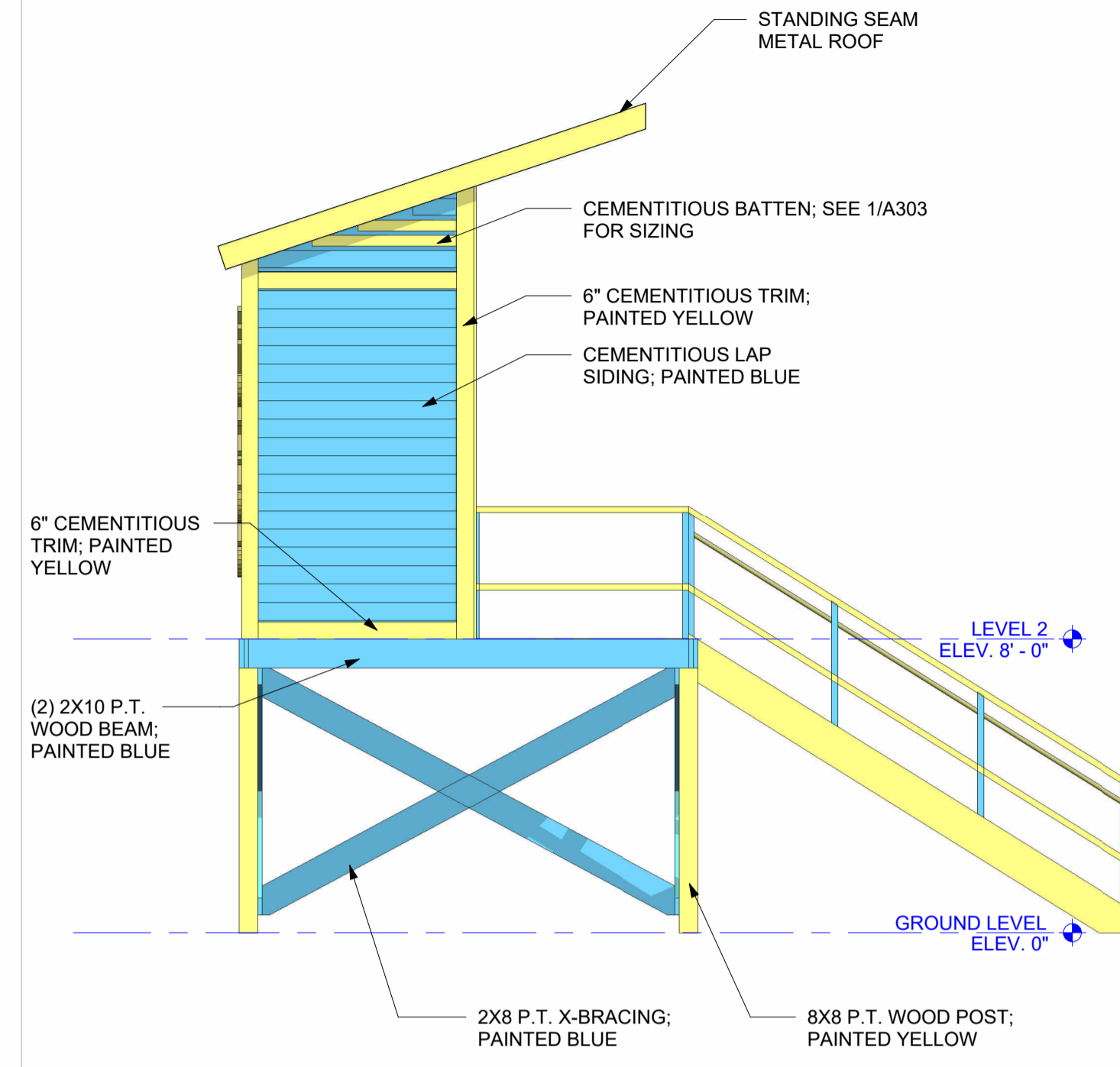
A101B



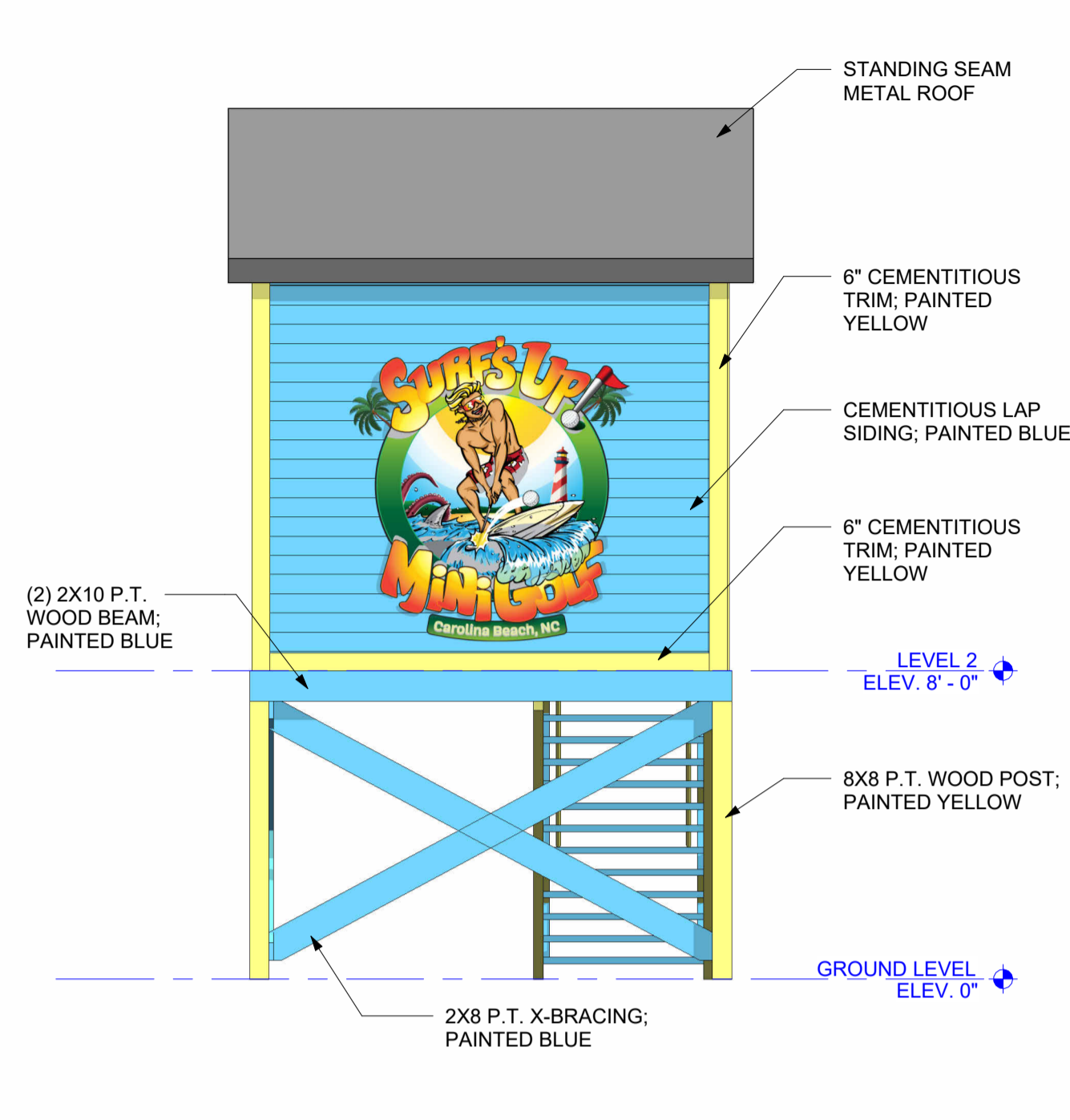
SOUTH LIFEGUARD STRUC. ELEV. 3
 1/4" = 1'-0"



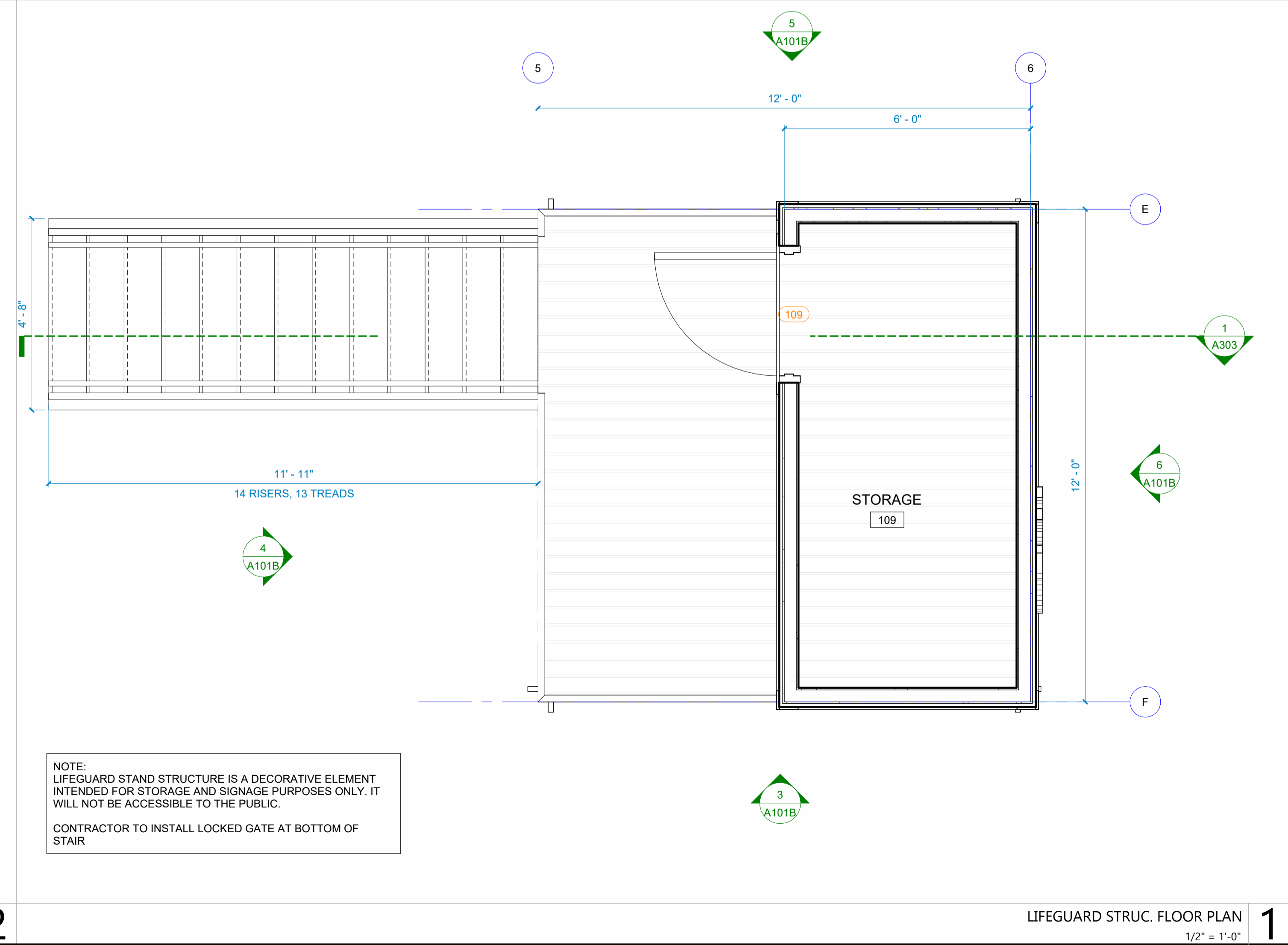
WEST LIFEGUARD STRUC. ELEV. 4
 1/4" = 1'-0"



NORTH LIFEGUARD STRUC. ELEV. 5
 1/4" = 1'-0"

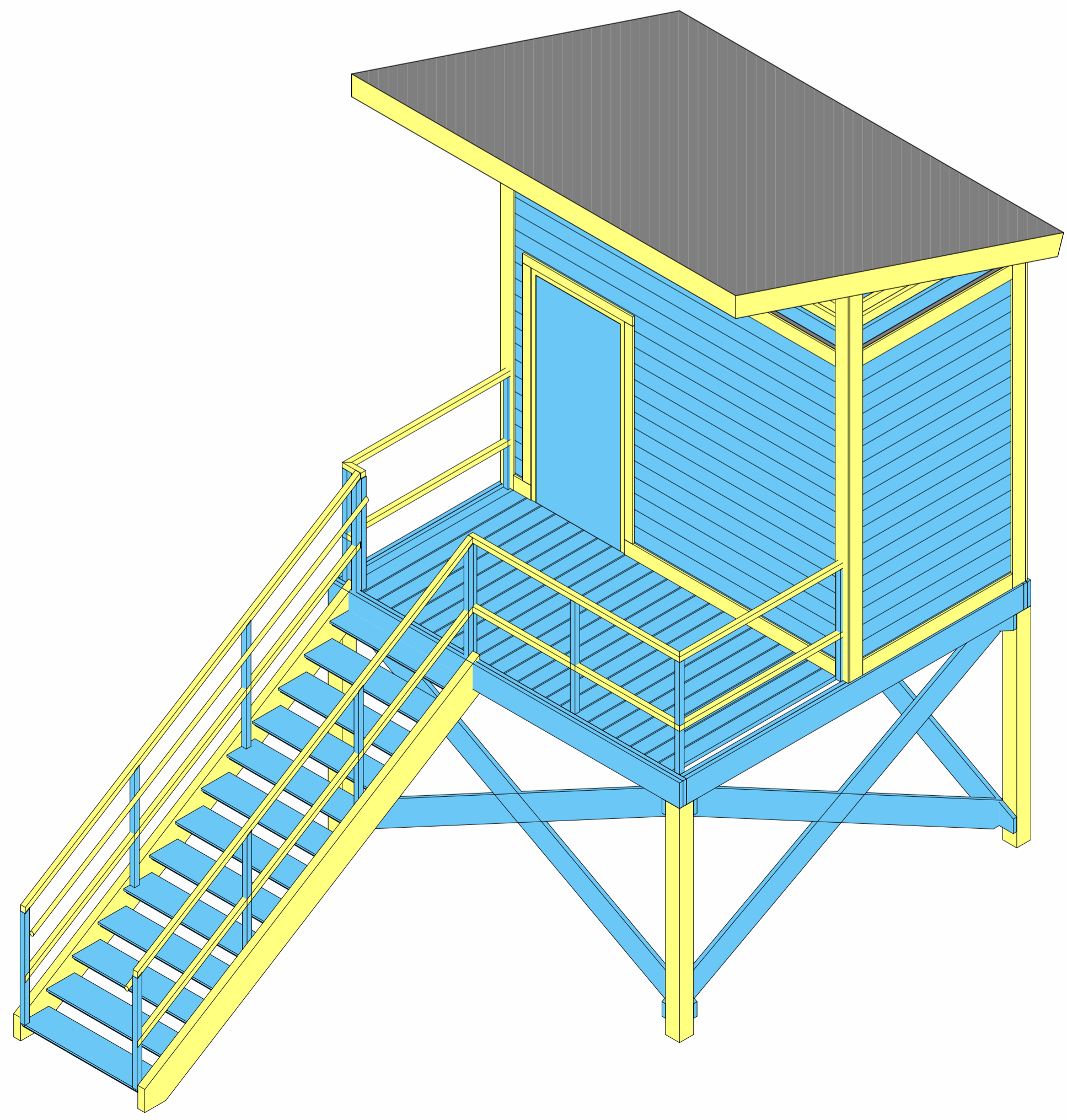


EAST LIFEGUARD STRUC. ELEV. 6
 1/4" = 1'-0"



LIFEGUARD STRUC. FLOOR PLAN 1
 1/2" = 1'-0"

NOTE:
 LIFEGUARD STAND STRUCTURE IS A DECORATIVE ELEMENT
 INTENDED FOR STORAGE AND SIGNAGE PURPOSES ONLY. IT
 WILL NOT BE ACCESSIBLE TO THE PUBLIC.
 CONTRACTOR TO INSTALL LOCKED GATE AT BOTTOM OF
 STAIR

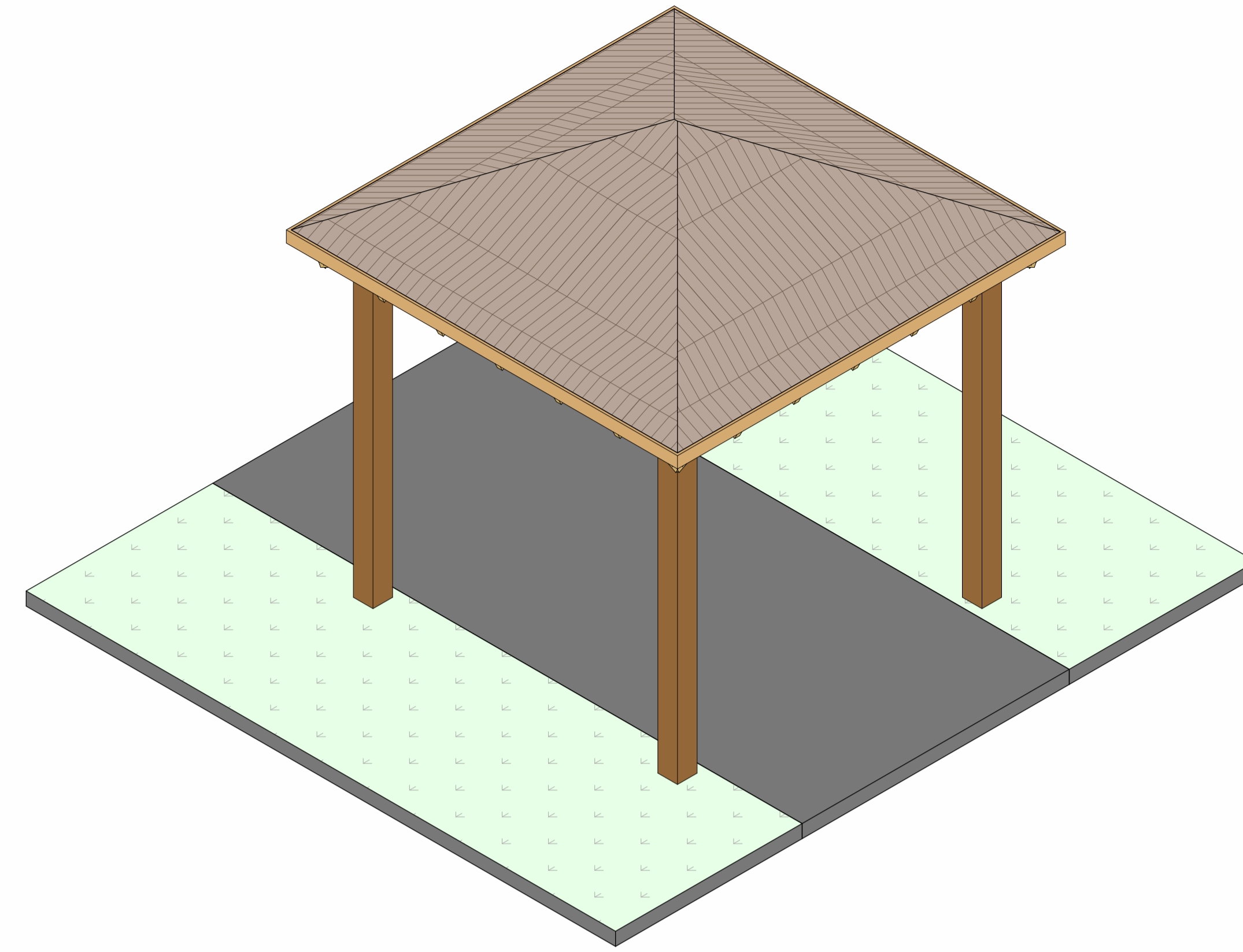


LIFEGUARD STRUC. AXON DIAGRAM 2
 1/4" = 1'-0"

Mark	Date	Description
PROJECT NO:	24074	
DATE:	09/26/2024	
SCALE:	As indicated	
DRAWN BY:	OU	
PROJ MGR:	WB	

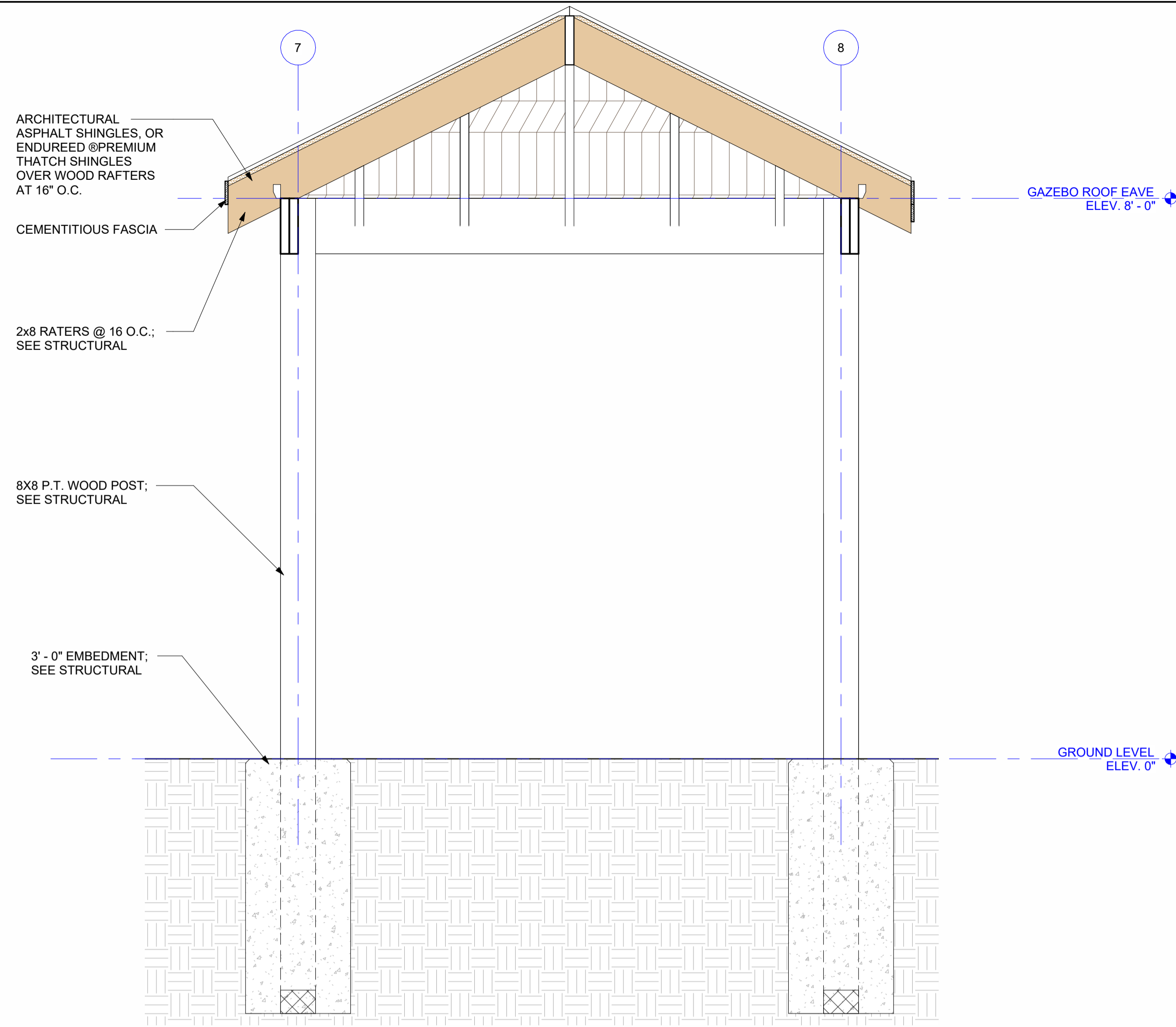
SINGLE GAZEBO

A101C



SINGLE GAZEBO AXON DIAGRAM

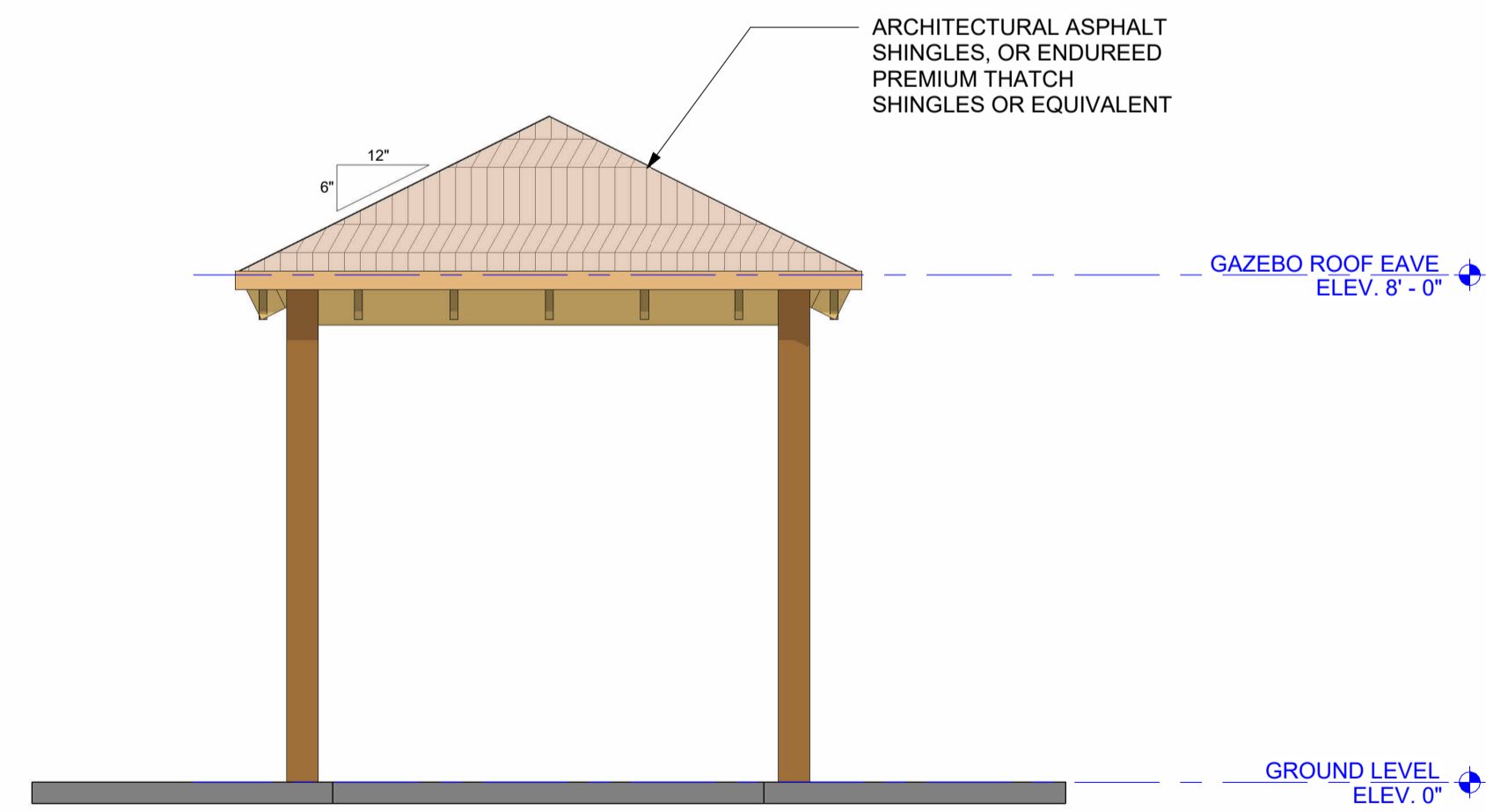
3



SINGLE GAZEBO SECTION

3/4" = 1'-0"

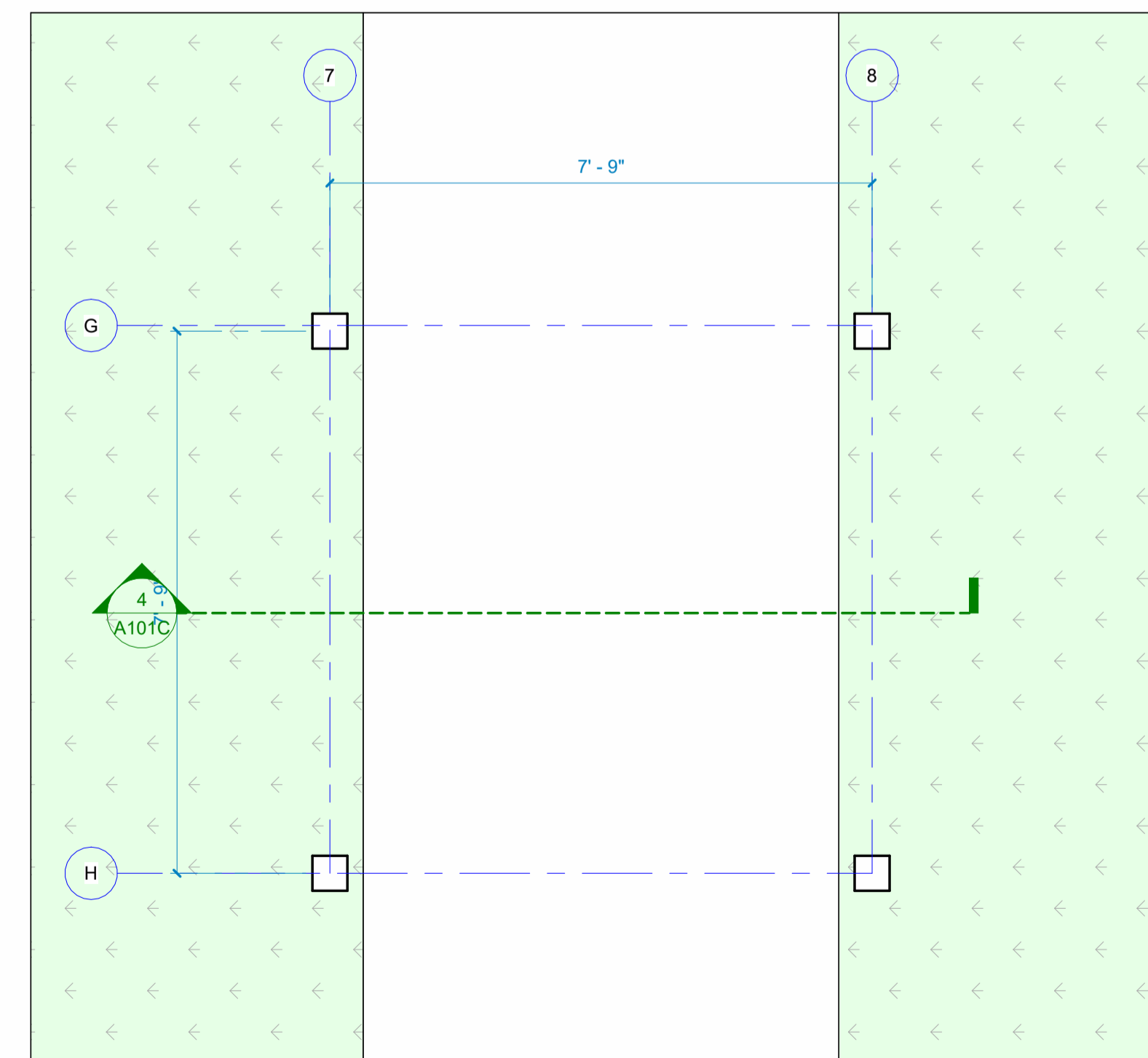
4



SINGLE GAZEBO ELEVATION

3/8" = 1'-0"

2









SINGLE GAZEBO FLOOR PLAN

1/2" = 1'-0"

1






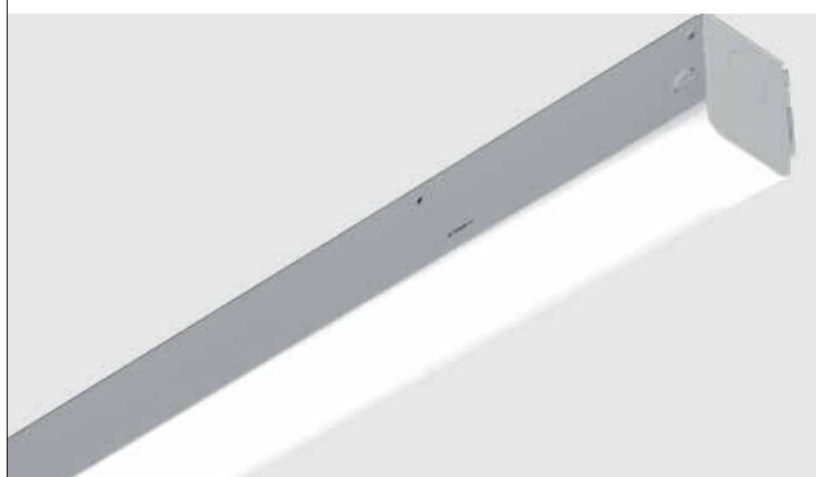

CEILING LEGEND

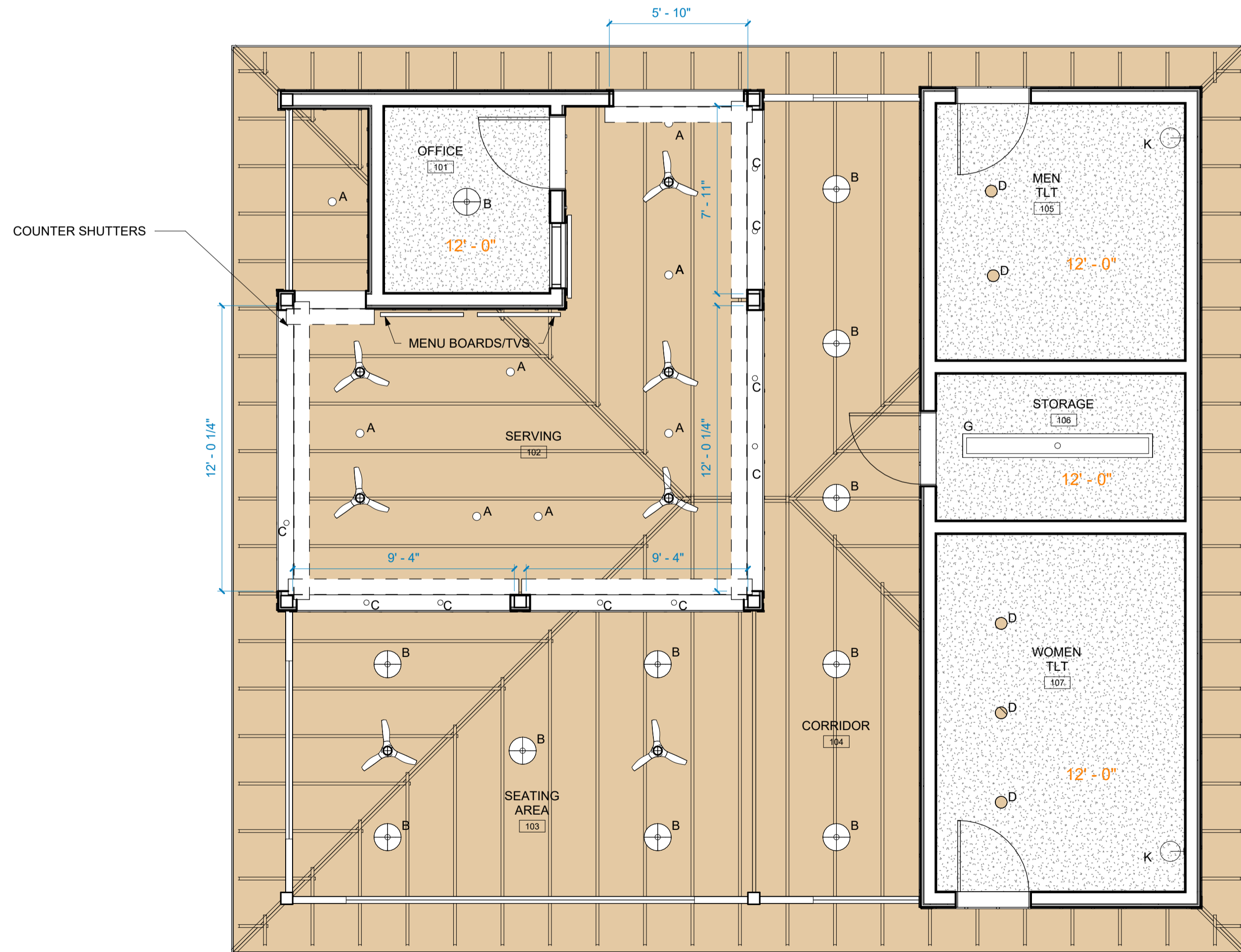
-  INTERIOR - GWB
CEILINGS /BULKHEADS
- X** EXPOSED
-  EXIT SIGN SINGLE FACE, CEILING MOUNTED
-  CEILING MOUNTED DUAL TECHNOLOGY
OCCUPANCY SENSOR
-  SUPPLY DIFFUSER
-  RETURN GRILLE
-  EXHAUST GRILLE

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 EXG. WINDOW MULLION LOCATIONS.
5. ALL EXPOSED LINTELS SHALL BE PAINTED.

LIGHTING SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER	CATALOG NUMBER	IMAGE	MOUNTING HEIGHT
A	WET LISTED CYLINDER PENDANT	TRULY GREEN SOLUTIONS	AQR		10' - 0"
B	SEATING AREA PENDANT	BOCK LIGHTING	514		9' - 0"
C	BAR PENDANT	DESIGN HOUSE	AJAX		7' - 0"
D	RESTROOM SURFACE DOWNLIGHTS	TRULY GREEN SOLUTIONS	88 0918		ATTACHED TO CEILING
F	BAR TAPE LIGHT	KELVIX			BOTTOM OF BAR COUNTERTOP
G	STORAGE 8' STRIP	H.E. WILLIAMS	FS8		ATTACHED TO CEILING
K	VANITY LIGHT	DESIGN HOUSE			7' - 6"



FIRST FLOOR REFLECTED CEILING PLAN 1
 1/4" = 1'-0"

ROOF NOTES

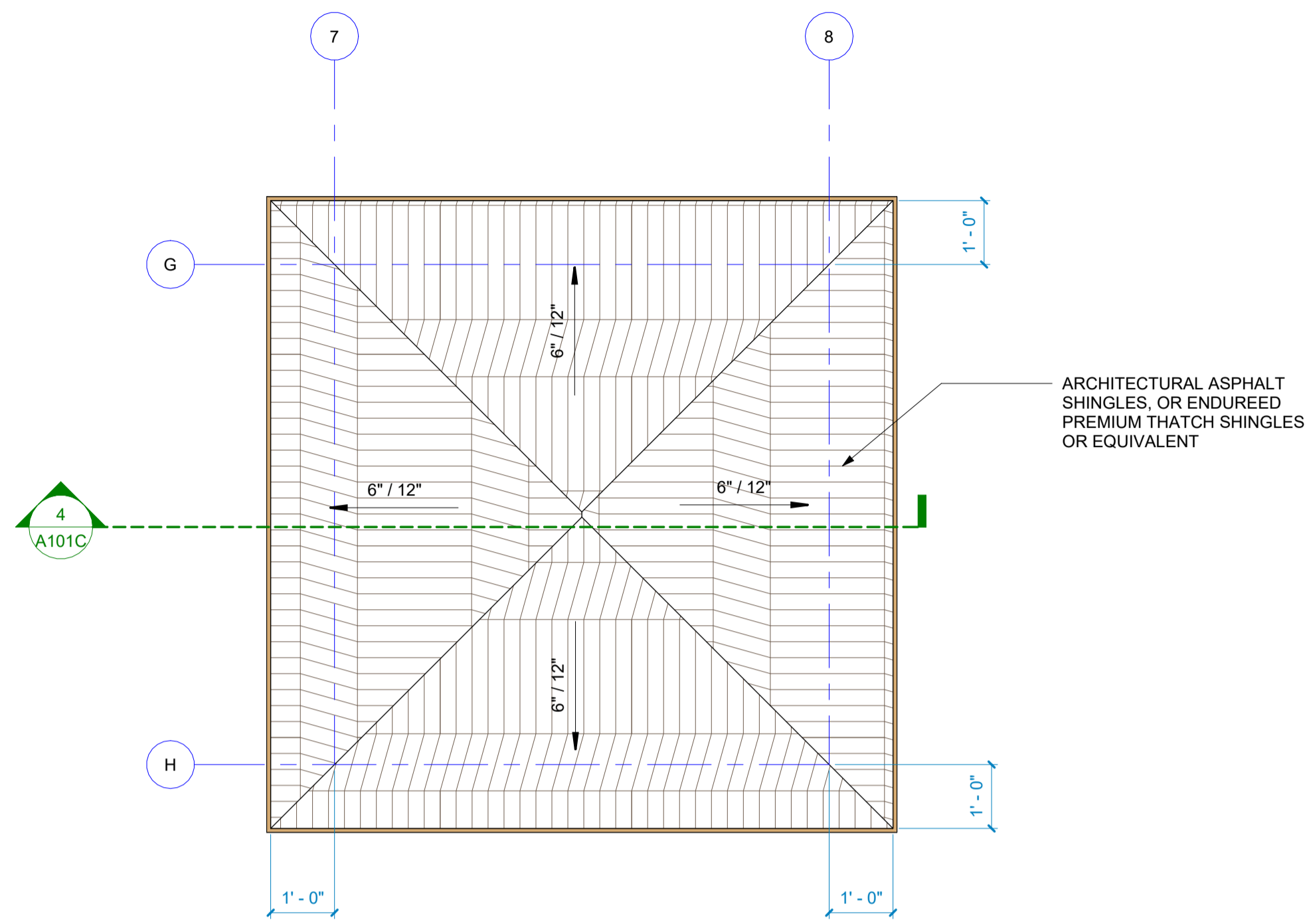
1. SLOPE ALL CRICKETS 1/2" / 12" MINIMUM, EXCEPT WHERE REQUIRED TO MAINTAIN MINIMUM 8" ROOFING/FLASHING TURN-UP HEIGHT.
2. TIE DOWNSPOUTS INTO BOOT AT GRADE AND CONNECT TO STORMWATER SYSTEM, UNLESS OTHERWISE NOTED. REFER TO CIVIL DRAWINGS FOR CONTINUATION.
3. PROVIDE CRICKETS AT ALL ROOF TOP EQUIPMENT, FIRE VENTS, EXHAUST FANS, CURBS, ETC. AS REQUIRED TO MAINTAIN POSITIVE DRAINAGE.
4. PROVIDE WALKWAY PADS AROUND MECHANICAL EQUIPMENT, BASE AND TOP OF LADDERS, AND AT DOORS.
5. REFER TO MECHANICAL FOR ROOFTOP EQUIPMENT.
6. REFER ALSO TO A5## AND A5## FOR TYPICAL ROOF DETAILS.



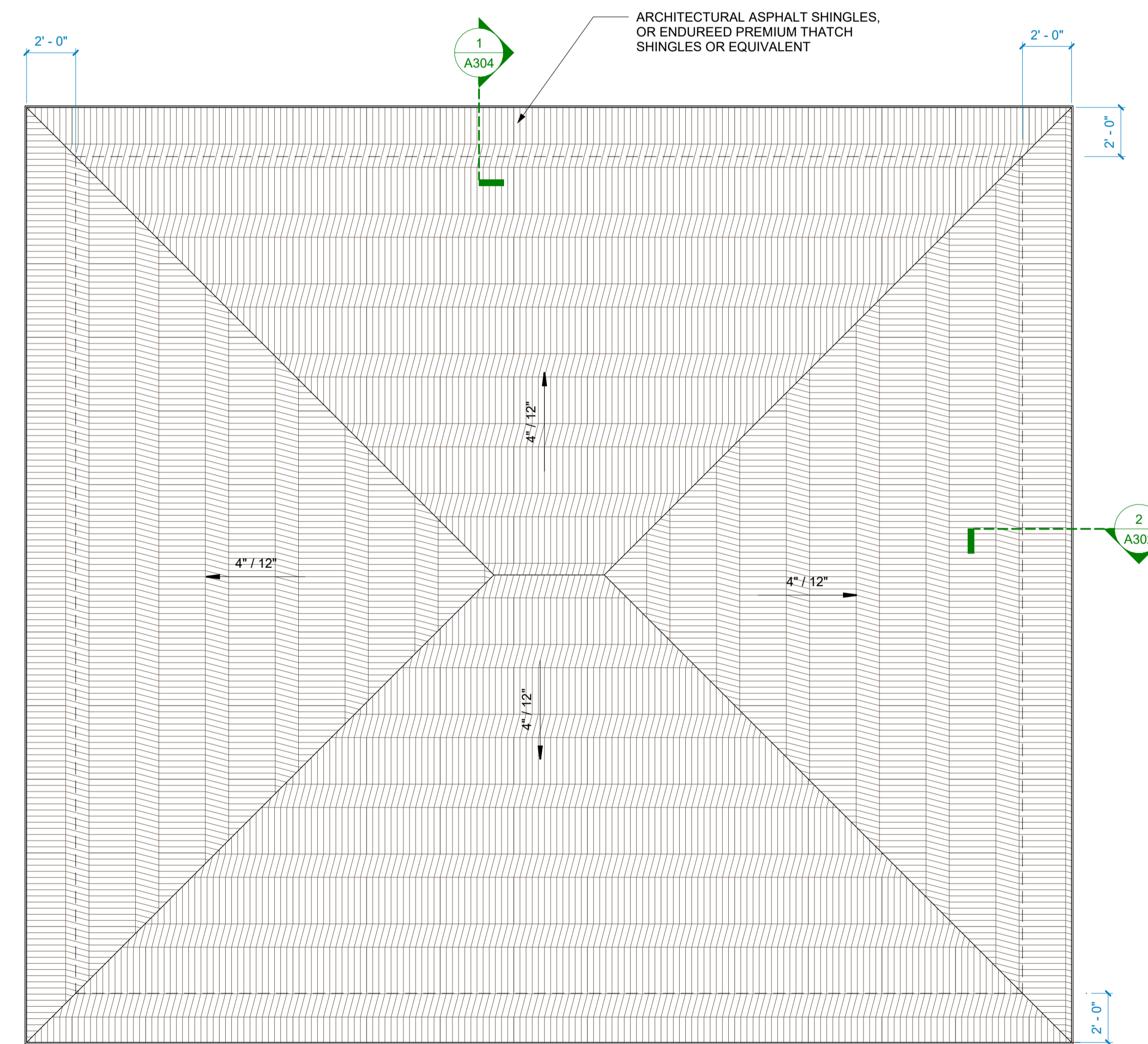
SURF'S UP
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 CAROLINA BEACH, NC 28428

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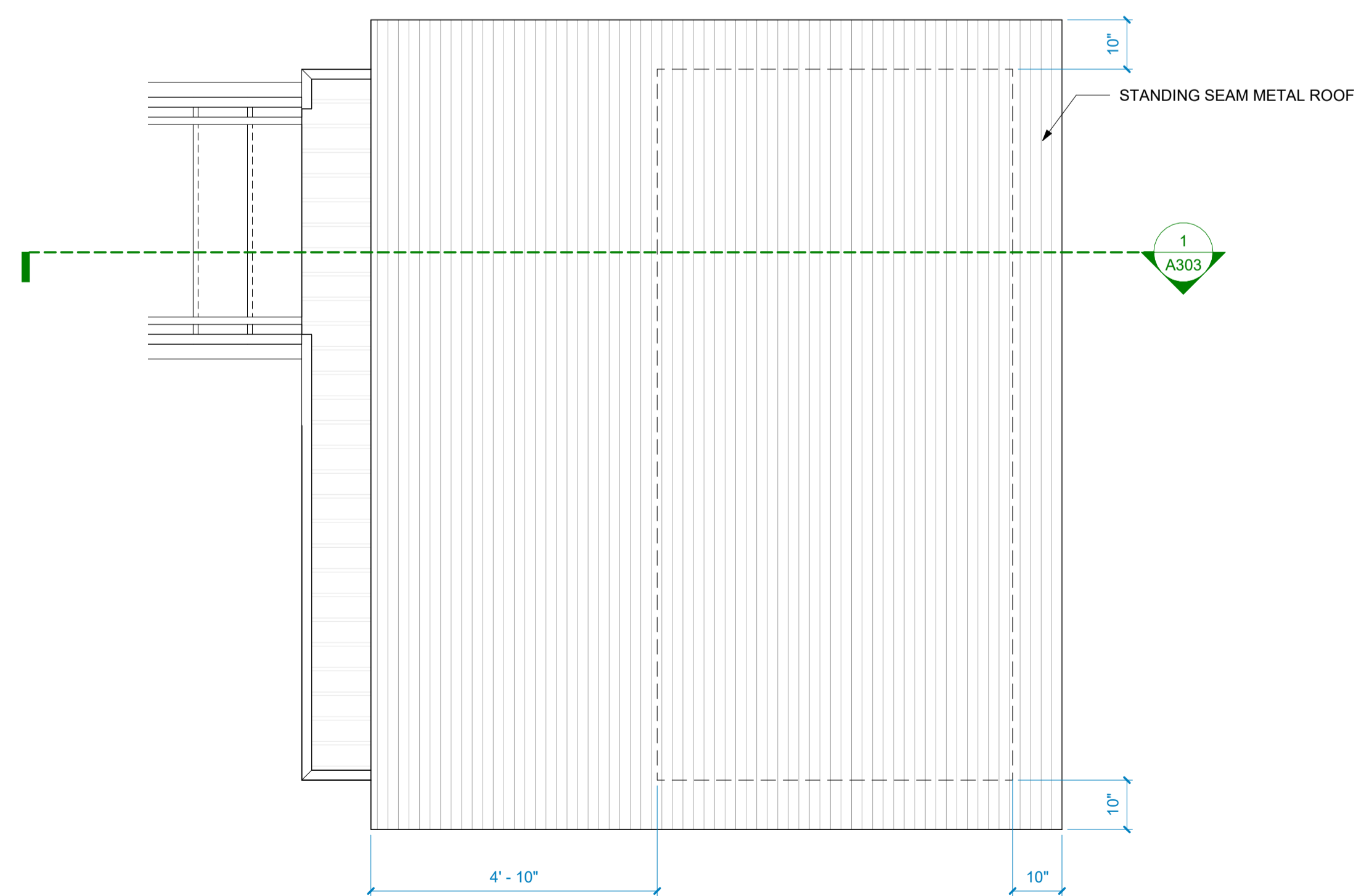
Mark	Date	Description
PROJECT NO:	24074	
DATE:	09/26/2024	
SCALE:	As indicated	
DRAWN BY:	OU	
PROJ MGR:	WB	
ROOF PLAN		
A103		



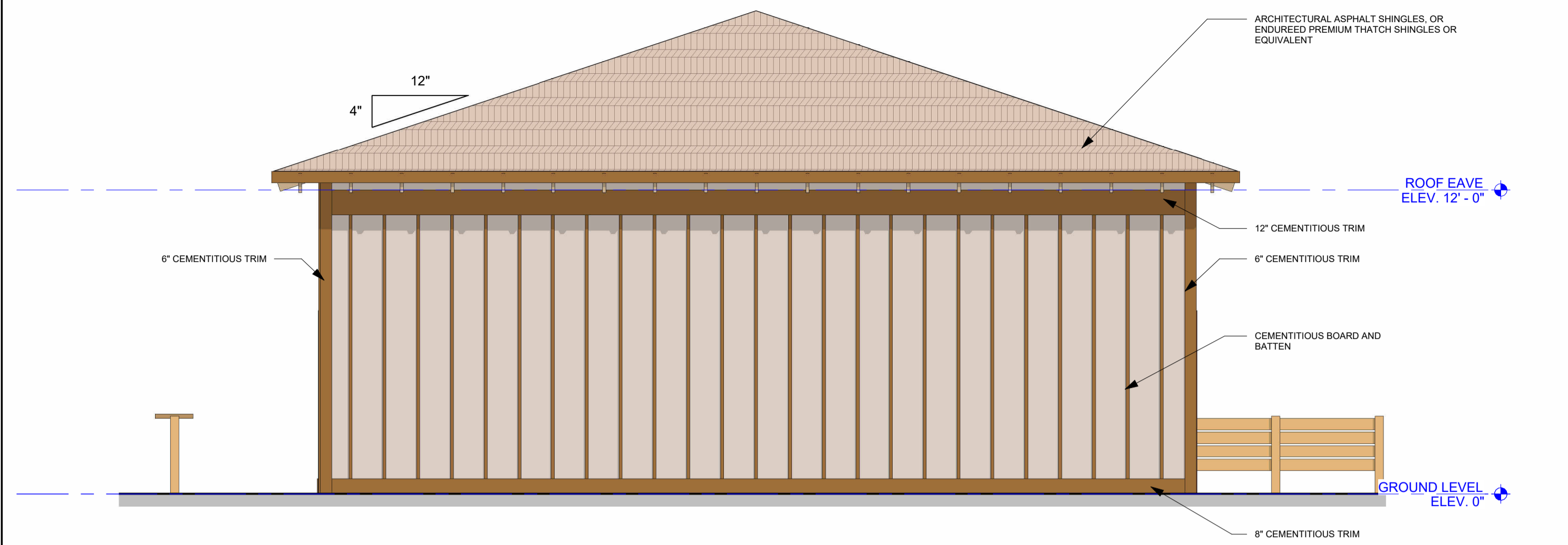
GAZEBO ROOF PLAN
 1/2" = 1'-0" **2**



ROOF PLAN
 1/4" = 1'-0" **1**



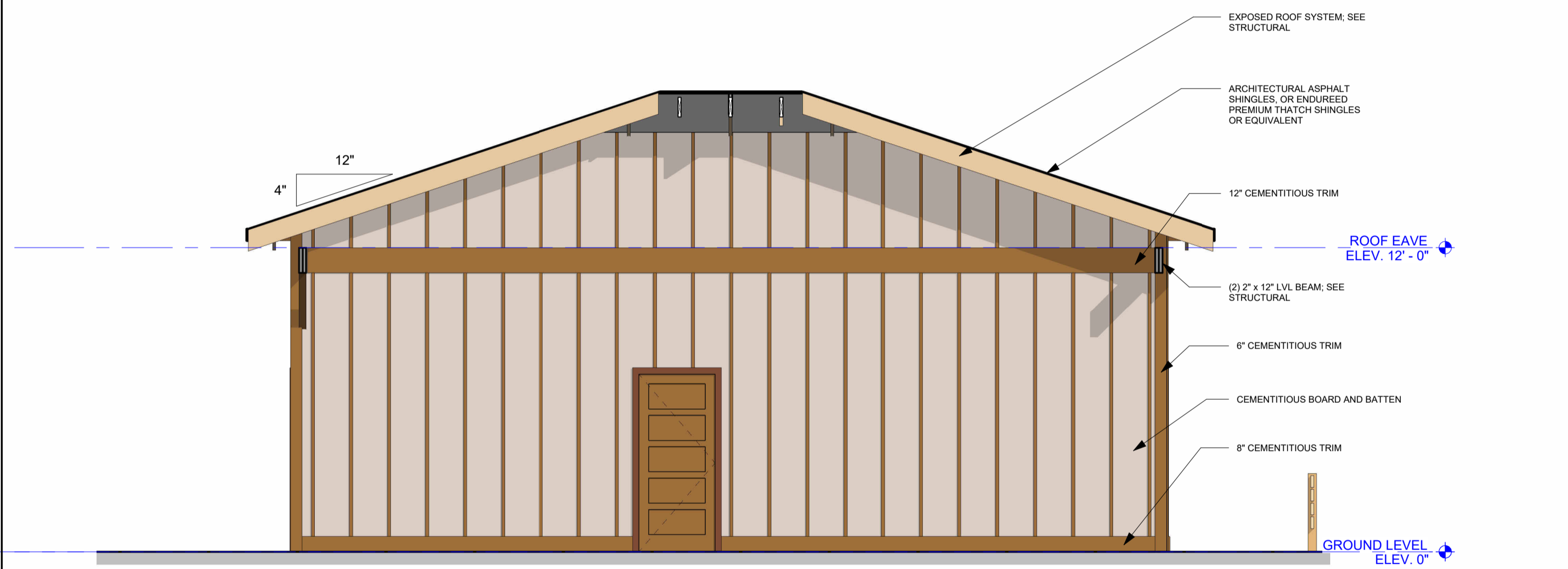
LIFE GUARD ROOF PLAN
 1/2" = 1'-0" **3**



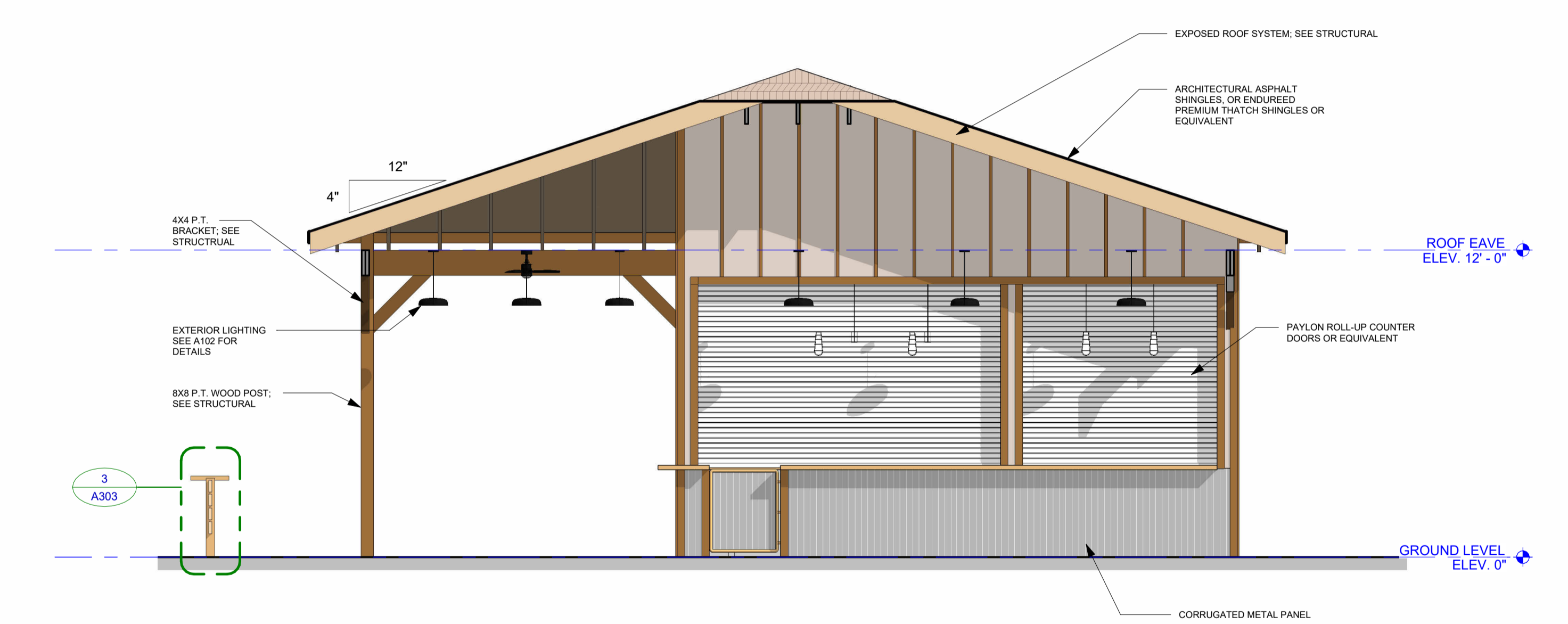
EAST ELEVATION
1/4" = 1'-0" 6



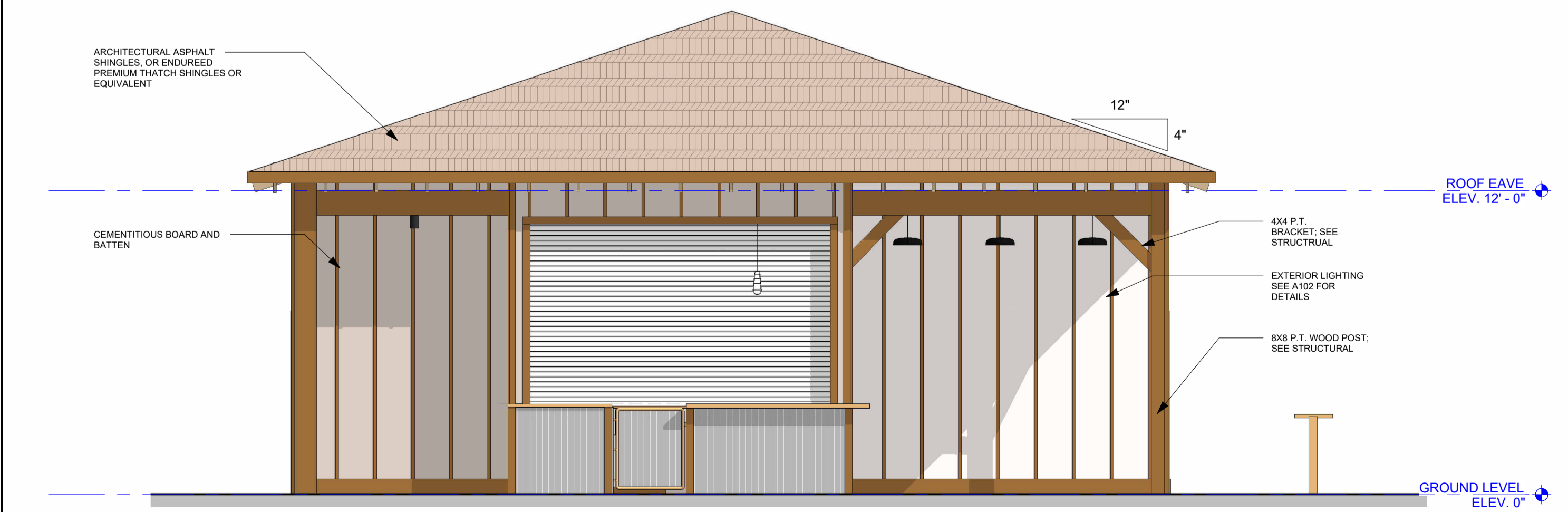
NORTH ELEVATION
1/4" = 1'-0" 5



INTERIOR WEST FACADE
1/4" = 1'-0" 4



INTERIOR EAST FACADE
1/4" = 1'-0" 3



WEST ELEVATION
1/4" = 1'-0" 2



SOUTH ELEVATION
1/4" = 1'-0" 1



SURF'S UP
MINIATURE GOLF STRUCTURES
1360 BRIDGE BARRIER RD.
CAROLINA BEACH, NC 28428

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Mark	Date	Description

PROJECT NO: 24074
DATE: 09/26/2024
SCALE: 1/4" = 1'-0"
DRAWN BY: OU
PROJ MGR: WB

EXTERIOR
ELEVATIONS

A201



SURF'S UP
MINIATURE GOLF STRUCTURES
1360 BRIDGE BARRIER RD.
CAROLINA BEACH, NC 28428

Mark	Date	Description
PROJECT NO:	24074	
DATE:	09/26/2024	
SCALE:		
DRAWN BY:	OU	
PROJ MGR:	WB	

EXTERIOR
PERSPECTIVE

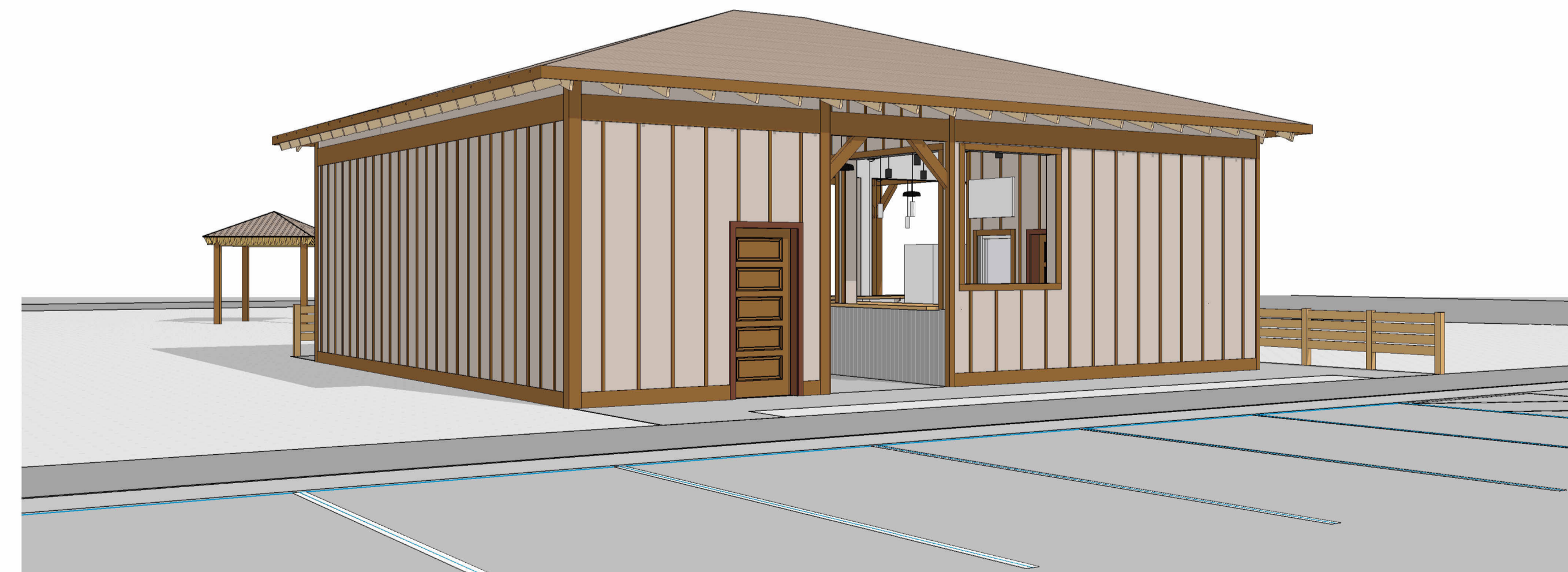
A202



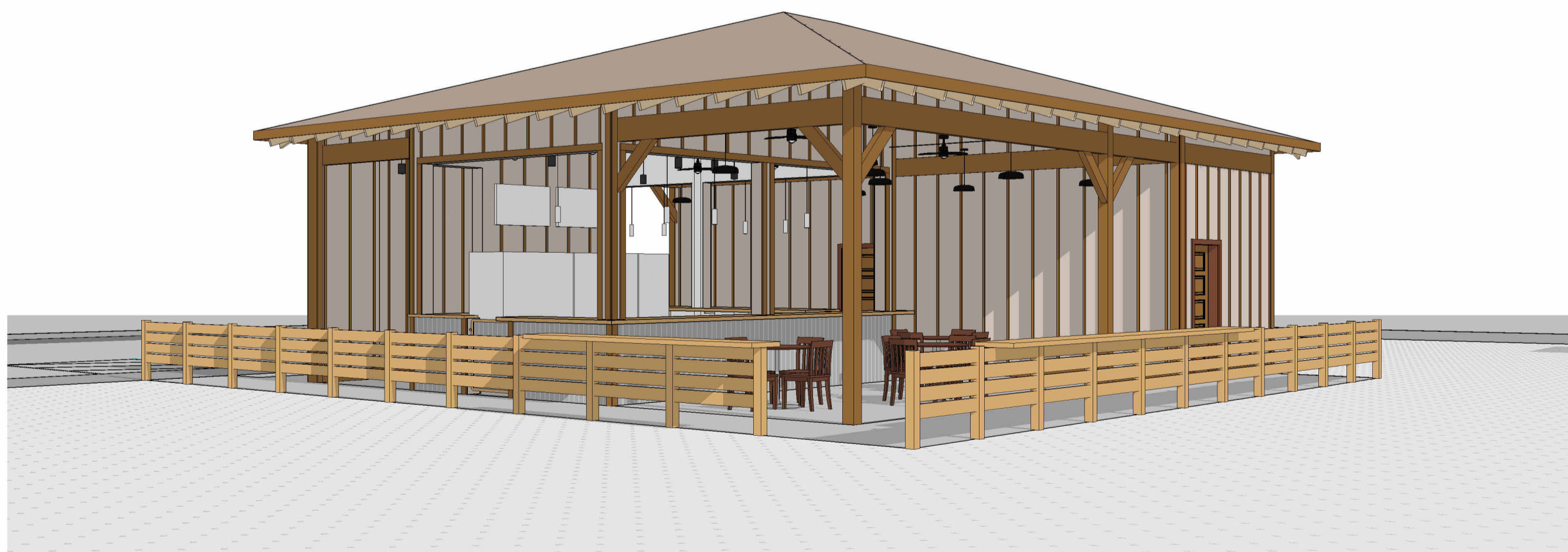
3D View (4) **4**



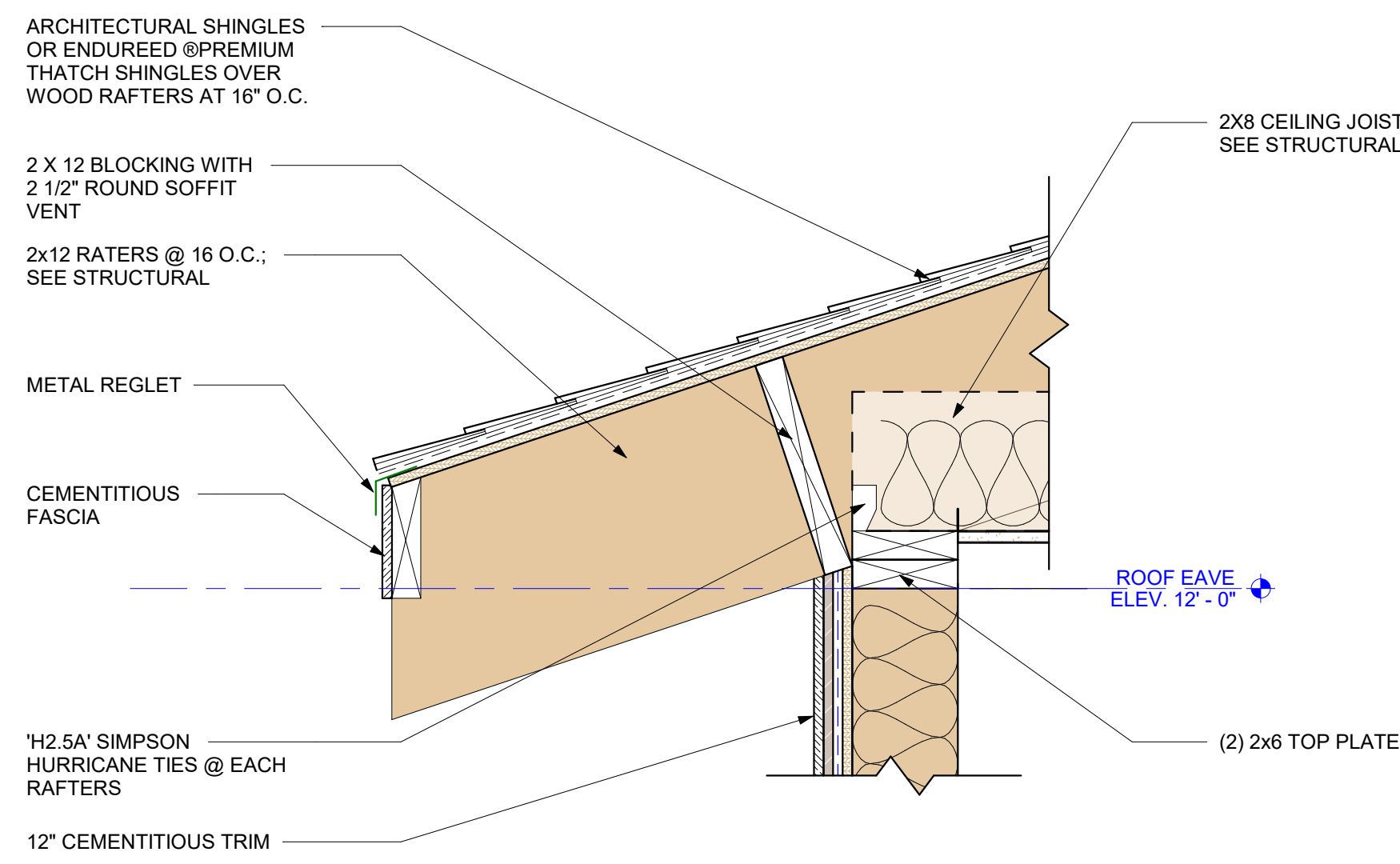
3D View (3) **3**



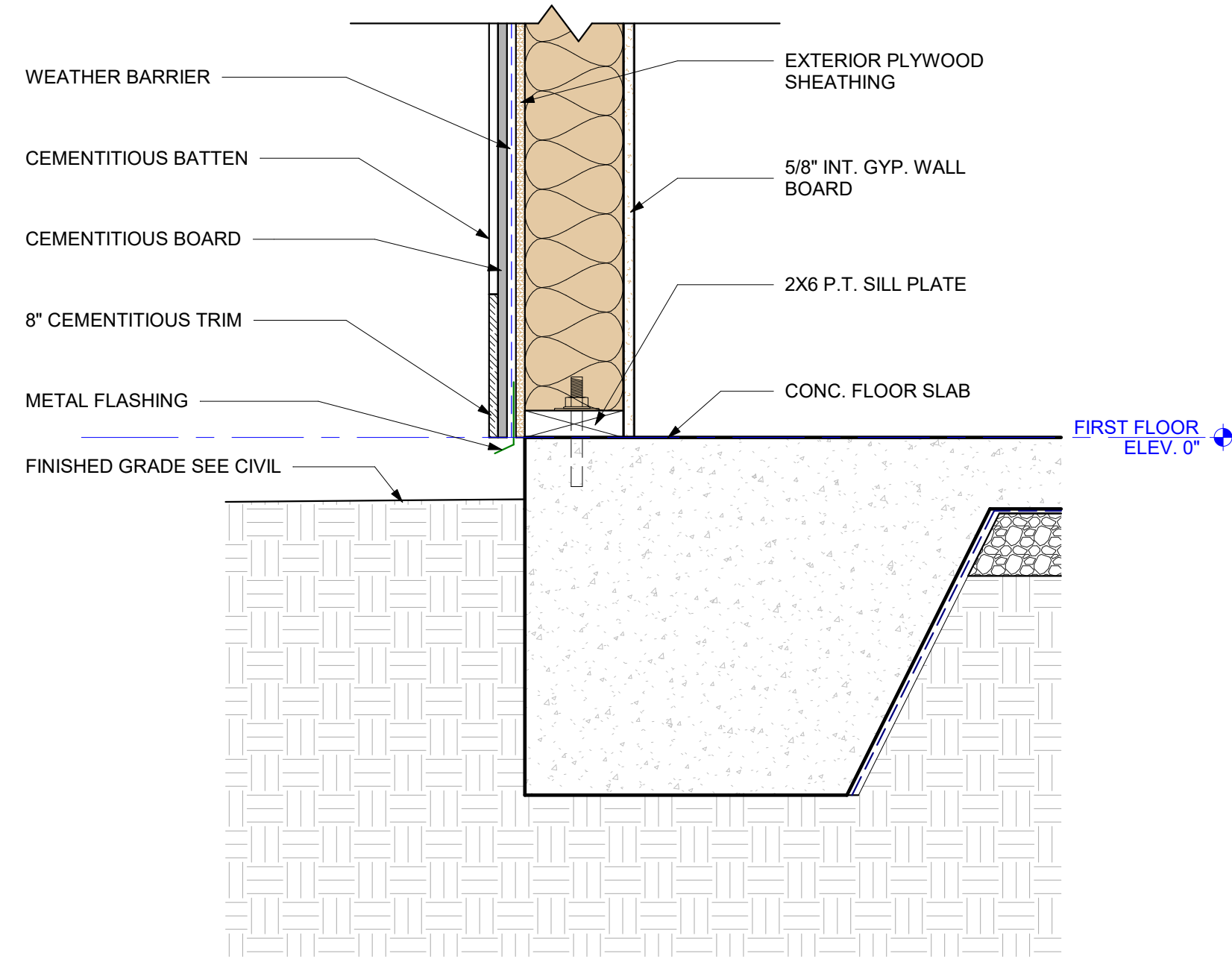
3D View (2) **2**



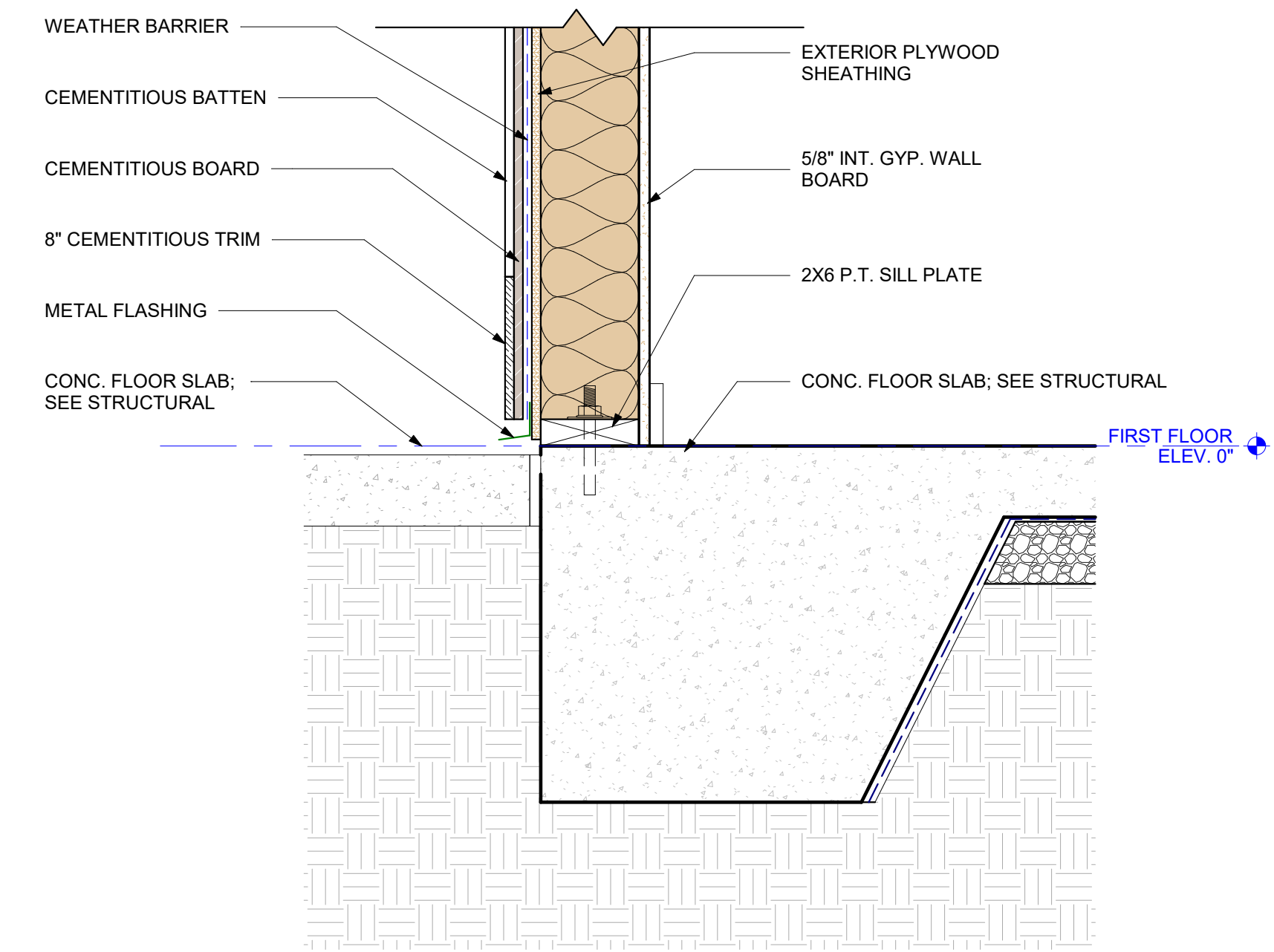
3D View (1) **1**



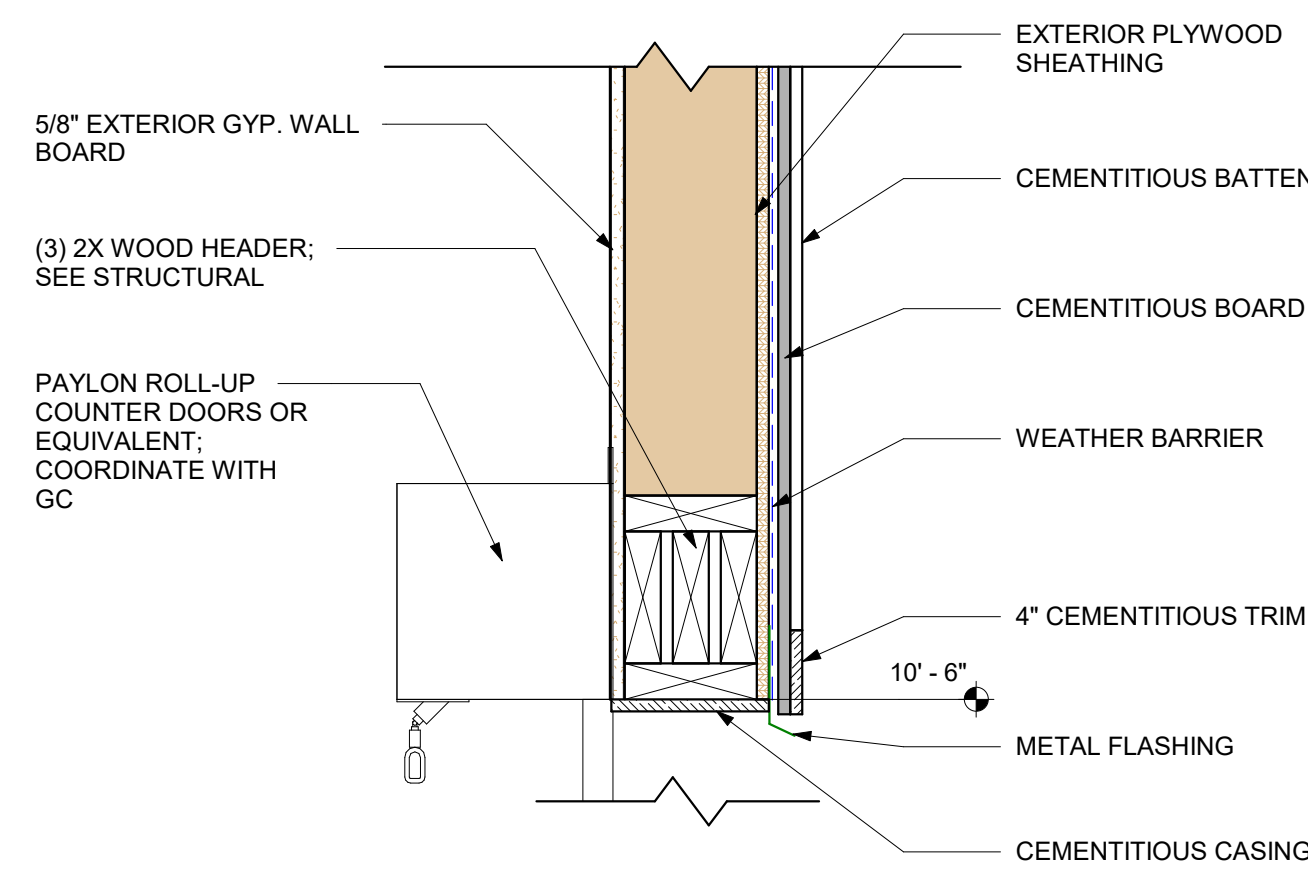
TIKI ROOF SOFFIT DETAIL AT RESTROOM
1 1/2" = 1'-0" **7**



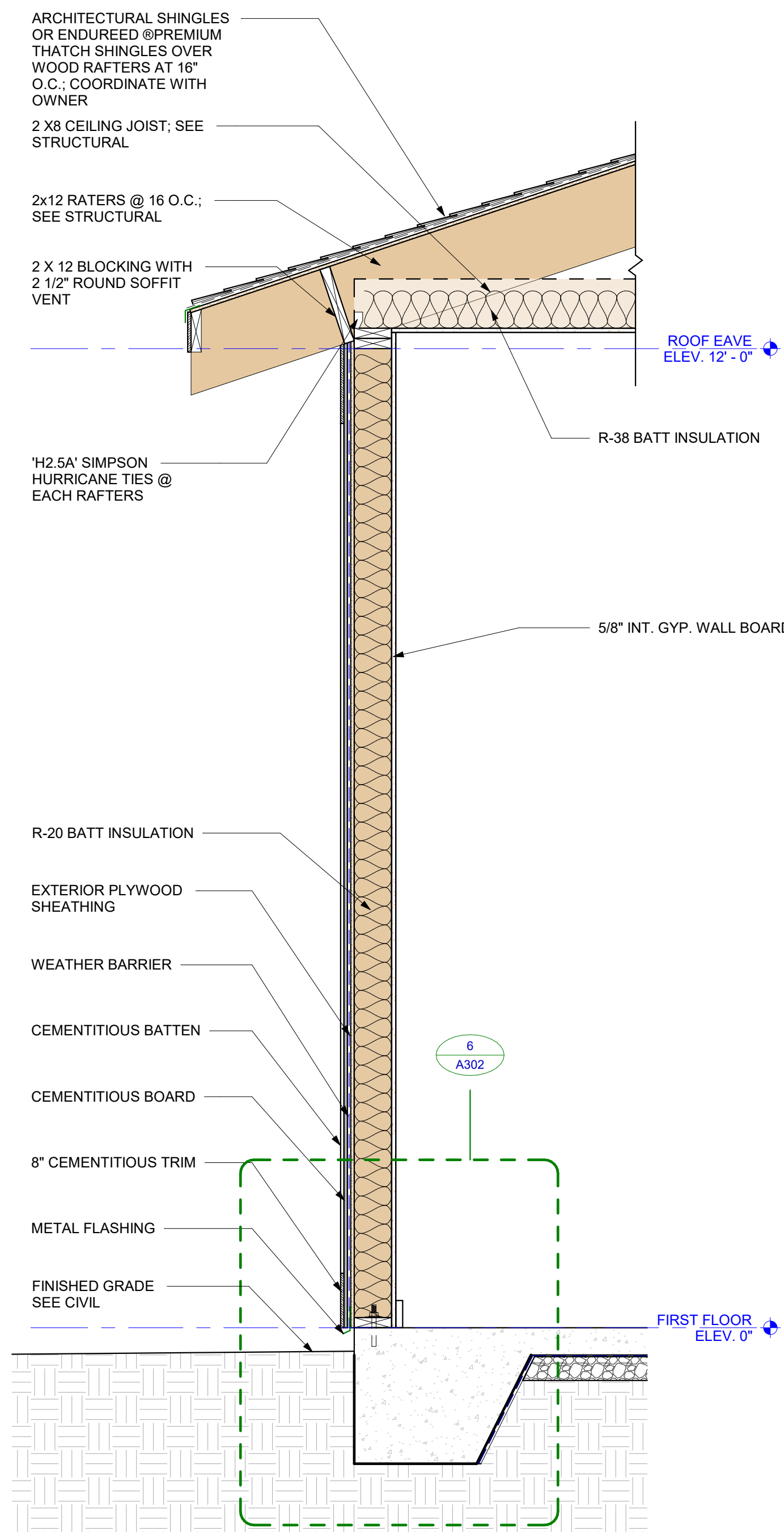
TIKI SLAB DETAIL 1
1 1/2" = 1'-0" **6**



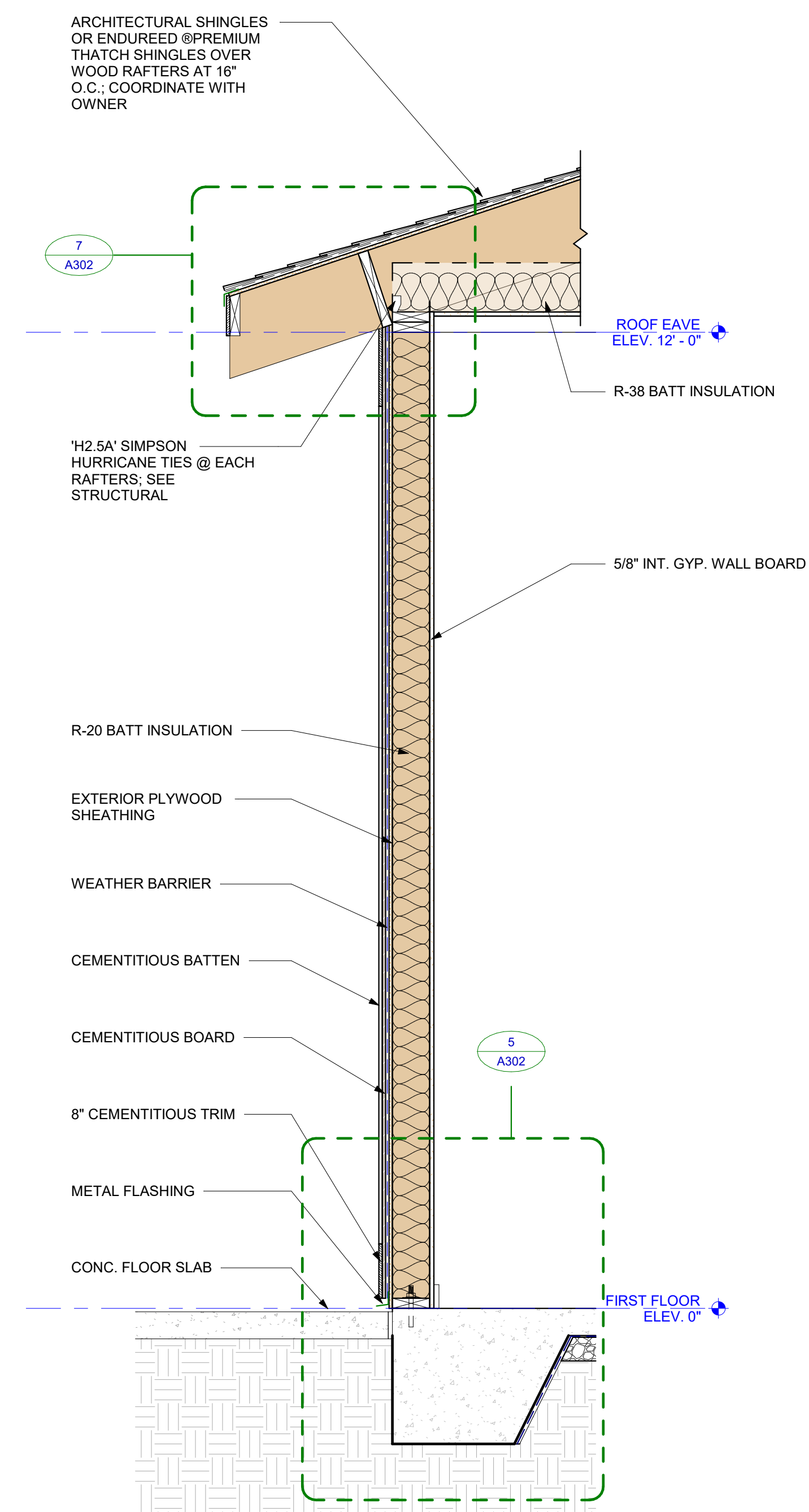
TIKI SLAB DETAIL 2
1 1/2" = 1'-0" **5**



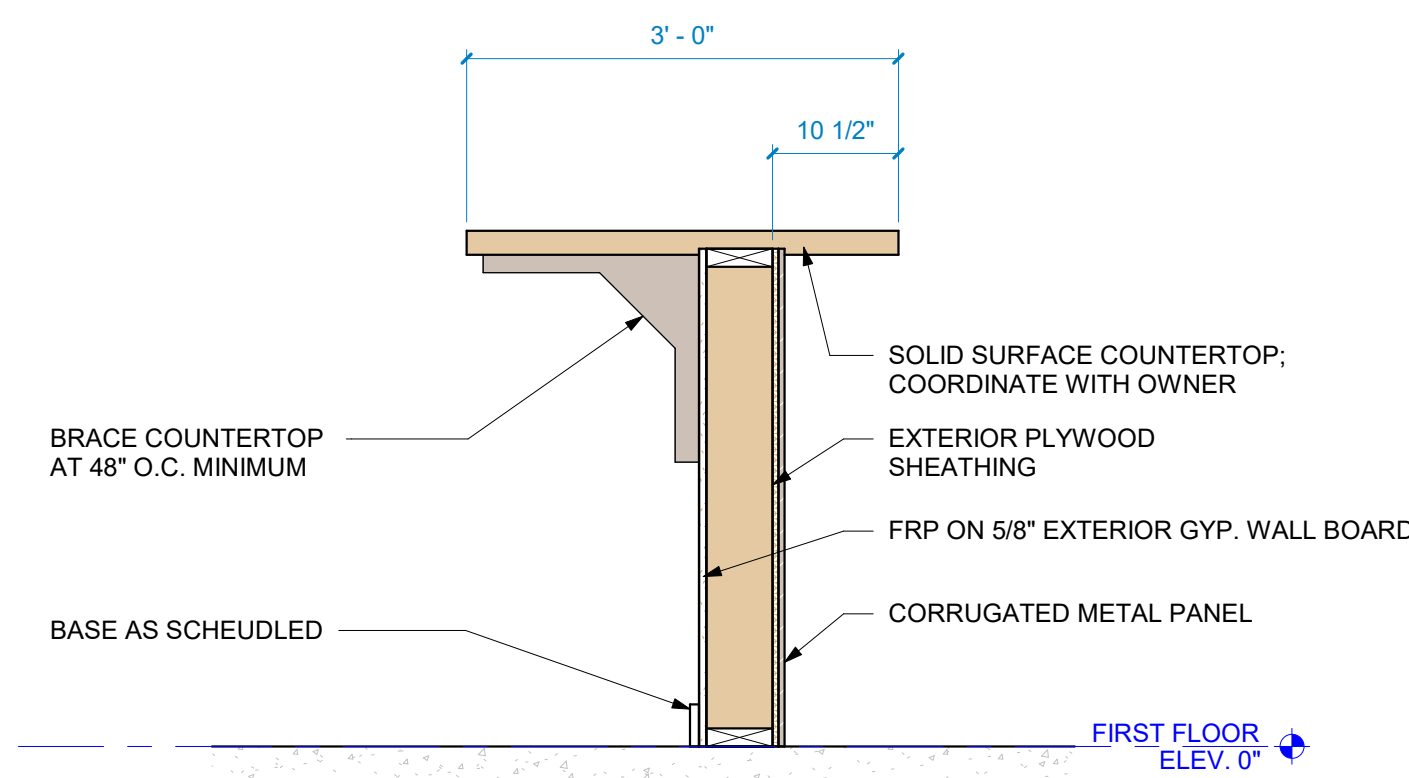
OVERHEAD TIKI HEADER DETAIL
1 1/2" = 1'-0" **4**



SECTION - TIKI RESTROOM WALLS
3/4" = 1'-0" **2**



TIKI BAR SECTION - OFFICE WALLS
3/4" = 1'-0" **1**



BAR COUNTERTOP SECTION 2
3/4" = 1'-0" **3**

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Mark	Date	Permit Comments
1	12/06	

PROJECT NO: 24074
DATE: 09/26/2024
SCALE: As indicated
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PROJ MGR: WB

TIKI BAR WALL SECTION AND DETAILS

A302



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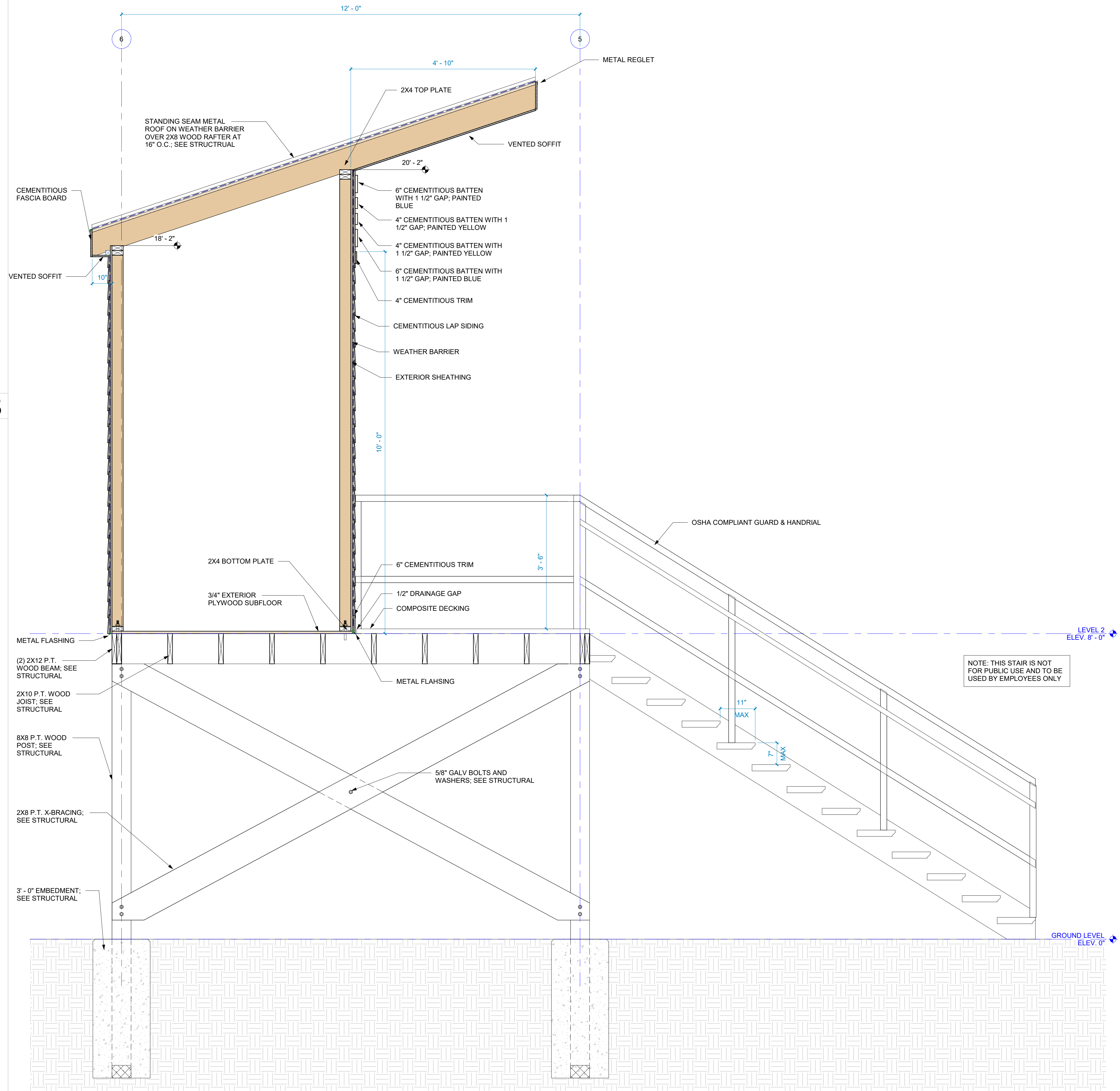
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Mark	Date	Permit Comments
1	12/06	

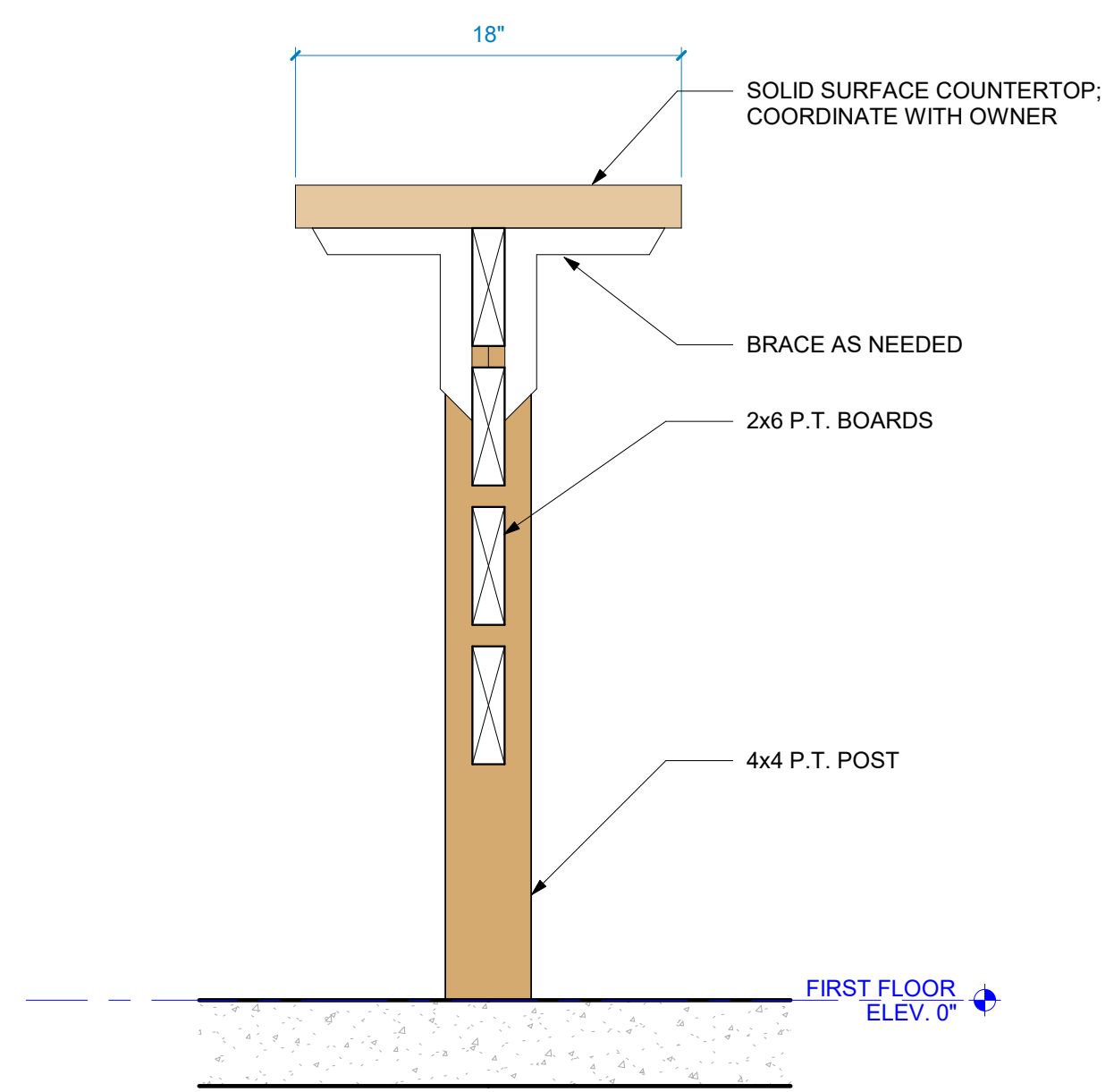
PROJECT NO: 24074
 DATE: 09/26/2024
 SCALE: As indicated
 DRAWN BY: OU
 PROJ MGR: WB

WALL SECTION AND DETAILS

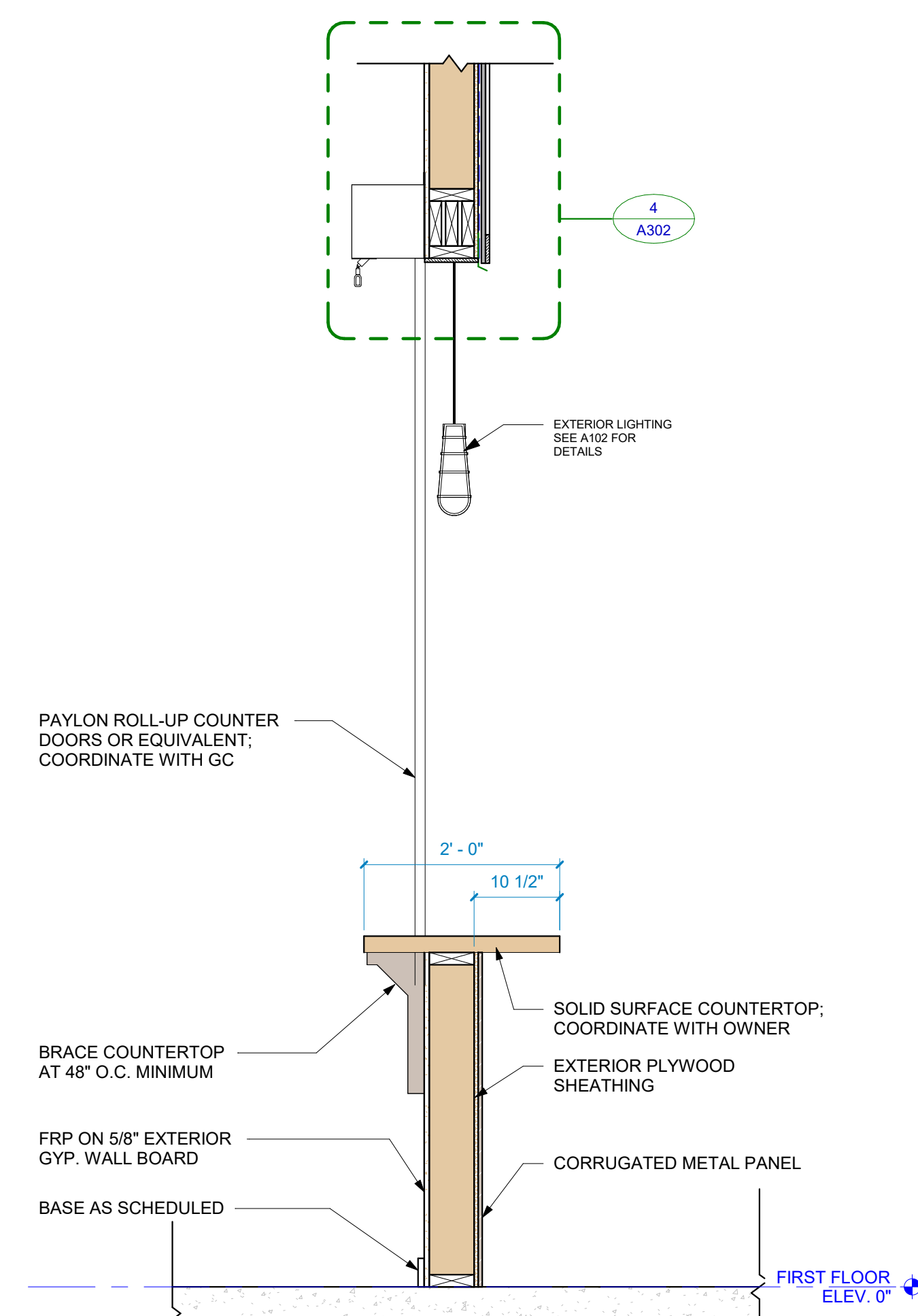
A303



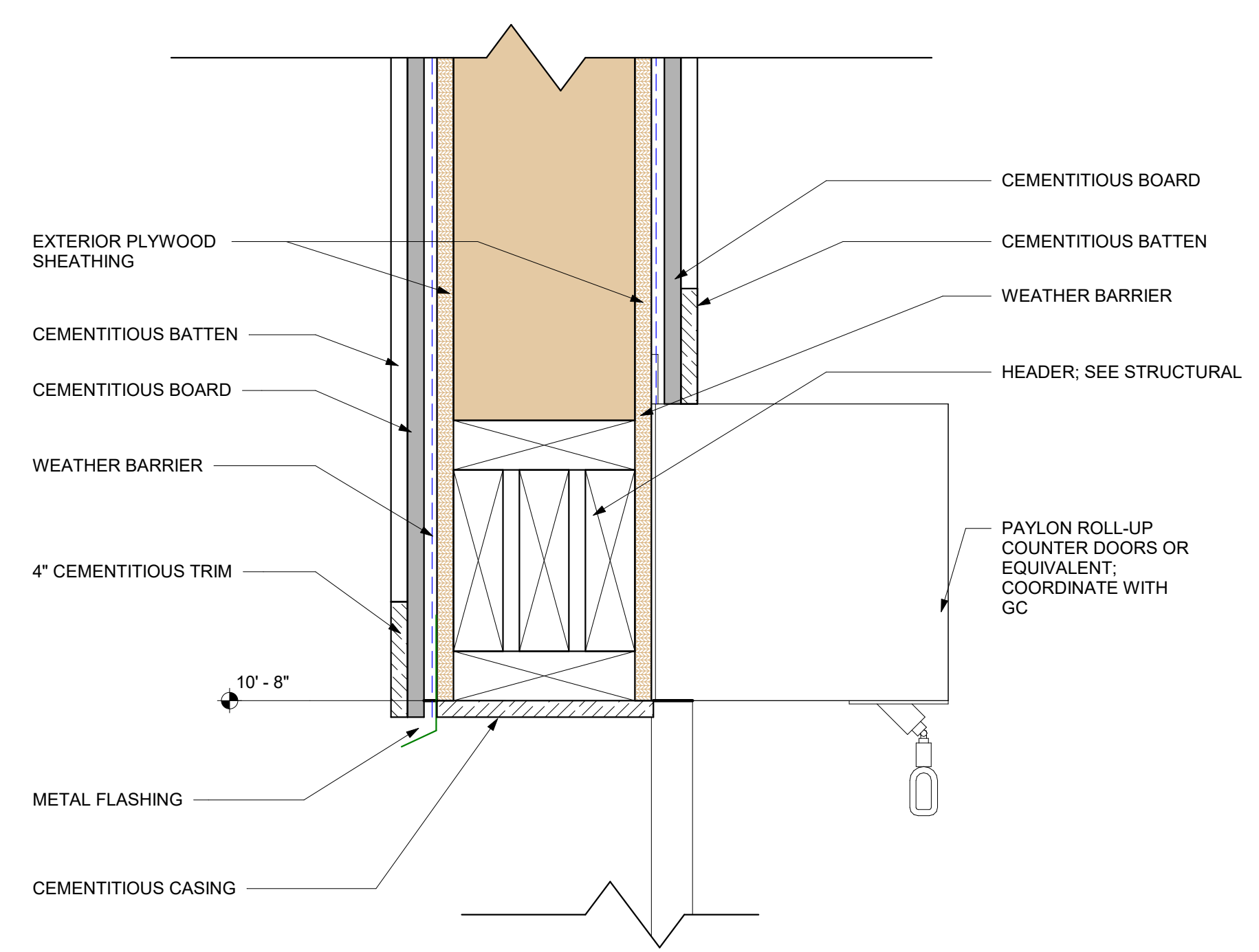
LIFEGUARD STRUC. WALL SECTION 1
 3/4" = 1'-0" **1**



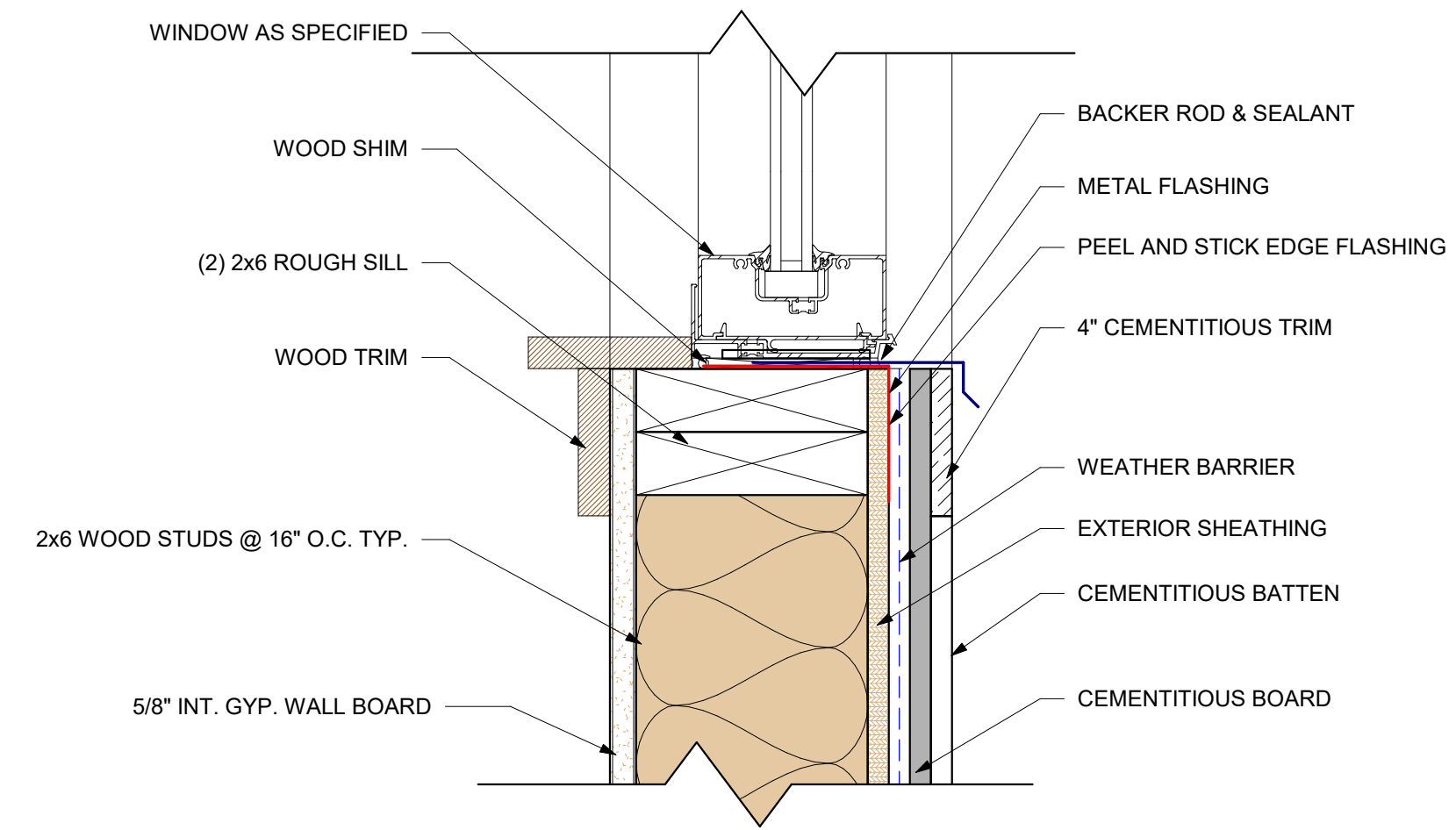
TIKI RAILING COUNTERTOP DETAIL
 1 1/2" = 1'-0" **3**



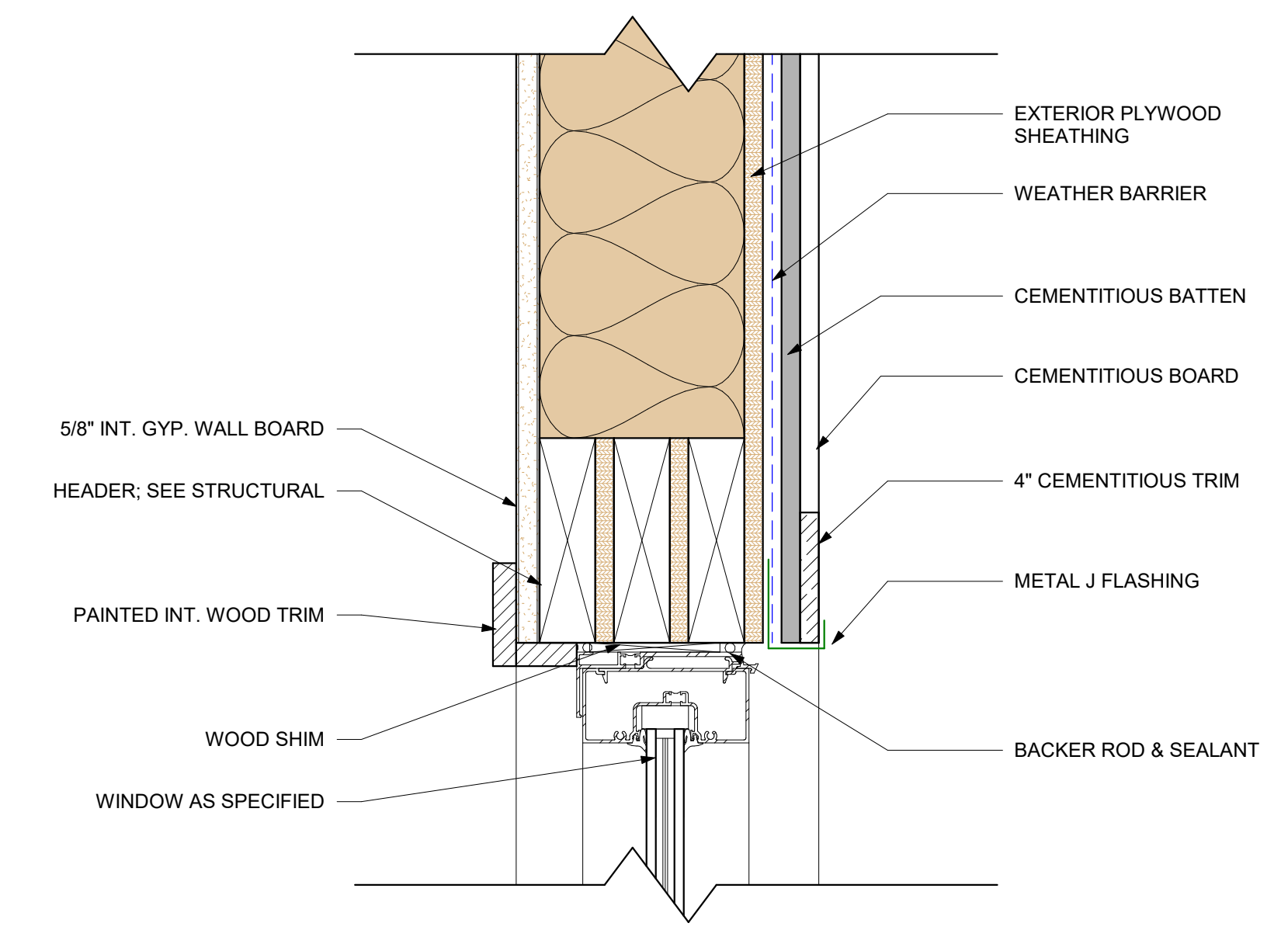
TIKI BAR COUNTERTOP SECTION 1
 3/4" = 1'-0" **2**



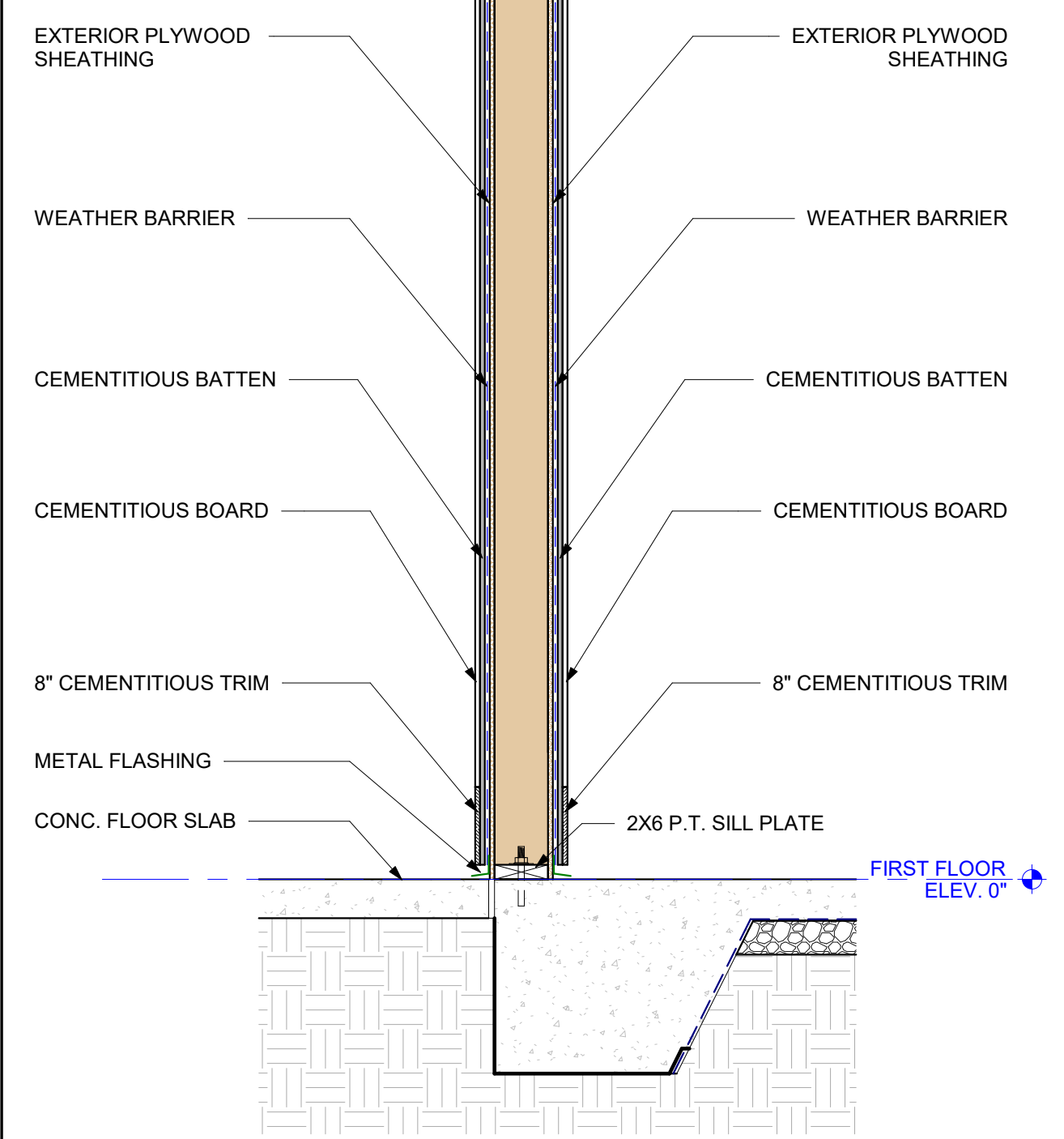
Detail 4
 3" = 1'-0"



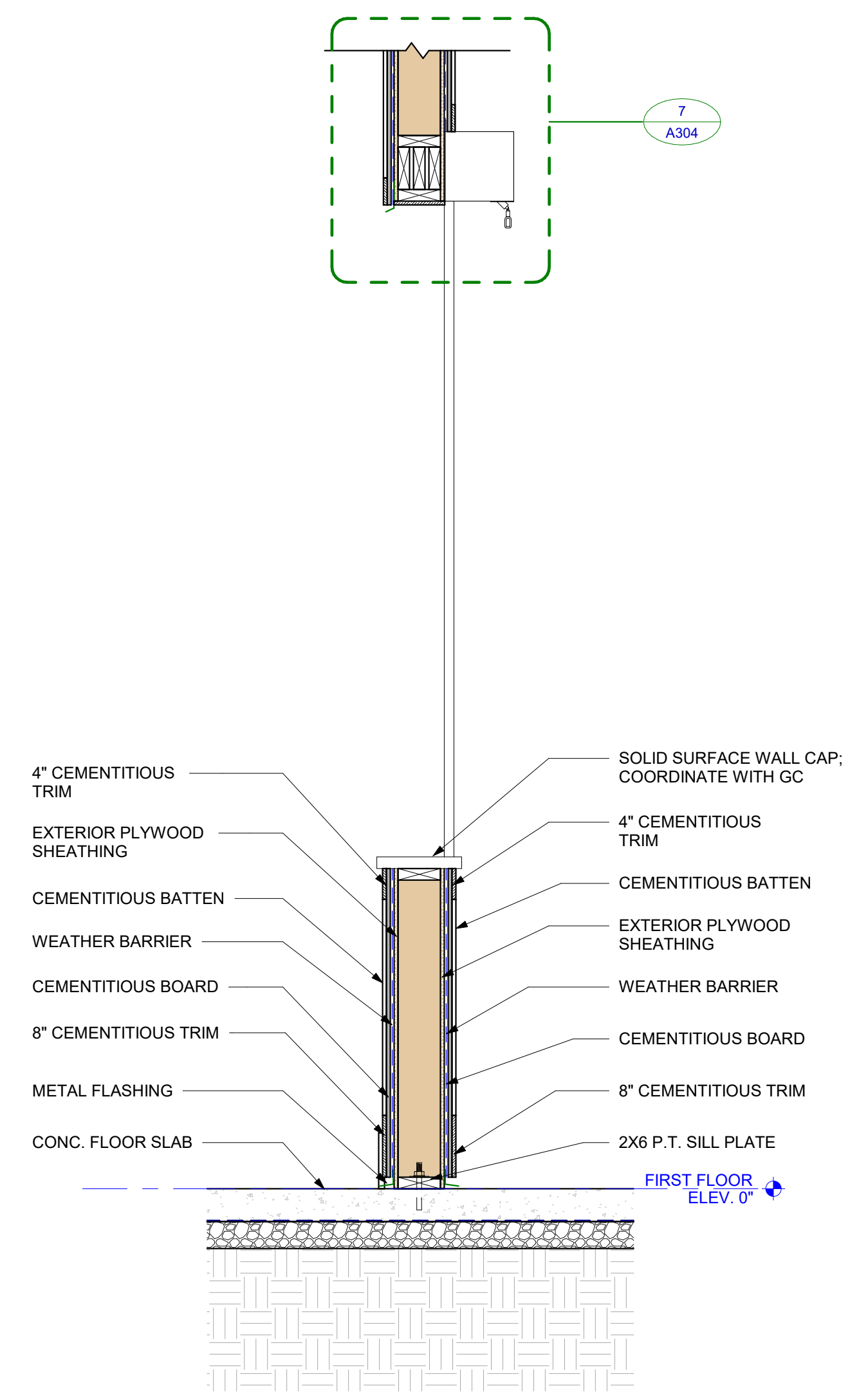
TYP. SILL DETAIL
 3" = 1'-0"



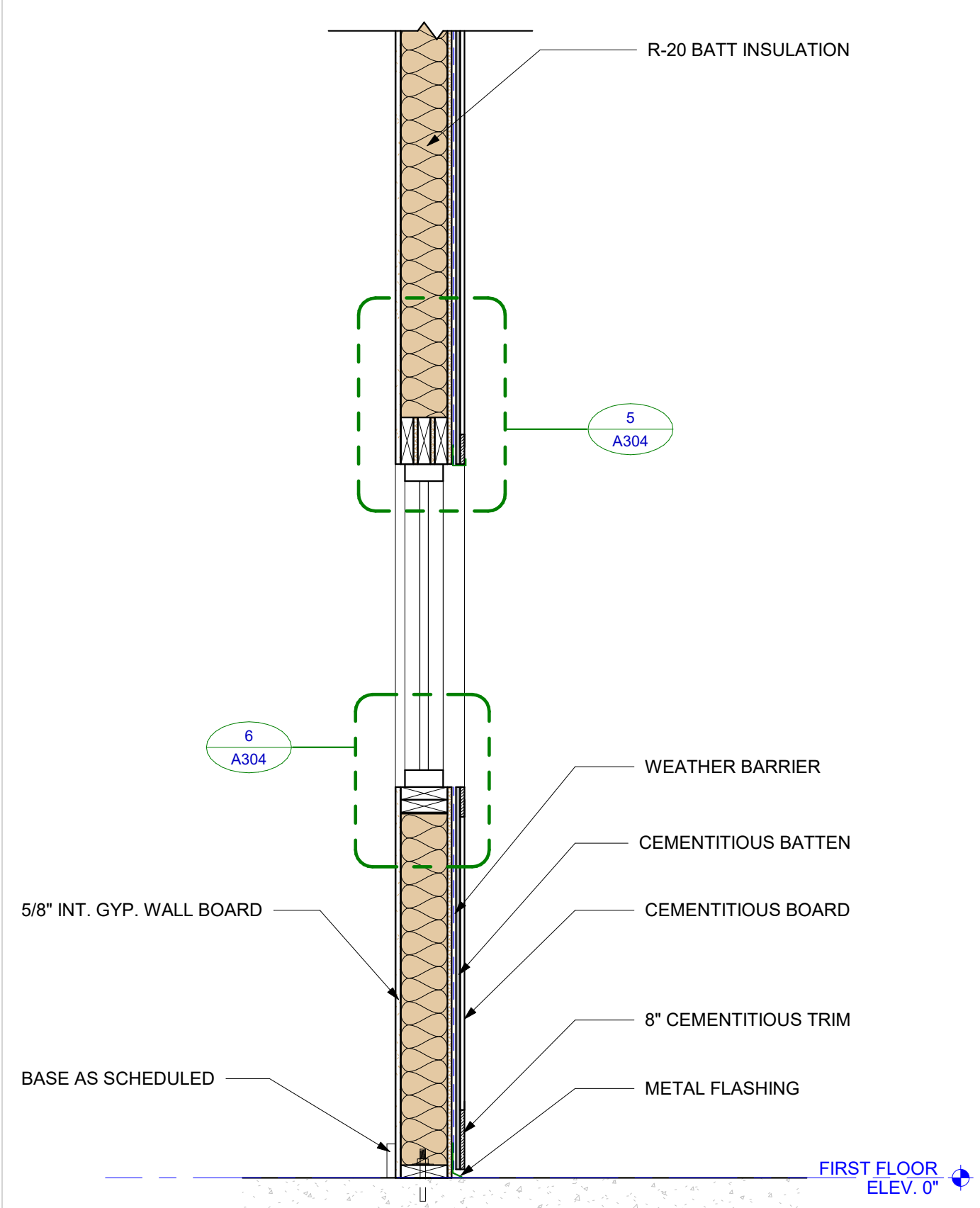
TYP. HEADER DETAIL (1)
 3" = 1'-0"



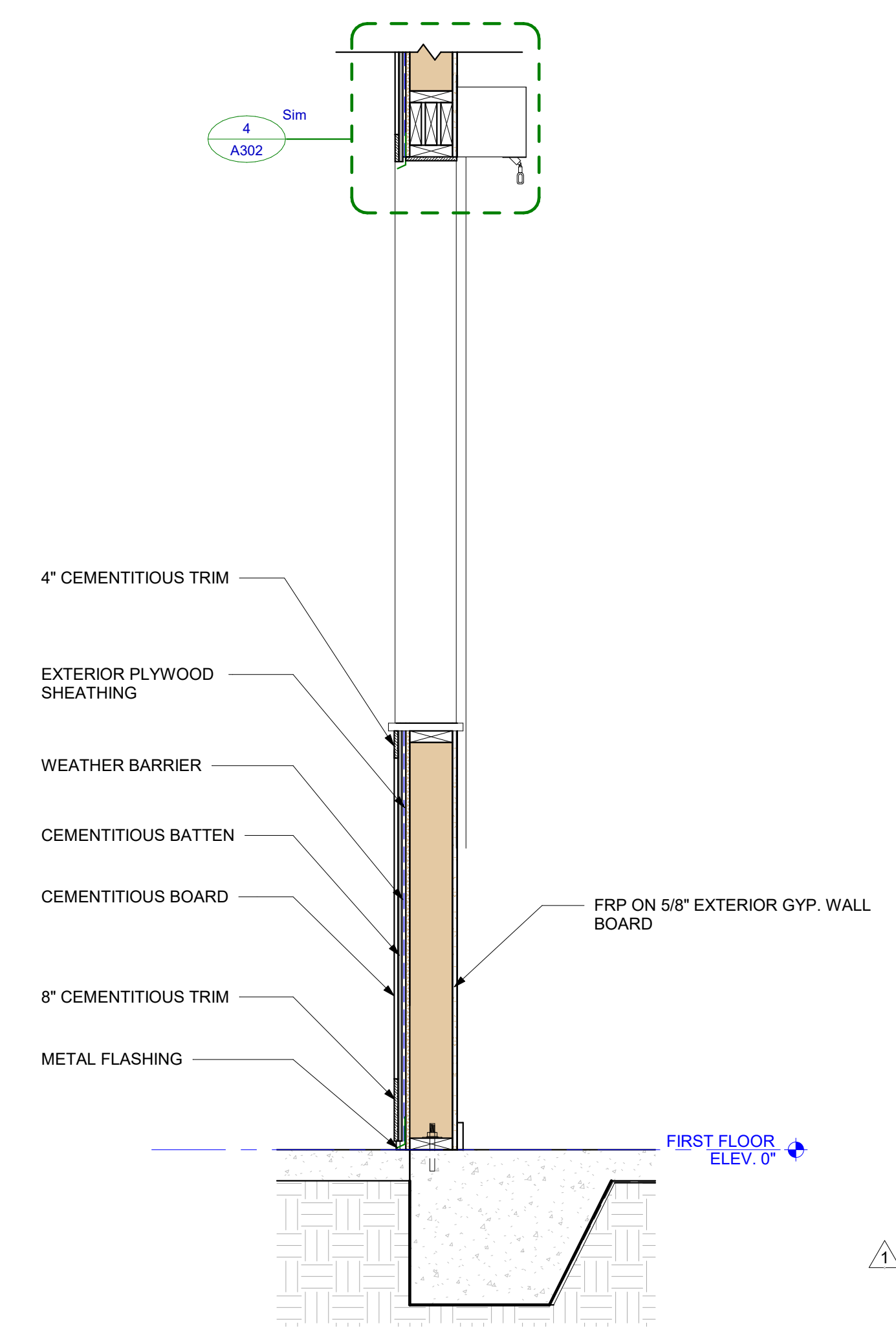
PHOTOBOOTH WALL SECTION 2
 3/4" = 1'-0"



PHOTOBOOTH WALL SECTION 1
 3/4" = 1'-0"



SECTION THROUGH OFFICE WINDOW
 3/4" = 1'-0"



SECTION THROUGH SERVING AREA 2
 3/4" = 1'-0"

SURF'S UP
 MINIATURE GOLF STRUCTURES
 1360 BRIDGE BARRIER RD.
 CAROLINA BEACH, NC 28428

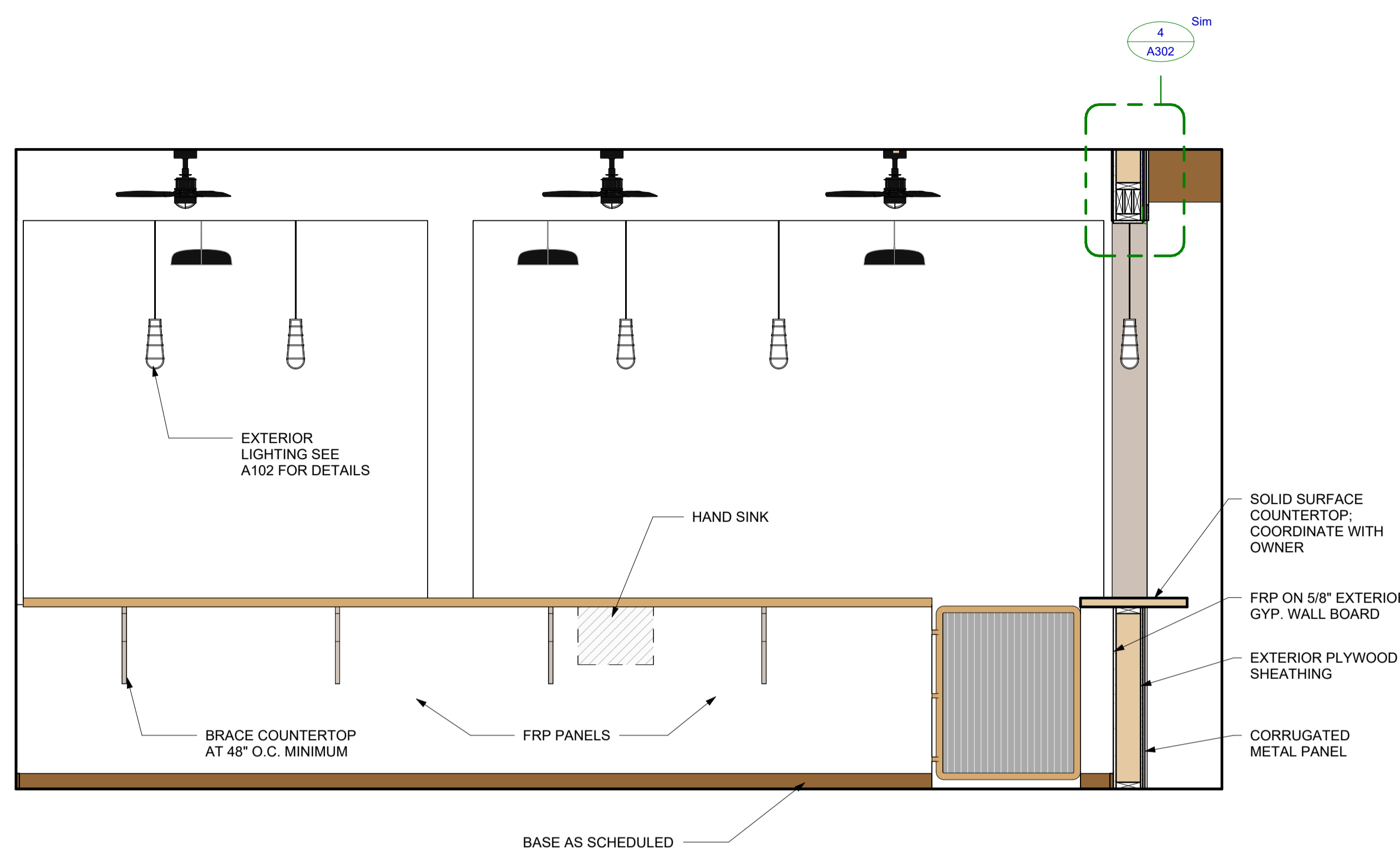
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Mark	Date	Permit Comments
1	12/06	
2	09/26/2024	

PROJECT NO: 24074
 DATE: 09/26/2024
 SCALE: As indicated
 DRAWN BY: OU
 PROJ MGR: WB

TIKI BAR WALL SECTION AND DETAILS

A304



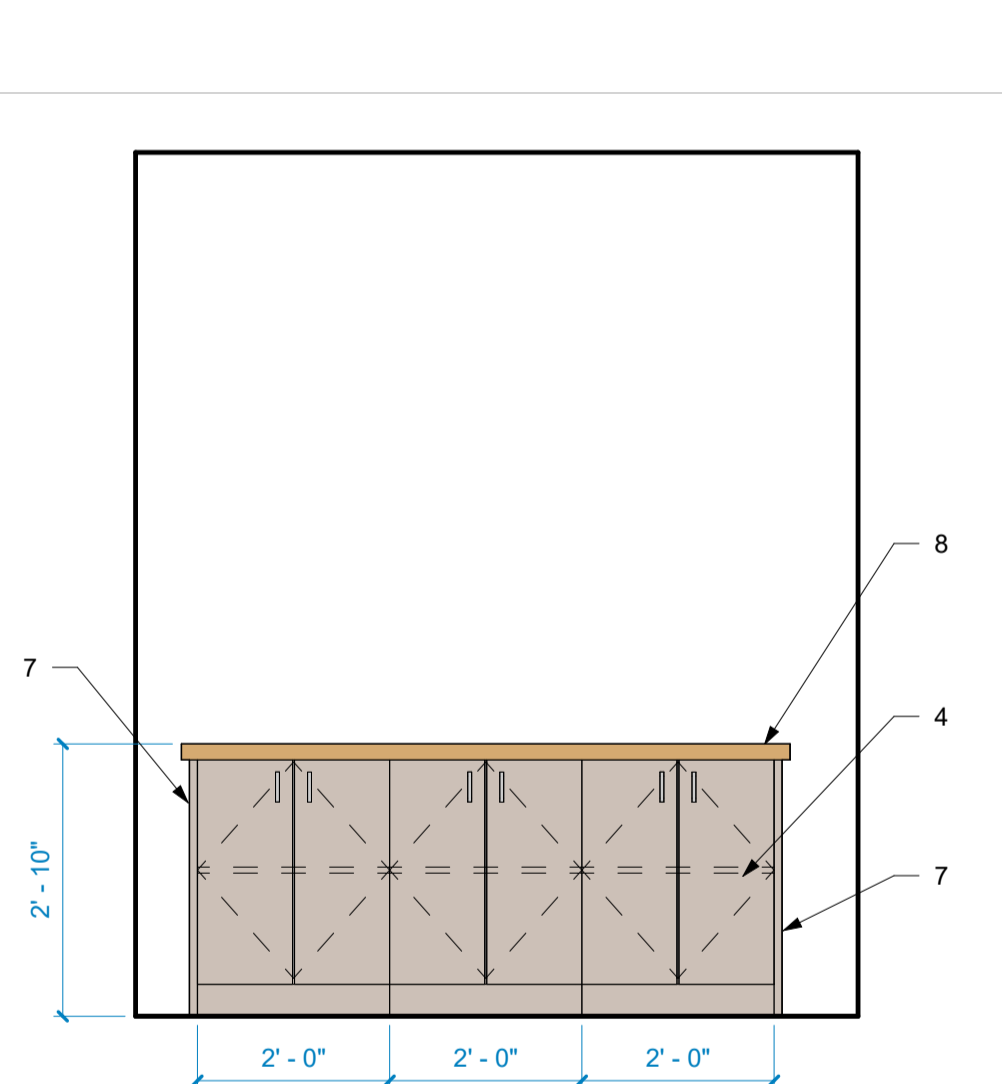
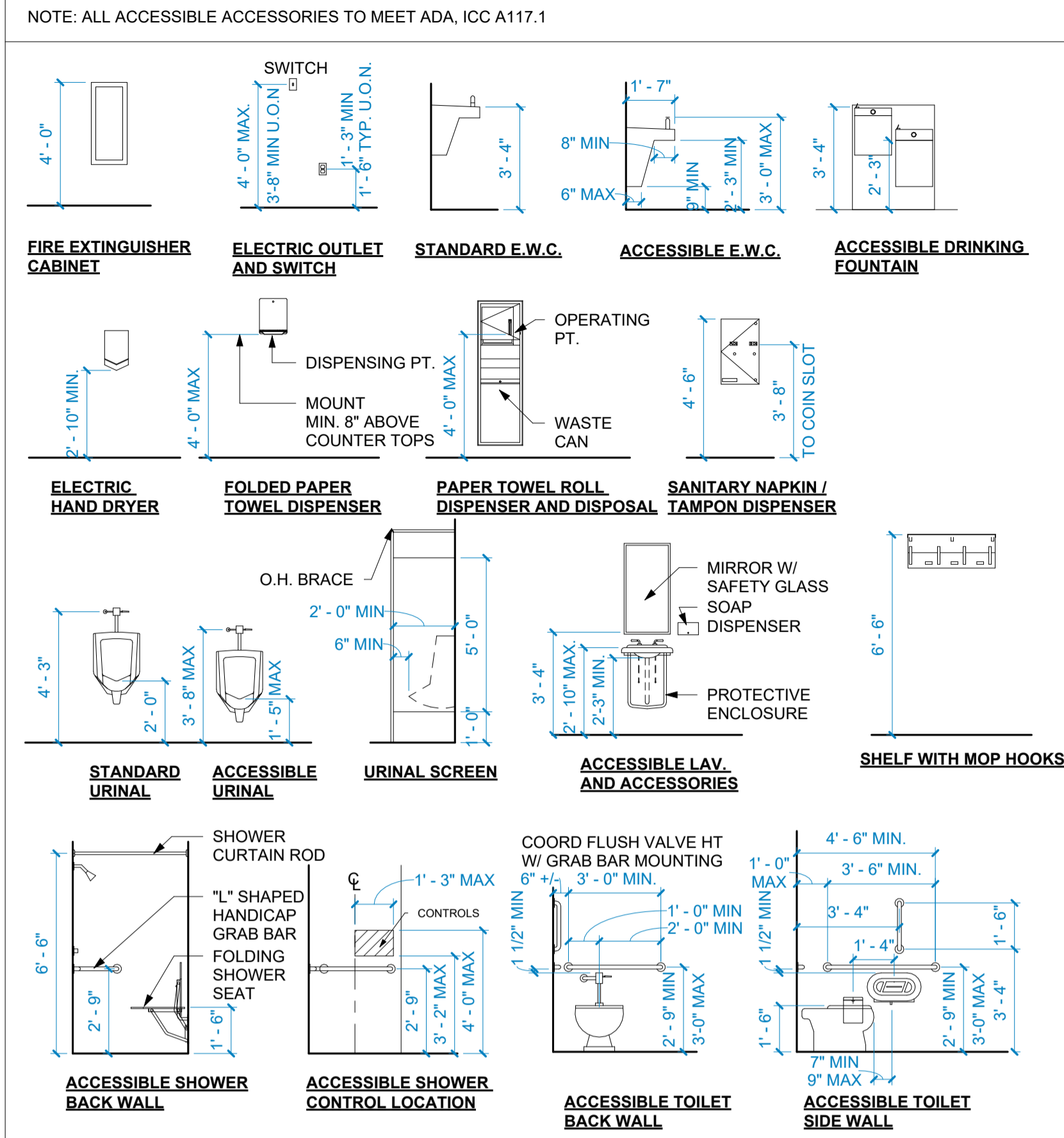
KEYNOTES - TOILET ACCESSORIES

A	TOILET PAPER DISPENSER
B	42" HORIZONTAL GRAB BAR
C	36" HORIZONTAL GRAB BAR
D	18" VERTICAL GRAB BAR
E	2 X 6 BLOCKING FOR ADA STANDARD GRAB BAR
F	BASE AS SCHEDULED
G	MIRROR, BY OWNER
H	VANITY LIGHT; SEE A102
J	HDPE TOILET PARTITIONS w/ STAINLESS HARDWARE

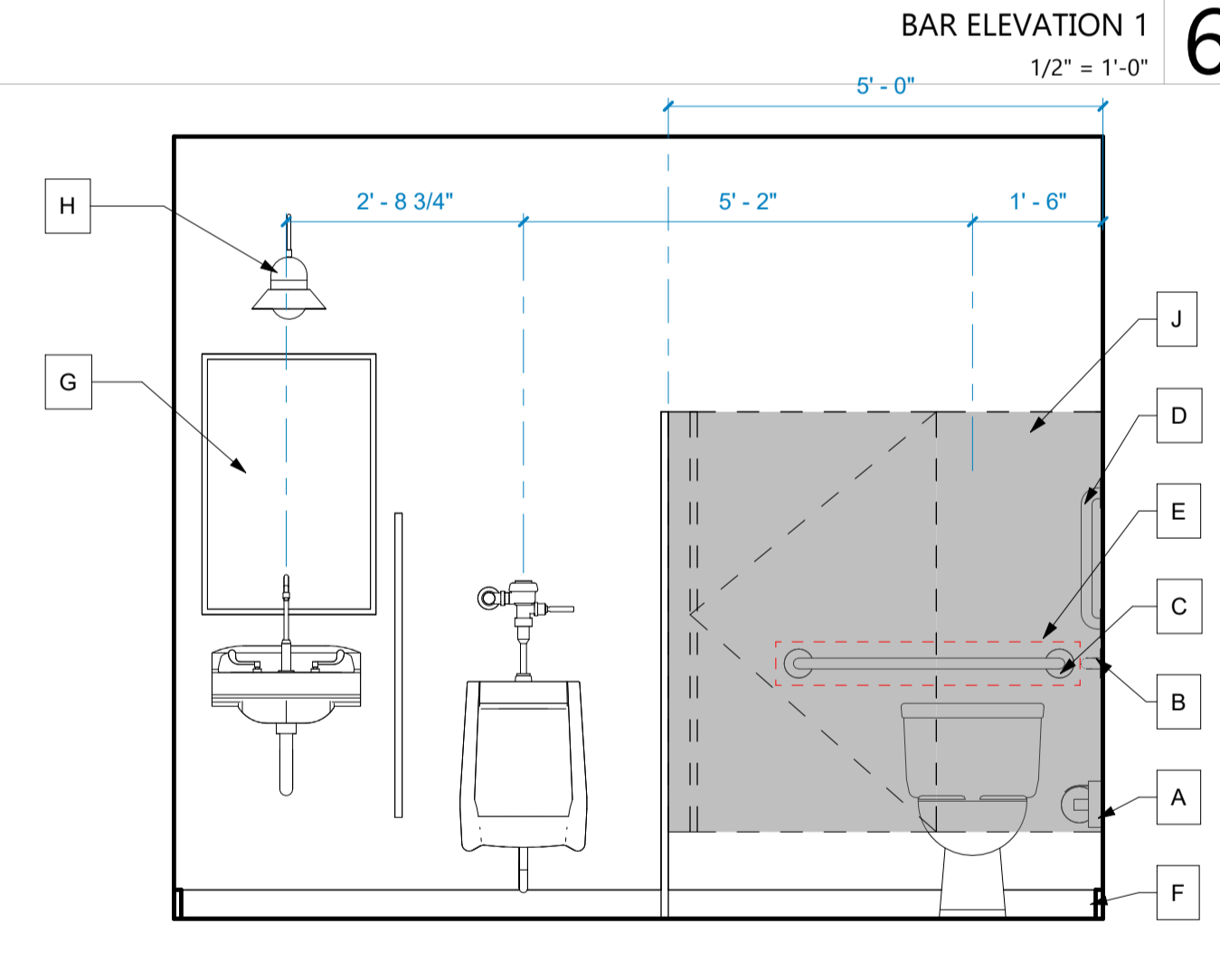
KEYNOTES - ELEVATION

1	FILLER AS NEEDED
2	P-LAM CABINETS 12" DEPTH
3	P-LAM COUNTER; W/4" BACKSPLASH
4	P-LAM CABINETS; 24" DEPTH
5	BASE AS SCHEDULED
6	BRACKET AS NEEDED
7	END PANEL
8	SOLID SURFACE COUNTERTOP

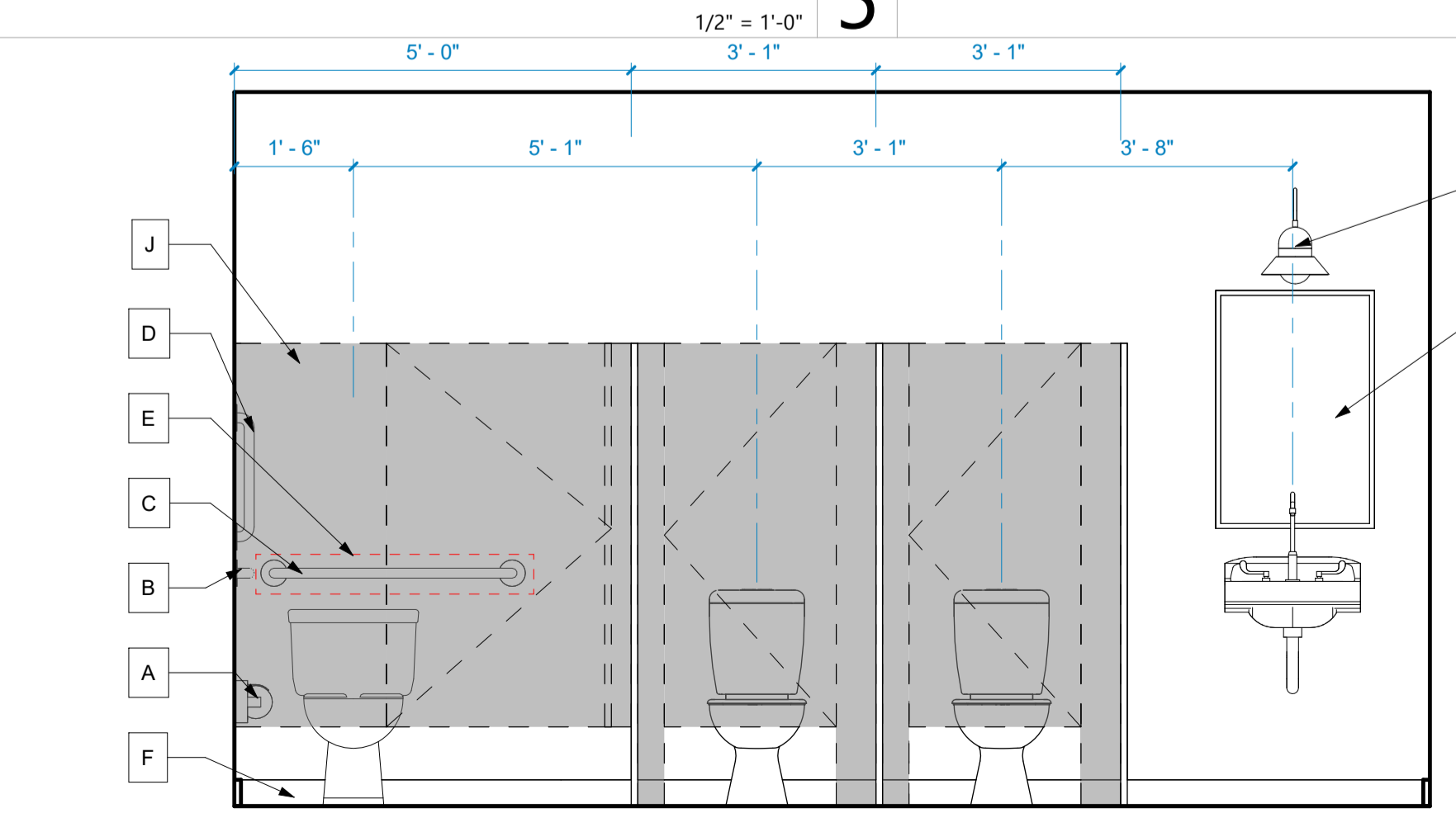
STANDARD MOUNTING HEIGHTS



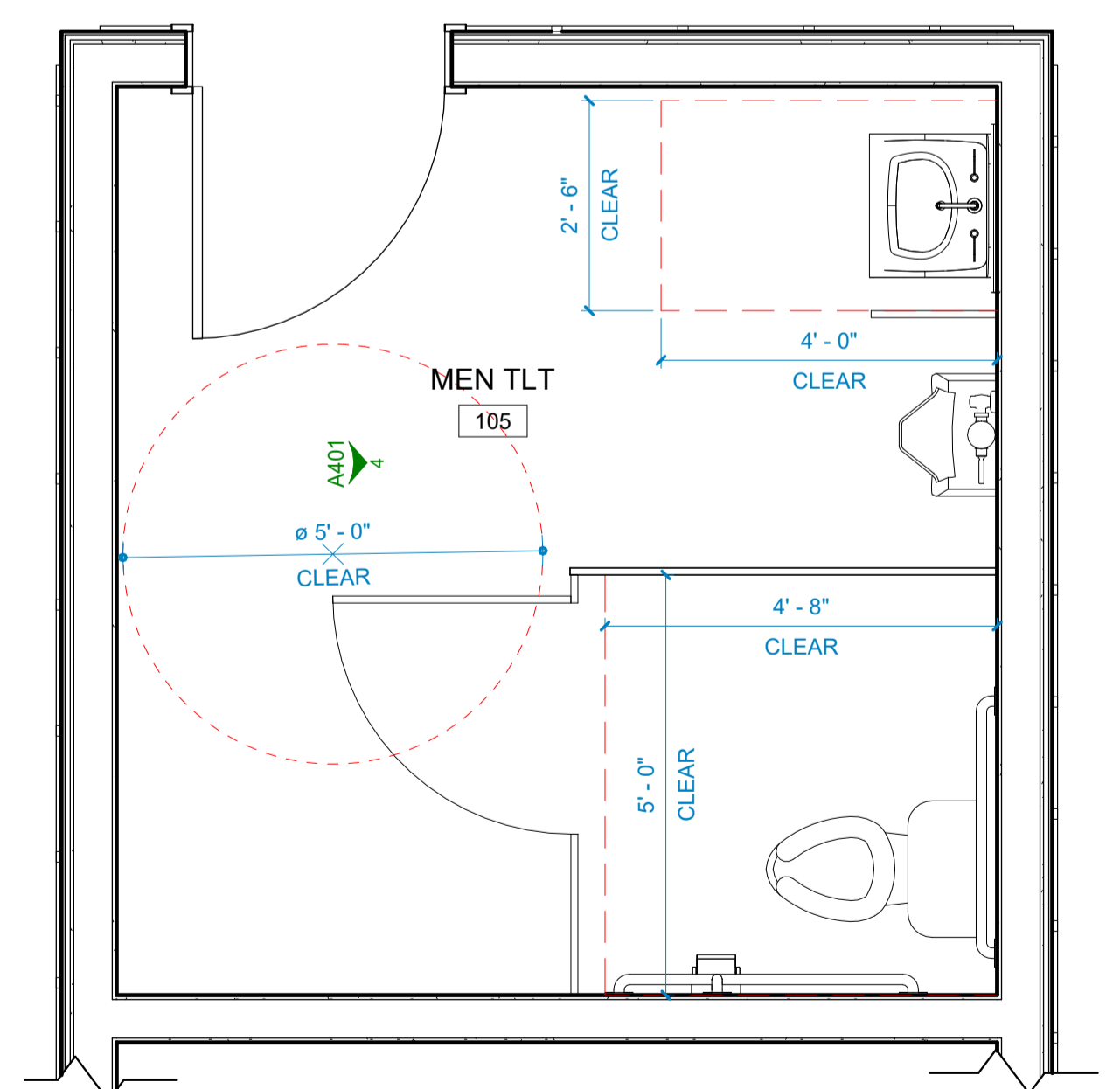
BAR ISLAND COUNTER ELEVATION 5
1/2" = 1'-0"



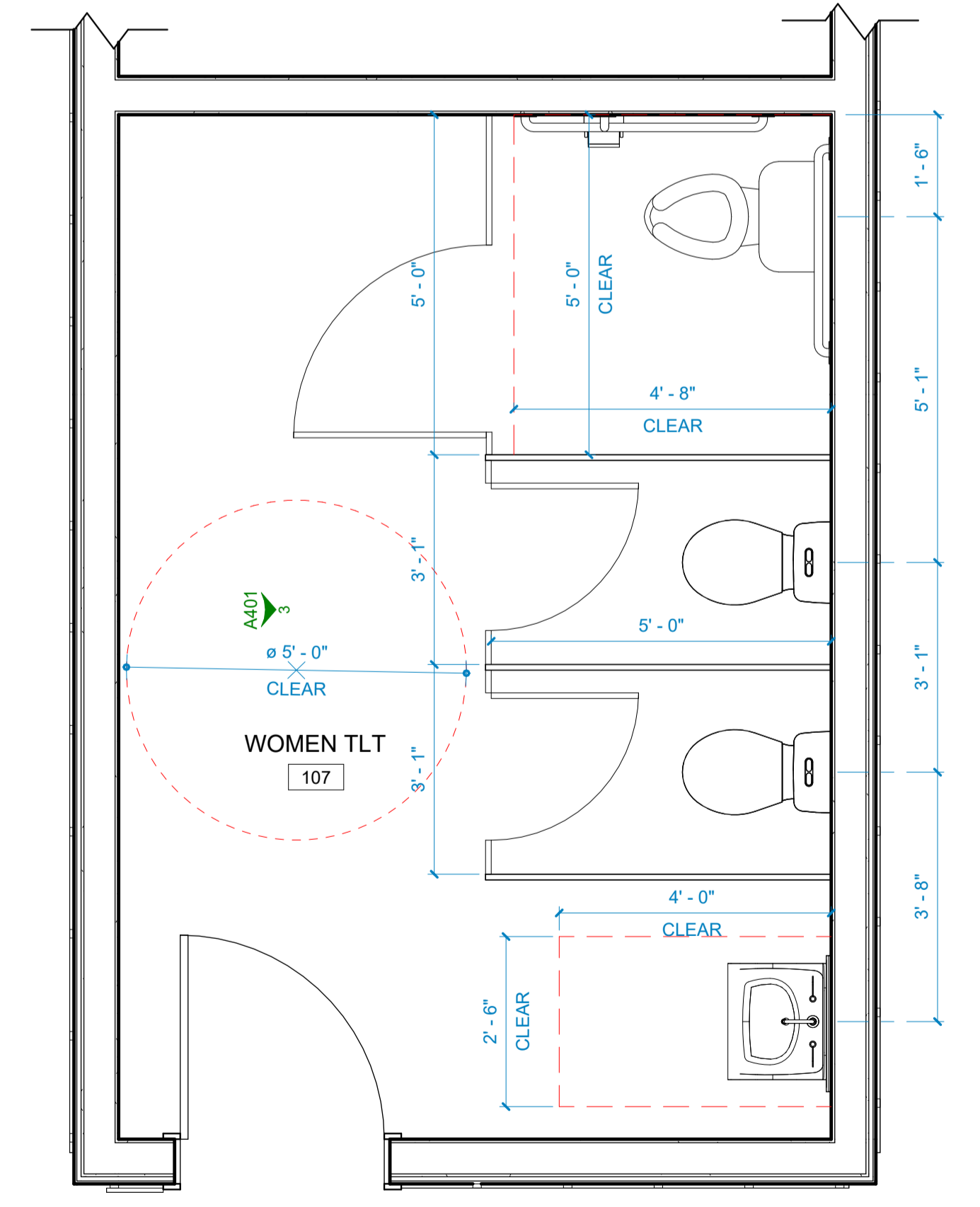
MEN'S TLT. ELEV. 4
1/2" = 1'-0"



WOMEN'S TLT. ELEV. 3
1/2" = 1'-0"



MEN'S TLT. ENLARGED PLAN 2
1/2" = 1'-0"



WOMEN'S TLT. ENLARGED PLAN 1
1/2" = 1'-0"

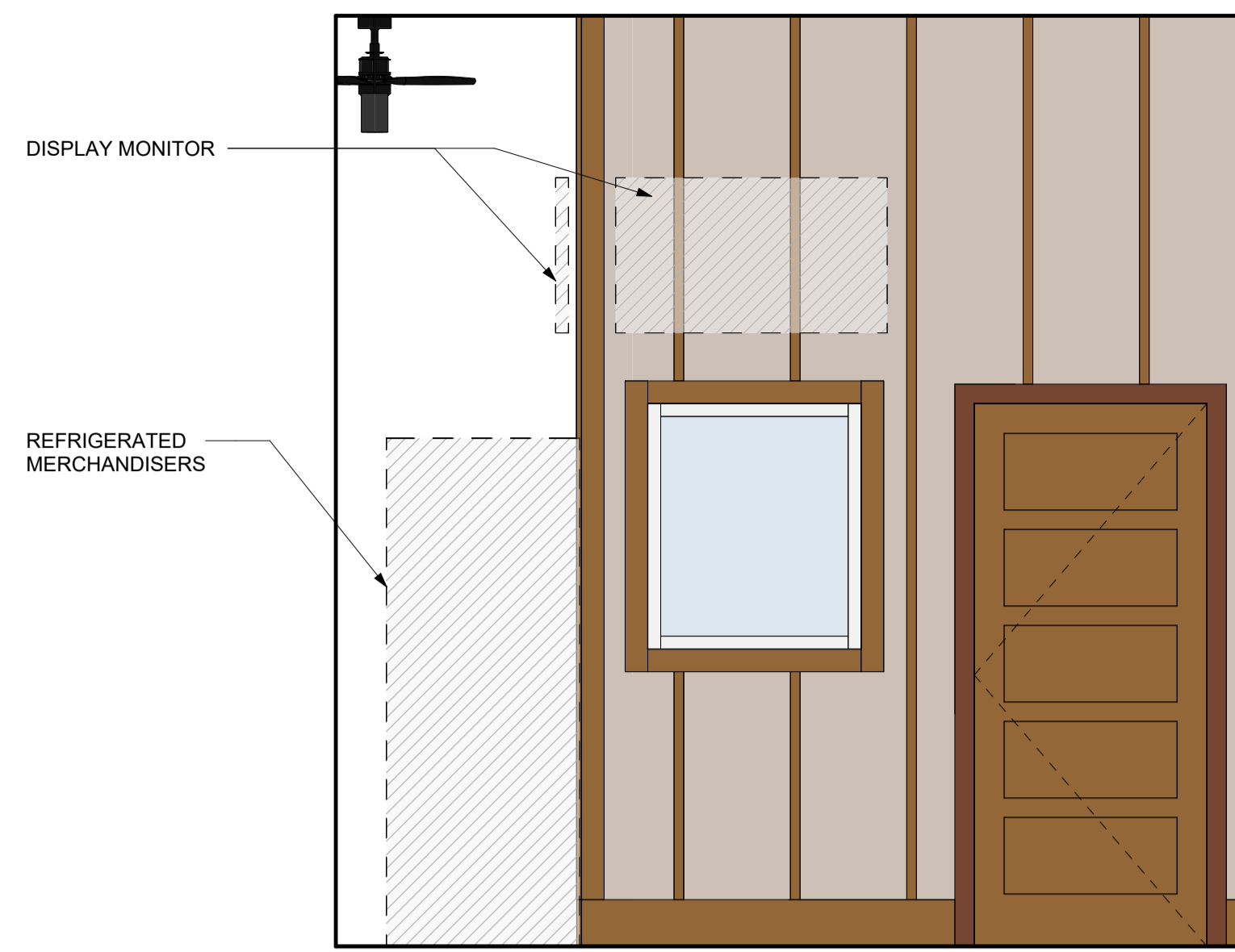
SURF'S UP
MINIATURE GOLF STRUCTURES
1360 BRIDGE BARRIER RD.
CAROLINA BEACH, NC 28428

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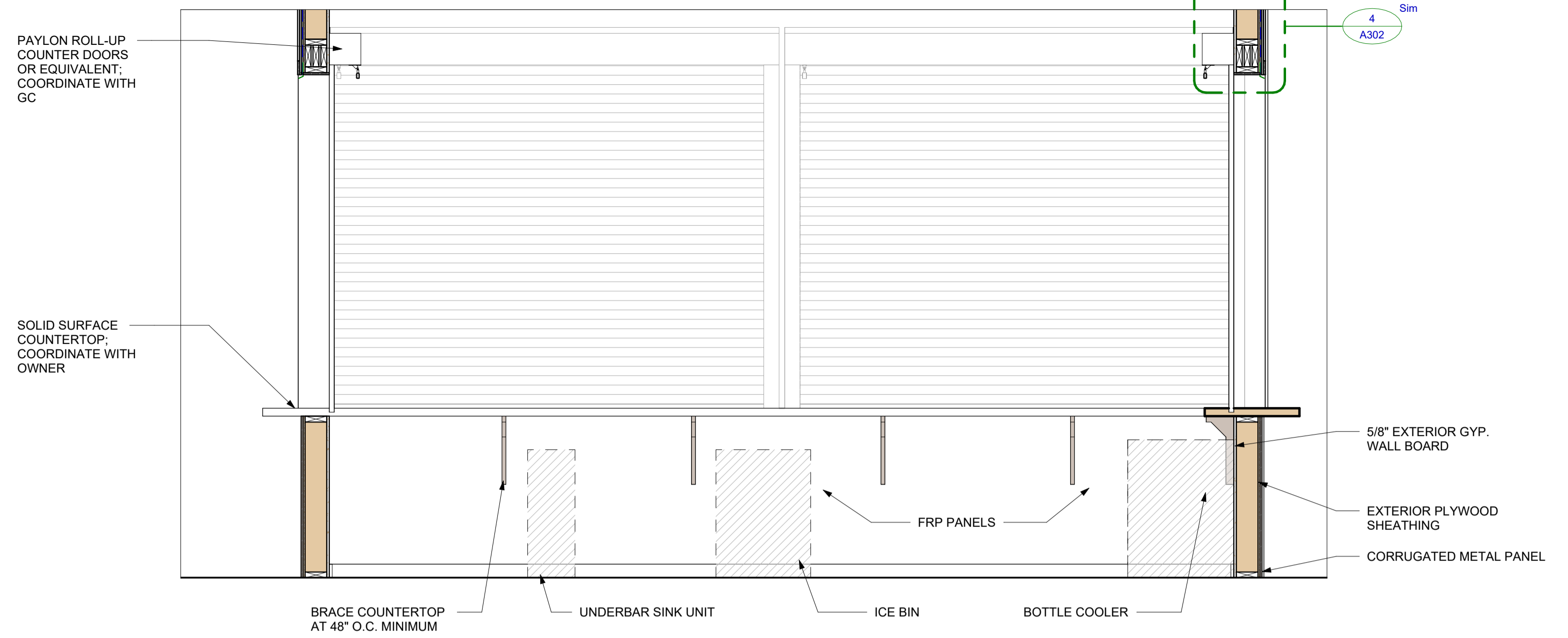
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PROJECT NO:	24074	
DATE:	09/26/2024	
SCALE:	As indicated	
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PROJ MGR:	WB	

ENLARGED PLANS AND SECTIONS

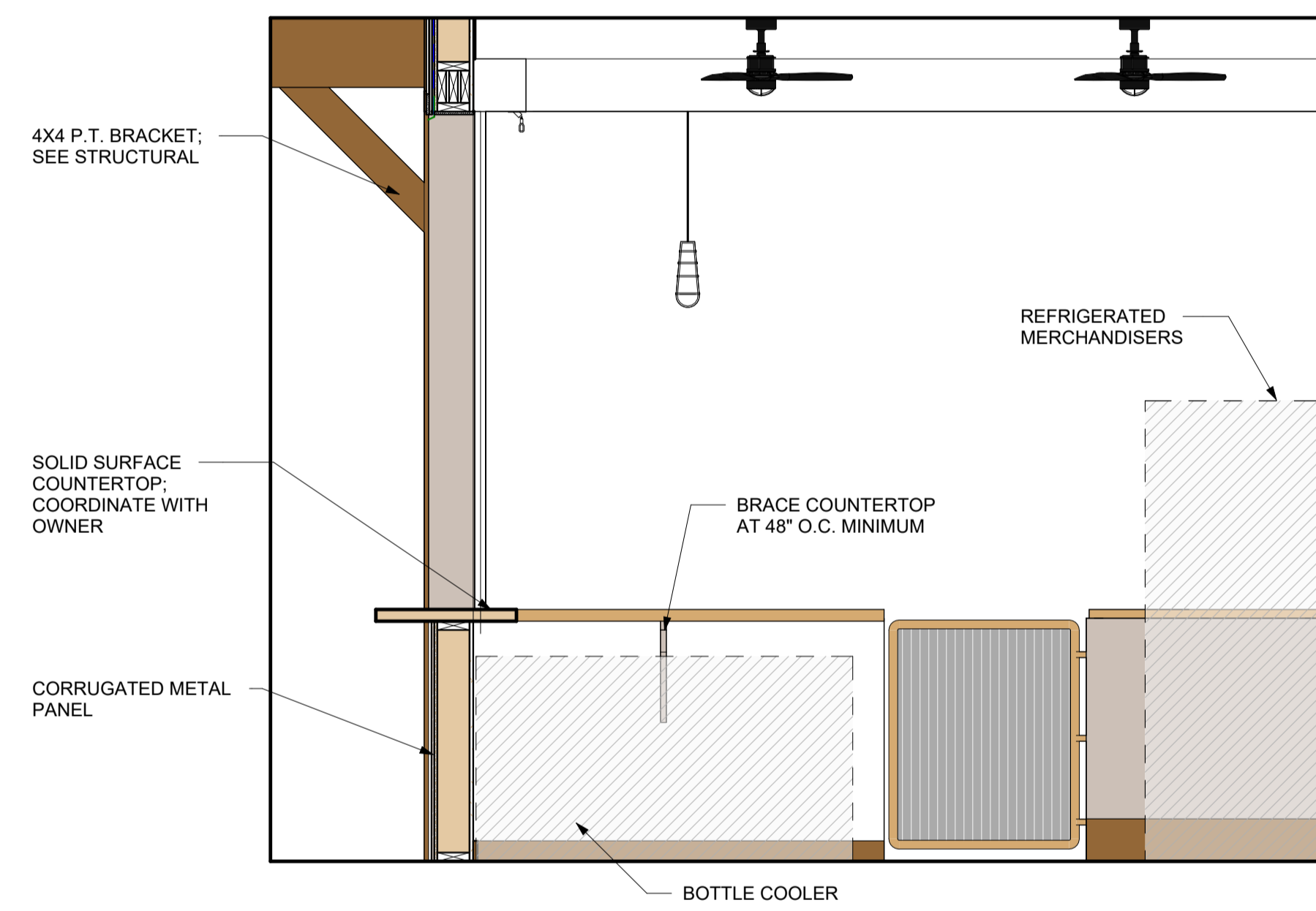
A401



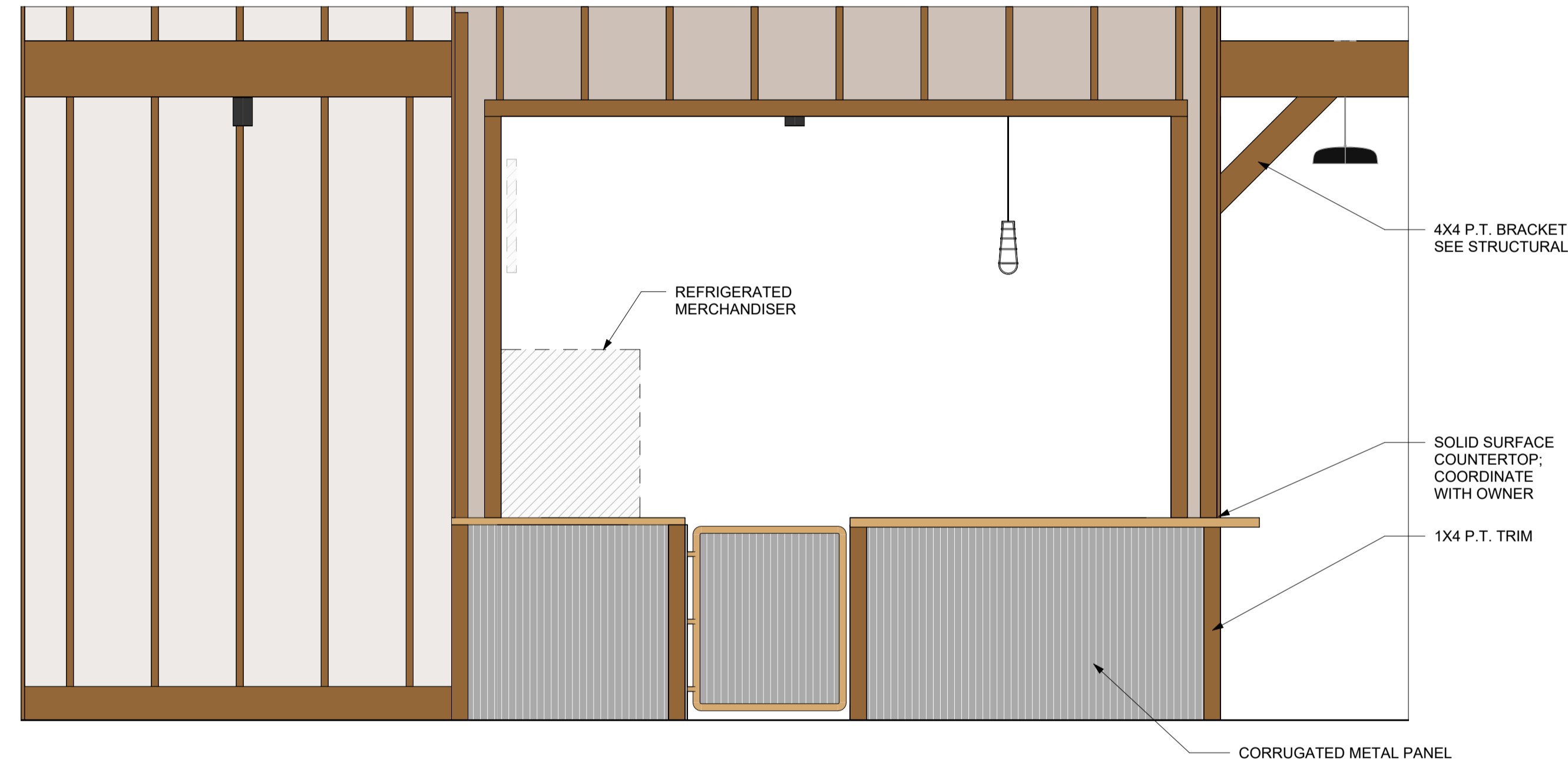
BAR ELEVATION 7
1/2" = 1'-0" 6



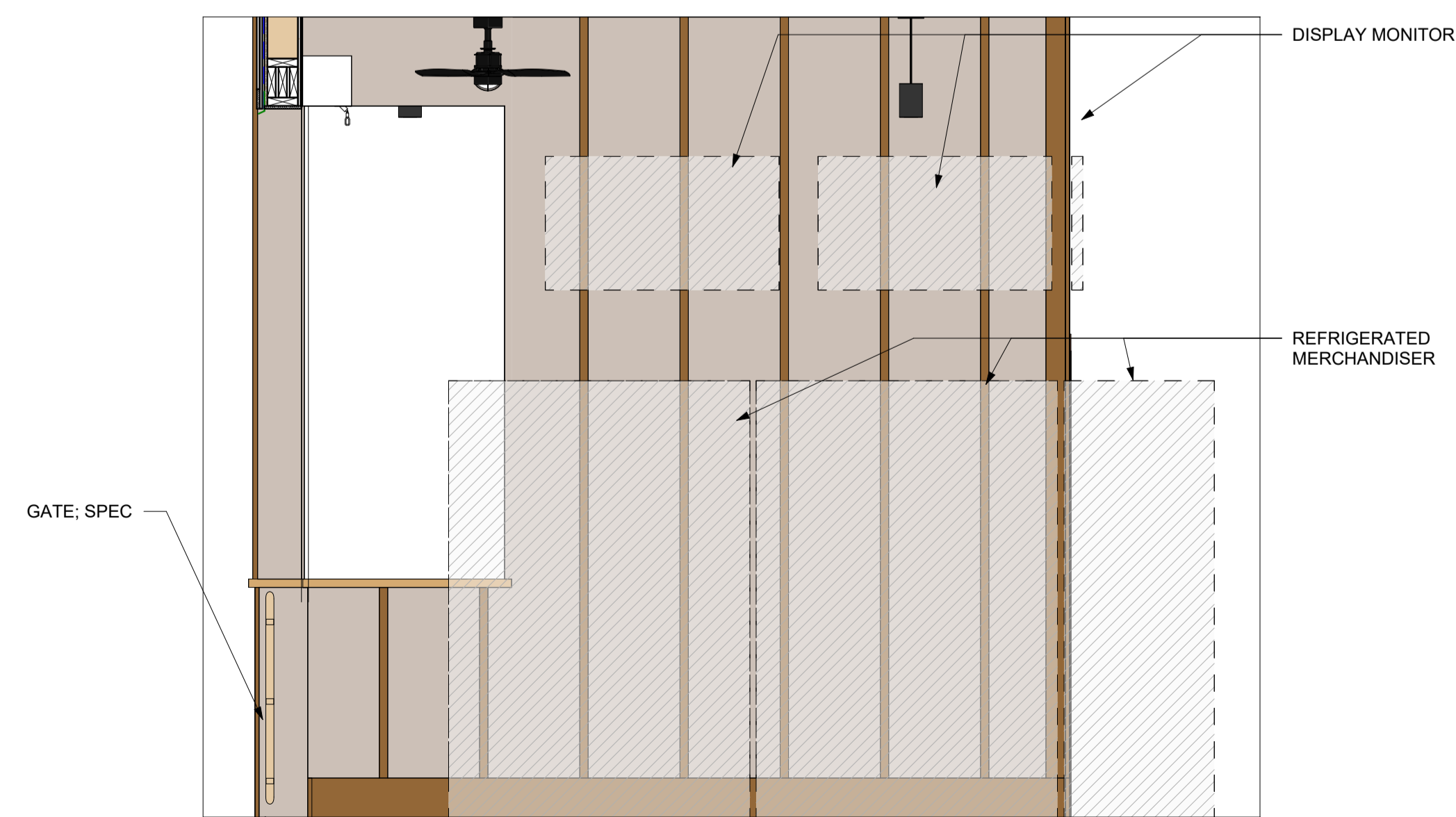
BAR ELEVATION 6
1/2" = 1'-0" 5



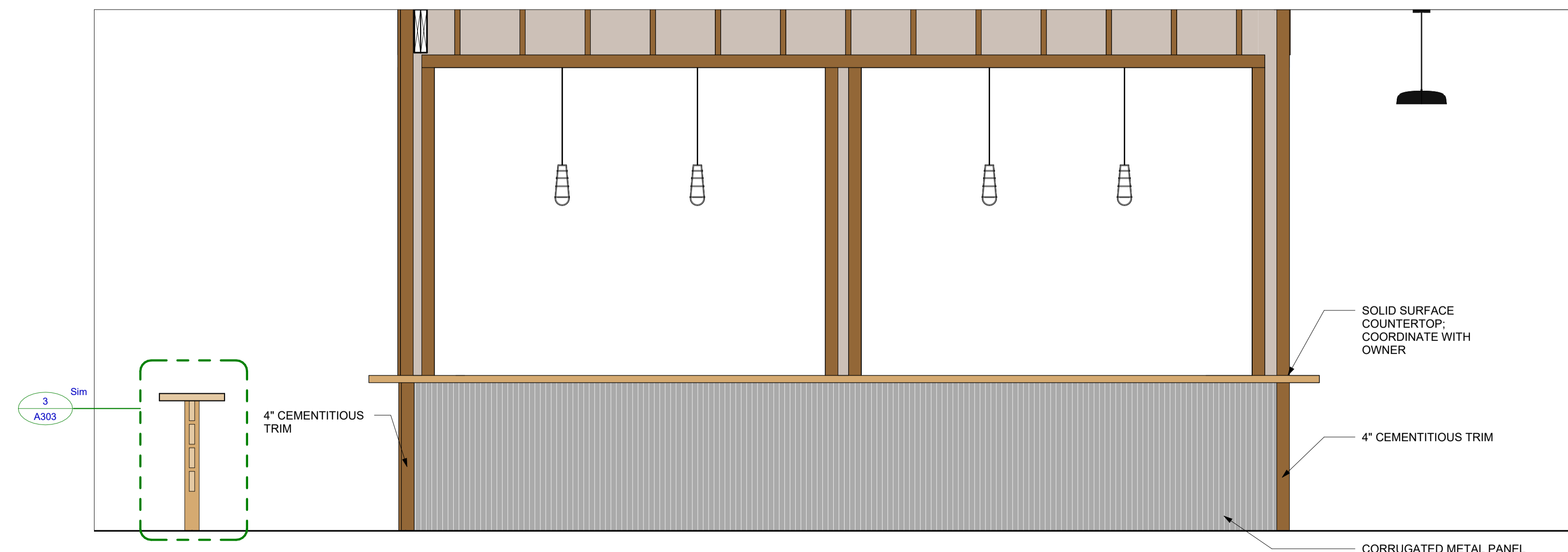
BAR ELEVATION 5
1/2" = 1'-0" 4



BAR ELEVATION 4
1/2" = 1'-0" 3



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



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

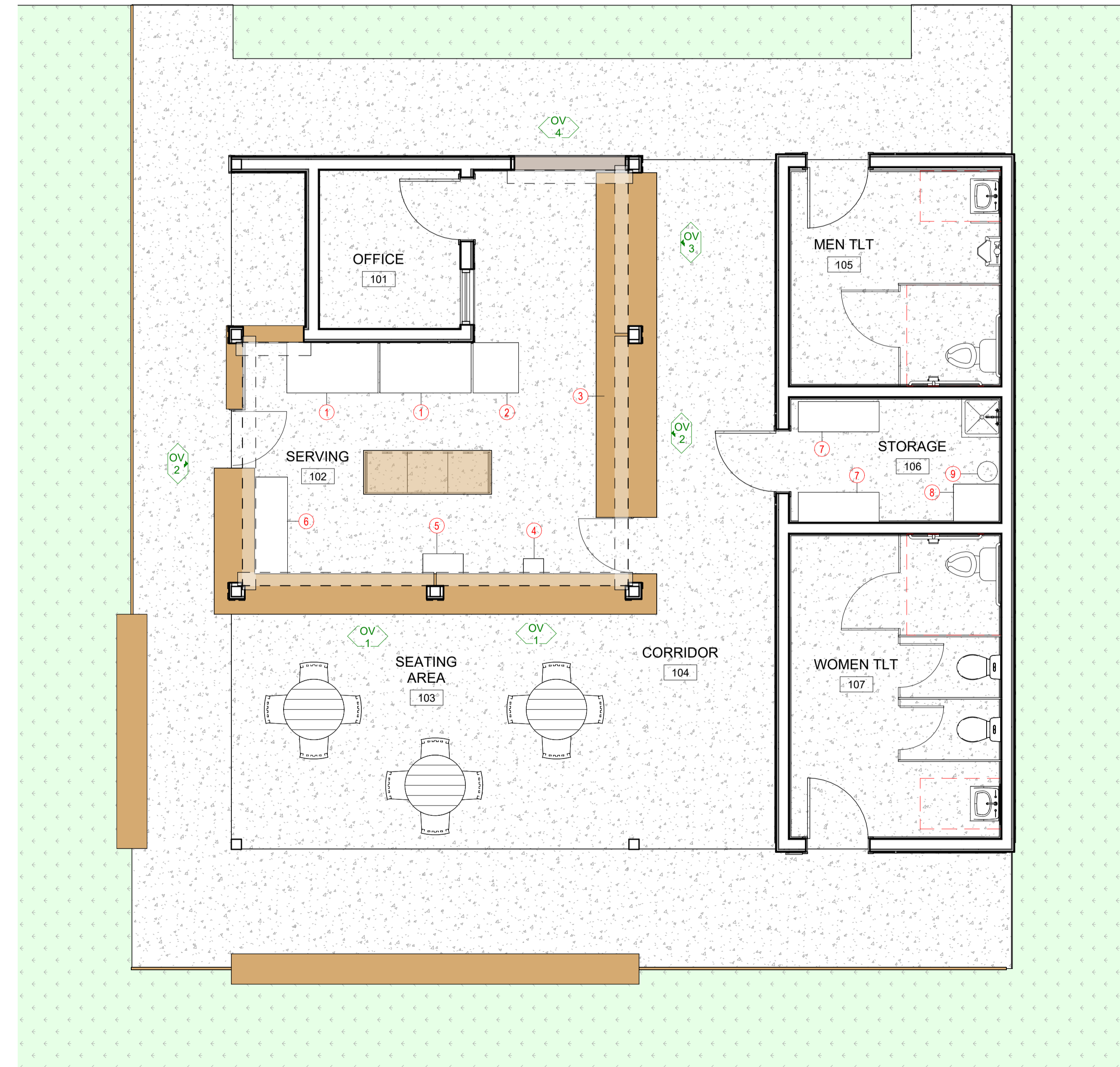
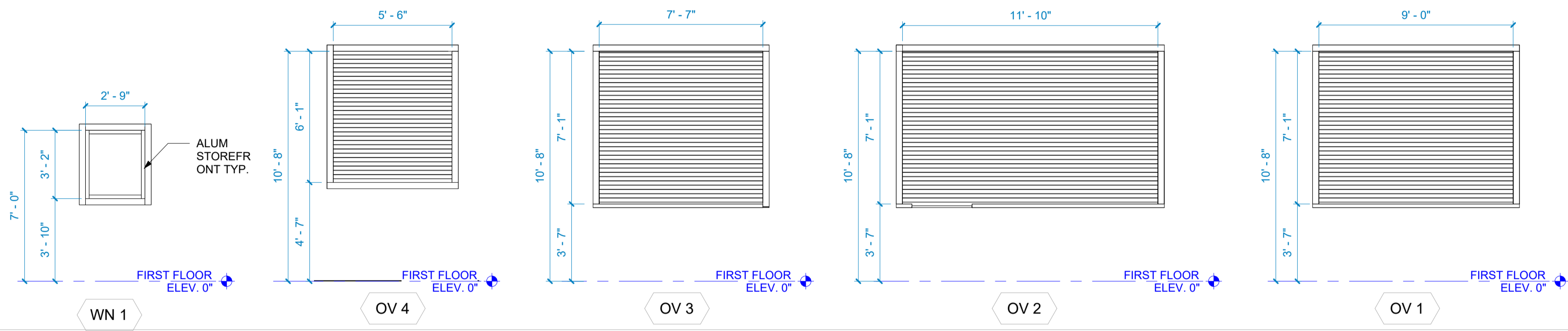
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Mark	Date	Description
PROJECT NO:	24074	
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SCALE:	1/2" = 1'-0"	
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INTERIOR ELEVATION

A402

FINISH SCHEDULE														
#	ROOM NAME	FLOOR	BASE MAT	WALL								CEILING		COMMENTS
				NORTH		EAST		SOUTH		WEST		MAT	FIN	
				MAT	FIN	MAT	FIN	MAT	FIN	MAT	FIN	MAT	FIN	
FIRST FLOOR														
101	OFFICE	CONC	R	GWB	PT	GWB	PT	GWB	PT	GWB	PT	GWB	PT	
102	SERVING	CONC	R	GWB	PT	GWB	PT	GWB	PT	GWB	PT	EXP	-	FRP ON ALL BAR SERVICE AREAS
103	SEATING AREA	CONC	-	GWB	PT	GWB	PT	GWB	PT	GWB	PT	EXP	-	
104	CORRIDOR	CONC	-	GWB	PT	GWB	PT	GWB	PT	GWB	PT	EXP	-	
105	MEN TLT	CONC	R	GWB	PT	GWB	PT	GWB	PT	GWB	PT	GWB	PT	EPOXY PAINT ON WALL
106	STORAGE	CONC	R	GWB	PT	GWB	PT	GWB	PT	GWB	PT	GWB	PT	
107	WOMEN TLT	CONC	R	GWB	PT	GWB	PT	GWB	PT	GWB	PT	GWB	PT	EPOXY PAINT ON WALL
108	PHOTOBOOTH	CONC	-	-	-	-	-	-	-	-	-	EXP	-	SEE A304/3 FOR DETAILS
LEVEL 2														
109	STORAGE	-	-	GWB	PT	GWB	PT	GWB	PT	GWB	PT	EXP	PT	

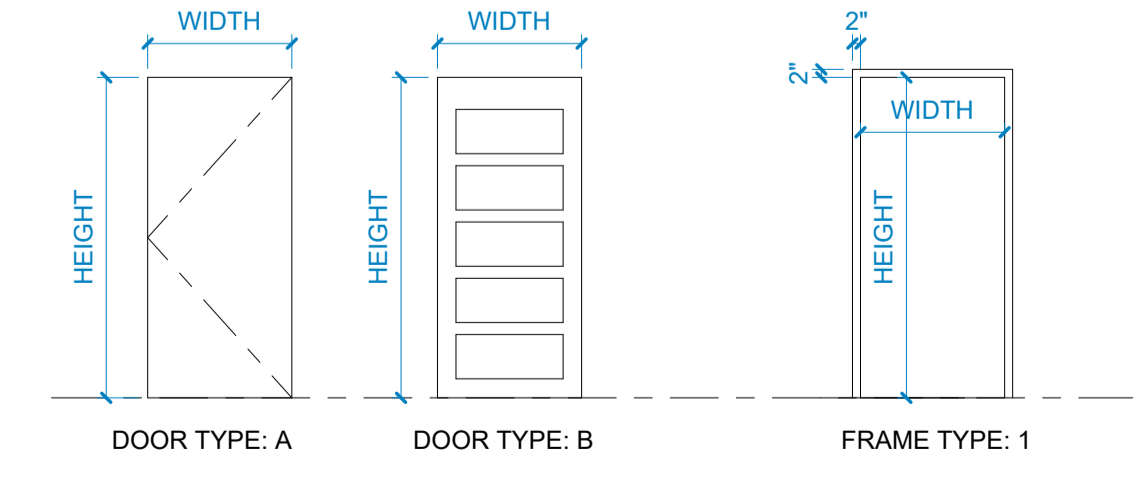
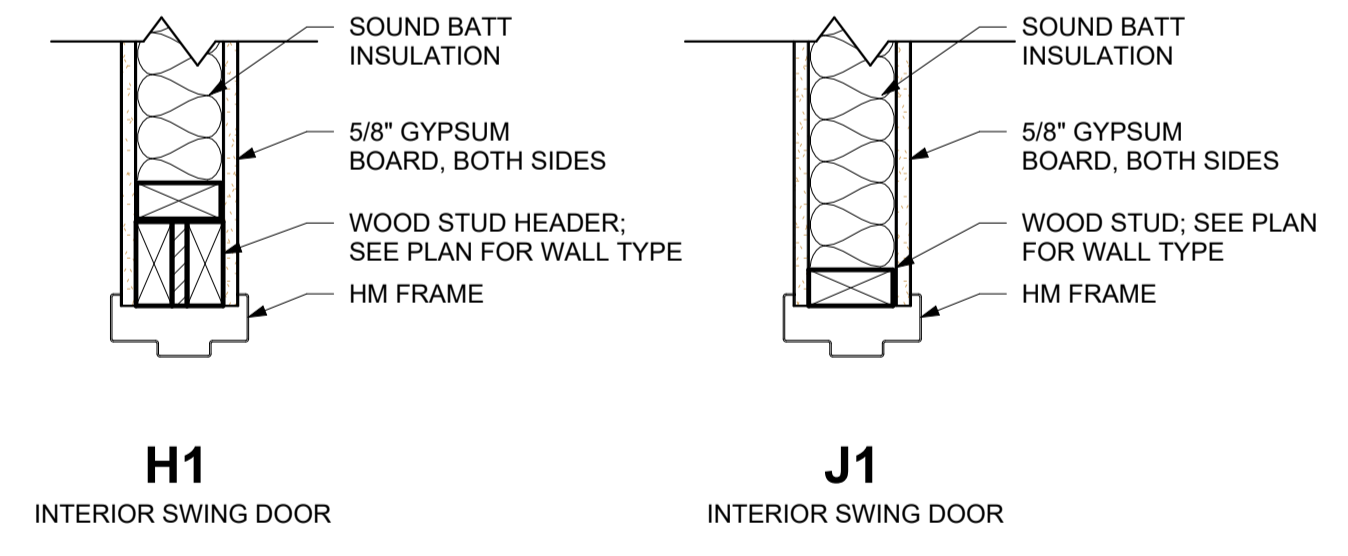


FINISH SCHEDULE LEGEND	
KEY NAME	DESCRIPTION
FLOOR	-
CD	COMPOSITE DECKING
CONC	CONCRETE WITH SEALER/HARDENER
BASE	-
-	NOT APPLICABLE / EXISTING TO REMAIN
R	RESILIENT WALL BASE
WD	WOOD BASE
WALL	-
-	NOT APPLICABLE / EXISTING TO REMAIN
CMU	EXPOSED STRUCTURE, FIRE PROTECTION, PLUMBING, MECHANICAL, ELECTRICAL, TECHNOLOGY
GWB	GYPSUM WALL BOARD
PT	PAINT
CEILING	-
-	NOT APPLICABLE / EXISTING TO REMAIN
EXPO	EXPOSED STRUCTURE, FIRE PROTECTION, PLUMBING, MECHANICAL, ELECTRICAL, TECHNOLOGY
GWB	GYPSUM BOARD CEILING
PT	PAINT

FINISH SCHEDULE LEGEND	
KEY NAME	DESCRIPTION
ORIENTATION	ON PLANS NORTH WALL IS UP, EAST IS RIGHT, SOUTH IS DOWN, WEST IS LEFT
GENERAL NOTES	1 WALLS AND CEILINGS MAY CONTAIN MORE THAN ONE MATERIAL OR FINISH AS INDICATED. COORDINATE WITH CONSTRUCTION TYPE AND FINISH SIMILAR TO ADJACENT MATERIALS
	2 SEE A102 REFLECTED CEILING PLANS & CEILING NOTES FOR CEILING HEIGHTS, MATERIAL EXTENTS, LOCATIONS AND HEIGHTS OF BULKHEADS, SOFFITS, ETC.
	3 PLAN WALL TYPES TAKE PRECEDENCE OVER SCHEDULED WALL FINISH. PROVIDE APPROPRIATE WALL FINISH TO CORRESPOND TO WALL TYPES
	4 MOLD AND MOISTURE RESISTANT GYPSUM BOARD SHALL BE USED AT ALL KITCHEN AREAS, TOILET ROOMS AND CUSTODIAN SERVICE CLOSETS SCHEDULED TO HAVE GYPSUM BOARD FINISHES
	5 WALL AND CEILING FINISHES SHALL INCLUDE ALL PROJECTIONS, BEAM ENCLOSURES, RECESSES, BULKHEADS, MATERIAL CHANGES, OR OTHER ENCLOSURES. REFER TO REFLECTED CEILING PLANS
	6 PROVIDE SEALANT/CAULK AT INTERSECTIONS OF DISSIMILAR MATERIALS AND AS RECOMMENDED BY MANUFACTURERS' GUIDELINES.

DOOR SCHEDULE											
MARK	DOOR			FRAME				DETAIL		COMMENTS	
	WIDTH	HT	TYPE	MATL	FIN	TYPE	MATL	FIN	HEAD		JAMB
FIRST FLOOR											
101	3'-0"	7'-0"	B	HM	PT	1	HM	PT	H1	J1	
105	3'-0"	7'-0"	B	HM	PT	1	HM	PT	H1	J1	
106	3'-0"	7'-0"	B	HM	PT	1	HM	PT	H1	J1	
107	3'-0"	7'-0"	B	HM	PT	1	HM	PT	H1	J1	
LEVEL 2											
109	3'-0"	7'-0"	A	HM	PT	1	HM	PT	H1	J1	PAINTED TO MATCH FACADE

EQUIPMENT LIST				
ITEM	MANUFACTURER	DIMENSIONS (H x W x D)	QUANT...	
1 REFRIGERATED MERCHANDISER	TRUE MFG. - GENERAL FOODSERVICE MODEL GDM-49-HC~TSL01	78.63(h) x 54.13(w) x 29.88(d)	2	
2 REFRIGERATED MERCHANDISER	TRUE MFG. - GENERAL FOODSERVICE MODEL GDM-23-HC~TSL01	78.63(h) x 27(w) x 29.88(d)	1	
3 HAND SINK	SERV-WARE MODEL HS15S-CWP	13.5(h) x 17(w) x 15(d)	1	
4 UNDERBAR SINK UNITS	BK RESOURCES MODEL UB4-18-1014HS12-P-G	32.5(h) x 12(w) x 18(d)	1	
5 ICE BIN	BK RESOURCES MODEL UB4-21-1B24	32.5(h) x 24(w) x 21(d)	1	
6 BOTTLE COOLER	SERV-WARE MODEL BC-65-HC	35(h) x 64.3(w) x 27(d)	1	
7 WIRE SHELVING	SERV-WARE MODEL GR1848CWP	48(w) x 18(d)	10	
8 ICE MAKER, CUBE-STYLE	BLUE AIR FSE LLC MODEL BLMI-300A	30.63(h) x 22(w) x 27(d)	1	
9 WATER FILTRATION SYSTEM	CUSTOM MODEL SYSTEMS IV CC1 SERIES	N/A	1	



WD STUD HEAD AND JAMB DETAILS 2
1 1/2" = 1'-0"

DOOR AND FRAME TYPES
1/4" = 1'-0"

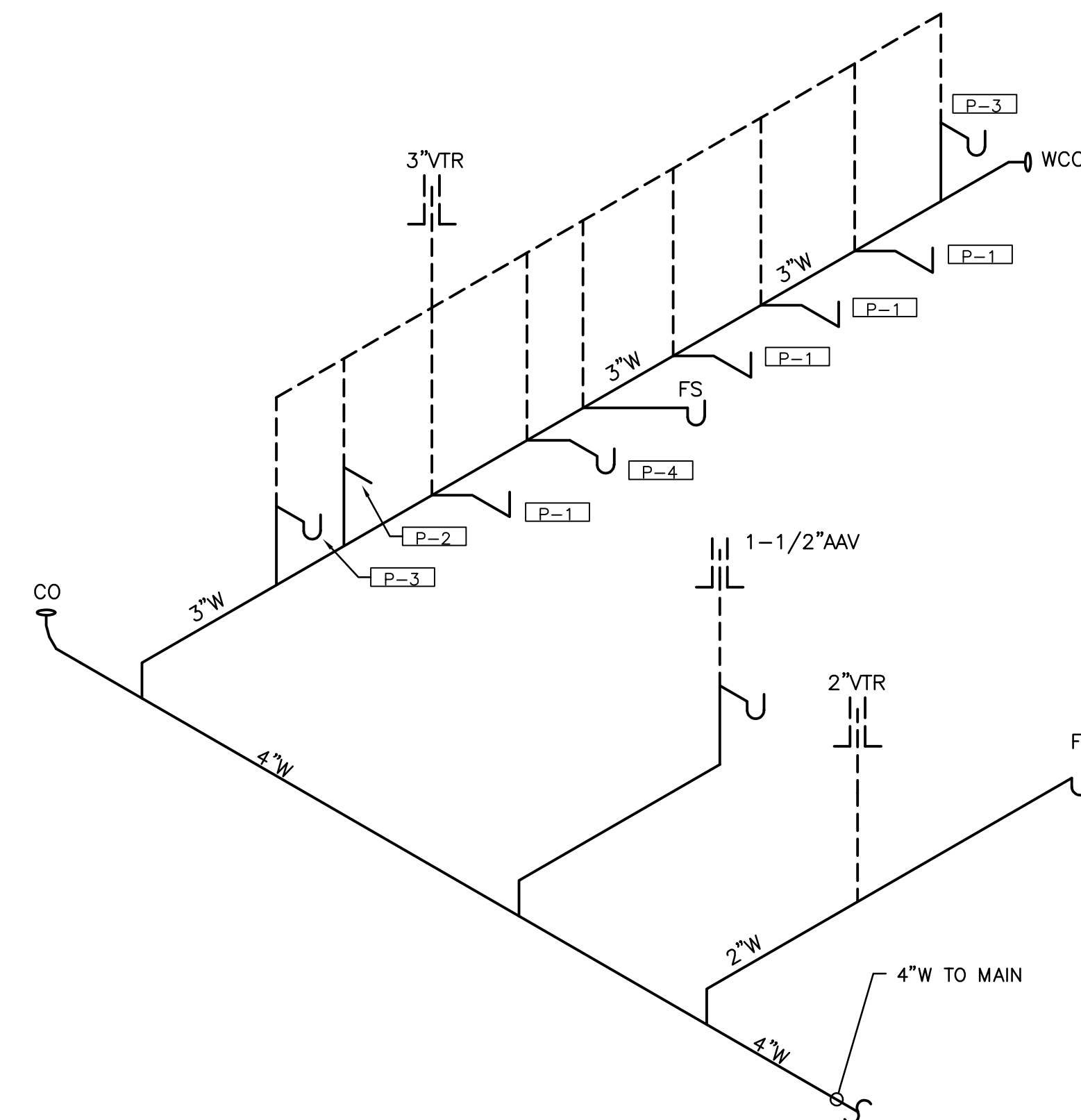


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DRAWN BY:	OU	
PROJ MGR:	WB	
DOOR AND FINISH SCHEDULE		
A601		

PLUMBING FIXTURE SCHEDULE

P-#	FIXTURES	SPECIFICATIONS	PIPING REQUIRED		
			WASTE	CW	HW
P-1	WATER CLOSET/ADA FLOOR MOUNTED TANK TYPE - 1.6 GPF	AMERICAN STANDARD "CADET RIGHT HEIGHT" MODEL 2298.012 VITREOUS CHINA TOILET WITH ELONGATED BOWL AND TANK WITH SIDE TRIP LEVER, 16 1/2" RIM HEIGHT, 1.6 GPF, 12" ROUGH-IN, BOLT CAPS, COMPLIES WITH ANSI A112.19.2 & A117.1 SEAT : BEMIS/CHURCH DURAGUARD 2100 NSSC ANTI-MICROBIAL HEAVY DUTY WHITE ELONGATED OPEN FRONT SEAT WITH COVER. VALVE: McGUIRE NO. 2166 3/8"x12" FLEX CLOSET SUPPLY WITH STOP.	3"	1/2"	--
P-2	URINAL - HANDICAP 3/4" TOP SPUD - 1.0 GPF MANUAL FLUSH VALVE	AMERICAN STANDARD "ALLBROOK" MODEL 6541.132 1.0 GPF 3/4" TOP SPUD, WHITE VITREOUS CHINA, 2" IPS OUTLET, WALL HANGER. MOUNT RIM 17" AFF TO COMPLY WITH ADA. VALVE: SLOAN REGAL MODEL 1-186-1-ADA, 1GPF, CHROME FLUSH WITH ADA COMPLIANT HANDLE.	2"	1/2"	--
P-3	LAVATORY - WALL MTD. AUTOMATIC FAUCET ADA	AMERICAN STANDARD "LUCERNE" 0355.012 WALL MTD. WHITE VITREOUS CHINA 20"x18" LAVATORY WITH 4" FAUCET CENTERS. FAUCET: AMERICAN STANDARD "SELECTRONIC" ELECTRONIC LAVATORY FAUCET MODEL 6057.205/6056.205, VANDAL RESISTANT 0.5 GPM AERATOR, 3/8" O.D. COPPER INLETS, PROVIDE POWER SUPPLY AND THERMOSTATIC MIXING VALVE. SUPPLIES: McGUIRE NO. 165 3/8"x12" FLEX ANGLE SUPPLY WITH STOP STRAINER; McGUIRE NO. 155-A GRID STRAINER WITH 1/4" TAILPIECE. TRAP AND SUPPLY INSULATION: McGUIRE PREWRAPPED PROWRAP INSULATION KIT MODEL NO.2150	1-1/2"	1/2"	1/2"
P-4	MOP BASIN 36"x36"x12"	FIAT MODEL TSB-3002, 36"x36"x12" TERRAZZO SERVICE BASIN WITH STAINLESS STEEL CAPS ON ALL CURBS, 12" HIGH WITH 6" DROP FRONT, SELF CAULKING BRASS DRAIN WITH STAINLESS STEEL STRAINER. FAUCET: FIAT MODEL 830-AA CHROME PLATED WITH VACUUM BREAKER, INTEGRAL STOPS, ADJUSTABLE WALL BRACE, PAIL HOOK & 3/4" HOSE THREAD ON SPOUT. HOSE AND HOSE BRACKET MODEL 832-AA 30" LONG FLEXIBLE HEAVY DUTY 3/8" RUBBER HOSE WITH 3/4" BRASS COUPLING, 18 GAUGE 302 STAINLESS STEEL BRACKET WITH RUBBER GRIP.	3"	1/2"	1/2"



WASTE RISER

SCALE: NONE

GENERAL PLUMBING SPECIFICATIONS

GENERAL: THE ENTIRE PLUMBING SYSTEM SHALL BE IN ACCORDANCE WITH THE CURRENT NORTH CAROLINA BUILDING PLUMBING CODE. SUBMIT THREE (3) COPIES OF PLUMBING INSPECTION CERTIFICATES TO OWNER. PLUMBING CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS REQUIRED BY GOVERNING AUTHORITIES FOR WORK DONE UNDER THIS CONTRACT. PROVIDE AND INSTALL ALL SUPPORTS, BRACKETS, MATERIALS AND LABOR AS REQUIRED FOR A COMPLETE AND ACCEPTABLE PLUMBING SYSTEM. PLUMBING CONTRACTOR SHALL CLEAN ALL PLUMBING FIXTURES AFTER ALL CONSTRUCTION IS COMPLETE.

SOIL, WASTE AND VENT PIPING: WASTE PIPING AND VENT PIPING SHALL BE P.V.C. - D.W.C. SCHEDULE 40 PIPE. HOWEVER, COEXTRUDED PVC "FOAM CORE", ASTM F891, WILL NOT BE ALLOWED.

ALL PENETRATIONS THROUGH NON-COMBUSTIBLE CONSTRUCTION SHALL BE PACKED WITH NON-COMBUSTIBLE FIRE STOPPING MATERIAL.

GRADE WASTE AND VENT PIPING 1/4 INCH PER FOOT WHERE POSSIBLE BUT NOT LESS THAN 1/8 INCH PER FOOT, UNLESS SPECIFICALLY DIRECTED. MAINTAIN INVERTS WHERE INDICATED.

WATER HEATER. ALL FITTINGS SHALL BE SWEAT TYPE WROUGHT COPPER WITH WALL THICKNESS EQUAL TO PIPE WALL THICKNESS. ALL JOINTS SHALL BE MADE WITH 95-5 SOLDER OR SILVABRITE 100. NO SOLDER W/LEAD SHALL BE PERMITTED.

ALL ROUGHING-IN PIPING SHALL BE RUN CONCEALED. ALL EXPOSED WATER LINES, STOPS, TRAP AND WASTE PIPE AT THE FIXTURES SHALL BE CHROME PLATED BRASS, WHICH FOR THE MOST PART WILL BE FURNISHED WITH THE FIXTURES. CHROME PLATED ESCUTCHEON RINGS SHALL BE USED AT EACH POINT OF ENTRANCE OF CHROME PIPING INTO WALLS, FLOORS, OR CEILINGS. EXPOSED WORK SHALL BE UNIFORM IN HEIGHT AND LOCATION FOR EACH TYPE FIXTURE.

WATER PIPING UNDER GROUND OUTSIDE OF BUILDING SHALL BE AT LEAST 24 INCHES BELOW THE FINISHED GRADE SURFACE.

THERMAL INSULATION: ALL HOT AND COLD WATER PIPING INSIDE BUILDING AND IN CRAWL SPACE, ALL HOT WATER PIPING BELOW GRADE, AND COLD WATER PIPING BELOW GRADE WITHIN 3'-0" OF OUTSIDE SHALL BE INSULATED WITH 1" THICK "ARMAFLEX" OR IMCOA WITH SEALED JOINTS OR PREMOULDED FIBERGLASS WITH VAPOR BARRIER JACKET. IN LIEU OF INSULATING WATER PIPING IN HEATED WALLS PIPING MAY BE ENCASED IN BATT INSULATION WITHIN THE WALL OR FLOOR/CEILING.

WATER HEATERS: WATER HEATERS SHALL BE UL LISTED AND COMPLETE WITH ALL STANDARD FEATURES, FIVE (5) YEAR TANK WARRANTY, GLASS-LINED TANK, FOAM INSULATION ON THE TANK, ANODE ROD, AUTOMATIC TEMPERATURE CONTROL, AND AUTOMATIC HIGH-LIMIT SAFETY CUTOFF. INSTALL ASSE 1070 COMPLIANT TEMPERATURE CONTROL VALVE DOWNSTREAM OF ANY HIGH TEMPERATURE FIXTURES AND UPSTREAM OF ALL PUBLIC HANDWASHING FACILITIES.

EACH WATER HEATER SHALL BE PROVIDED WITH AN ASME APPROVED PRESSURE AND TEMPERATURE RELIEF VALVE. UNITS NOT INSTALLED WITH VACUUM BREAKER ON COLD WATER SUPPLY LINE SHALL BE PROVIDED WITH AGA CERTIFIED VACUUM RELIEF VALVE PER ANSI Z21.22. A GATE VALVE SHALL BE INSTALLED ON SAME FLOOR AS UNIT AND NO FURTHER THAN 3 FEET ON THE COLD WATER SUPPLY.

EACH WATER HEATER AND ITS INSTALLATION SHALL COMPLY WITH THE LATEST ISSUE AND ALL ADDENDA THERETO OF THE STATE BOILER INSPECTION LAWS AND REGULATIONS. ALL WIRING AND CONTROLS ASSOCIATED WITH THE HEATERS SHALL BE U.L. APPROVED AND IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE.

EACH HEATER TANK SHALL BE FITTED WITH APPROVED "DIP" TUBE AND LABELED TO SHOW APPROVAL FOR INSTALLATION.

DISCHARGE RELIEF VALVE FROM EACH WATER HEATER SHALL BE PIPED FULL SIZE TO WITHIN SIX (6) INCHES OF THE FLOOR OVER A FLOOR DRAIN, DRIP PAN OR OTHER SAFE LOCATION. DISCHARGE PIPE SHALL BE SUPPORTED AND ANCHORED SO THAT IT WILL NOT PUT UNDUE STRAIN ON THE RELIEF VALVE BODY OR MOUNTING COUPLING.

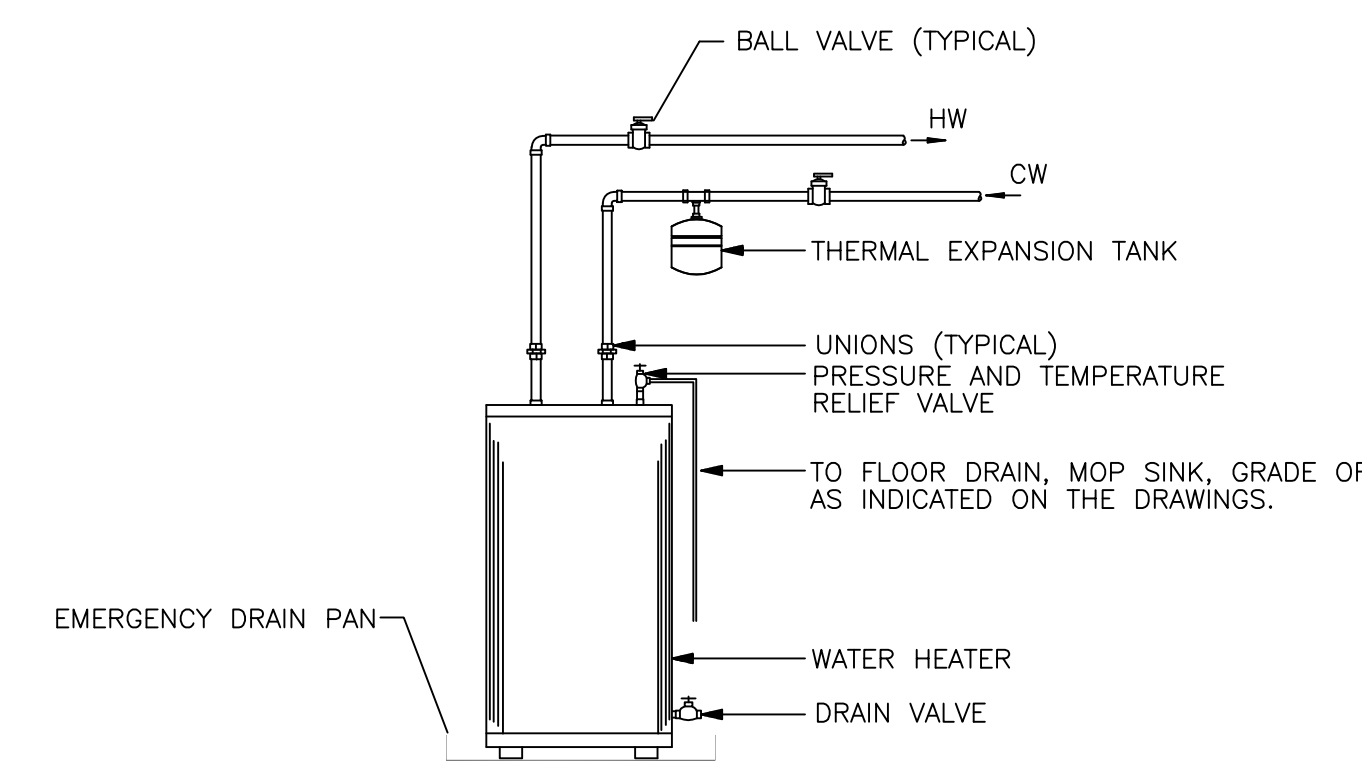
SUBMITTAL: THE CONTRACTOR SHALL WITHIN (15) DAYS OF RECEIPT OF PROPERLY SIGNED CONTRACT SUBMIT TO THE ARCHITECT/ENGINEER FOR APPROVAL (5) COPIES OF A LIST OF SUPPLIES AND MANUFACTURER'S MATERIAL AND EQUIPMENT TO BE USED ON THIS PROJECT.

SUBSTITUTION OF MATERIALS AND/OR EQUIPMENT FOR THAT SPECIFIED WILL NOT BE ACCEPTED WITHOUT PRIOR WRITTEN APPROVAL BY THE ARCHITECT/ENGINEER PRIOR TO RECEIPT OF BIDS.

GUARANTEE: THE PLUMBING CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FOR A PERIOD OF NOT LESS THAN ONE (1) YEAR FROM DATE OF FINAL ACCEPTANCE BY OWNER STATING THE DAY THE GUARANTEE BEGINS AND ENDS.

WATER HEATER (EWH): STATE M/N PCE 30 20LSA, 30 GALLON ELECTRIC WATER HEATER WITH ONE (1) 4.5KW ELEMENT, 240 VOLT, SINGLE PHASE, WITH 3 YEAR WARRANTY. FURNISH WITH A.S.M.E. APPROVED RELIEF VALVE, WATERGUARD EXPANSION TANK M/N ETC-2X, AND DRAIN PAN.

NOTE: PLANS SHOULD NOT BE SCALED FOR DIMENSIONS. COORDINATE ALL ROUGH IN DIMENSIONS WITH EQUIPMENT TO BE INSTALLED AND DIMENSIONED DRAWINGS INCLUDING KITCHEN EQUIPMENT PLANS IF AVAILABLE. CONTACT ENGINEER BEFORE CONSTRUCTION WITH ANY CONFLICTS.



(A) ELECTRIC WATER HEATER
SCALE: NONE

PLUMBING GENERAL NOTES:

BASIS OF DESIGN: UNLESS OTHERWISE NOTED THE PURPOSE OF THESE DRAWINGS IS TO PROVIDE DIRECTION AND BASIS OF DESIGN TO A COMPETENT CONTRACTOR FAMILIAR WITH THE TYPE OF SYSTEMS BEING INSTALLED SUFFICIENT TO INDICATE OWNER'S REQUESTS AND CODE REQUIREMENTS. IT IS THE CONTRACTOR'S RESPONSIBILITY, WHEN OTHERWISE UNDIRECTED, TO FOLLOW STANDARD INDUSTRY PRACTICES AND BASIC CODE COMPLIANCE INCLUDING, BUT NOT LIMITED TO, PROVIDING MATCHING REQUIRED ACCESSORIES TO THE SYSTEMS INDICATED, COORDINATING EXACT ROUTINGS AND LOCATIONS WITH OTHER TRADES AND THE OWNER, SELECTING CODE APPROVED MATERIALS, AND MAKING MINOR OFFSETS/ADJUSTMENTS BASED ON FIELD COORDINATION AND OWNER'S FIELD REQUESTS. CHANGE OF MANUFACTURER TO EQUIVALENT SYSTEMS, WITH OWNER'S APPROVAL, IS ACCEPTABLE. CONTACT ENGINEER WITH ANY CONFLICTS NOT COVERED BY THE ABOVE INSTRUCTIONS.

1. PROVIDE ALL MATERIALS AND LABOR NECESSARY FOR COMPLETE AND PROPERLY FUNCTIONING PLUMBING SYSTEMS. WARRANTY ALL WORK AND ALL MATERIALS, EQUIPMENT AND DEVICES FOR A PERIOD OF ONE YEAR AFTER OWNER'S ACCEPTANCE.

2. WORK SHALL CONFORM TO OR MEET THE REQUIREMENTS OF THE MOST CURRENT EDITION OF:
A. NORTH CAROLINA PLUMBING CODE
B. ASPE
C. UL
D. ANSI
E. ALL FEDERAL, STATE AND LOCAL CODES AND ORDINANCES

3. DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ARE NOT INTENDED TO BE SCALED FOR DIMENSIONS, UNLESS DIMENSIONED.

4. ALL MATERIALS, EQUIPMENT AND DEVICES SHALL, AS A MINIMUM, MEET THE REQUIREMENTS OF UL WHERE UL STANDARDS ARE ESTABLISHED FOR THOSE ITEMS. ALL ITEMS SHALL BE CLASSIFIED BY UL AS SUITABLE FOR THE PURPOSE USED.

5. ALL ITEMS SHALL BE NEW, UNLESS NOTED OTHERWISE.

6. ALL MATERIALS AND EQUIPMENT SHALL BE CURRENT PRODUCTS BY MANUFACTURERS REGULARLY ENGAGED IN THE PRODUCTION OF SUCH PRODUCTS.

7. COORDINATE LOCATION OF PLUMBING WORK WITH OTHER TRADES TO AVOID CONFLICTS AND INTERFERENCES. COORDINATE WITH SITE WORK TO PROVIDE FULL OPEN WATER SERVICE VALVE WITHIN 5 FEET OF BUILDING ENTRY.

8. INSTALL ALL EQUIPMENT AND MATERIAL IN ACCORDANCE WITH MANUFACTURER'S WRITTEN PRINTED INSTRUCTIONS AND RECOMMENDATIONS. VERIFY, INCLUDING WITH OTHER TRADES, POWER AND/OR FUEL SUPPLY BEFORE ORDERING.

9. COORDINATE WITH AND OBTAIN PERMITS AND INSPECTIONS FROM AUTHORITY HAVING JURISDICTION AND INCLUDE ALL FEES IN BID.

10. PROVIDE OWNER WITH CERTIFICATES OF FINAL INSPECTION AND ACCEPTANCE FROM AUTHORITY HAVING JURISDICTION.

11. ALL EQUIPMENT AND PIPE ABOVE CEILING SHALL BE SUPPORTED FROM BUILDING STRUCTURE ABOVE, UNO.

12. WHERE PIPES PENETRATE FIRE RATED BARRIERS (WALLS, FLOORS AND CEILINGS) SEAL OPENING AROUND PIPES AND DUCTWORK WITH U.L. LISTED FIRE STOPPING MATERIAL TO MAINTAIN THE FIRE RATING OF THE BARRIER. PER NC BUILDING CODE VOLUME 1, PENETRATIONS OF NONRATED WALLS, PARTITIONS AND FLOORS OF NONCOMBUSTIBLE CONSTRUCTION SHALL BE FIRE-STOPPED WITH NONCOMBUSTIBLE MATERIAL.

13. PROVIDE EXPANSION-DEFLECTION JOINTS WHERE PIPE CROSSES BUILDING EXPANSION OR SEISMIC JOINTS.

14. PRIOR TO BIDDING, THE CONTRACTOR AND HIS SUBCONTRACTORS SHALL VISIT THE JOBSITE AND SHALL FAMILIARIZE THEMSELVES WITH ALL CONDITIONS UNDER WHICH WORK IS TO BE PERFORMED AND SHALL INCLUDE IN HIS BID ALL LABOR, MATERIAL AND OPERATIONS REQUIRED FOR A COMPLETE JOB. (NOTIFY OWNER AND ENGINEER OF ANY DISCREPANCIES PRIOR TO BID.)

15. CLEANOUTS, LINE SIZE, UNO.

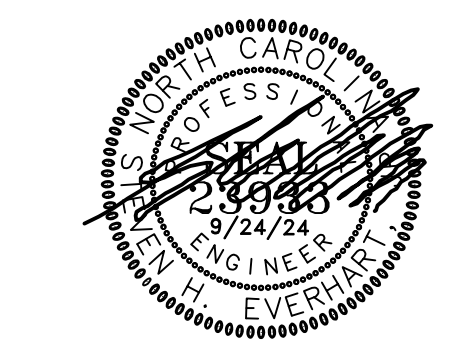
16. FLOOR DRAINS, LINE SIZE, UNO.

17. FLOOR DRAINS WITH SUBSCRIPT OO TO HAVE INTEGRAL CLEANOUT AND SHALL BE SIMILAR TO REGULAR FLOOR DRAIN SPECIFIED. UNO.

18. FLOOR DRAINS AND FLOOR SINKS SHALL BE PROVIDED WITH TRAP PRIMERS OR ALTERNATE METHODS AS APPROVED BY AUTHORITY HAVING JURISDICTION.

PLUMBING LEGEND

- P-# FIXTURE NUMBER, SEE SCHEDULE
- ⊗ WATER BALANCE/SHUTOFF VALVE
- ⊗ HOT WATER TEMPERING VALVE
- FLOOR SINK
- VTR VENT THROUGH ROOF
- AAV AIR ADMITTANCE VALVE
- NEW COLD WATER PIPE
- - - NEW HOT WATER PIPE
- NEW WASTE PIPE
- - - NEW VENT PIPE



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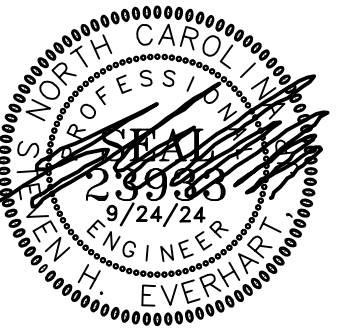
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SCALE:		
DRAWN BY:		
PROJ MGR:		

PLUMBING SCHEDULES, NOTES & DETAILS

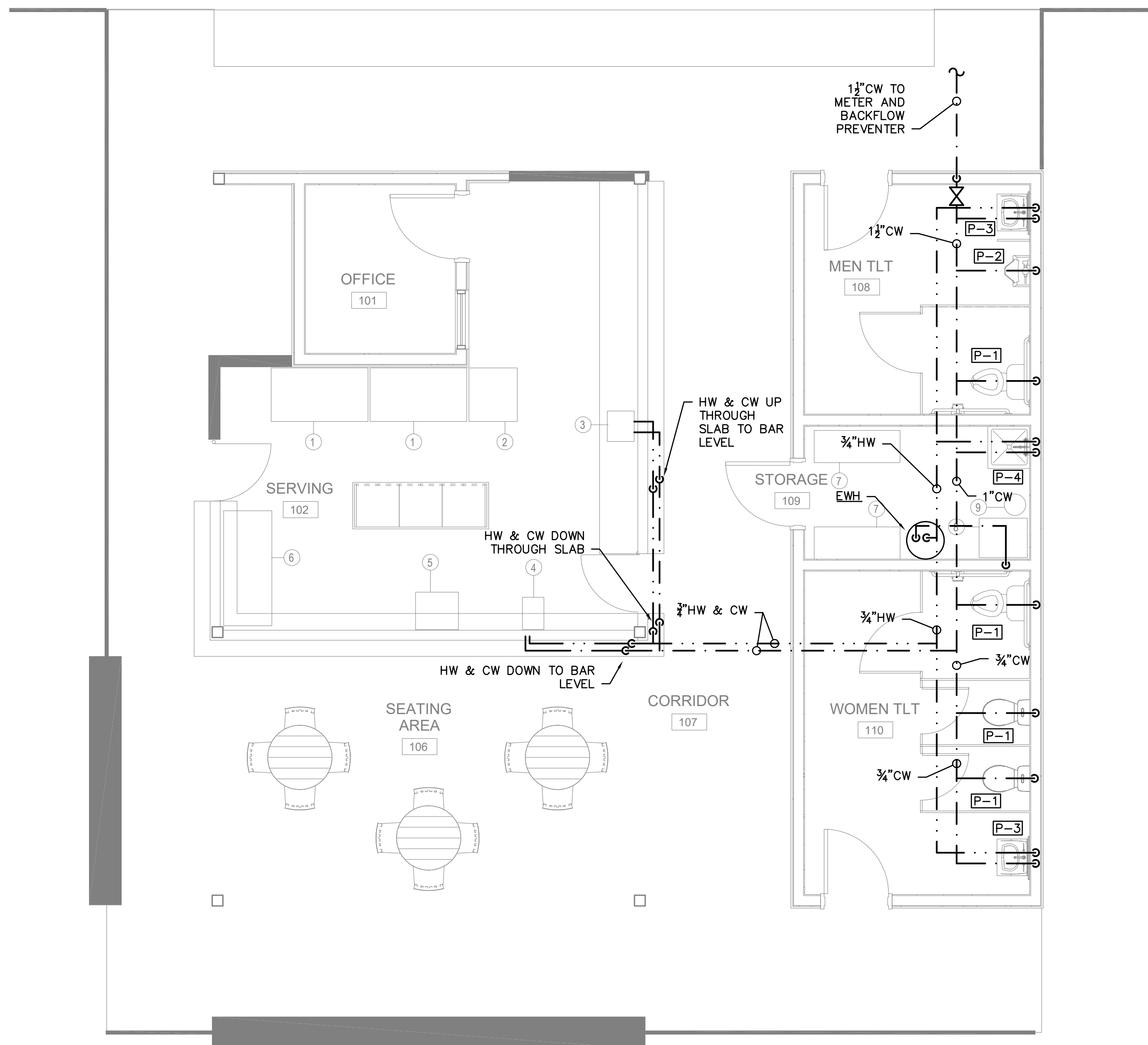


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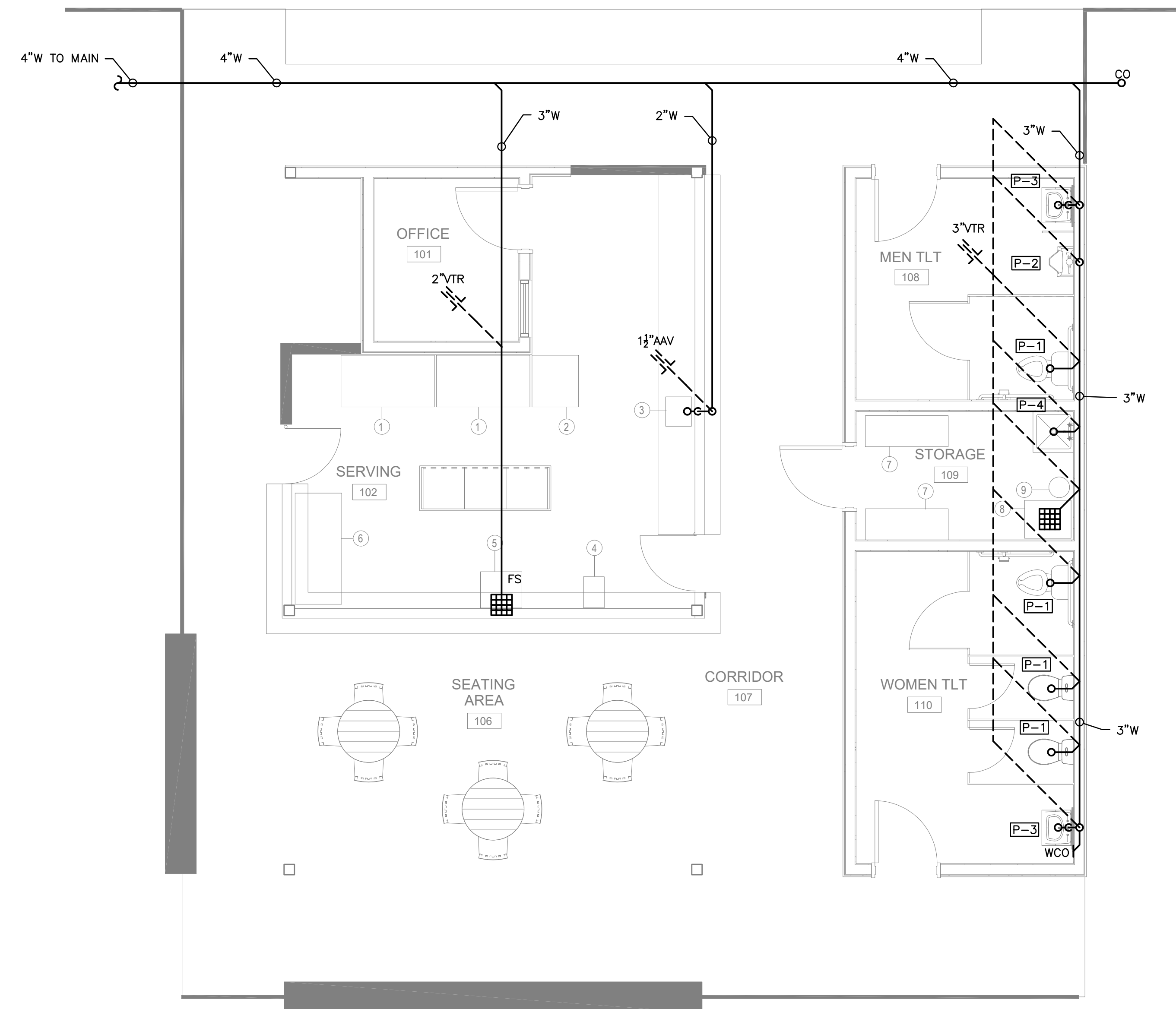
PROJECT NO. 18260
TOPSAIL
ENGINEERING, INC.
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EQUIPMENT LIST				
	ITEM	MANUFACTURER	DIMENSIONS (H x W x D)	QUANT...
1	REFRIGERATED MERCHANDISER	TRUE MFG. - GENERAL FOODSERVICE MODEL GDM-49-HC~TSL01	78.63(h) x 54.13(w) x 29.88(d)	2
2	REFRIGERATED MERCHANDISER	TRUE MFG. - GENERAL FOODSERVICE MODEL GDM-23-HC~TSL01	78.63(h) x 27(w) x 29.88(d)	1
3	HAND SINK	SERV-WARE MODEL HS155-CWP	13.5(h) x 17(w) x 15(d)	1
4	UNDERBAR SINK UNITS	BK RESOURCES MODEL UB4-18-1014HS12-P-G	32.5(h) x 12(w) x 18(d)	1
5	ICE BIN	BK RESOURCES MODEL UB4-21-1B24	32.5(h) x 24(w) x 21(d)	1
6	BOTTLE COOLER	SERV-WARE MODEL BC-65-HC	35(h) x 64.3(w) x 27(d)	1
7	WIRE SHELVING	SERV-WARE MODEL GR1848CWP	48(w) x 18(d)	10
8	ICE MAKER, CUBE-STYLE	BLUE AIR FSE LLC MODEL BLMI-300A	30.63(h) x 22(w) x 27(d)	1
9	WATER FILTRATION SYSTEM	CUSTOM MODEL SYSTEMS IV CC1 SERIES	N/A	1



FLOOR PLAN — PLUMBING — WATER
SCALE: 1/4"=1'-0"



FLOOR PLAN — PLUMBING — WASTE
SCALE: 1/4"=1'-0"

SURF'S UP MINIATURE GOLF
STRUCTURES
1360 BRIDGE BARRIER RD,
CAROLINA BEACH, NC 28428

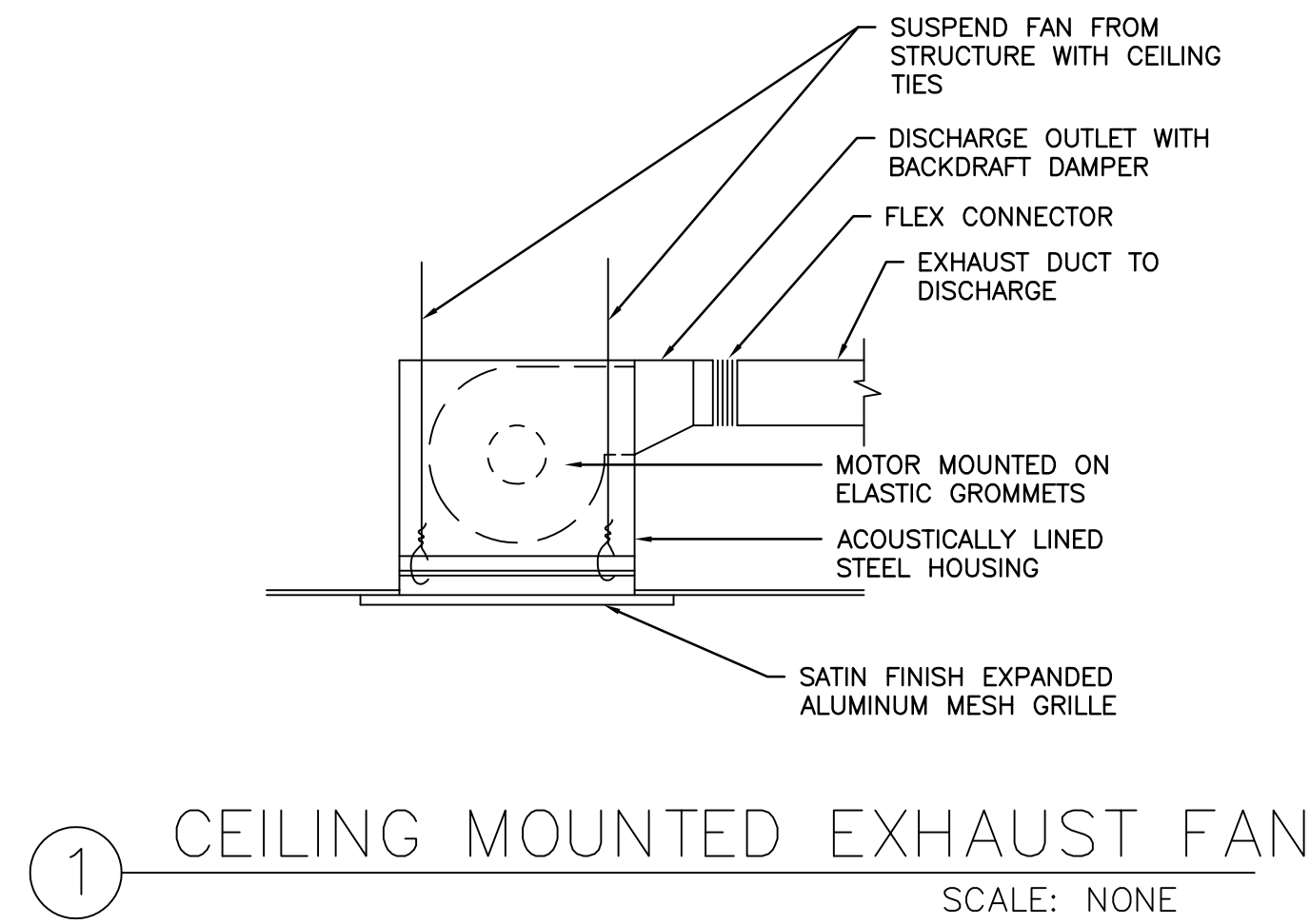
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Mark	Date	Description
PROJECT NO:	24074	
DATE:	9/24/2024	
SCALE:		
DRAWN BY:		
PROJ MGR:		

FLOOR PLAN
PLUMBING

DUCTLESS SPLIT SYSTEM HEAT PUMP SCHEDULE		
UNIT NUMBER	DAHU-1, 2, 3	
AIR HANDLER TYPE	WALL MOUNTED	
MANUFACTURER	MITSUBISHI	
MODEL NUMBER	PKA-A12LA	
UNIT WEIGHT (LBS)	32	
FAN	TOTAL AIR CFM	455
	OUTSIDE AIR CFM	-
	FAN H.P.	30 WATTS
	EXT. S.P. (IN H2O)	-
	POWER SUPPLY	208V-1Ø-60
COOLING CAPACITY	TOTAL COOLING CAPACITY (BTUH)	12,000
	SENSIBLE COOLING CAPACITY (BTUH)	9,720
	ENTERING AIR TEMP	80/67
	ENTERING AIR TEMP	70°F
	HIGH TEMP (BTUH) 47°F	18,000
HEATING CAPACITY	LOW TEMP (BTUH) 17°F	11,100
	AUXILIARY COIL CAPACITY	-
	POWER SUPPLY	208V-1Ø-60
	MINIMUM AMPACITY	1
	MAX. OVERCURRENT PROTECTION	VIA OUTDOOR UNIT
AIR COOLED HEAT PUMP	UNIT NUMBER	DHP-1, 2, 3
	MODEL NUMBER	PUY-A12NKA7
	UNIT WEIGHT	137
	ENTERING AIR TEMP	95°F
	FAN TYPE	PROPELLER
	FAN H.P.	-
	COMPRESSOR	INVERTER
POWER SUPPLY	208V-1Ø-60	
MINIMUM AMPACITY	11	
MAX. OVERCURRENT PROTECTION	28	
ACCESSORIES	(1)	

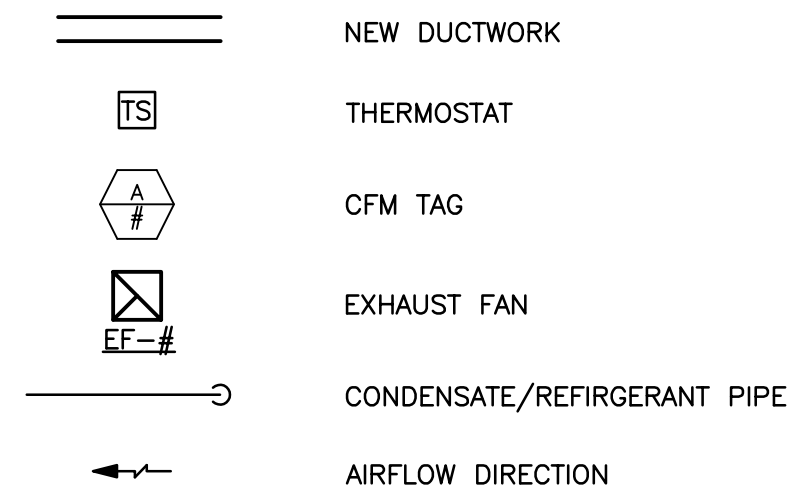
(1) PROVIDE WALL MOUNTED, PROGRAMMABLE ELECTRONIC THERMOSTAT WITH AUTO CHANGEOVER.



EXHAUST FAN SCHEDULE									
TAG	CFM	RPM	S.P. IN W.G	WATTS/HP	SONES	ELECTRIC	CONTROL	MANUF. MODEL NUMBER	DESCRIPTION & ACCESSORIES
EF-1	75	700	0.25	50 W	3.0	120V-1Ø-60	THERMOSTAT	GREENHECK SP-B90	1,2,3
EF-2	150	1050	0.25	129 W	4.5	120V-1Ø-60	WIRED WITH LIGHT	GREENHECK SP-B150	1,2,3
EF-3	225	1000	0.25	83 W	3.0	120V-1Ø-60	WIRED WITH LIGHT	GREENHECK SP-A250	1,2,3

- (1) CABINET CEILING FAN, DIRECT DRIVE, CENTRIFUGAL, SPRING LOADED ALUMINUM BACKDRAFT DAMPER.
 (2) ALUMINUM, WHITE ENAMEL CEILING GRILLE.
 (3) ALUMINUM HOODED WALL CAP WITH BUILT-IN BIRDSCREEN AND DAMPER.
 ALTERNATE BY PENNBARRY ACCEPTABLE

MECHANICAL LEGEND



GENERAL MECHANICAL SPECIFICATIONS

ALL WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE LATEST EDITION OF THE NC MECHANICAL CODE.

BASIS OF DESIGN: UNLESS OTHERWISE NOTED THE PURPOSE OF THESE DRAWINGS IS TO PROVIDE DIRECTION AND BASIS OF DESIGN TO A COMPETENT CONTRACTOR FAMILIAR WITH THE TYPE OF SYSTEMS BEING INSTALLED SUFFICIENT TO INDICATE OWNER'S REQUESTS AND CODE REQUIREMENTS. IT IS THE CONTRACTOR'S RESPONSIBILITY, WHEN OTHERWISE UNDIRECTED, TO FOLLOW STANDARD INDUSTRY PRACTICES AND BASIC CODE COMPLIANCE, INCLUDING, BUT NOT LIMITED TO, PROVIDING MATCHING REQUIRED ACCESSORIES TO THE SYSTEMS INDICATED, COORDINATING EXACT ROUTINGS AND LOCATIONS WITH OTHER TRADES AND THE OWNER, SELECTING CODE APPROVED MATERIALS, AND MAKING MINOR OFFSETS/ADJUSTMENTS BASED ON FIELD COORDINATION AND OWNER'S FIELD REQUESTS. CHANGE OF MANUFACTURER TO EQUIVALENT SYSTEMS, WITH OWNER'S APPROVAL, IS ACCEPTABLE. CONTACT ENGINEER WITH ANY CONFLICTS NOT COVERED BY THE ABOVE INSTRUCTIONS.

SHEET METAL WORK: THIS CONTRACTOR SHALL FURNISH ALL DUCTWORK AND ASSOCIATED SHEET METAL WORK AS CALLED FOR ON THE DRAWINGS AND REQUIRED FOR A COMPLETE DUCTED AIR DISTRIBUTION SYSTEM.

DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH BEST PRACTICES OF SHEET METAL WORK AND SMACNA STANDARDS.

ALL DUCTWORK SHALL BE GALVANIZED SHEET IRON THROUGHOUT EXCEPT WHERE OTHERWISE SHOWN AND FABRICATED IN ACCORDANCE WITH THE FOLLOWING TABLE (ALL DUCT SIZES ON CONTRACT DRAWINGS ARE SHEET METAL FABRICATION SIZES):

MAXIMUM DIMENSION OF DUCT	GAUGE U.S. STD.	TRANSVERSE JOINT	BRACING
UP TO 12"	26	DRIVE SLIPS 7"-10" CENTERS	NONE
13" TO 30"	24	DRIVE SLIPS 7"-10" CENTERS	1"x1"x1/8" ANGLES 4 FEET FROM JOINT

DUCTS 25 INCHES OR SMALLER IN MAXIMUM DIMENSION SHALL BE SUPPORTED WITH 1 INCH FLAT BAND HANGERS; DUCTS 25 INCHES AND LARGER SHALL BE SUPPORTED BY 3/4 INCH X 1-1/2 INCH ANGLE IRON AND ROUND ROD. SUPPORTS SHALL BE NOT MORE THAN 8 FEET ON CENTERS, PROPERLY FASTENED AND PLACED TO BUILDING STRUCTURES AND SHALL EXTEND AND BE RIVETED TO THE BOTTOM OF DUCTS.

UNLESS OTHERWISE SPECIFIED, FURNISH AND INSTALL ALL NECESSARY LINTELS, PROPERLY SIZED, SHEET METAL SLEEVES AND ESCUTCHEON COLLARS WHERE DUCTWORK RISES THROUGH FLOORS OR PASSES THROUGH WALLS OR CEILINGS.

FURNISH AND INSTALL FLEXIBLE COLLARS IN THE DUCTWORK CONNECTIONS TO AIR HANDLING FANS TO PREVENT NOISE TRANSMISSION BETWEEN SECTIONS.

ALL CHANGES IN DUCT DIRECTION SHALL BE LONG RADIUS ELBOWS OR SHALL BE FITTED WITH TURNING VANES.

IT IS ACCEPTABLE TO CHANGE RECTANGULAR DUCTWORK TO THE EQUIVALENT SIZE IN ROUND PROVIDED THE CONTRACTOR COORDINATES ALL CLEARANCE ISSUES.

DUCT INSULATION: ALL CONCEALED DUCTWORK SHALL BE INSULATED ON THE OUTSIDE WITH TWO INCH (2") THICK, 3/4 POUND DENSITY FIBERGLASS BLANKET INSULATION HAVING AN ALUMINUM FOIL-SCRIM VAPOR BARRIER JACKET. EXPOSED DUCTWORK SHOWN ROUND SHALL BE DOUBLE WALL SPIRAL UNLESS OWNER SPECIFICALLY ALLOWS FOR POTENTIAL SWEATING ISSUES.

EDGES OF INSULATION SHALL BE CUT STRAIGHT AND TRUE AND SHALL BE TIGHTLY BUTTED. THE VAPOR BARRIER JACKET SHALL OVERLAP THE BLANKET JOINT A MINIMUM OF THREE INCHES (3"). THE JACKET LAP SHALL BE FASTENED WITH MOISTURE RESISTANT ADHESIVE AND ALSO OUTWARD CLINCHING STAPLES SPACED TEN INCHES (10") C/C. THE VAPOR BARRIER EDGE AND STAPLES SHALL THEN BE COVERED WITH A THREE INCH (3") WIDE TAPE OF THE SAME MATERIAL AS THE JACKET AND SHALL BE FASTENED WITH MOISTURE RESISTANT ADHESIVE.

ALL CUTS, TEARS AND PENETRATIONS IN THE VAPOR BARRIER JACKET SHALL BE SEALED WITH JOINT TAPE. ALL EDGES OF INSULATING BLANKET SHALL BE SEALED FROM THE JACKET TO DUCT SURFACE WITH TAPE.

INSULATING BLANKET ON THE BOTTOM OF SURFACES IN EXCESS OF 24 INCHES WIDE SHALL BE SECURED AGAINST THE DUCT WITH ADHESIVE OVER THE ENTIRE AREA, MECHANICAL CLIPS ON 24 INCH CENTER OR BY WIRE TIES AROUND THE DUCT SPACED 24 INCHES C/C.

CONTRACTOR MAY USE FLEXIBLE DUCTWORK (MAXIMUM LENGTHS 15'-0") FOR FINAL CONNECTIONS TO DIFFUSERS/GRILLES. FLEXIBLE DUCTWORK SHALL BE CERTAFLEX 25 AS MANUFACTURED BY THE CERTAINTeed CORPORATION.

REGISTERS AND GRILLES: ALL REGISTERS AND GRILLES SHALL BE OF SIZE, STYLE AND CAPACITY CALLED FOR ON PLANS AND IN THE GRILLE SCHEDULE. PROVIDE RUBBER OR EXPANDED FOAM GASKETS COMPLETELY AROUND ALL REGISTER AND GRILLE FRAMES TO PREVENT AIR LEAKAGE BETWEEN GRILLE FRAME AND DUCT OR BETWEEN GRILLE FRAME AND SURROUNDING FINISHED SURFACE. ACCEPTABLE MFGS: PRICE, CARNES, METALAIR, KRUGER.

EQUIPMENT: MECHANICAL AND ELECTRICAL CONTRACTORS SHALL COORDINATE PRIOR TO ORDERING EQUIPMENT TO VERIFY CONSISTANT VOLTAGES. PRIOR TO EQUIPMENT BEING ENERGIZED, VOLTAGE TO EQUIPMENT CIRCUITS SHALL BE VERIFIED AS INSTALLED TO MATCH EQUIPMENT NAMEPLATE.

OPERATING INSTRUCTIONS, CERTIFICATES AND WARRANTIES: THE ORIGINAL OF ALL INSPECTION CERTIFICATES SHALL BE DELIVERED TO THE OWNER AND ONE (1) COPY EACH TO THE ENGINEER PRIOR TO REQUEST FOR FINAL PAYMENT.

THREE (3) COPIES OF OPERATING AND MAINTENANCE INSTRUCTIONS AND MANUFACTURER'S WARRANTIES FOR ALL EQUIPMENT PROVIDED UNDER THIS CONTRACT SHALL BE PROVIDED TO THE OWNER PRIOR TO SUBMITTING REQUEST FOR FINAL PAYMENT.

PRIOR TO FINAL PAYMENT TO THE CONTRACTOR, THE CONTRACTOR SHALL BE RESPONSIBLE TO TRAIN THE AUTHORIZED PERSONNEL ON HOW TO SERVICE, START-UP AND SHUT-DOWN THE VARIOUS SECTIONS OF THE SYSTEM. UPON COMPLETION OF THIS PHASE OF THE CONTRACT, THE CONTRACTOR SHALL SECURE A LETTER OF ACCEPTANCE FROM THE OWNER THAT HE IS SATISFIED WITH THE CONDITIONS STIPULATED HEREIN. UPON ACCEPTANCE OF THIS LETTER AND AT THE DISCRETION OF THE ENGINEER, THE FINAL PAYMENT WILL BE MADE.

THE CONTRACTOR SHALL PROVIDE A WRITTEN GUARANTEE OF ALL MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM DATE OF SYSTEM ACCEPTANCE.

THE WORK UNDER THIS CONTRACT WILL BE ACCEPTED ONLY AS AN ENTIRE SYSTEM UPON SATISFACTORY COMPLETION OF THE REQUIRED TESTS. NO PARTIAL ACCEPTANCE OF ANY PART OR PORTION OF APPARATUS WILL BE MADE.

INSTALL AND CONNECT ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND DO ALL WORK IN A NEAT AND WORKMANLIKE MANNER AND IN ACCORDANCE WITH ACCEPTED GOOD PRACTICE AS JUDGED BY THE ENGINEER.

ALL EQUIPMENT AND PIPING SHALL BE SO INSTALLED THAT NO OBJECTIONABLE NOISES FROM EQUIPMENT, PIPING OR AIR DISTRIBUTION ARE AUDIBLE IN THE FINISHED AREAS.

GUARANTEE: THIS CONTRACTOR SHALL GUARANTEE ALL MATERIALS, EQUIPMENT AND WORKMANSHIP FOR ONE (1) YEAR FOLLOWING FINAL INSPECTION AND ACCEPTANCE OF THE BUILDING BY THE ENGINEER AND OWNER. THIS APPLIES TO ALL MATERIALS AND EQUIPMENT INSTALLED UNDER THIS CONTRACT, REGARDLESS OF SOURCE.

THE ONE (1) YEAR GUARANTEE PERIOD WILL START ON THE DAY OF FINAL INSPECTION AND ACCEPTANCE BY THE OWNER. THE CONTRACTOR SHALL PROVIDE THE ENGINEER A LETTER WITH TWO (2) COPIES STATING THE BEGINNING AND ENDING DATES OF THE GUARANTEE BASED ON THE AFOREMENTIONED STARTING DATES.

EXTENDED GUARANTEE: PROVIDE AN ADDITIONAL FOUR (4) YEAR GUARANTEE ON ALL COMPRESSORS BEYOND THE ABOVE MENTIONED ONE (1) YEAR GUARANTEE PERIOD.

AIR BALANCE: ALL SYSTEMS SHALL BE BALANCED BY THE CONTRACTOR PER THE REQUIREMENTS OF SECTION 408.2.2.1 OF THE NORTH CAROLINA STATE BUILDING CODE: ENERGY CONSERVATION CODE.

ENERGY CODE COMPLIANCE: HVAC EQUIPMENT SELECTED MEETS PERFORMANCE REQUIREMENTS OF THE NORTH CAROLINA STATE BUILDING CODE: ENERGY CONSERVATION CODE SECTION 406.2 ANY SUBSTITUTIONS MUST MEET THIS STANDARD AS WELL. UPON FINAL INSPECTION THE CONTRACTOR SHALL PROVIDE TO OWNER MANUALS AND EVIDENCE OF AIR BALANCE. CONTRACTOR SHALL SCHEDULE DESIGN PROFESSIONAL AND ASSIST TO COMPLETE SYSTEM INSTALLATION STATEMENT IN ACCORDANCE WITH THE NORTH CAROLINA STATE BUILDING CODE: ENERGY CONSERVATION CODE SECTION 408.1.

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT METHOD OF COMPLIANCE

Prescriptive Energy Cost Budget

Thermal Zone 3A

Exterior design conditions _____
 winter dry bulb 26° F
 summer dry bulb 92° F DB/76° F WB

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

Building heating load 27 MBTU/H
 Building cooling load 2.3 TONS

Mechanical Spacing Conditioning System _____
 Unitary
 description of unit _____
 heating efficiency 9.0 HSPF
 cooling efficiency 15.0 SEER AVG.
 heat output of unit SEE SCHEDULES
 cooling output of unit SEE SCHEDULES

boiler
 total boiler output. If oversized, state reason.
N/A

chiller
 total chiller capacity. If oversized, state reason.
N/A

List equipment efficiencies N/A

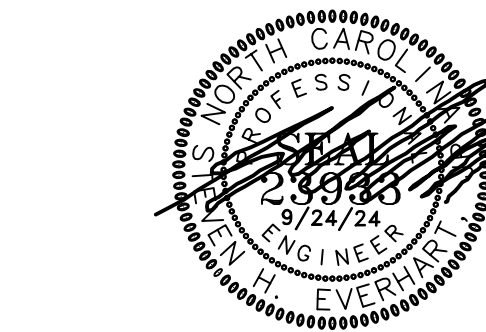
Equipment schedules with motors (mechanical systems)

motor horsepower SEE SCHEDULES
 number of phases SEE SCHEDULES
 minimum efficiency SEE SCHEDULES
 motor type ODP
 # of poles 4

Additional prescriptive compliance method : C406.2.1 More Eff. Mech Equip.
 DESIGNER STATEMENT:

To the best of my knowledge and belief, the design of this building complies with the mechanical systems, service systems and equipments of the 2018 North Carolina State Energy Code.

SIGNED: _____
 NAME: STEVEN H. EVERHART JR., P.E.
 TITLE: PROFESSIONAL ENGINEER



SURF'S UP MINIATURE GOLF STRUCTURES

1360 BRIDGE BARRIER RD.,
 CAROLINA BEACH, NC 28428

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Mark	Date	Description
PROJECT NO:	24074	
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PROJ MGR:		

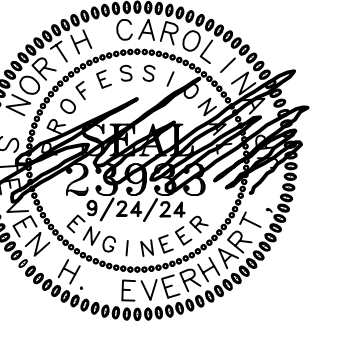
MECHANICAL SCHEDULES, NOTES & DETAILS

M100



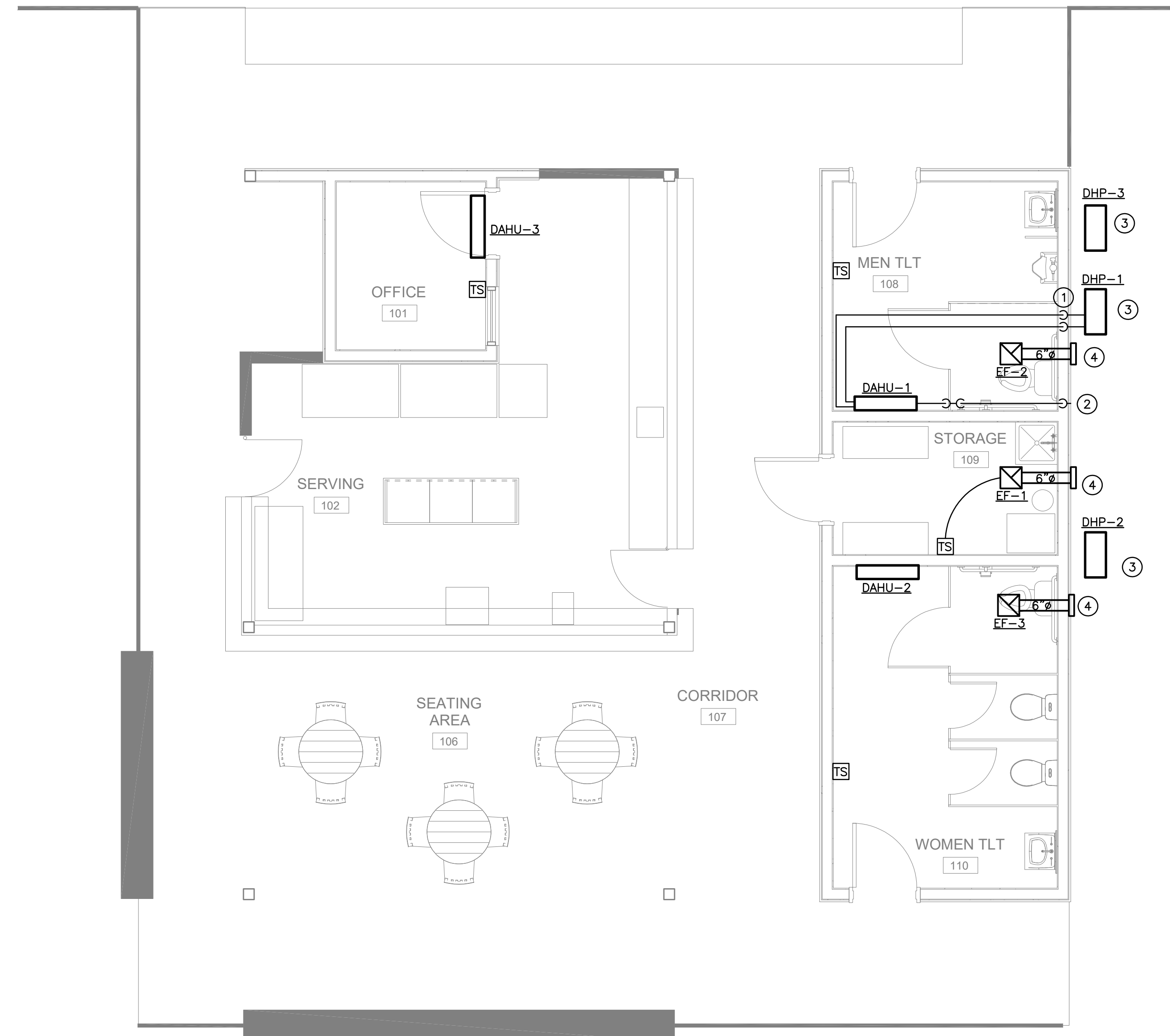
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201 N. FRONT ST. SUITE 1004
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PROJECT NO. 18260
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GENERAL NOTES:

- ① REFRIGERANT PIPING CONCEALED ABOVE CEILING AND IN BUILDING CONSTRUCTION, SIZE AS RECOMMENDED BY UNIT MANUFACTURER. TYP.
- ② 1" CONDENSATE DRAIN PIPING WITH PROPER PITCH. TERMINATE OUTSIDE BUILDING, MIN. 8" ABOVE GRADE WITH ELBOW LOOKING UP. TYP.
- ③ MOUNT UNIT ON 4" CONCRETE PAD OR PAVED SURFACE.
- ④ DUCT CAP TO EXHAUST FAN.



FLOOR PLAN – MECHANICAL
SCALE: 1/4" = 1'-0"

**SURF'S UP MINIATURE GOLF
STRUCTURES**

1360 BRIDGE BARRIER RD.
CAROLINA BEACH, NC 28428

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**FLOOR PLAN
MECHANICAL**

SCOPE: FURNISH ALL MATERIALS, LABOR, TOOLS, EQUIPMENT AND SUPERVISION NECESSARY TO INSTALL COMPLETE ELECTRICAL POWER AND LIGHTING SYSTEM IN THE BUILDING AS FURTHER DESCRIBED ON THE ELECTRICAL CONTRACT DRAWINGS.

SUPPLY ALL MATERIALS, FITTINGS AND HARDWARE NECESSARY FOR COMPLETE OPERATING SYSTEMS WITHIN THE OBVIOUS INTENT OF THE DRAWINGS. NO ATTEMPT HAS BEEN MADE TO DETAIL OR LIST EACH AND EVERY ITEM OF MATERIAL. THE ELECTRICAL CONTRACTOR IS CAUTIONED TO READ THE ENTIRE PROJECT DRAWINGS AND SPECIFICATIONS TO ASSURE HIMSELF OF A THOROUGH KNOWLEDGE OF BUILDING CONSTRUCTION, STRUCTURAL RESTRICTIONS TO ELECTRICAL CONTRACT WORK AND TO ASSURE THAT NO REFERENCE ANYWHERE IN THE PROJECT DRAWINGS AND SPECIFICATIONS TO WORK BY THE ELECTRICAL CONTRACTOR IS OVERLOOKED.

CODES, PERMITS AND INSPECTIONS: THE LATEST EDITION OF THE STATE BUILDING CODE WHICH INCLUDES THE 2020 EDITION OF THE NATIONAL ELECTRICAL CODE IS HEREBY MADE A PART OF THIS SPECIFICATION. CODE REQUIREMENTS SHALL TAKE PRECEDENCE OVER THESE SPECIFICATIONS WHERE THE CODE REQUIREMENTS EXCEED THAT OF THE SPECIFICATIONS. HOWEVER, THE SPECIFICATIONS SHALL BE FOLLOWED WHERE THEY EXCEED CODE REQUIREMENTS. THE ELECTRICAL CONTRACTOR SHALL AT NO ADDITIONAL COST TO THE OWNER, OBTAIN THE SERVICES OF THE LOCAL ELECTRICAL INSPECTOR TO MAKE ALL REQUIRED INSPECTIONS.

MATERIALS AND WORKMANSHIP: ALL MATERIAL BUILT INTO THIS PROJECT SHALL BE NEW OF EQUIVALENT OR BETTER QUALITY THAN THAT SPECIFIED. SPECIFIC NAMES AND CATALOG NUMBERS USED HEREIN ARE TO ESTABLISH THE ITEM FUNCTION, ARRANGEMENT AND QUALITY REQUIRED AND ARE NOT INTENDED TO RESTRICT COMPETITION. ALL MATERIALS SHALL BE UL LISTED AND LABELED FOR THE PARTICULAR APPLICATION AS USED ON THIS PROJECT.

CONDUCTORS: ALL CONDUCTORS SHALL BE COPPER (#10 AWG AND SMALLER SHALL BE SOLID, AND #8 AWG AND LARGER STRANDED) WITH THIN/THIN INSULATION, INSTALLED IN CONDUIT (PANEL FEEDER) OR MC CABLE (BRANCH CIRCUITS). NM CABLE SHALL NOT BE USED. CONDUCTORS SHALL BE #12 AWG MINIMUM EXCEPT WITHIN LIGHT FIXTURES, LOW VOLTAGE CONTROLS OR COMMUNICATION/FIRE ALARM EQUIPMENT. CONDUCTOR COLOR CODE SHALL CONFORM TO THE NEC. CONDUCTORS SHALL BE CONTINUOUS FROM TERMINAL TO TERMINAL OR PULL BOX TO PULL BOX. JOINTS SHALL BE MADE WITH IDEAL "WIRENUTS."

RACEWAYS: RACEWAYS SHALL BE ELECTRICAL METALLIC TUBING (EMT) WITH THREADED STEEL HEXAGONAL COMPRESSION FITTINGS - NEITHER INDENTOR TYPE OR DIE METAL FITTING WILL BE ACCEPTED. CONDUIT UNDER THE FLOOR SLAB AND UNDER GROUND OUTSIDE THE BUILDING MAY BE PVC. FITTINGS IN EMT SHALL BE WEATHER TIGHT (THOMAS AND BETTS SERIES #5123 WITH NYLON INSULATED THROATS), BENDS SHALL BE FACTORY FABRICATED OR MADE "COLD" WITH BENDING TOOL, FREE OF KINKS OR RESTRICTIONS. NO SINGLE BEND SHALL BE IN EXCESS OF 90 DEGREES. THERE SHALL BE NO MORE THAN THE EQUIVALENT OF THREE (3) 90 DEGREE BENDS IN A GIVEN RACEWAY FROM PULL BOX TO PULL BOX. RIGID RACEWAY THREADS SHALL BE CUT STRAIGHT AND TRUE - PIPE ENDS SHALL BE REAMED AND SMOOTHED INSIDE AND OUT.

SUPPORT 1-1/2 INCH AND LARGER CONDUIT 10 FEET O/C OR LESS, AND 1 INCH AND SMALLER 6 FEET O/C MAXIMUM. RACEWAYS SHALL BE SUPPORTED DIRECTLY FROM BUILDING STRUCTURE WITH BOLTS, SCREWS, STRAPS, HANGER RODS AND BRACKETS. ALL METALLIC HARDWARE SHALL BE GALVANIZED OR CADMIUM PLATED. NAILS, WIRE AND/OR PERFORATED STRAPS WILL NOT BE ACCEPTED.

USE THREADED LOCKNUTS OUTSIDE AND THREADED LOCKNUT AND BUSHING INSIDE ALL RACEWAY CONNECTIONS TO BOXES, DEVICES, PANELS AND GUTTERS. USE NON-METALLIC BUSHINGS ON ALL 1-1/4 INCH AND LARGER CONDUIT. EXPOSED CONDUIT SHALL BE RUN STRAIGHT AND TRUE PARALLEL AND PERPENDICULAR TO PRIMARY BUILDING LINES.

BOXES AND DEVICES: ALL BOXES, PANELS AND EQUIPMENT SHALL BE SUPPORTED DIRECTLY FROM THE BUILDING STRUCTURE AND SHALL NOT DEPEND ON THE FEEDER RACEWAYS FOR SUPPORT. ALL ITEMS SHALL BE CAREFULLY ALIGNED SO THAT COVERS WILL FINISH FLUSH AND STRAIGHT. ALL UNUSED KNOCKOUTS SHALL BE CLOSED WITH BLANKING DEVICES. BOXES IN CONCRETE OR MASONRY SHALL BE 3-1/2 INCH DEEP (MINIMUM) SQUARE 16 GAUGE GALVANIZED STEEL - STEEL CITY SERIES GW. BOXES INSTALLED IN WOOD PARTITIONS SHALL BE STEEL CITY 3-1/2 INCH DEEP GANGABLE SQUARE CORNER TYPE. RECEPTACLES SHALL BE HUBBELL 5362 OR EQUAL. SWITCHES SHALL BE HUBBELL 1120 SERIES OR EQUAL. COVER PLATES SHALL BE IMPACT RESISTANT. EXCEPT USE STAINLESS STEEL IN FOOD SERVICE AREAS.

PULL BOXES SHALL BE 14 GAUGE GALVANIZED STEEL WITH BLANK COVER SIZED AS REQUIRED BY NATIONAL ELECTRICAL CODE. LOCATE DEVICES AND EQUIPMENT ABOVE FINISHED FLOOR AS FOLLOWS UNLESS OTHERWISE SPECIFICALLY NOTED ON PLANS:

WALL SWITCHES - 4"-0" OR TO NEAREST MASONRY COURSE JOINT.
RECEPTACLES - 1'-6" OR TO NEAREST MASONRY COURSE JOINT.
LIGHT FIXTURES - AS NOTED ON FIXTURE SCHEDULE.

GROUNDING: THE ELECTRICAL SYSTEM AND ALL ELECTRICAL EQUIPMENT SHALL BE GROUNDED IN ACCORDANCE WITH ARTICLE 250 OF THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE. GREEN EQUIPMENT GROUND WIRE SHALL BE USED WITH ALL FEEDERS AND BRANCH CIRCUITS.

LIGHTING FIXTURES: LIGHTING FIXTURES AND LAMPS SHALL BE PROVIDED AND INSTALLED AS PER SCHEDULE. ALL FIXTURES SHALL BE CLEANED ON COMPLETION OF INSTALLATION.

TESTS: THE CONTRACTOR SHALL MEGGER ALL BUSWAYS, CABLES AND CONTROL CONNECTIONS TO PROVE INSULATION RESISTANCE IS OF ACCEPTABLE VALUE.

PANELBOARDS: PROVIDE PANELS AS SCHEDULED EQUAL TO SQUARE D NQ00.

SAFETY SWITCHES: SWITCHES SHALL BE EQUAL TO SQUARE D TYPE GD WITH RATINGS AND FUSING PROVISIONS AS INDICATED.

IDENTIFICATION AND NAMEPLATES: PROVIDE ENGRAVED, LAMINATED BAKELITE (WHITE LETTERS ON BLACK SURFACE) NAMEPLATES SCREWED TO EACH PIECE OF ELECTRICAL DISTRIBUTION EQUIPMENT AS FOLLOWS:

A. PANELBOARDS, SWITCHBOARDS - DESIGNATION L1, P1, ETC., VOLTAGE, PHASE NUMBER OF WIRES, ETC.; WORDING EXAMPLE: PANEL L1-208V-3 PHASE, 4 WIRE.

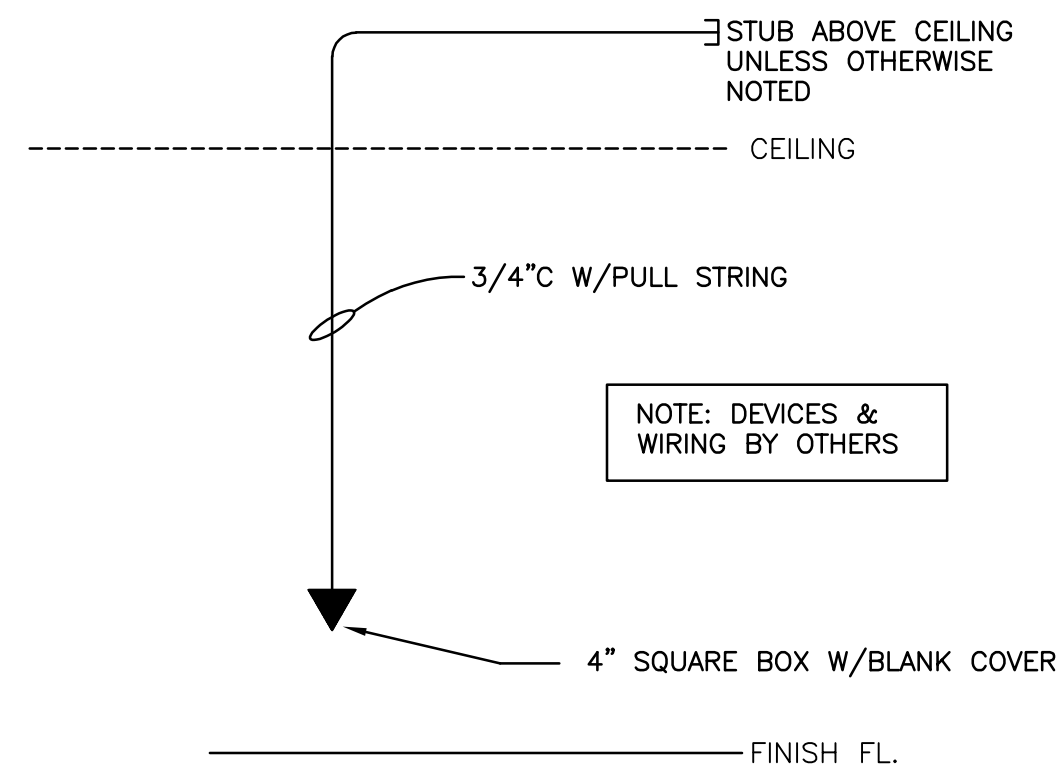
B. MOTOR STARTERS, DISCONNECT SWITCHES - UNLESS MOUNTED DIRECTLY ON OR ADJACENT TO IDENTIFY EQUIPMENT; WORDING EXAMPLE: EXHAUST FAN 1, MAKE-UP AIR UNIT.

EQUIPMENT CONNECTIONS: THIS CONTRACTOR SHALL BRING ALL REQUIRED ELECTRICAL SERVICE TO ALL EQUIPMENT ITEMS FURNISHED UNDER OTHER SECTIONS OF THESE SPECIFICATIONS OR BY THE OWNER, MAKE FINAL CONNECTIONS, AND LEAVE EQUIPMENT READY FOR OPERATION. THIS CONTRACTOR SHALL COORDINATE WITH ANY AFFECTED TRADE TO ASSURE CORRECT OPERATION OF THE EQUIPMENT ITEM.

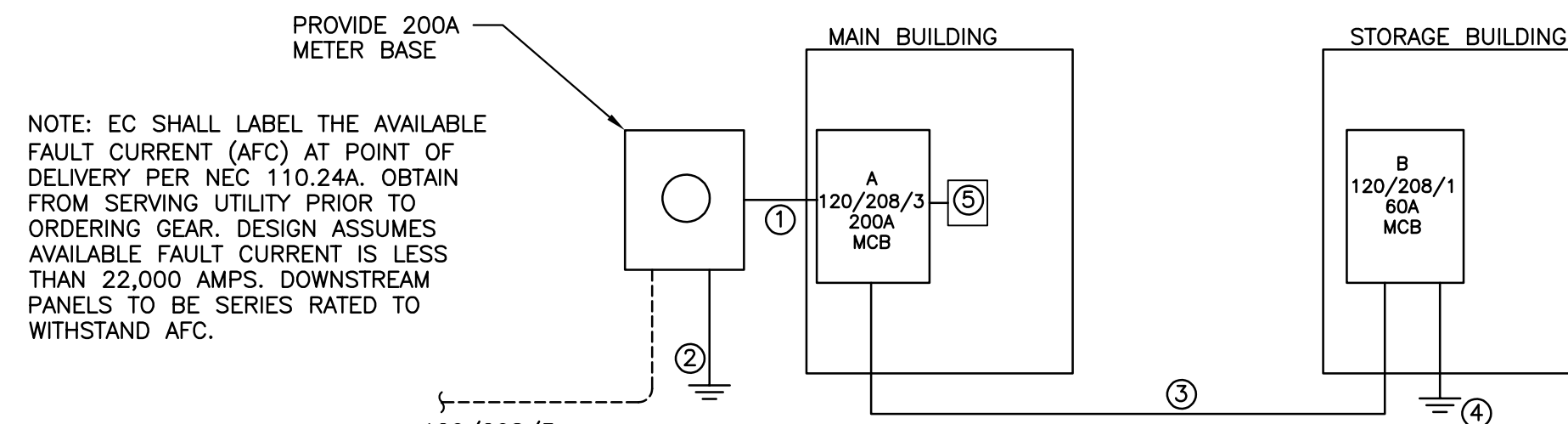
CONTROL AND INTERLOCK WIRING: EXCEPT AS OTHERWISE INDICATED ON THE DRAWINGS, ALL CONTROL AND INTERLOCK WIRING SHALL BE PERFORMED BY THE RESPECTIVE CONTRACTORS.

THE ELECTRICAL SUBCONTRACTOR SHALL INSTALL ALL STARTERS, PILOT SWITCHES, CONTROL DEVICES AND MISCELLANEOUS ITEMS OF ELECTRICAL EQUIPMENT FURNISHED UNDER OTHER SECTIONS OF THESE SPECIFICATIONS THAT ARE NOT INTEGRALLY MOUNTED WITH THEIR ASSOCIATED EQUIPMENT.

SERVICE: THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING SERVICE WITH THE UTILITY COMPANY. PROVIDE UTILITY REQUIRED METERING PROVISIONS. EC SHALL WORK DIRECTLY WITH THE UTILITY AND SHALL COMPLETE AND SUBMIT ALL LOAD DATA SHEETS REQUIRED FOR SERVICE APPLICATION.



TYPICAL DATA/COMM OUTLET
NTS



POWER RISER
NTS

- ① 4 #3/0, #4 GND, 2" C
- ② #4 GND PER NEC 250. SEE DETAIL
- ③ 3 #6, #10 GND, 1"
- ④ #8 GND PER NEC 250. SEE DETAIL
- ⑤ PROGRAMMABLE ELECTRONIC TIMECLOCK FOR COURSE LIGHTING

ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT METHOD OF COMPLIANCE:

Energy Code: Prescriptive Performance

Lighting schedule

lamp type required in fixture	See Fixture Schedule
number of lamps in fixture	See Fixture Schedule
ballast type used in the fixture	See Fixture Schedule
number of ballasts in fixture	See Fixture Schedule
total wattage per fixture	See Fixture Schedule
total interior wattage specified vs allowed	1737/1746
total exterior wattage specified vs allowed	2590/5440

Additional Efficiency Package Options

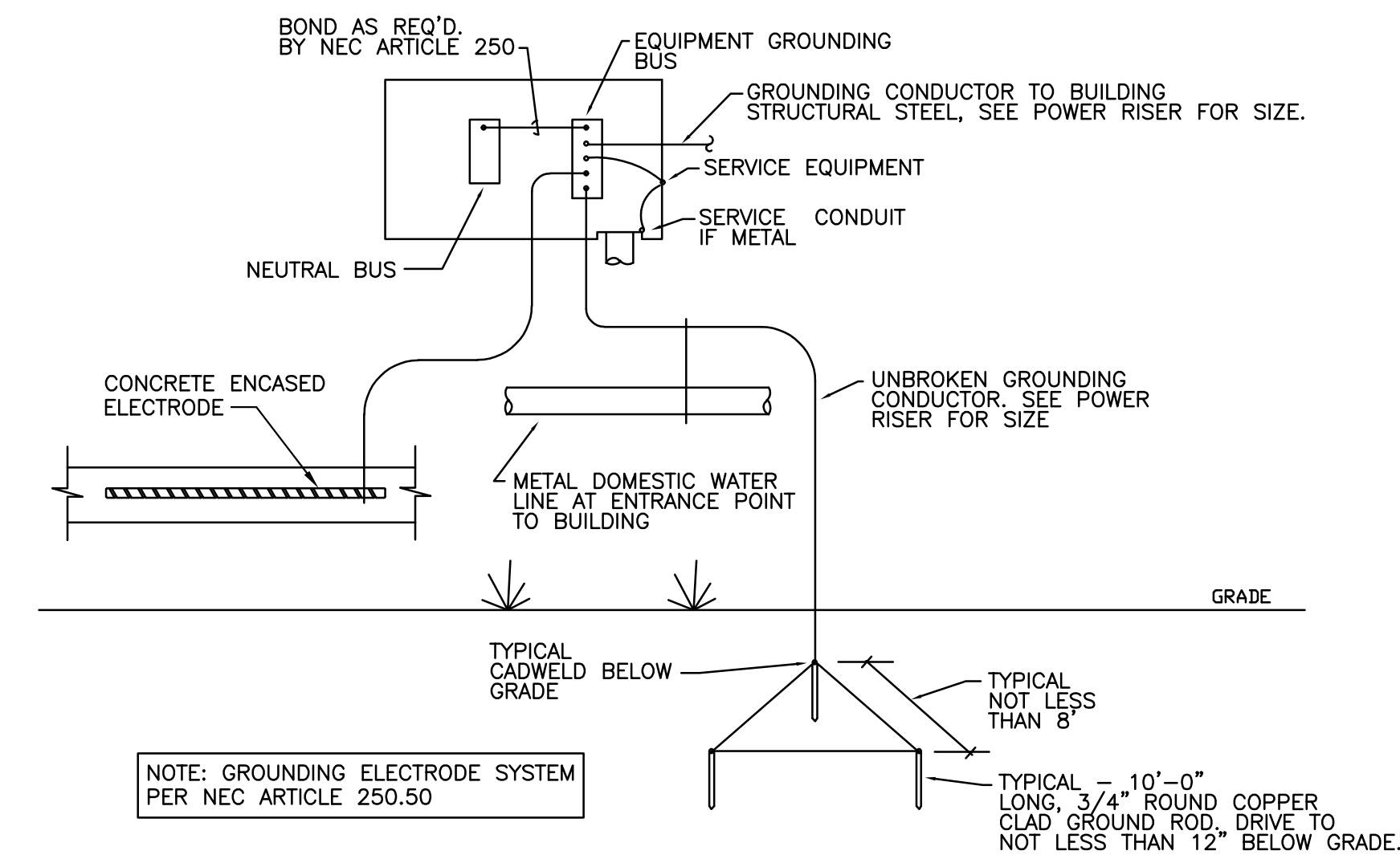
<input checked="" type="checkbox"/> C406.2 More Efficient HVAC Equipment Performance
<input type="checkbox"/> C406.3 Reduced Lighting Power Density
<input type="checkbox"/> C406.4 Enhanced Digital Lighting Controls
<input type="checkbox"/> C406.5 On-Site Renewable Energy
<input type="checkbox"/> C406.6 Dedicated Outdoor Air System
<input type="checkbox"/> C406.7 Reduced Energy Use in Service Water Heating
<input type="checkbox"/> N/A EXISTING/RENOVATION

DESIGNER STATEMENT:
To the best of my knowledge and belief, the design of this building complies with the requirements of Section C405 of the 2018 North Carolina State Energy Code.

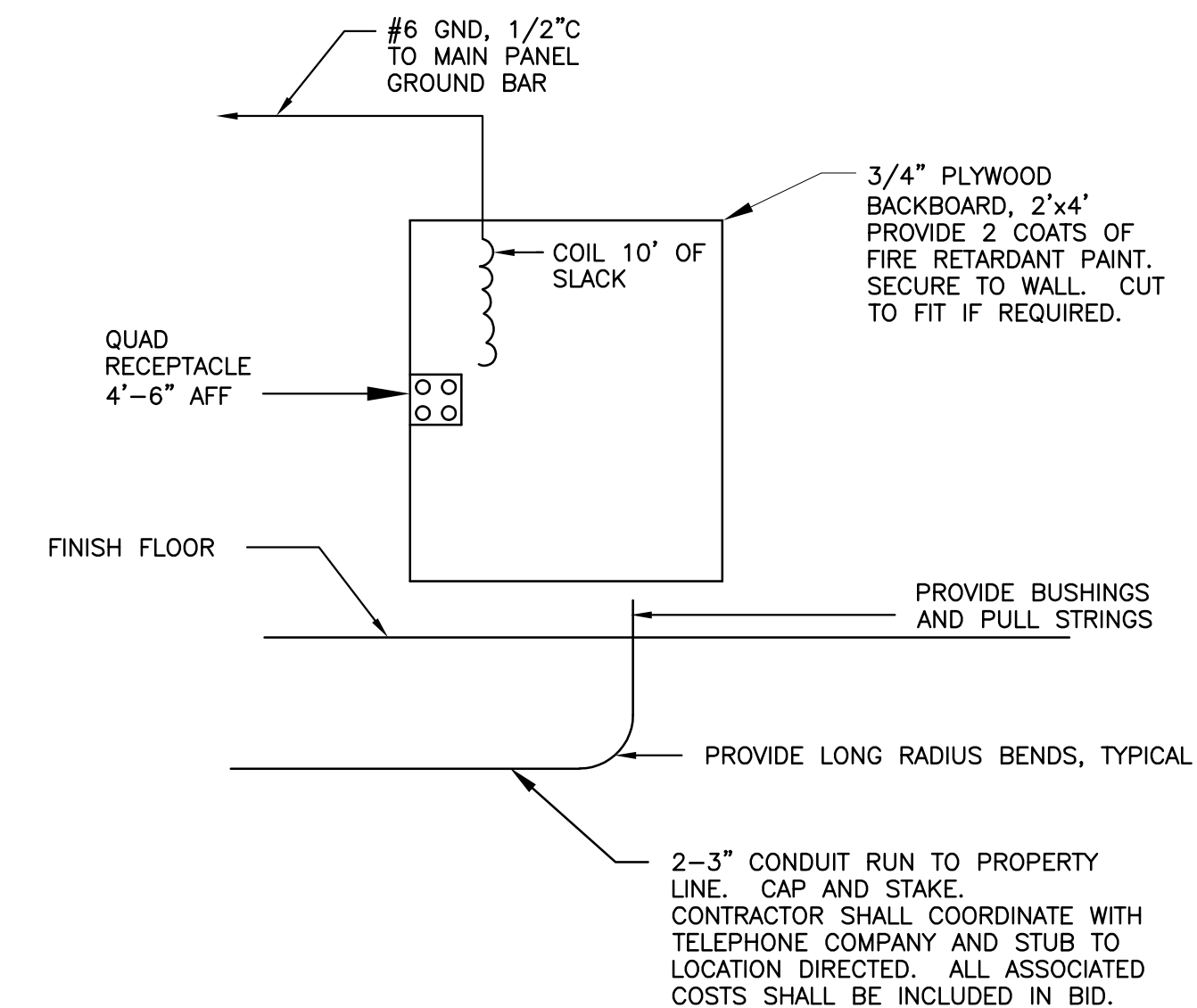
SIGNED: *Gregory McDowell*
NAME: Gregory McDowell
TITLE: Professional Engineer

ELECTRICAL LEGEND	
SYMBOL	DESCRIPTION
---	CONDUIT
----	CONDUIT UNDERFLOOR OR UNDERGROUND
↗	ARROW INDICATES HOMERUN, TICKMARKS: NEUTRAL, PHASE, GND.
☐	POWER PANEL
⊕	JUNCTION BOX
⊗	DISCONNECT SWITCH; FUSED; NONFUSED
S _m	MOTOR TOGGLE SWITCH
⊖	MOTOR
○	LIGHT FIXTURE
AFF	ABOVE FINISHED FLOOR
⊕	DUPLEX RECEPT, ABOVE COUNTER
⊕ WP, ⊕ GFI	WEATHERPROOF, GROUND FAULT
▼	DATA/COMM OUTLET

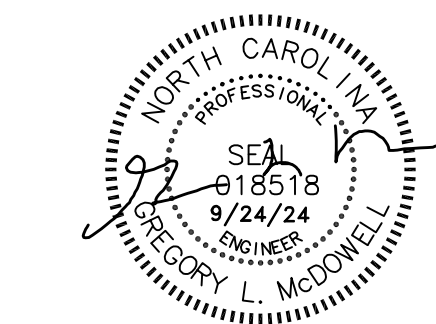
SEE LIGHTING PLAN FOR ADDITIONAL SYMBOLS



ELECTRICAL SERVICE GROUNDING DETAIL
SCALE: NTS



TELEPHONE SERVICE DETAIL
NTS



SURF'S UP MINIATURE GOLF STRUCTURES
1360 BRIDGE BARRIER RD., CAROLINA BEACH, NC 28428

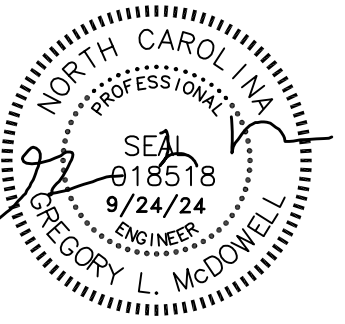
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Mark	Date	Description
PROJECT NO:	24074	
DATE:	9/24/2024	
SCALE:		
DRAWN BY:		
PROJ MGR:		

ELECTRICAL SCHEDULES, NOTES & DETAILS

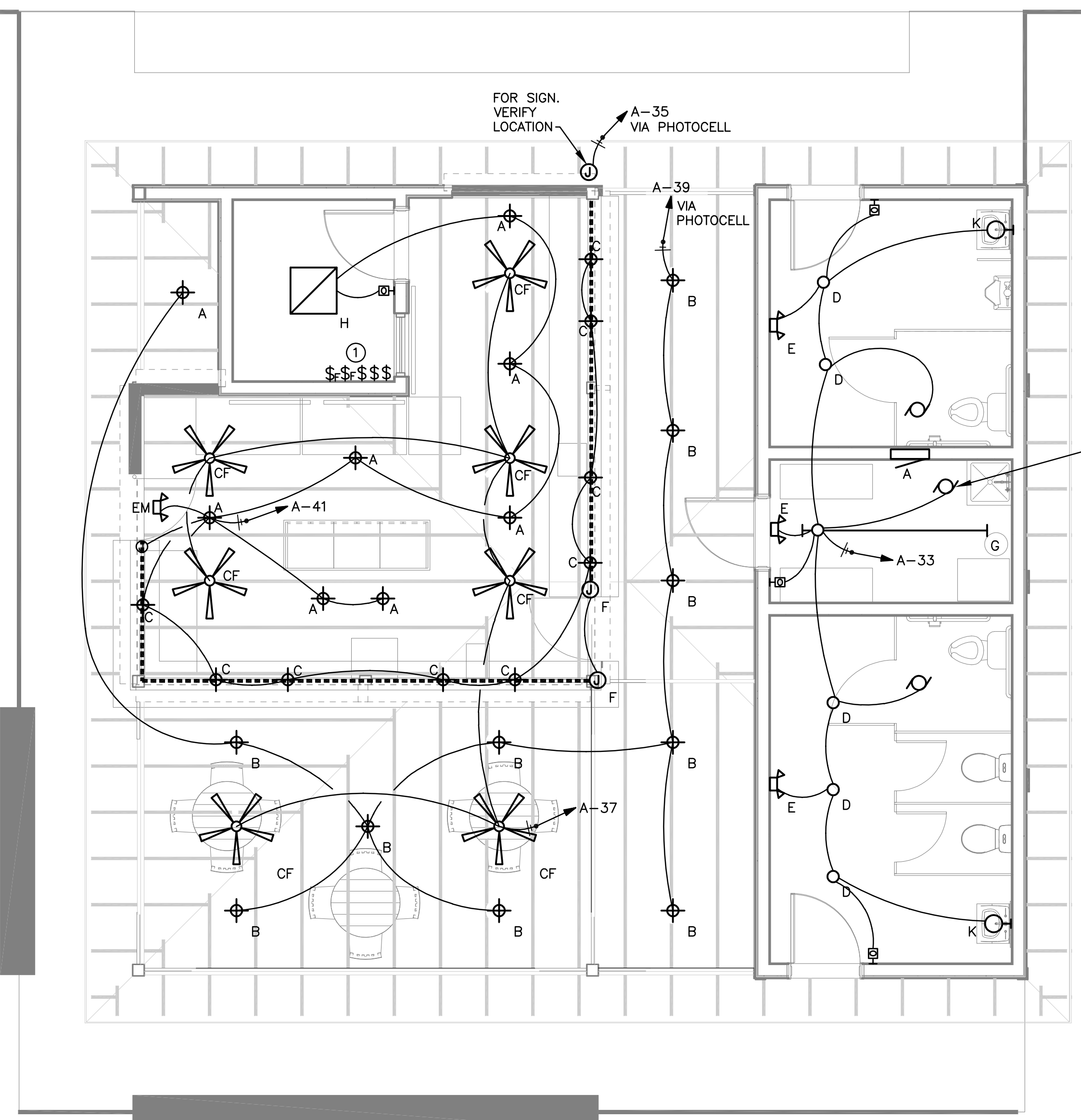


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WILMINGTON, NORTH CAROLINA
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PROJECT NO. 18260
TOPSAIL
ENGINEERING, INC.
P.O. BOX 367 | Hampstead, NC 28443
office@topsailingengineering.com
NC License No. C-2546
(910) 270-3747



NOTE: ALL SINGLE-PHASE RECEPTACLES RATED 150V TO GROUND OR LESS, 50 AMPERES OR LESS IN SERVING AREA SHALL BE GROUND-FAULT PROTECTED. GFCI RECEPTACLES MUST BE READILY ACCESSIBLE. PROVIDE GFCI BREAKERS WHERE THIS REQUIREMENT CAN NOT BE MET



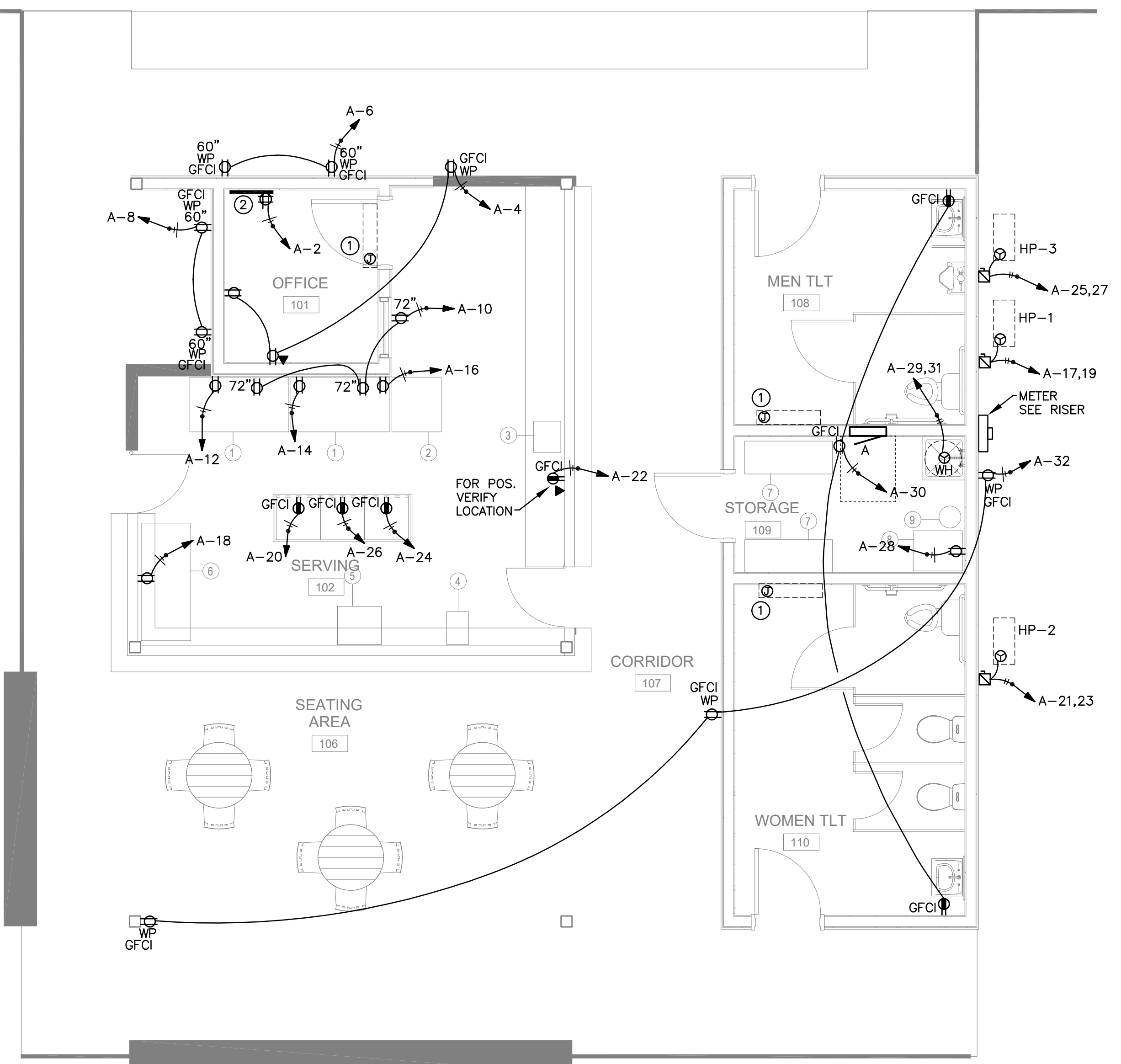
THERMOSTATICALLY CONTROLLED EXHAUST FAN. CONNECT TO LIGHTING CIRCUIT AHEAD OF CONTROLS

SWITCH SCHEDULE

SYMBOL	NOTE 1
\$ _F	FAN SPEED CONTROLLER TO CONTROL MULTIPLE FANS
Ⓜ	SENSORWORX SWX-121 WALL SWITCH OCCUPANCY SENSOR
\$	SINGLE POLE SWITCH

REFERENCE NOTES - LIGHTING:
① PROVIDE SWITCHES AT THIS LOCATION TO CONTROL CEILING FANS AND FIXTURES "A","C"&"F"

FLOOR PLAN - LIGHTING
SCALE: 1/4"=1'-0"



REFERENCE NOTES - POWER:
① CONNECT INDOOR MINI-SPLIT THROUGH OUTDOOR UNIT PER MANUFACTURER'S INSTRUCTIONS
② TELEPHONE BOARD. SEE DETAIL ON DRAWING E100

FLOOR PLAN - POWER
SCALE: 1/4"=1'-0"

SURF'S UP MINIATURE GOLF STRUCTURES

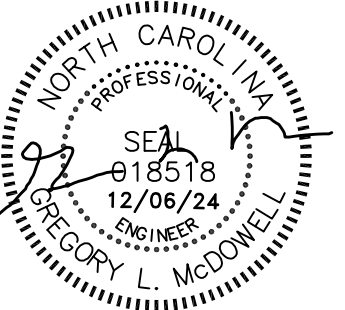
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DATE:	9/24/2024	
SCALE:		
DRAWN BY:		
PROJ MGR:		

FLOOR PLAN ELECTRICAL

E200



Mark	Date	Description
PROJECT NO:	24074	
DATE:	9/24/2024	
SCALE:		
DRAWN BY:		
PROJ MGR:		

STORAGE BUILDING & ELECTRICAL SCHEDULES

E201

REV. NUM.	DATE	REVISION DESCRIPTION
1	12-06-24	PLAN REVIEW COMMENTS

GENERAL LUMINAIRE SCHEDULE

CALLOUT	LAMP	DESCRIPTION	MOUNTING	MODEL	TOTAL VA	VOLTS	NOTE 1
A	LED	CYLINDER DOWNLIGHT	PENDANT	TRULY GREEN SOLUTIONS AQR	50	120	
B	LED	DOMED DOWNLIGHT	PENDANT	BROCK LIGHTING 514	23	120	23W MAX
C	A19	DOWNLIGHT	PENDANT	DESIGN HOUSE AJAX	60	120	
CF		CEILING FAN	CEILING	SELECTED BY OWNER	150	120	
D	LED	DOWNLIGHT	SURFACE	TRULY GREEN SOLUTIONS 880918	24	120	
E	LED INCLUDED	EMERGENCY	WALL	SURE-LITES SELHP 100R3	0	120	90 MINUTE BATTERY
EM	LED INCLUDED	EMERGENCY	WALL	SURE-LITES AP2SQLED30	0	120	90 MINUTE BATTERY. UL DAMP LABEL
F	LED	TAPE LIGHT	SURFACE	KELVIX	200	120	PROVIDE LOW VOLTAGE TRANSFORMER AND ALL HARDWARE AS RECOMMENDED BY SUPPLIER FOR INSTALLATION IN LOCATIONS SHOWN
G	LED 6800 LUMENS	8' STRIP	SURFACE	H.E. WILLIAMS FSB	46	120	
H	LED	2x2 FLAT PANEL	SURFACE	H.E. WILLIAMS BP22	40	120	
K	AS REQUIRED	VANITY	WALL ABOVE MIRROR	SELECTED BY OWNER	60	120	60W MAX
OA	LED	AREA LIGHT	POLE	NAFCO NF-SLS-185-50-MV-5W-BX-6R (TWO)	370	120	PROVIDE NAFCO NP-RSAA-16-4040-D-AB-SB-FP-BK-D2
OB	LED	AREA LIGHT	POLE	NAFCO NF-SLS-185-50-MV-4M-BK-6R	185	120	PROVIDE NAFCO NP-RSAA-16-4040-D-AB-SB-FP-BK-D2

EQUIPMENT CONNECTION SCHEDULE

EQUIPMENT TAG	EQUIPMENT DESCRIPTION	SYMBOL	VOLTS	AMPS	KVA	CIRCUIT	WIRE CALLOUT	MCA	MOCP	DISCONNECT	DISCONNECT DESCRIPTION
HP-1	MINI-SPLIT 1		208V 2P 2W	24.04	5	A-17,19	1/2"C,2#12,#12G	11	30	FUSED	240/30/2/3R
HP-2	MINI-SPLIT 2		208V 2P 2W	24.04	5	A-21,23	1/2"C,2#12,#12G	11	30	FUSED	240/30/2/3R
HP-3	MINI-SPLIT 3		208V 2P 2W	24.04	5	A-25,27	1/2"C,2#12,#12G	11	30	FUSED	240/30/2/3R
P1	ROCK WATERFALL PUMP		208V 2P 2W	19.62	4.08	A-1,3	3/4"PVC,2#8,#8G			FUSED	240/30/2/3R
P2	FOUNTAIN PUMP		208V 2P 2W	19.62	4.08	A-5,7	3/4"PVC,2#8,#8G			FUSED	240/30/2/3R
P3	FOUNTAIN PUMP		208V 2P 2W	19.62	4.08	A-9,11	3/4"PVC,2#8,#8G			FUSED	240/30/2/3R
WH	WATER HEATER		208V 2P 2W	21.63	4.5	A-29,31	1/2"C,2#10,#10G			HARDWIRED CONNECTION	BREAKER WITH-IN SIGHT

DISCONNECTS FOR WATER PUMPS SHALL BE NON-METALLIC OR COMPLY WITH NEC 682.33(A) FOR EQUIPOTENTIAL PLANE REQUIREMENTS.

A

MOUNTING RECESSED
 FED FROM UTILITY
 NOTE

VOLTS 208Y/120V 3P 4W
 BUS AMPS 200
 NEUTRAL 100%

AIC 22,000
 MAIN BRKR 200
 LUGS STANDARD

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA			CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA		
			A	B	C				A	B	C
1	30/2	ROCK WATERFALL PUMP *	2.04	2.04		2	20/1	QUAD - TEL BD	0.36	0.54	0.36
3						4	20/1	RECS - OFFICE			
5	30/2	FOUNTAIN PUMP *			2.04	6	20/1	RECS - HIGH ON WALL OUTSIDE			
7			2.04			8	20/1	RECS - HIGH ON WALL OUTSIDE	0.36		
9	30/2	FOUNTAIN PUMP *		2.04		10	20/1	RECS HIGH ON WALL *		0.54	
11						12	20/1	MERCHANDISER *			1.02
13	20/1	ANIMATRONICS	1.2	1.2		14	20/1	MERCHANDISER *	1.02	0.6	0.84
15	20/1	ANIMATRONICS			2.5	16	20/1	MERCHANDISER *			
17	30/2	MINI-SPLIT 1				18	20/1	BOTTLE COOLER *			
19			2.5	2.5		20	20/1	DRINK MACHINE	1.1	0.18	
21	30/2	MINI-SPLIT 2		2.5		22	20/1	POS			1.1
23			2.5	2.5		24	20/1	FUTURE EQUIPMENT	1.1		
25	30/2	MINI-SPLIT 3		2.5		26	20/1	SLUSHI MACHINE			
27			2.5	2.5		28	20/1	ICE MAKER *		1.2	
29	30/2	WATER HEATER		2.25		30	20/1	RECS - TLTS, STORAGE	0.54	1.1	0.54
31			2.25	0.436		32	20/1	RECS - OUTSIDE	0.54		
33	20/1	LTG - TLTS, STORAGE				34	20/1	COURSE LTG & RECS **		1.1	
35	20/1	SIGN			1.2	36	20/1	COURSE LTG & RECS ***			1.1
37	20/1	CLG FANS	1.05	0.28	1.33	38	20/1	RECEPT AT PUMP	0.18	1.25	0.36
39	20/1	LTG - SEATING				40	60/2	PANEL B			
41	20/1	LTG - SERVING, OFFICE				42					
43	20/1	COURSE LTG & RECS ***	1.1	1.1		44	20/1	SPARE	0	0	0
45	20/1	COURSE LTG & REC ***				46	20/1	SPARE			
47	20/1	SPARE *			0	48	20/1	SPARE			0
49	20/1	SPARE *	0	0		50	-/1	SPACE	0	0	0
51	20/1	SPARE				52	-/1	SPACE			
53	20/1	SPARE			0	54	-/1	SPACE			

TOTAL CONNECTED KVA BY PHASE 19.3 17.5 19.2

	CONN KVA	CALC KVA		CONN KVA	CALC KVA
LIGHTING	8.13	10.2	(125%)	KITCHEN EQUIPMENT	7.98
LARGEST MOTOR	5	1.25	(25%)	CONTINUOUS	6.9
MOTORS	12.2	12.2	(100%)	HEATING	15
RECEPTACLES	5.76	5.76	(50%>10)	COOLING	0
				TOTAL LOAD	58.2
				BALANCED 3-PHASE LOAD	162 A

* GFCI BREAKER, ** VIA PHOTOCCELL, *** VIA PROGRAMABLE ELECTRONIC TIMELOCK

B

MOUNTING SURFACE
 FED FROM A
 NOTE LOAD CENTER

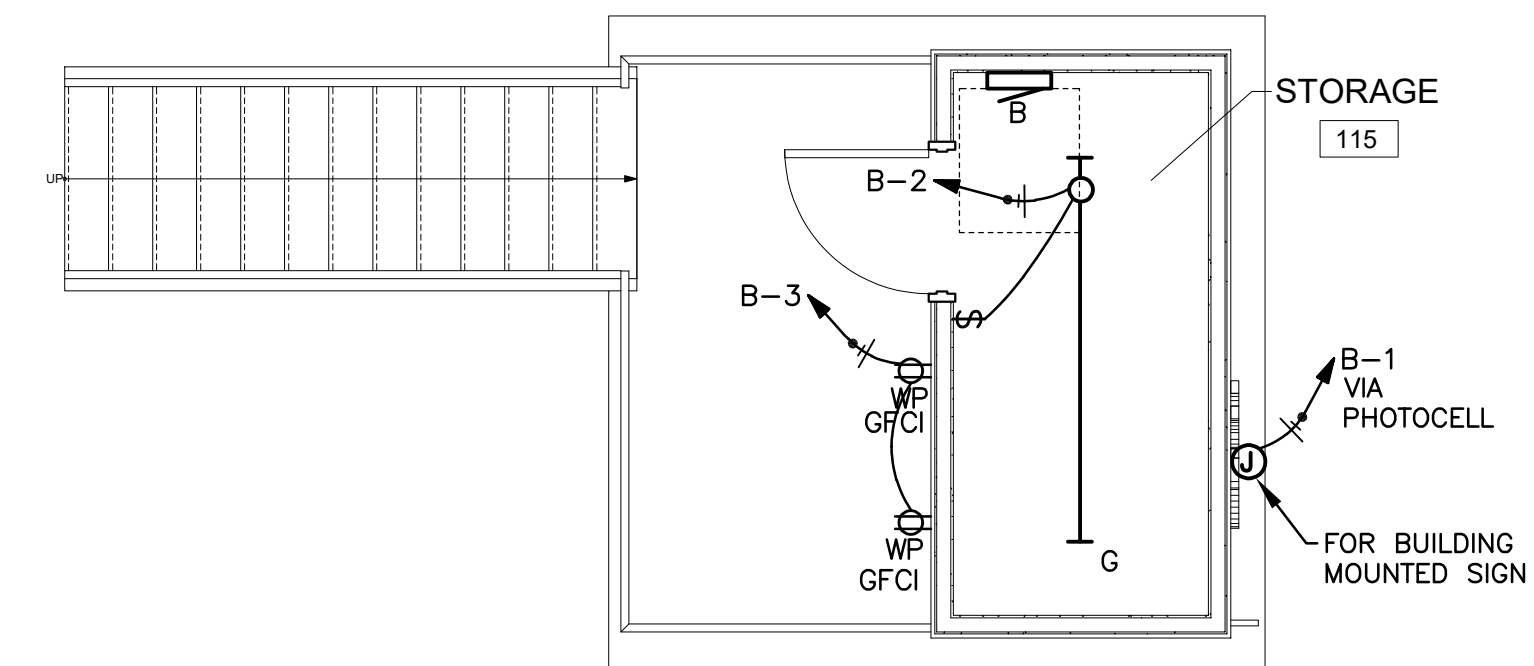
VOLTS 208/120V 2P 3W
 BUS AMPS 60
 NEUTRAL 100%

AIC 10,000
 MAIN BRKR 60
 LUGS STANDARD

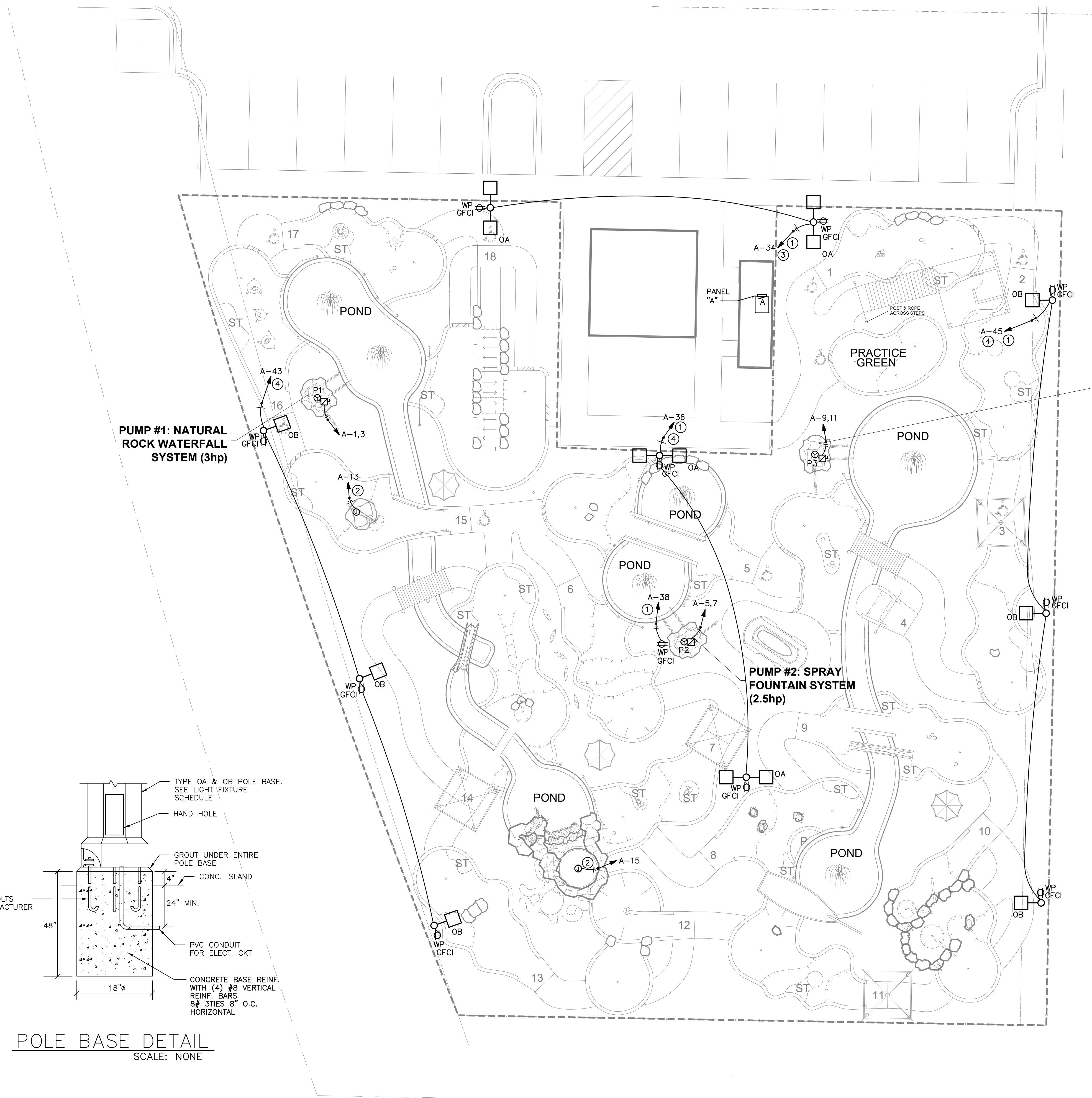
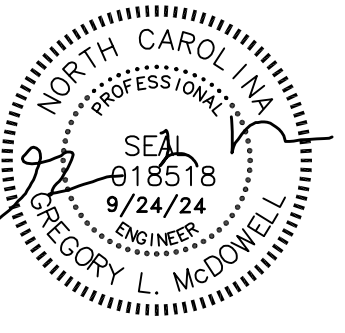
CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA		CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA	
			A	B				A	B
1	20/1	SIGN	1.2	0.36	2	20/1	LIGHTING	0.046	0
3	20/1	RECEPTS			4	-/1	SPACE		
5	20/1	SPARE	0	0	6	-/1	SPACE	0	0
7	20/1	SPARE			8	-/1	SPACE		

TOTAL CONNECTED KVA BY PHASE 1.25 0.36

	CONN KVA	CALC KVA		CONN KVA	CALC KVA
LIGHTING	1.25	1.56	(125%)	TOTAL LOAD	1.92
RECEPTACLES	0.36	0.36	(50%>10)	BALANCED LOAD	9.22 A



STORAGE BUILDING - ELECTRICAL
 SCALE: 1/4"=1'-0"

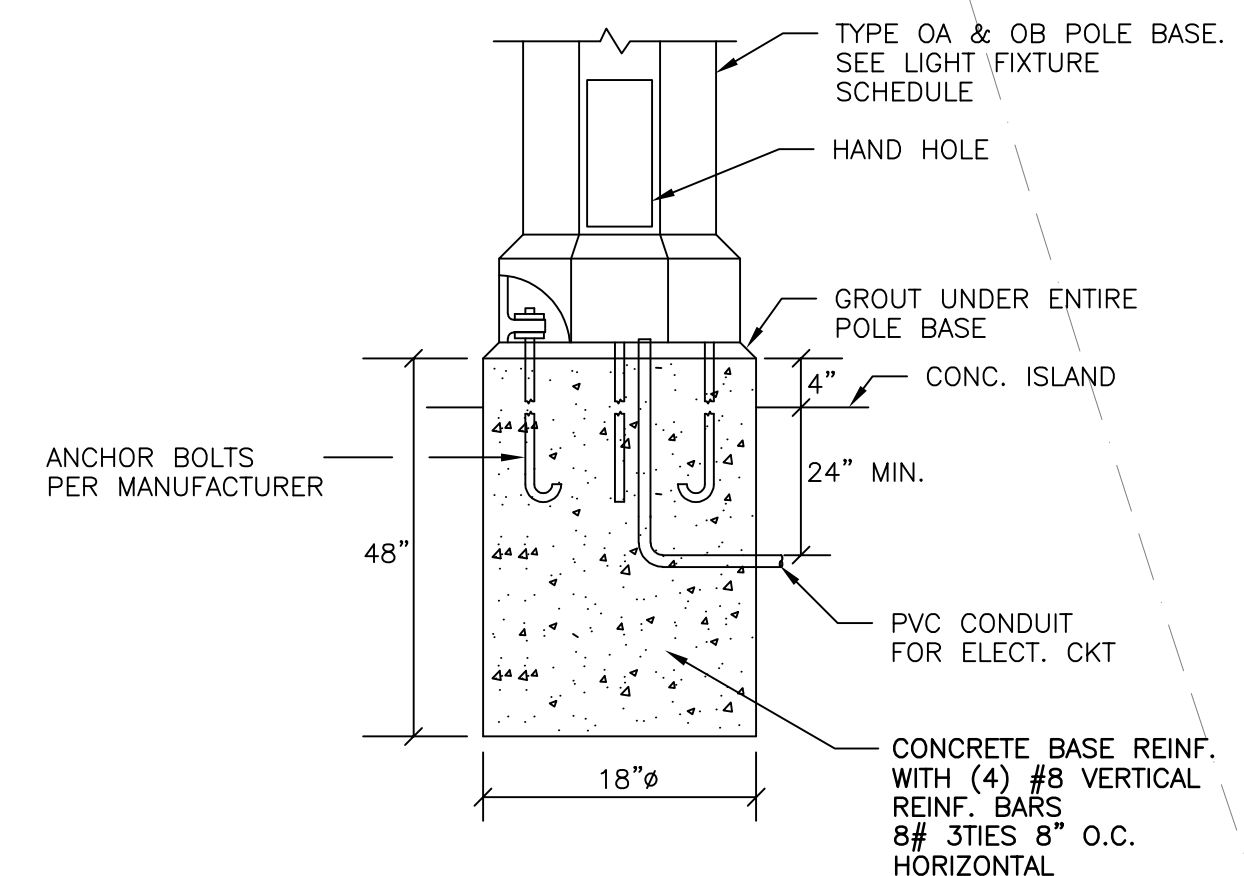


PUMP #3: SPRAY FOUNTAIN SYSTEM (2.5hp)

PUMP #1: NATURAL ROCK WATERFALL SYSTEM (3hp)

PUMP #2: SPRAY FOUNTAIN SYSTEM (2.5hp)

- REFERENCE NOTES:
- ① #10AWG THROUGHOUT CIRCUIT IN 3/4" PVC
 - ② FOR 120V ANIMATRONICS. HOMERUN #10AWG IN 3/4" PVC
 - ③ VIA PHOTOCELL
 - ④ VIA PROGRAMMABLE ELECTRONIC TIMECLOCK



POLE BASE DETAIL
 SCALE: NONE

SITE PLAN - ELECTRICAL
 SCALE: 1"=10'-0"

SURF'S UP MINIATURE GOLF STRUCTURES
 1360 BRIDGE BARRIER RD.
 CAROLINA BEACH, NC 28428

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Mark	Date	Description
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SITE PLAN ELECTRICAL

E300