

INDEX OF DRAWINGS

ARCHITECTURAL	
A001	COVER SHEET, AREA PLANS, & GENERAL NOTES
A002	ENERGY COMPLIANCE NOTES & THERMAL ENVELOPE DIAGRAMS
A002	BASEMENT PLAN
A003	FIRST FLOOR PLAN
A003	SECOND FLOOR PLAN
A004	ELEVATIONS
A005	ELEVATIONS
A006	SECTIONS & DETAILS

STRUCTURAL	
S001	STRUCTURAL FOUNDATION PLAN
S002	FIRST FLOOR FRAMING PLAN
S003	SECOND FLOOR FRAMING / FIRST FLOOR ROOF FRAMING PLAN
S004	ROOF FRAMING PLAN
S005	FIRST FLOOR WALL BRACING PLAN
S006	SECOND FLOOR WALL BRACING PLAN
S007	GENERAL STRUCTURAL NOTES & SCHEDULES
S008	GENERAL STRUCTURAL NOTES & SCHEDULES
S009	GENERAL STRUCTURAL DETAILS & NOTES
S010	GENERAL STRUCTURAL DETAILS & NOTES
S011	GENERAL STRUCTURAL DETAILS & NOTES
S012	GENERAL STRUCTURAL DETAILS & NOTES

SCOPE OF WORK

THE SCOPE OF WORK TO INCLUDE CONSTRUCTION OF A NEW 5,324 SQUARE FOOT 4 BEDROOM, SINGLE FAMILY HOME WITH 1521 SQUARE FOOT OF UNFINISHED BASEMENT, INTEGRAL 413 SQUARE FOOT 3-CAR GARAGE, 200 SQUARE FOOT COVERED FRONT PORCH AND 254 SQUARE FOOT COVERED REAR PORCH PER THESE DRAWINGS.

APPLICABLE CODES

ALL WORK MUST COMPLY WITH THE FOLLOWING CODES:

BUILDING:
2021 INTERNATIONAL RESIDENTIAL CODE (IRC) WITH LOCAL AMENDMENTS
-MARYLAND BUILDING PERFORMANCE STANDARDS (COMAR 05.02.01)
2021 ICC INTERNATIONAL MECHANICAL CODE (IMC)
2021 ICC INTERNATIONAL ENERGY CONSERVATION CODE (IECC)

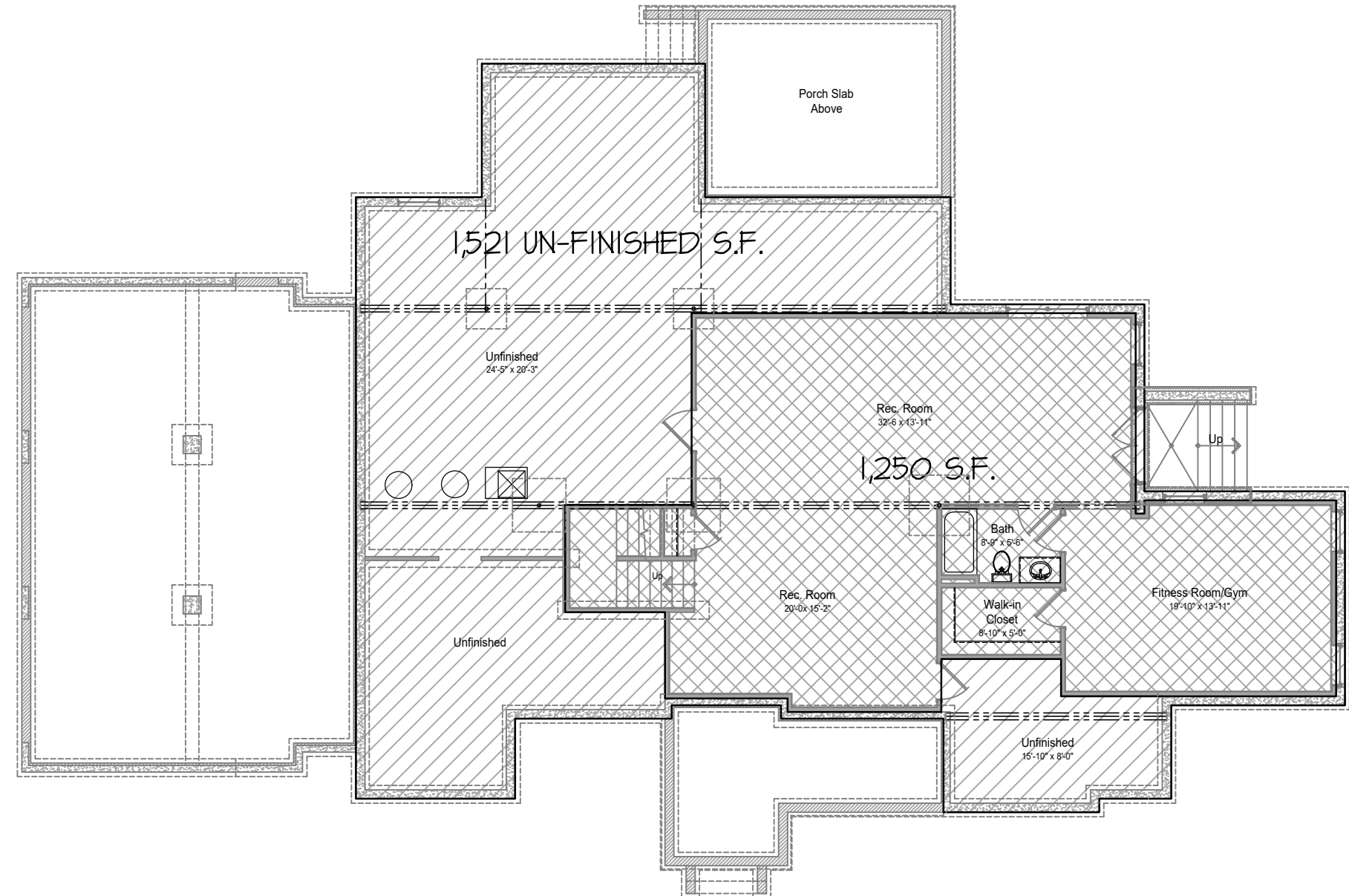
PLUMBING / GAS:
2021 ICC INTERNATIONAL PLUMBING CODE (IPC) ILLUSTRATED WITH LOCAL AMENDMENTS
2021 INTERNATIONAL FUEL GAS CODE (IFGC) WITH LOCAL AMENDMENTS
2011 LIQUEFIED PETROLEUM GAS CODE NFPA 58

ELECTRICAL:
2023 NEC NATIONAL ELECTRICAL CODE WITH LOCAL AMENDMENTS

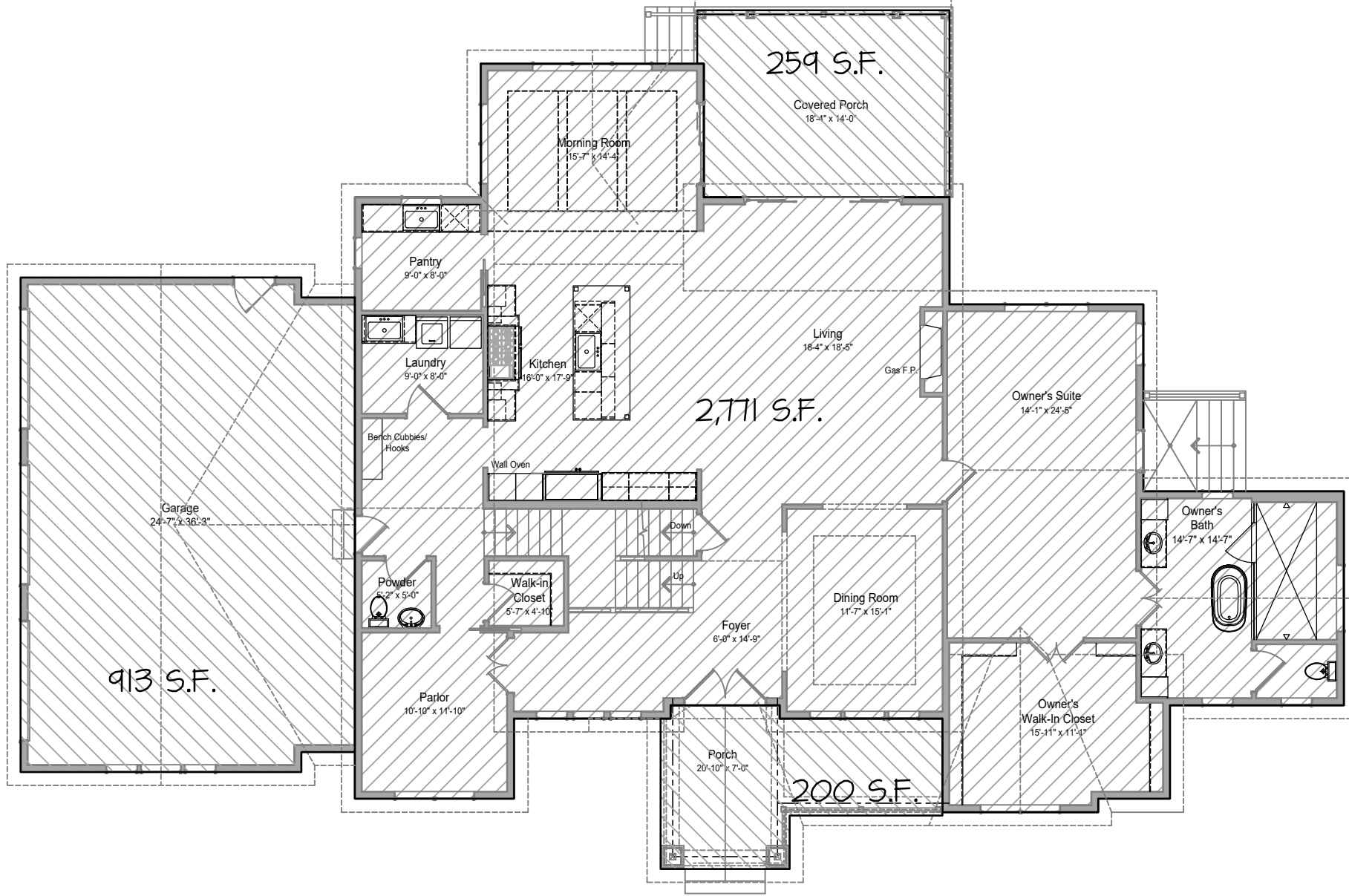
FIRE PREVENTION:
-MARYLAND STATE FIRE PREVENTION CODE
-2018 NFPA 1 FIRE CODE (NATIONAL FIRE PROTECTION ASSOCIATION) WITH AMENDMENTS, PER STATE OF MARYLAND FIRE PREVENTION CODE
-2018 NFPA 101 LIFE SAFETY CODE (NATIONAL FIRE PROTECTION ASSOCIATION) WITH AMENDMENTS, PER STATE OF MARYLAND FIRE PREVENTION CODE

BASEMENT PLAN

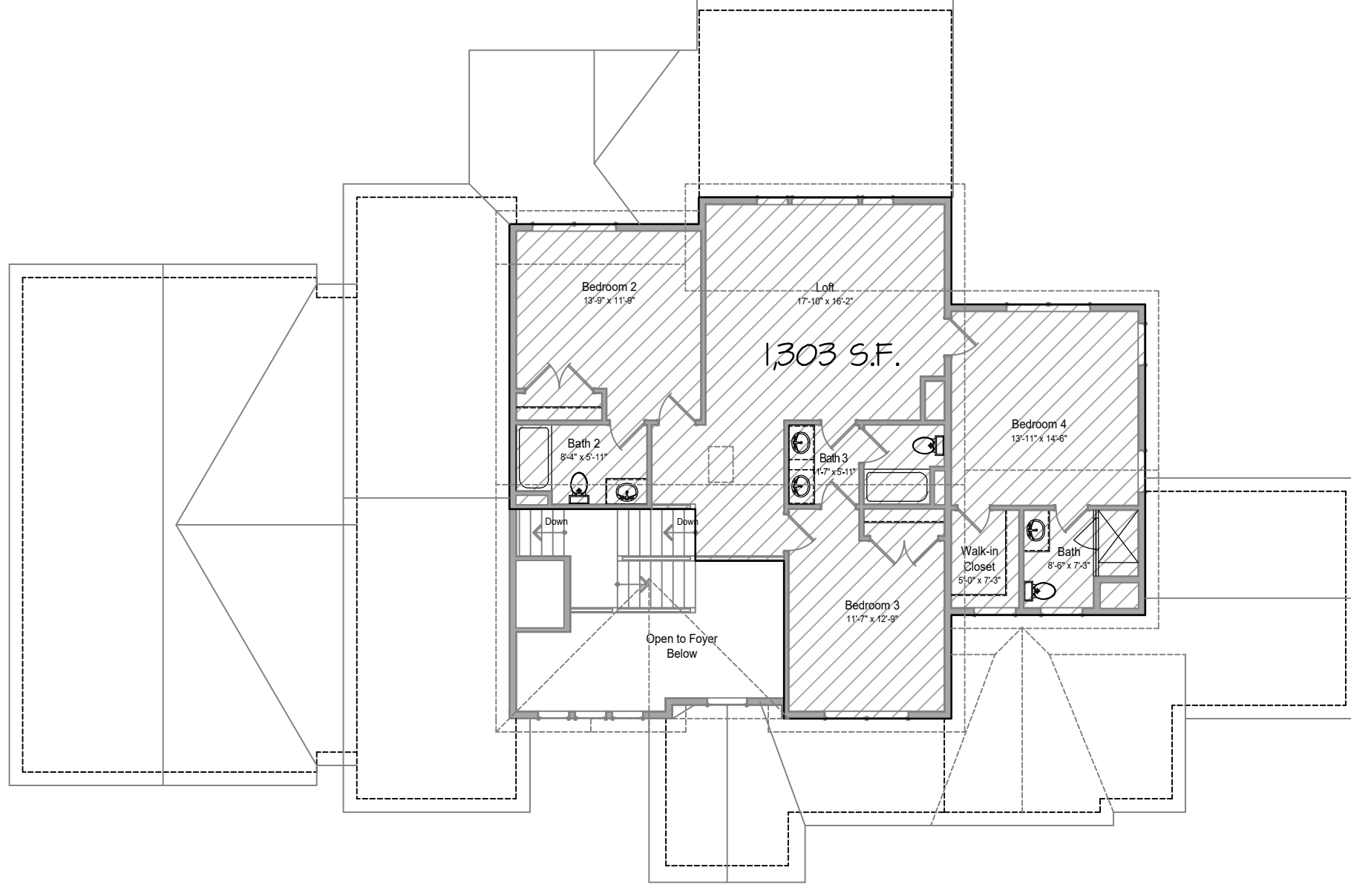
AREA PLANS



FIRST FLOOR PLAN



SECOND FLOOR PLAN



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

GENERAL STRUCTURAL NOTES:

- STRUCTURAL DESIGN BASED ON THE FOLLOWING LOCAL CRITERIA:
 - 2021 INTERNATIONAL RESIDENTIAL CODE
 - GROUND SNOW LOAD - 30 P.S.F.
 - WIND PRESSURE - 20 P.S.F.
 - WIND SPEED - 115 M.P.H.
 - SEISMIC ZONE - A
 - WEATHERING AREA - SEVERE
 - FROST LINE DEPTH - 30" BELOW FINISH GRADE
 - TERMITE AREA - MODERATE TO HEAVY
 - DECAY AREA - SLIGHT TO MODERATE
 - WINTER DESIGN TEMPERATURE - 11° F
 - COINCIDENT WET BULB = 74%
 - WINTER HUMIDITY = 30%
 - SUMMER HUMIDITY = 30%
 - ICE SHIELD UNDER-LAYMENT REQUIRED - YES
 - FLOOD HAZARD - ORIGINALLY MAY 2, 1983, CURRENTLY OCTOBER 16, 2012, REVISED FEBRUARY 18, 2015
 - AIR FZ. INDEX - >1500
 - MEAN ANNUAL TEMP = 55° F
 - TOPOGRAPHIC EFFECTS - NO
 - RADON PROTECTION REQUIRED - YES
- LIVE LOADS:
 - BALCONIES (EXTERIOR) - 60 P.S.F.
 - DECKS - 60 P.S.F.
 - GARAGES - 50 P.S.F.
 - ATTICS (W/ LIMITED STORAGE) - 20 P.S.F.
 - ATTICS (NO STORAGE) - 10 P.S.F.
 - HABITABLE ATTICS & ATTICS SERVED W/ FIXED STAIR - 30 P.S.F.
 - DWELLING UNITS - 40 P.S.F.
 - SLEEPING AREAS - 30 P.S.F.
 - STAIRS - 40 P.S.F.
- DEFLECTION:
 - RAFTERS - L/180
 - INTERIOR WALLS - L/180
 - FLOORS / CEILINGS - L/360
 - STRUCTURAL MEMBERS - L/240
 - FLOOR TRUSSES - L/480
- FOUNDATION DESIGN:
 - SOIL BEARING CAPACITY MIN. - 2000 P.S.F.
 - TYPICAL FOUNDATION WALL - 8" CONCRETE WALL WITH #4 BARS AT 16" O.C. EACH WAY WITH DOWELS INTO FOOTINGS - CONCRETE TO BE AIR ENTRAINED - TOTAL AIR CONTENT TO BE NOT LESS THAT 5% OR MORE THAN 1% CONCRETE TO BE 3000 P.S.I.
 - TYPICAL CONCRETE FOOTING - CONTINUOUS 8" DEEP - MIN. 30" BELOW FINISH GRADE. SEE LOWER LEVEL PLAN FOR WIDTH. CONCRETE TO BE AIR ENTRAINED - TOTAL AIR CONTENT TO BE NOT LESS THAN 5% OR MORE THAN 1%. CONCRETE TO BE 2500 P.S.I. CONCRETE.
 - FOUNDATION DRAINAGE TO BE PROVIDED TO ALL BASEMENTS. DRAINAGE TO BE 4" DRAIN TILE ON 2" OF WASHED GRAVEL WITH 6" GRAVEL COVER WITH FILTER MEMBRANE OVER STONE. DRAIN TILE TO DRAIN TO GRADE OR SUMP CROCK WITH PUMP TO GRADE.
 - FOUNDATION WALL TO BE DAMP PROOFED AS REQUIRED
 - FOUNDATION FOOTING TO BE INSULATION TO BELOW FROST LINE.
 - ALL STEEL TO BE Laterally SUPPORTED AND HAVE A SHOP COAT OF RUST INHIBITIVE PAINT.
 - SOIL AROUND FOUNDATION TO BE CHEMICALLY TREATED IN ACCORDANCE WITH USDA FOREST SERVICE HOME AND GARDEN BULLETIN #64 FOR TERMITE AND PEST CONTROL.
- CONCRETE SLABS:
 - TYPICAL BASEMENT SLAB TO BE 4" CONCRETE W/ 6X6 W4.0XW4.0 WJLF. OVER VAPOR BARRIER & 4" GRAVEL BASE. CONCRETE TO BE AIR ENTRAINED - TOTAL AIR CONTENT TO BE NOT LESS THAT 5% OR MORE THAN 1%. CONCRETE TO BE 2500 P.S.I.
 - TYPICAL GARAGE SLAB TO BE 4-1/2" CONCRETE WITH #4 BARS @ 24" O.C. EACH WAY OVER VAPOR BARRIER. CONCRETE TO BE AIR ENTRAINED - TOTAL AIR CONTENT TO BE NOT LESS THAN 5% OR MORE THAN 1%. CONCRETE TO BE 4000 P.S.I. CONCRETE.
 - TYPICAL PORCH AND STOOP SLAB TO BE 4" CONCRETE WITH 6X6 W4.0XW4.0 WJLF. OVER VAPOR BARRIER & 4" GRAVEL BASE. CONCRETE TO BE AIR ENTRAINED - TOTAL AIR CONTENT TO BE NOT LESS THAN 5% OR MORE THAN 1%. CONCRETE TO BE 4000 P.S.I. CONCRETE.
 - VAPOR BARRIER TO BE 6 MIL. POLY-ETHYLENE SHEET W/ MIN. 6" OVERLAP AT SEAMS.
 - WHEN REQUIRED BY DRAWING PROVIDE FIBER-MESH ADDITIVE TO CONCRETE PRIOR TO MIXING.
 - PROVIDE CONTROL JOINTS OF @ LEAST 1/4" SLAB DEPTH @ A MAX. OF 30' INTERVALS. OFFSETS OF GREATER THAT 10' REQUIRE CONTROL JOINT @ OFFSET.

BUILDING REQUIREMENTS:

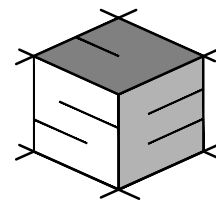
- FIRE-STOPPING TO BE PROVIDED TO CUT OFF ALL CONCEALED DRAFT OPENINGS BOTH VERTICALLY AND HORIZONTALLY. FIRE-STOPPING TO CONSIST OF NOMINAL 2X LUMBER, OR 2 LAYERS OF PLYWOOD OR 1X MATERIAL. INTEGRITY OF ALL FIRE-STOPS TO BE MAINTAINED.
- DRAFT-STOPPING TO BE PROVIDED IN ALL FLOOR/CEILING ASSEMBLIES WHEN CEILING IS SUSPENDED OR FLOOR IS OPEN STYLE TRUSSES. DRAFT-STOPPING TO CONSIST OF 1/2" GYP. BOARD OR 3/8" PLYWOOD.
- PROVIDE CONT. RIDGE VENT AND SOFFIT VENTS FOR ALL ROOF AREA'S INSTALLED PER MFRS RECOMMENDATIONS AND SPECIFICATIONS.
- COMBINATION CO/SMOKE DETECTORS SHALL BE HARD-WIRED AND INTERCONNECTED AND INSTALLED INSIDE EACH SLEEPING AREA AND HALLWAY BETWEEN SLEEPING AREAS AND ON EACH ADDITIONAL STORY OF HABITABLE SPACE. PRIMARY POWER FROM THE BUILDING WIRING WITH BATTERY BACK-UP PER NFPA 72. SEE IRC 2021 FOR FURTHER DETAILS
- WATER RESISTANT GYPSUM BOARD TO BE PROVIDED IN ALL BATHROOMS. NO VAPOR BARRIER IS PERMITTED. USE 1/2" CEMENTITIOUS BACKER BOARD AT ALL WET SHOWER AND TUB LOCATIONS WHERE TILE IS APPLIED WITH APPROVED WATERPROOFING MEMBRANE.
- PROVIDE ARTIFICIAL LIGHT AND VENTILATION IN ALL BATHS WHEN WINDOWS ARE OMITTED. PROVIDE EXHAUST FAN DIRECTLY TO THE EXTERIOR. VENTILATION REQUIRED IS 5 AC/HR. ARTIFICIAL LIGHT REQUIRED IS 6 FOOT CANDLES AT 30" ABOVE FINISHED FLOOR.
- PROVIDE TEMPERED GLASS AT ALL HAZARDOUS LOCATIONS. PER IRC 2021 308.4.
- PROVIDE LANDINGS AT EXTERIOR DOORS PER IRC R311.3
- STAIR RISERS TO BE 7 3/4" MAX. AND TREADS TO BE 10" MIN.
- PROVIDE 1/2" GYPSUM BOARD UNDER STAIRS WHERE SPACE IS FINISHED, ENCLOSED, AND ACCESSIBLE.
- PROVIDE HANDRAILS FOR ALL STAIRS. RAILINGS ON OPEN SIDE OF STAIRS MUST BE 34" HIGH MEASURED FROM THE TIP OF THE NOSING WITH INTERMEDIATE RAILS WHICH WILL NOT ALLOW THE PASSAGE OF A 4" SPHERE PER R312.1.3. GUARDRAILS SHALL BE ABLE TO RESIST A 200# LOAD APPLIED AT ANY POINT ALONG RAIL. PER IRC 2021 IN TABLE R301.5 *GUARDS AND HANDRAILS*
- STAIR, LANDING AND CORRIDOR MUST HAVE MINIMUM 3'-0" WIDTH.
- PROVIDE ILLUMINATION AT ALL INTERIOR STAIRS WITH SWITCHES AT EACH LEVEL. ACCESSSED BY STAIRS PER IRC R303.1. PROVIDE ILLUMINATION AT EXTERIOR STAIRS PER IRC R303.8
- PROVIDE EGRESS WINDOWS FROM ALL BEDROOMS WITH A NET CLEAR OPENING OF 5.7 SQ.FT. EXCEPT GRADE FLOOR WINDOWS MAY HAVE A CLEAR OPENING OF 5.0 SQ.FT.. SILL HEIGHT= MAX. 44", WINDOW CLEAR WIDTH = 20" MIN., WINDOW CLEAR HEIGHT=22" MIN.
- ALL WINDOW OPENINGS MORE THAN 6' ABOVE GRADE OR SURFACE BELOW SHALL BE A MIN. OF 24" ABOVE FINISHED FLOOR INSIDE.
- EXPOSED INSULATION BATT'S SHALL HAVE A FLAME SPREAD INDEX NOT TO EXCEED 25 AND SMOKE DEVELOPMENT INDEX NOT TO EXCEED 450. CELLULOSE LOOSE FILL INSULATION SHALL HAVE A SMOKE DEVELOPMENT INDEX OF NOT MORE THAN 450. ATTIC INSULATION TO HAVE A CRITICAL RADIANT FLUX OF AT LEAST 12 WATT PER SQUARE CENTIMETER.
- PROVIDE 22" X 30" MIN. ATTIC ACCESS HOLE FOR ALL TRUSSED SPACES WITH MORE THAN 30" CLEAR HEIGHT. CUT ACCESS HOLES FROM EXISTING ATTIC SPACES INTO NEW ATTIC SPACE PER R807.
- HVAC DESIGN AND SPECIFICATIONS TO BE IN ACCORDANCE WITH 2021 INTERNATIONAL MECHANICAL CODE AND 2021 INTERNATIONAL ENERGY CONSERVATION CODE. ALL HVAC TO BE HIGH EFFICIENCY CARRIER EQUIPMENT OR APPROVED EQUAL.
- PLUMBING TO BE DONE UNDER A SEPARATE PERMIT BY A PLUMBER REGISTERED IN THE STATE OF MARYLAND. ALL PLUMBING TO BE IN ACCORDANCE WITH COMAR SECTION 9.20, 2021 INTERNATIONAL PLUMBING CODE AND THE LOCAL AMENDMENTS.
- ELECTRIC TO BE DONE UNDER A SEPARATE PERMIT. ALL ELECTRICAL WORK TO BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND LOCAL REQUIREMENTS.
- PROVIDE GROUNDING ROD FOR ELECTRIC SERVICE PER REQUIREMENTS OF THE UTILITY SERVICE PROVIDER.
- ALL WORK TO BE DONE IN ACCORDANCE WITH MFRS RECOMMENDATIONS AND SPECIFICATIONS.
- PROVIDE METAL FLASHING AT ALL WINDOWS, DOOR, AND ROOF INTERSECTIONS PER MANUFACTURERS SPECIFICATIONS & RECOMMENDATIONS.
- PROVIDE RADON PROTECTION CONSISTENT W/ I.R.C. APPENDIX F AND LOCAL AMENDMENTS.
- PROVIDE STREET ADDRESS NUMBERS VISIBLE TO ROAD. MIN. 6" HIGH NUMBERS.
- SLOPE FINISH GRADE AWAY FROM HOUSE MIN. 6" IN THE FIRST 10'. GRADE SHALL BE A MIN. OF 6" BELOW TO OF CONCRETE / MASONRY WALLS.
- FACTORY BUILT FIREPLACES AND CHIMNEYS TO BE INSTALLED PER MANUFACTURERS SPECIFICATIONS. ALL FACTORY BUILT APPLIANCES MUST COMPLY WITH I.R.C. SECTION R1004 & R1005.
- PROVIDE FIRE SPRINKLER SYSTEM (13D) AS REQUIRED PER IRC R313. SUB-CONTRACTOR TO PROVIDE SHOP DRAWINGS TO LOCAL FIRE MARSHAL FOR APPROVAL PRIOR TO INSTALLATION.

WOOD CONSTRUCTION:

- ALL STRUCTURAL LUMBER TO BE HEM FIR #2 OR BETTER GRADE.
- FLOOR SHEATHING TO BE 5/8" PLYWOOD OR 3/4" OSB TONGUE AND GROOVE RATED SHEATHING. GLUED AND NAILED TO JOISTS WITH 6D NAILS AT 6" O.C. ON EDGES AND 12" O.C. AT INTERMEDIATE SUPPORTS.
- JOISTS AND BEAMS TO HAVE MIN. 1 1/2" BEARING.
- JOISTS AND BEAMS TO HAVE LATERAL SUPPORT BY FULL DEPTH SOLID BLOCKING OR NAILED TO A BAND BOARD.
- FLOOR JOISTS SHALL BE DIMENSIONAL LUMBER AS NOTED OR PRE-ENGINEERED FLOOR TRUSSES BY TRUSS JOIST - PROVIDE SHOP DRAWINGS SIGNED AND SEALED BY LICENSED ENGINEER IN THE STATE OF MARYLAND.
- CUTTING AND NOTCHING OF JOISTS ARE NOT ACCEPTABLE - SEE TRUSS MFRS SPECIFICATIONS
- BORED HOLES IN JOIST ARE NOT ACCEPTABLE - SEE TRUSS MFRS SPECIFICATIONS IF TRUSSES ARE USED.
- ALL TRUSS PRODUCTS TO BE DESIGNED BY A LICENSED ENGINEER IN THE STATE OF MARYLAND. SEALED TRUSS DRAWINGS TO BE GIVEN TO INSPECTOR PRIOR TO CLOSE-IN INSPECTION. ALL TRUSS REPAIRS MUST BE SIGNED BY LICENSED ENGINEER.
- ALL LUMBER IN CONTACT WITH MASONRY OR CONCRETE TO BE TREATED LUMBER. METAL HANGERS AND CONNECTORS TO BE STAINLESS STEEL OR HOT DIPPED GALVANIZED STEEL COMPATIBLE WITH TREATED WOOD PRODUCT USED.
- INTERIOR NON-BEARING WALLS TO BE 2 X 4 WOOD STUDS AT 16" O.C. WITH 1/2" GYP. BOARD ON EACH SIDE. FIRE-STOPPED AS REQUIRED FOR BEARING WALLS.
- EXTERIOR WALLS TO BE BUILT IN ACCORDANCE WITH TYPICAL WALL SECTIONS AND SPECIFIC DETAILS AS INCLUDED IN THESE DOCUMENTS AND IN COMPLIANCE WITH SECTION R-602 OF THE IRC, 2021
- STUDS IN BEARING PARTITIONS MAY BE CUT OR NOTCHED TO A DEPTH NOT TO EXCEED 25% OF ITS WIDTH. A STUD MAY BE BORED TO A DIAMETER NOT TO EXCEED 60% OF ITS WIDTH IF STUDS ARE DOUBLED AND NOT MORE THAN TWO CONSECUTIVE STUDS ARE BORED.
- TOP PLATE NOTCHED OR CUT MORE THAN 50% SHALL BE REINFORCED WITH 24 GAUGE STEEL ANGLE OR APPROVED STRAPPING.
- MAINTAIN 2" AIR SPACE BETWEEN COMBUSTIBLE FRAMING AND ALL FIREPLACES AND CHIMNEYS PER THE REQUIREMENTS OF IRC SECTION R1001.11.
- NEW EXTERIOR WALLS SHALL BE CONTINUOUSLY SHEATHED PER IRC 2021, SECTION 602.10, N.S.P. METHOD. BRACED WALL SEGMENTS SHALL BE SPACED MAXIMUM 25'-0" ON CENTER, AND SHALL START WITH-IN 12'-0" OF EACH END OF BRACED WALL LINES

Laine Street Homes LLC
244 N Market St
Frederick, MD 21701
(C) (301)524-4471

These plans are the property of of Builders National Cooperative, LLC. No unauthorized use is permitted. Plan is a lot specific ACL3 model.



STRUCTURAL ENGINEERING
UNLIMITED, LLC
341 W. PATRICK STREET
FREDERICK, MD 21701
240-815-6760
301-748-2769

ACL3 HOUSE MODEL:
(LOT #1) 7452 Heritage
Oak Terr., Middletown
MD., 21769

JOB #:	B0714
REVISIONS:	DATE:
PERMIT PLANS	7/21/26
DATE:	07 / 21 / 2026
SCALE:	AS SHOWN
PAGE DESCRIPTION:	GENERAL STRUCTURAL NOTES & SCHEDULES
SHEET:	001

MD ALTERNATIVE ENERGY COMPLIANCE (2021 INTERNATIONAL ENERGY CONSERVATION CODE (IECC)) PER CHART R402.1.3.1 MARYLAND ALTERNATIVE R-VALUE

- 2021 IECC WALL AND CEILING INSULATION LEVELS WERE AMENDED AND REVERTED BACK TO 2018 IECC LEVELS BY ADDING TABLE R402.1.3.1 MARYLAND ALTERNATIVE R-VALUE.
- COMPLIANCE WITH TABLE R402.1.3.1 ALSO REQUIRES COMPLIANCE WITH TABLE R408.3 ADDITIONAL ENERGY FEATURES, WHERE AN ADDITIONAL 6% SAVINGS MUST BE ACHIEVED.

NOTE: THE EFFICIENCY PACKAGE REQUIREMENT WHERE AN ADDITIONAL 6% SAVINGS IS BEING MET WITH A GREATER THAN OR EQUAL TO 2.9 UEF ELECTRIC SERVICE WATER-HEATING SYSTEM.

TABLE R402.1.3.1 MD ALTERNATIVE INSULATION MINIMUM R-VALUES AND FENESTRATION REQUIREMENTS BY COMPONENT										
CLIMATE ZONE	FENESTRATION U-FACTOR ^a	SKYLIGHT ^b U-FACTOR	GLAZED FENESTRATION SHGC ^{c,e}	CEILING R-VALUE	WOOD FRAME WALL R-VALUE	MASS WALL R-VALUE ^d	FLOOR R-VALUE	BASEMENT WALL R-VALUE	SLAB ^b R-VALUE & DEPTH	CRAWLSPACE WALL R-VALUE
4 EXCEPT MARINE	0.30	0.55	0.40	49	20 OR 13+5 ^b	8/13	19	10ci or 13	10ci, 4 FT	10ci or 13
5	0.30i	0.55	0.40	49	20 OR 13+5 ^b	13/17	30	15ci or 19 or 13+5ci	10ci, 4 FT	15ci or 19 or 13+5ci

W = NOT REQUIRED FOR 3'-1'-0" < 1'-0" < 1'-0" < 1'-0"

ALL VALUES ARE MINIMUMS. U-FACTORS AND SHGC ARE MAXIMUMS. WHERE INSULATION IS INSTALLED IN A CAVITY THAT IS LESS THAN THE LABEL OR DESIGN THICKNESS OF THE INSULATION, THE INSTALLED R-VALUE OF THE INSULATION SHALL BE NOT LESS THAN THE R-VALUE SPECIFIED IN THE TABLE.

IF THE FENESTRATION U-FACTOR COLUMN INCLUDES SKYLIGHTS, THE SHGC COLUMN APPLIES TO ALL GLAZED FENESTRATION.

EXCEPTION: IN CLIMATE ZONES 1 THROUGH 3, SKYLIGHTS SHALL BE PERMITTED TO BE EXCLUDED FROM GLAZED FENESTRATION SHGC REQUIREMENTS PROVIDED THAT THE SHGC FOR SUCH SKYLIGHTS DOES NOT EXCEED 0.30.

C10.0.1.1 MEANS R-10 CONTINUOUS INSULATION (CI) ON THE INTERIOR OR EXTERIOR OF THE HOME OR R-13 CAVITY INSULATION ON THE INTERIOR OF THE BASEMENT WALL, 10/16" MEANS R-15 CONTINUOUS INSULATION ON THE INTERIOR OR EXTERIOR OF THE HOME OR R-19 CAVITY INSULATION AT THE INTERIOR OF THE BASEMENT WALL. ALTERNATELY, COMPLIANCE WITH 10/16" SHALL BE R-13 CAVITY INSULATION ON THE INTERIOR OF THE BASEMENT WALL PLUS R-5 CONTINUOUS INSULATION ON THE INTERIOR OR EXTERIOR OF THE HOME.

D18-5 INSULATION SHALL BE PROVIDED UNDER THE FULL SLAB AREA OF A HEATED SLAB IN ADDITION TO THE REQUIRED SLAB EDGE INSULATION R-VALUE FOR SLABS AS INDICATED IN THE TABLE. THE SLAB EDGE INSULATION FOR HEATED SLABS SHALL NOT BE REQUIRED TO EXTEND BELOW THE SLAB.

IF THERE ARE NO SHGC REQUIREMENTS IN THE MARINE ZONE.

BASEMENT WALL INSULATION IS NOT REQUIRED IN WARM-HUMID LOCATIONS AS DEFINED BY FIGURE R301.1 AND TABLE R301.1.

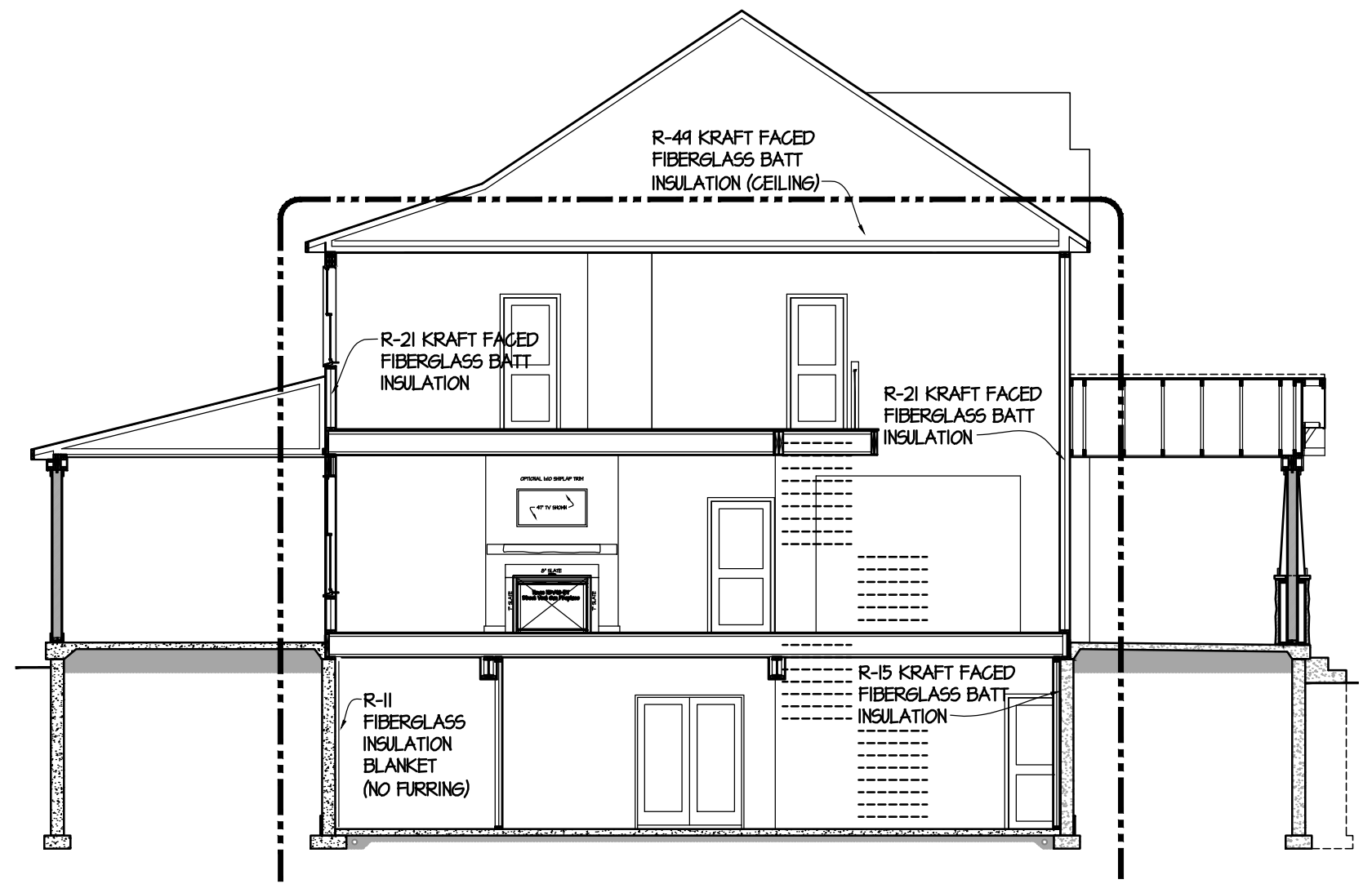
ALTERNATELY, INSULATION SUFFICIENT TO FILL THE FRAMING CAVITY AND PROVIDING NOT LESS THAN AN R-VALUE OF R-19.

IF THE FIRST FLOOR IS CAVITY INSULATION, THE SECOND FLOOR IS CONTINUOUS INSULATION. IF THERE IS NO CAVITY INSULATION, 15/16" MEANS R-13 CAVITY INSULATION PLUS R-5 CONTINUOUS INSULATION.

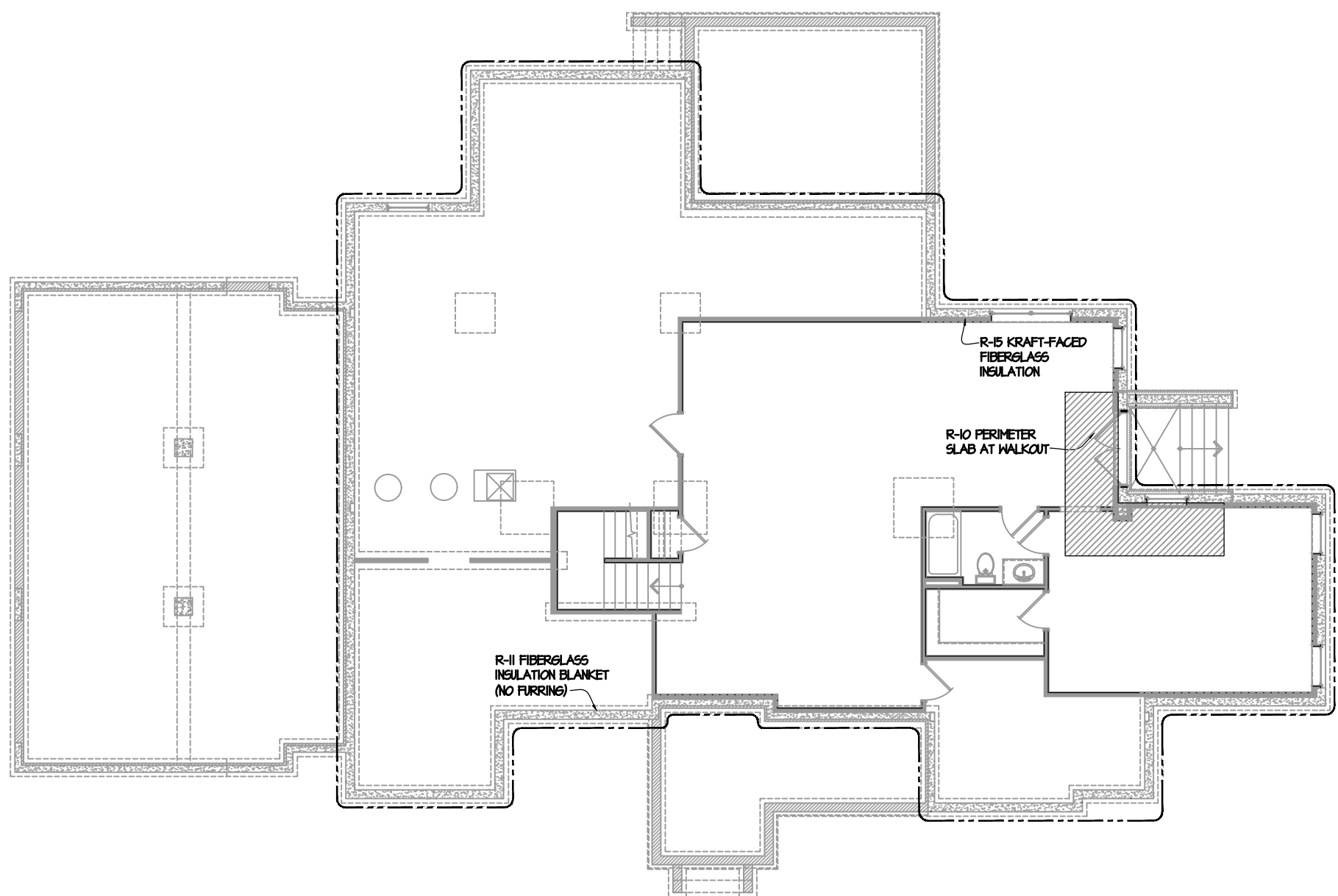
MASS WALLS SHALL BE IN ACCORDANCE WITH SECTION R402.2.2. THE SECOND R-VALUE APPLIES WHERE MORE THAN HALF OF THE INSULATION IS ON THE INTERIOR OF THE MASS WALL.

- ### ENERGY CODE COMPLIANCE NOTES
- BUILDING DESIGNED IN ACCORDANCE WITH 2021 I.E.C.C. SECTION R402.1.5 AS AMENDED BY MARYLAND ALTERNATIVE ENERGY COMPLIANCE AND PERFORMANCE STANDARDS TOTAL UA ALTERNATIVE PER TABLE R402.1.3.1 MD ALTERNATIVE INSULATION MINIMUM R-VALUES AND FENESTRATION REQUIREMENTS.
 - ALL MECHANICAL EQUIPMENT TO BE HIGH EFFICIENCY- SIZED IN ACCORDANCE W/ 2021 IECC SECTION - R403.6
 - WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM TO BE PROVIDED IN ACCORDANCE W/ I.E.C.C. SECTION R403.5.0 & M1507.3 OF I.R.G. 2021.
 - AIR DUCTS & MECHANICAL SYSTEMS OUTSIDE THE THERMAL ENVELOPE TO BE INSULATED WITH MIN. R-8 COVERING. AIR DUCT IN FLOORS OUTSIDE THE ENVELOPE SHALL BE MIN. R-6.
 - HOT WATER PIPES SHALL HAVE MIN. R-2 PIPE INSULATION
 - SEAL ALL AIR DUCTS IN ACCORDANCE WITH 2021 I.E.C.C. SECTION R403.2.2
 - ALL PENETRATIONS THROUGH THERMAL ENVELOPE TO BE SEALED IN ACCORDANCE WITH IECC CHAPTER 4. BUILDING TO BE TESTED AND VERIFIED AS HAVING AN AIR LEAKAGE RATE NOT EXCEEDING 3 AIR CHANGES PER HOUR AT 50 PA, PER IECC SECTION R402.4.1.2
 - ALL FENESTRATION TO HAVE A U-FACTOR PER ALLOWABLE FENESTRATION U-FACTORS IN TABLE R402.1.2
 - BUILDING TO HAVE A MIN. R-VALUE OF - 41 EXCEPT WHERE INDICATED.
 - WOOD FRAMED EXTERIOR WALLS TO HAVE A MIN. R-VALUE OF - 21
 - FLOORS OVER UNCONDITIONED SPACE TO HAVE A MIN. R-VALUE OF - 30
 - BASEMENT WALLS TO HAVE A MIN. R-VALUE OF R-11 CONTINUOUS OR R-15 CAVITY PER RESCHECK.
 - PROVIDE 4' R-10 PERIMETER UNDER SLAB INSUL. @ LOCATIONS WHERE TOP OF SLAB IS 2' OR LESS BELOW EXTERIOR GRADE PER 2021 I.E.C.C. or AS AMENDED.

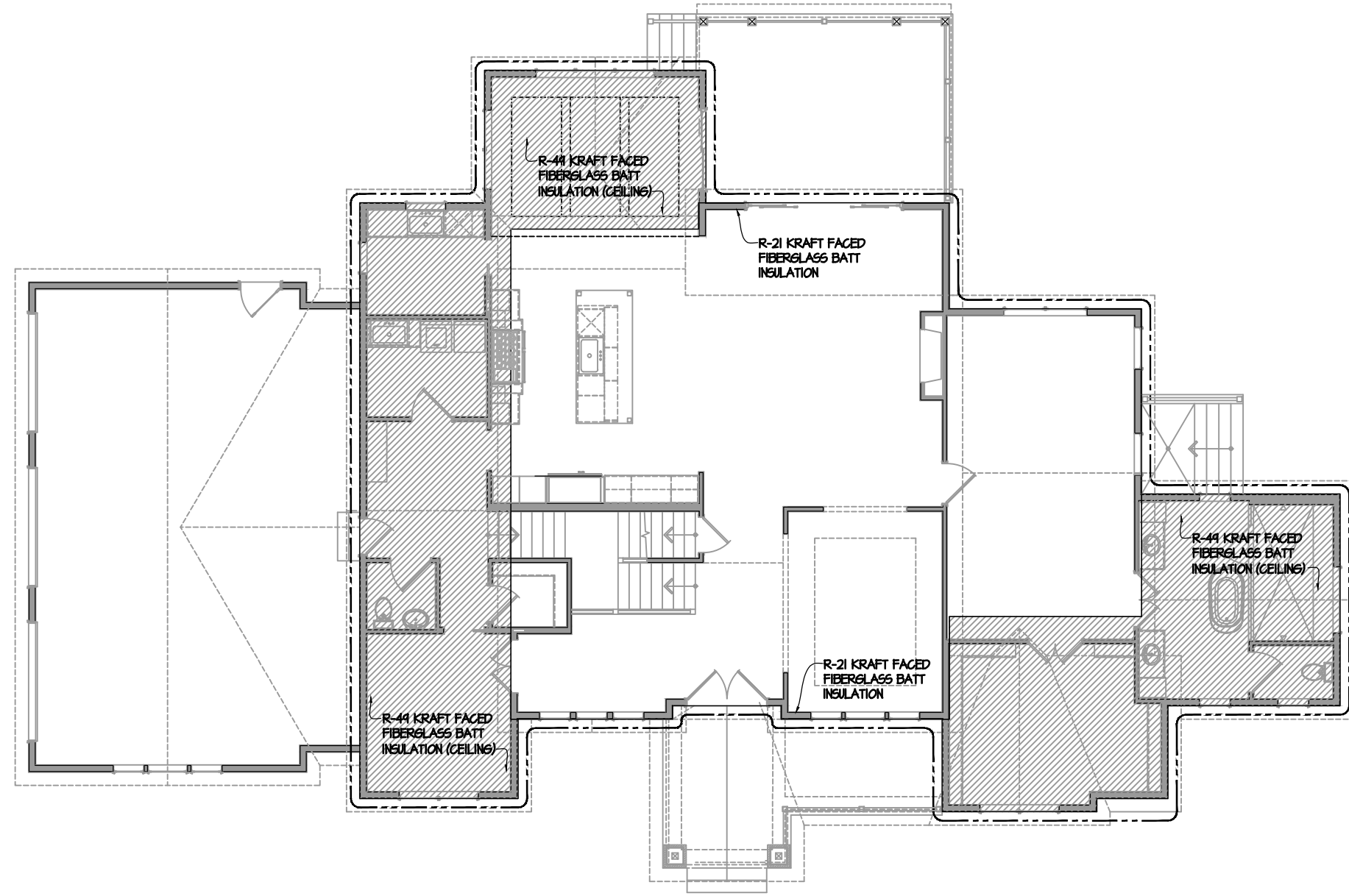
- ### DRAWING SYMBOL LEGEND
- LOCATION OF BUILDING THERMAL ENVELOPE
 - R-41 FGL. INSUL. @ CEILING / R-30 FGL. INSUL. @ FLOOR / R-10 PERIMETER SLAB INSUL.
 - R-30 FIBERGLASS BLOWN INSULATION W/ BAFFLES AS REQUIRED PER N102.2.2 (21 S.F. W/ NO ATTIC)



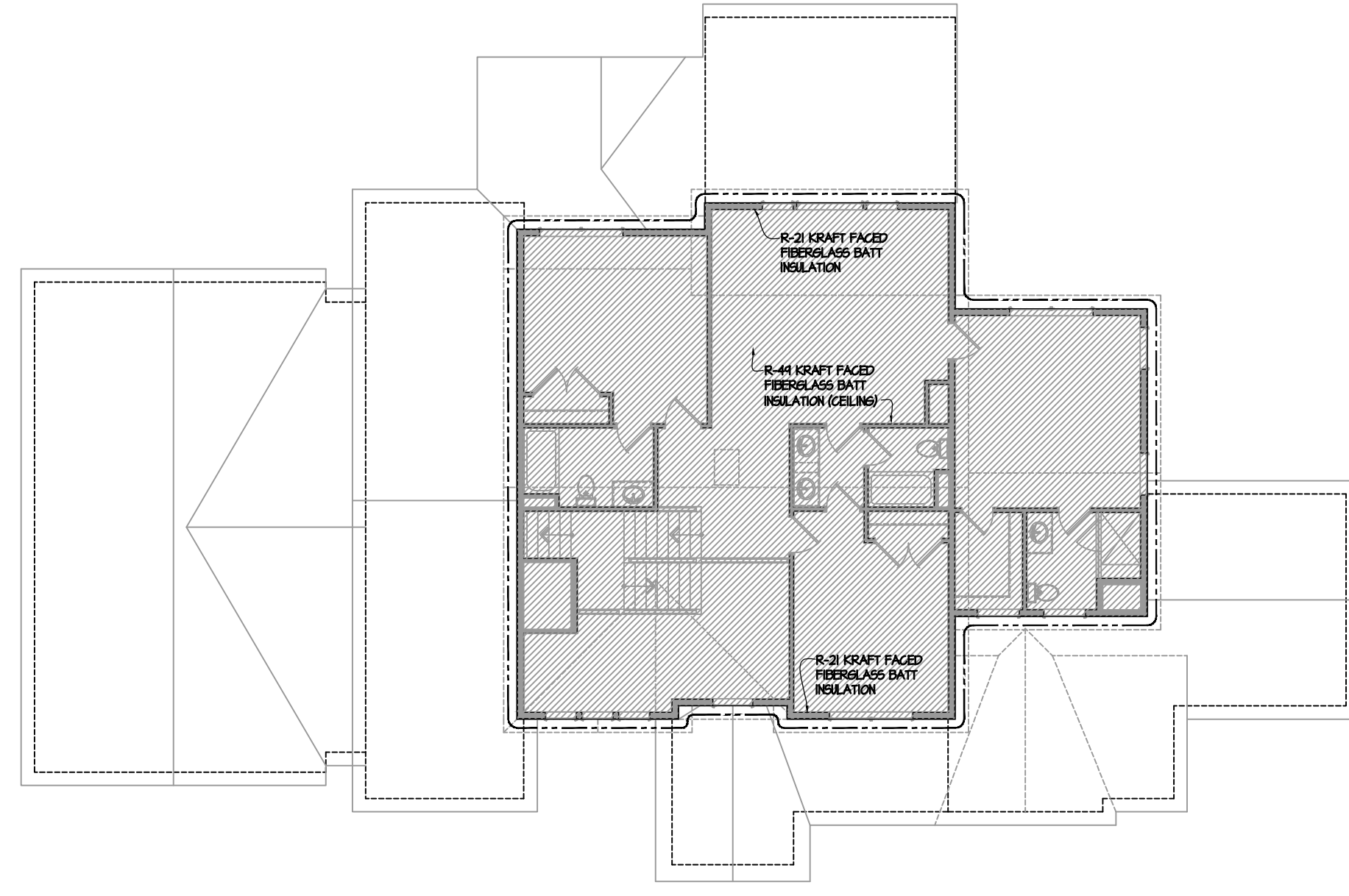
TYPICAL BUILDING SECTION SCALE: 1/8"=1'-0"



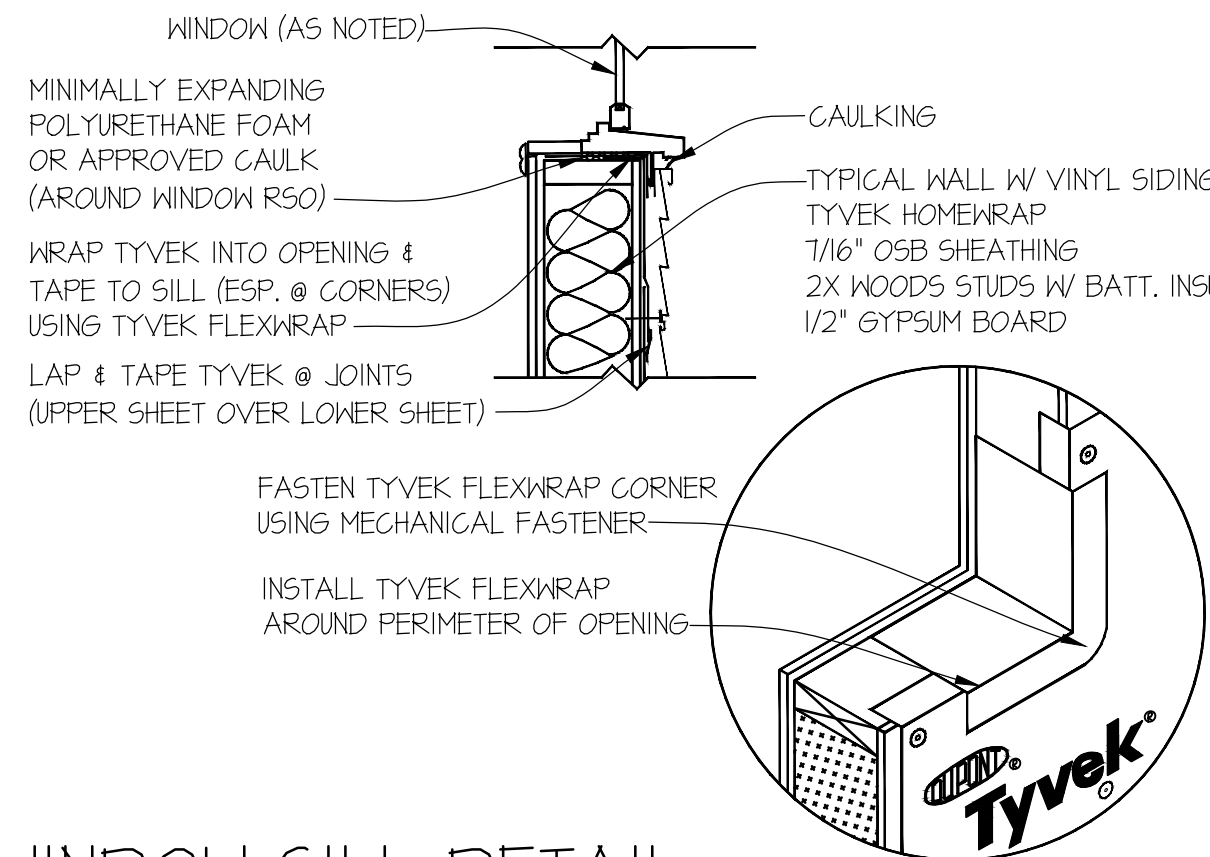
FOUNDATION PLAN SCALE: 3/32"=1'-0"



FIRST FLOOR PLAN SCALE: 3/32"=1'-0"

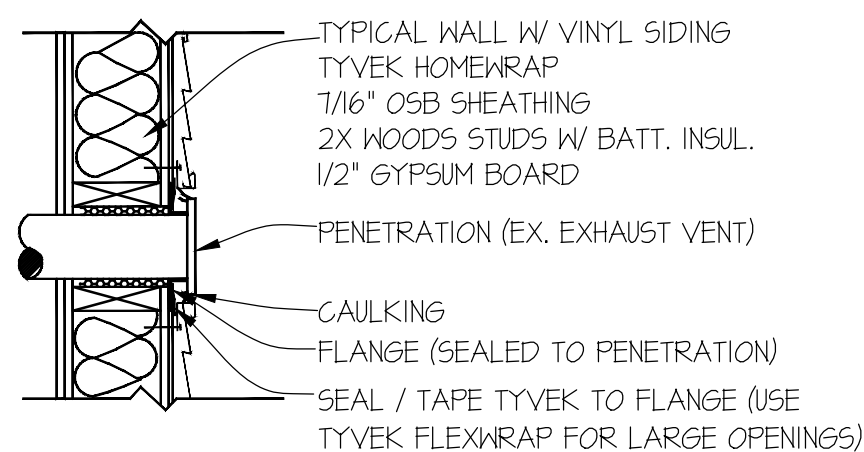


SECOND FLOOR PLAN SCALE: 3/32"=1'-0"

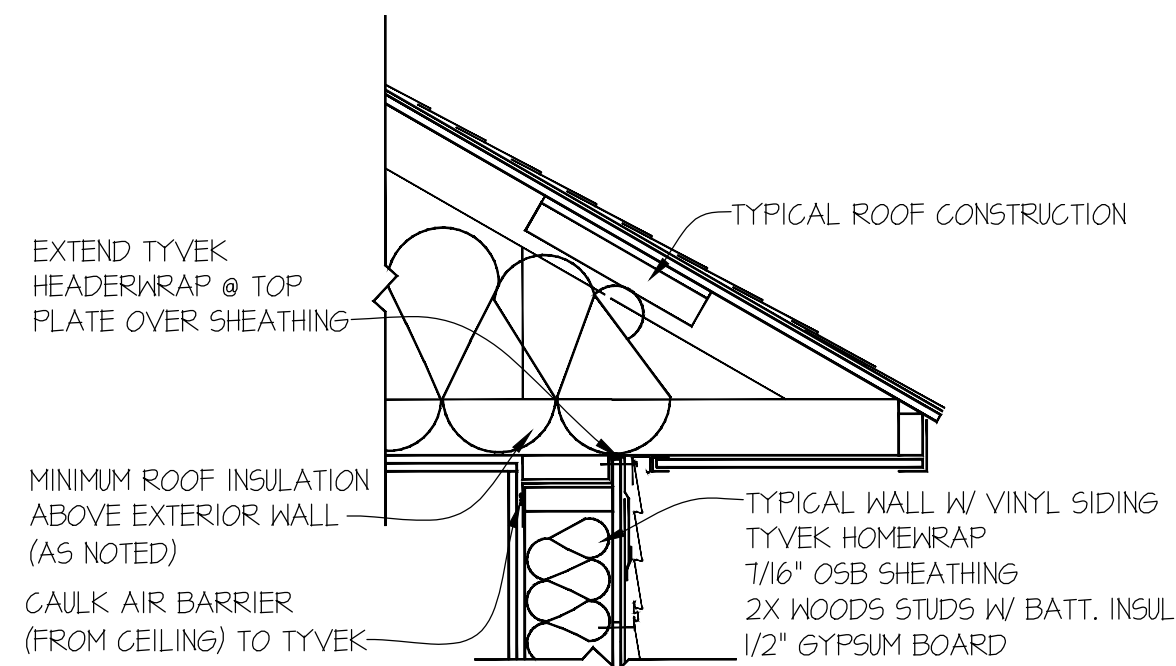


WINDOW SILL DETAIL SCALE: NTS
RESIDENTIAL WOOD FRAME STRUCTURE W/ VINYL SIDING (HEATING CLIMATE)

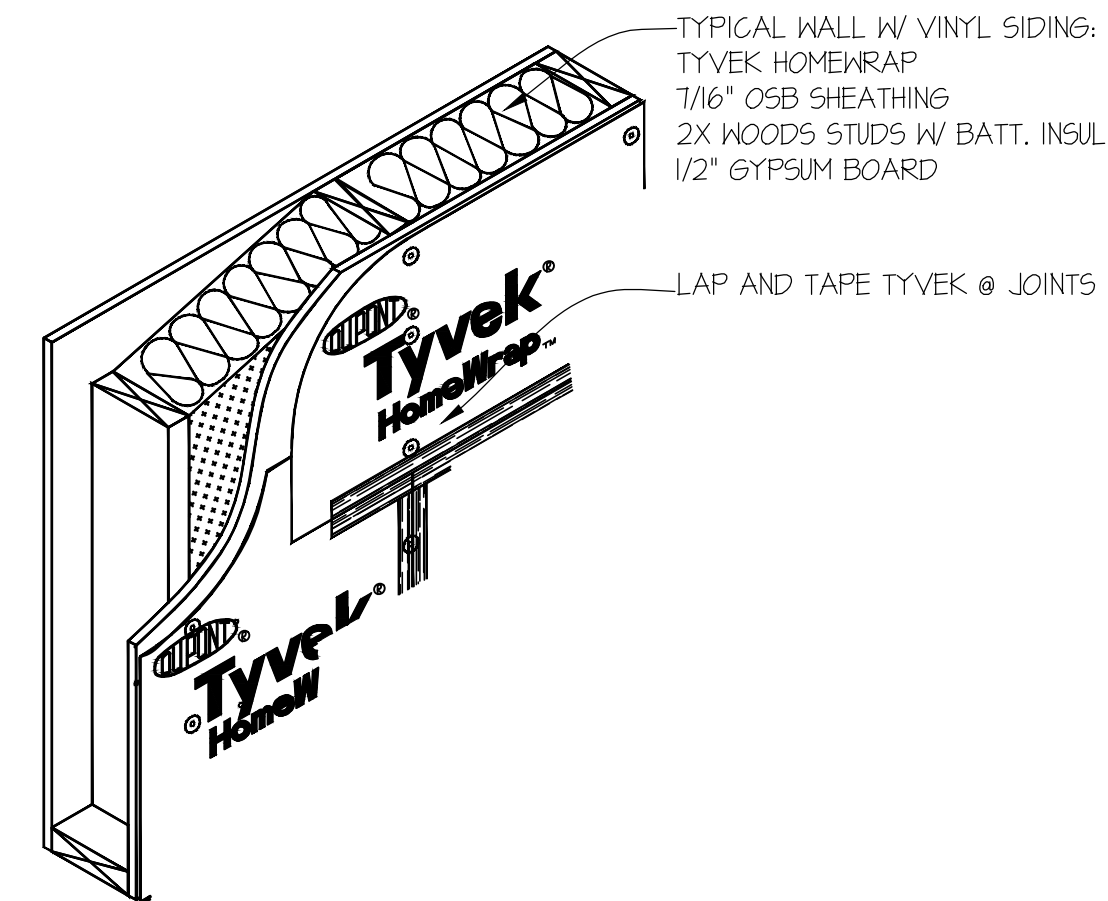
- ### TYVEK GENERAL NOTES:
- SEAL ALL TYVEK JOISTS AND PENETRATIONS WITH APPROVED TAPE. (EX. DUPONT CONTRACTOR TAPE)
 - FASTEN TYVEK TO SHEATHING WITH LARGE HEAD NAILS OR USE NAILS WITH LARGE PLASTIC WASHER HEADS. (EX. DUPONT WRAPCAPS)
 - SEAL OR GASKET BRICK TIES AT FACE OF TYVEK
 - LOCAL LAWS, ZONING, AND BUILDING CODES VARY AND THEREFORE GOVERNS OVER MATERIAL SELECTION AND DETAILING SHOWN BELOW.



WALL PENETRATION SCALE: NTS
RESIDENTIAL WOOD FRAME STRUCTURE W/ VINYL SIDING (HEATING CLIMATE)



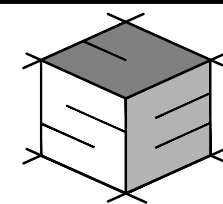
ROOF / WALL INTERFACE SCALE: NTS
RESIDENTIAL WOOD FRAME STRUCTURE W/ VINYL SIDING (HEATING CLIMATE)



TYP. WALL ISOMETRIC SCALE: NTS
RESIDENTIAL WOOD FRAME STRUCTURE W/ VINYL SIDING (HEATING CLIMATE)

Laine Street Homes LLC
244 N Market St
Frederick, MD 21701
(C) (301)524-4471

These plans are the property of of Builders National Cooperative, LLC. No unauthorized use is permitted. Plan is a lot specific ACL3 model.

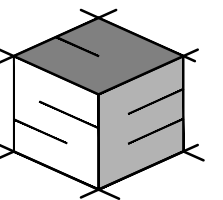


STRUCTURAL ENGINEERING UNLIMITED, LLC
341 W. PATRICK STREET
FREDERICK, MD 21701
240-815-6760
301-748-2769

ACL3 HOUSE MODEL:
(LOT #1) 7452 Heritage
Oak Terr., Middletown
MD., 21769

JOB #:	B0714
REVISIONS:	DATE:
PERMIT PLANS	7/21/26
DATE:	07 / 21 / 2026
SCALE:	AS SHOWN
PAGE DESCRIPTION:	ENERGY COMPLIANCE NOTES & THERMAL ENVELOPE DIAGRAMS
SHEET:	002

These plans are the property of of
Builders National Cooperative, LLC.
No unauthorized use is permitted.
Plan is a lot specific ACL3 model.



**ACL3 HOUSE MODEL:
(LOT #1) 7452 Heritage
Oak Terr., Middletown
MD., 21769**

A001

LEGEND

NEW CONCRETE FOUNDATION WALL.

NEW INTERIOR PARTITION -
2x4 WOOD STUDS AT 16" O.C. MAX.
W/ 1/2" GYP. BD. EACH SIDE

NEW EXTERIOR WALL -
2 X 6 WOOD STUDS AT 16" O.C. MAX.
WITH R-21 BATT INSULATION, O.S.B.
SHEATHING, W/ SIDING AS SELECTED

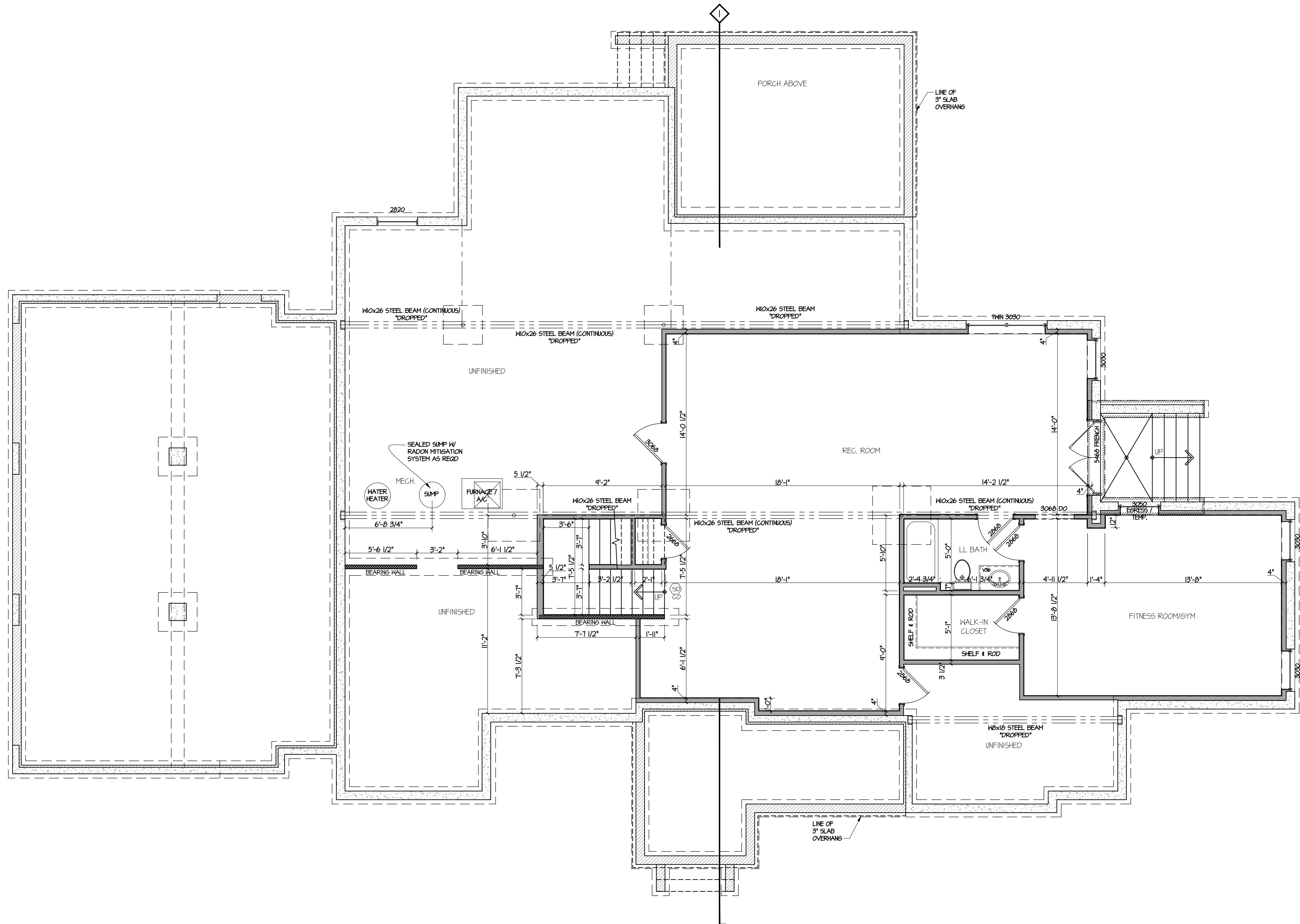
BEARING WALL.

NEW WINDOW, TYP.

NEW DOOR, TYP.

1. HANDRAILS SHALL BE PROVIDED ON AT LEAST ONE SIDE OF EACH CONTINUOUS RUN OF TREADS OR FLIGHT WITH FOUR OR MORE RISERS
2. HANDRAIL HEIGHT, MEASURED VERTICALLY FROM THE SLOPED PLANE ADJOINING THE TREAD NOSING, SHALL NOT BE LESS THAN 34 INCHES AND NOT MORE THAN 38 INCHES.
3. HANDRAILS FOR STAIRWAYS SHALL BE CONTINUOUS FOR THE FULL LENGTH OF THE FLIGHT, FROM A POINT DIRECTLY ABOVE THE TOP RISE OF THE FLIGHT TO A POINT DIRECTLY ABOVE THE FIRST RISE OF THE FLIGHT. HANDRAIL ENDS SHALL BE RETURNED OR SHALL TERMINATE IN NIBEL POSTS. HANDRAILS ADJACENT TO A WALL SHALL HAVE A SPACE OF NOT LESS THAN 1" BETWEEN THE HANDRAIL AND THE WALL. THE WALL SHALL NOT BE PERMITTED TO BE INTERRUPTED BY A NIBEL POST AT THE TURN.
4. THE DISTANCE FROM THE BOTTOM RAIL TO THE FINISHED FLOOR SURFACE SHALL NOT BE GREATER THAN 4 INCHES.
5. VERTICAL BALUSTERS ARE REQUIRED TO BE SPACED 50 AS NOT TO ALLOW A 4-INCH SPHERE TO PASS THRU.
6. AT STAIR RAILINGS, THE TRIANGULAR OPENING FORMED BY THE RAIL AND BOTTOM ELEMENT OF THE GUARDRAIL AT THE OPEN SIDE OF A STAIRWAY SHALL NOT PERMIT A 6-INCH SPHERE TO PASS THRU.

1. EXTERIOR DIMENSIONS ARE FROM FACE OF WALL, INTERIOR DIMENSIONS ARE FROM FACE OF STUD, INTERIOR DIMENSIONS ARE FROM FACE OF STUD
2. TYP. CONC. FOOTING: CONT. 16" X 8" DP. CONC. FOOTING WITH 3-#4 BARS, UNO.
3. TYP. FOUNDATION WALL: 9" HIGH (UNQ.) CONC. WALLS. SEE STRUCTURAL DRAWINGS FOR REINFORCING WITH DOWELS ON CONCRETE FOOTINGS.
4. TYP. BASEMENT SLAB: 4" CONC. SLAB SEE STRUCTURAL DRAWINGS FOR REINFORCING OVER 10 MIL VAPOR BARRIER OVER 4" COMPACTED GRAVEL FILL. PROVIDE 1/2" COMPRESSIBLE FILLER AT PERIMETER WALL. TYP. SEAL SLAB GUTS W/ CONCRETE SEALER AS SELECTED.
5. TYP. PORCH SLAB: 4" CONC. SLAB SEE STRUCTURAL DRAWINGS FOR REINFORCING OVER 10 MIL VAPOR BARRIER OVER 4" COMPACTED GRAVEL FILL. PROVIDE 1/2" COMPRESSIBLE FILLER AT PERIMETER WALL W/ ELASTOMERIC SEALANT GUTS W/SLAB. TYP. SEAL SLAB AFTER SLAB GUTS W/ CONCRETE SEALER AS SELECTED. FINISH AS SELECTED
6. TYPICAL BASEMENT INTERIOR PARTITION: 2X4 WOOD STUDS @ 16" O.C. WITH TREATED BOTTOM PLATE AND 1/2" GYP. BOARD EACH SIDE.
7. TYPICAL FURRED FOUNDATION WALL - 2X4 WOOD FURRING @ 16" O.C. W/ R-11 BATT INSULATION AND 1/2" GYP. BOARD.
8. PROVIDE COMBO CO/SMOKE DETECTORS ON EACH FLOOR AND IN THE VICINITY OF ALL BEDROOMS. PROVIDE SMOKE DETECTORS IN ALL BEDROOMS
9. PROVIDE EGRESS WINDOW FROM BEDROOM WITH MIN. 5.0 SQ.FT. CLEAR OPENING W/ MAX. SILL HEIGHT 44" AND MIN. CLEAR WIDTH 24".
10. PROVIDE ARTIFICIAL LIGHT AND VENTILATION WITH EXHAUST TO THE EXTERIOR FOR BATHROOM.
11. TYP. FLOOR CONSTRUCTION: 1/4" ENGINEERED WOOD JOIST @ 16" O.C. W/ 3/4" GYP. SHEATHING GLED AND SCREWD WITH FIN. FLOOR AS SELECTED.
12. WINDOWS - DESIGN ARE CALLED OUT IN FEET & INCHES
EXAMPLE: 3052 = 3'-0" X 5'-2"



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

DRAWING SYMBOL LEGEND

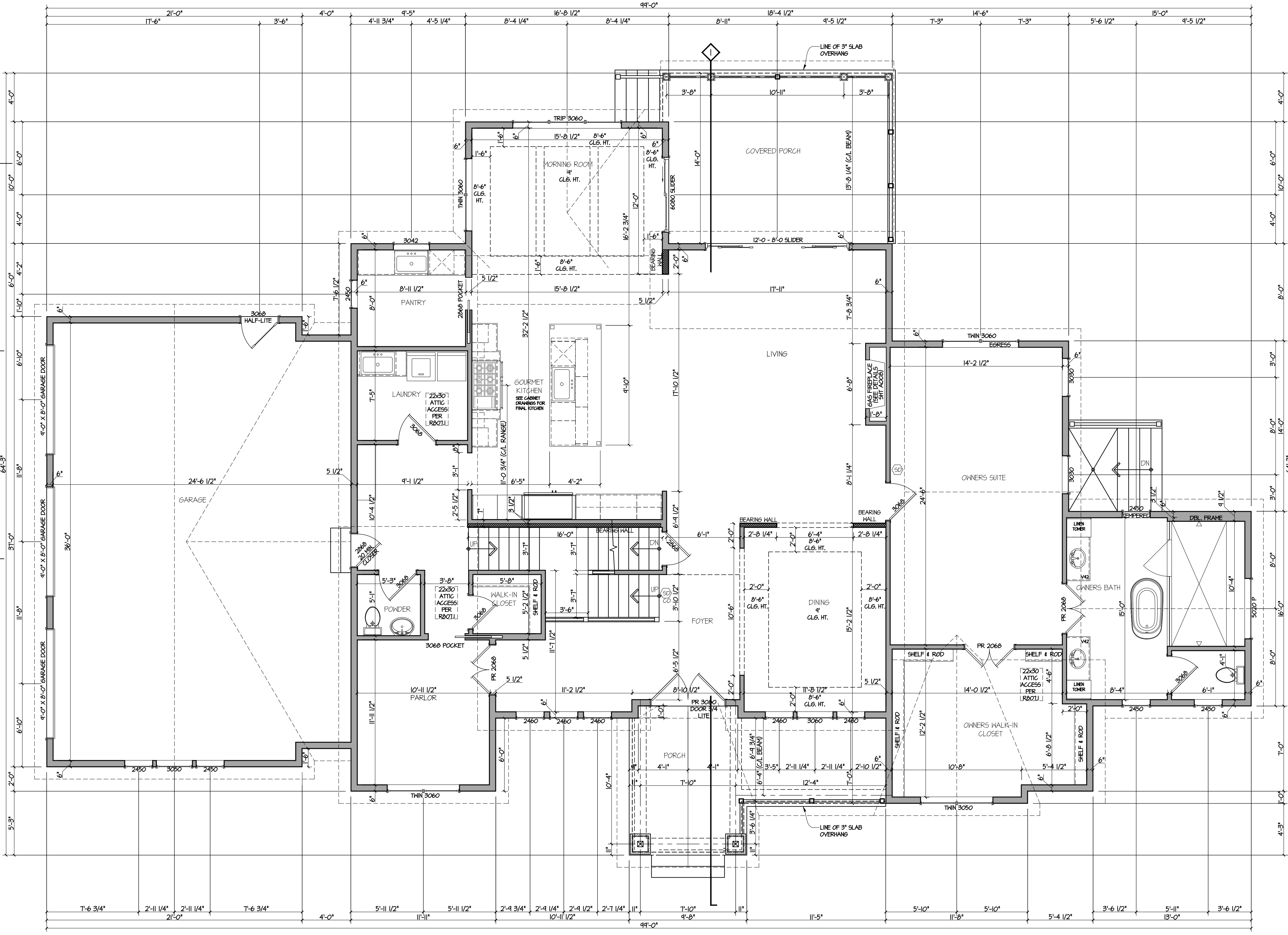
- NEW CONCRETE FOUNDATION WALL
- NEW INTERIOR PARTITION - 2x4 WOOD STUDS AT 16" O.C. MAX. W/ 1/2" GYP. BD. EACH SIDE
- NEW EXTERIOR WALL - 2 X 6 WOOD STUDS AT 16" O.C. MAX. WITH R-21 BATT INSULATION, O.S.B. SHEATHING, W/ SIDING AS SELECTED
- BEARING WALL
- NEW WINDOW, TYP.
- NEW DOOR, TYP.

STAIR AND RAIL NOTES

- HANDRAILS SHALL BE PROVIDED ON AT LEAST ONE SIDE OF EACH CONTINUOUS RUN OF TREADS OR FLIGHT WITH FOUR OR MORE RISERS
- HANDRAIL HEIGHT, MEASURED VERTICALLY FROM THE SLOPED PLANE ADJOINING THE TREAD NOSING SHALL NOT BE LESS THAN 34 INCHES AND NOT MORE THAN 38 INCHES.
- HANDRAILS FOR STAIRWAYS SHALL BE CONTINUOUS FOR THE FULL LENGTH OF THE FLIGHT, FROM A POINT DIRECTLY ABOVE THE TOP RISER OF THE FLIGHT TO A POINT DIRECTLY ABOVE THE LOWEST RISER OF THE FLIGHT. HANDRAIL ENDS SHALL BE RETURNED OR SHALL TERMINATE IN NIKEL POSTS. HANDRAILS ADJACENT TO A WALL SHALL HAVE A SPACE OF NOT LESS THAN 1" BETWEEN THE WALL AND THE HANDRAIL. HANDRAILS MAY BE PERMITTED TO BE INTERRUPTED BY A NIKEL POST AT THE TURN.
- THE DISTANCE FROM THE BOTTOM RAIL TO THE FINISHED FLOOR SURFACE SHALL NOT BE GREATER THAN 4 INCHES.
- VERTICAL BALUSTERS ARE REQUIRED TO BE SPACED SO AS NOT TO ALLOW A 4-INCH SPHERE TO PASS THROUGH.
- AT STAIR RAILINGS, THE TRIANGULAR OPENING FORMED BY THE RISER, TREAD AND BOTTOM ELEMENT OF THE GUARDRAIL AT THE OPEN SIDE OF A STAIRWAY SHALL NOT PERMIT A 6-INCH SPHERE TO PASS THRU.

PLAN NOTES

- EXTERIOR DIMENSIONS ARE FROM FACE OF SHEATHING TO FACE OF STUD, INTERIOR DIMENSIONS ARE FROM FACE OF STUD.
- TYP. EXTERIOR WALL: 2X6 WOOD STUDS AT 16" O.C. W/ R-21 BATT INSUL. 7/16" O.S.B. SHEATHING, TYVEK AIR INFILTRATION AND AIR BARRIER AND HARDIE PLANK SIDING WITH 1/2" GYP. BOARD INTERIOR FINISH - BASE, CROWN AND CHAIR MOLDING AS SELECTED.
- TYP. INTERIOR PARTITION: 2X4 WOOD STUDS AT 16" O.C. W/ 1/2" GYP. BD. EA. SIDE. PROVIDE WATER RESISTANT GYP. BD. AT SINK LOCATIONS AND BATHROOMS.
- PROVIDE 1/2" DUROCK UNDERLAYMENT UNDER ALL CERAMIC TILE.
- PROVIDE COMBO CO/SMOKE DETECTORS ON EACH FLOOR AND IN THE VICINITY OF ALL BEDROOMS. PROVIDE SMOKE DETECTORS IN ALL BEDROOMS
- PROVIDE EGRESS WINDOW FROM 2ND FLOOR BEDROOMS WITH MIN. 5.7 SQ.FT. CLEAR OPENING W/ MAX. SILL HEIGHT 44" AND MIN. CLEAR WIDTH 20" W/ 24" MIN. HT.
- PROVIDE ARTIFICIAL LIGHT AND VENTILATION WITH EXHAUST TO THE EXTERIOR FOR BATHROOMS.
- CABINETS, COUNTERTOPS, APPLIANCES, FIXTURES AND FLOORING AS SELECTED.
- PROVIDE BATH TUB AND DIVERTER ACCESS PANELS.
- TYP. FLOOR CONSTRUCTION: 14" ENGINEERED WOOD I-JOISTS AT 19.2" O.C. WITH 3/4" 1/6 SHEATHING GLUED AND SCREENED WITH FIN. FLOOR AS SELECTED.
- WINDOWS - DESIGNATION ARE CALLED OUT IN FEET & INCHES. EXAMPLE: 3052 = 3'-0" X 5'-2"
- PROVIDE 20-MIN. RATED INSULATED DOOR FROM GARAGE INTO DWELLING WITH SELF CLOSING OR AUTOMATIC-CLOSING DEVICE PER R302.5.1
- PROVIDE ATTIC ACCESS IN GARAGE AS REQUIRED PER R302.6 & R807.1

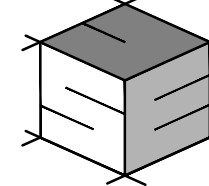


FIRST FLOOR PLAN

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

Laine Street Homes LLC
244 N Market St
Frederick, MD 21701
(C) (301)524-4471

These plans are the property of of Builders National Cooperative, LLC. No unauthorized use is permitted. Plan is a lot specific ACL3 model.



STRUCTURAL ENGINEERING
UNLIMITED, LLC
341 W. PATRICK STREET
FREDERICK, MD 21701
240-815-6760
301-748-2769

ACL3 HOUSE MODEL:
(LOT #1) 7452 Heritage
Oak Terr., Middletown
MD., 21769

JOB #:	B0714
REVISIONS:	DATE:
PERMIT PLANS	7/21/26

DATE: 07 / 21 / 2026

SCALE: AS SHOWN

PAGE DESCRIPTION:

FIRST FLOOR PLAN

SHEET:

A002

DRAWING SYMBOL LEGEND

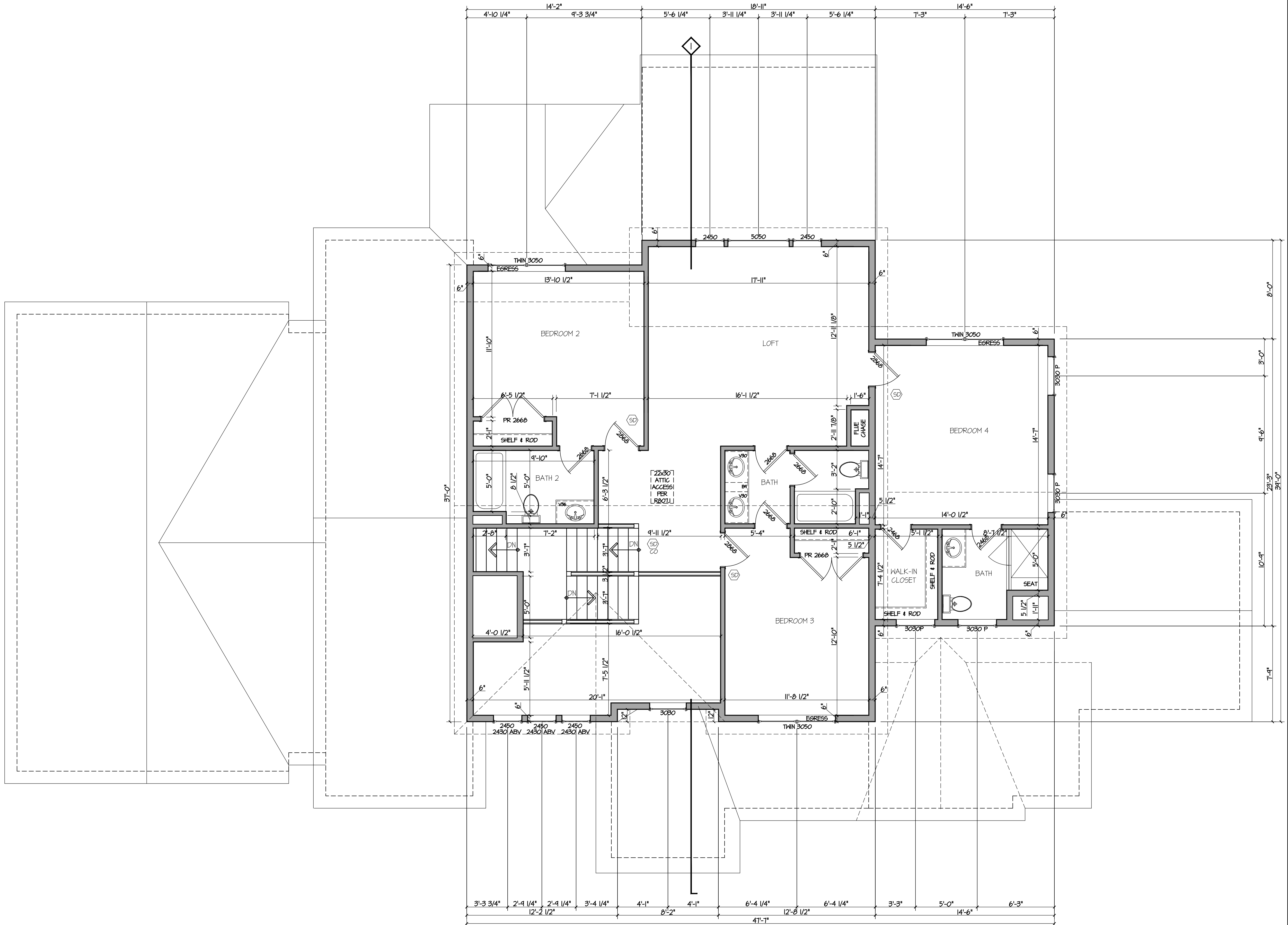
- NEW CONCRETE FOUNDATION WALL
- NEW INTERIOR PARTITION - 2x4 WOOD STUDS AT 16" O.C. MAX. W/ 1/2" GYP. BD. EACH SIDE
- NEW EXTERIOR WALL - 2 X 6 WOOD STUDS AT 16" O.C. MAX. WITH R-21 BATT INSULATION, O.S.B. SHEATHING, W/ SIDING AS SELECTED
- BEARING WALL
- NEW WINDOW, TYP.
- NEW DOOR, TYP.

STAIR AND RAIL NOTES

- HANDRAILS SHALL BE PROVIDED ON AT LEAST ONE SIDE OF EACH CONTINUOUS RUN OF TREADS OR FLIGHT WITH FOUR OR MORE RISERS
- HANDRAIL HEIGHT, MEASURED VERTICALLY FROM THE SLOPED PLANE ADJOINING THE TREAD NOSING SHALL NOT BE LESS THAN 34 INCHES AND NOT MORE THAN 38 INCHES.
- HANDRAILS FOR STAIRWAYS SHALL BE CONTINUOUS FOR THE FULL LENGTH OF THE FLIGHT, FROM A POINT DIRECTLY ABOVE THE TOP RISER OF THE FLIGHT TO A POINT DIRECTLY ABOVE THE LOWEST RISER OF THE FLIGHT. HANDRAIL ENDS SHALL BE RETURNED OR SHALL TERMINATE IN NEWEL POSTS. HANDRAILS ADJACENT TO A WALL SHALL HAVE A SPACE OF NOT LESS THAN 1/4" BETWEEN THE WALL AND THE HANDRAIL. HANDRAILS MAY BE PERMITTED TO BE INTERRUPTED BY A NEWEL POST AT THE TURN.
- THE DISTANCE FROM THE BOTTOM RAIL TO THE FINISHED FLOOR SURFACE SHALL NOT BE GREATER THAN 4 INCHES.
- VERTICAL BALUSTERS ARE REQUIRED TO BE SPACED SO AS NOT TO ALLOW A 4-INCH SPHERE TO PASS THROUGH.
- AT STAIR RAILINGS, THE TRIANGULAR OPENING FORMED BY THE RISER, TREAD AND BOTTOM ELEMENT OF THE GUARDRAIL AT THE OPEN SIDE OF A STAIRWAY SHALL NOT PERMIT A 6-INCH SPHERE TO PASS THRU.

PLAN NOTES

- EXTERIOR DIMENSIONS ARE FROM FACE OF SHEATHING TO FACE OF STUD, INTERIOR DIMENSIONS ARE FROM FACE OF STUD.
- TYP. EXTERIOR WALL: 2x6 WOOD STUDS AT 16" O.C. W/ R-21 BATT INSUL. 1/16" O.S.B. SHEATHING, TYVEK AIR INFILTRATION AND AIR BARRIER AND HARDIE PLANK SIDING WITH 1/2" GYP. BOARD INTERIOR FINISH - BASE, CROWN AND CHAIR MOLDING AS SELECTED.
- TYP. INTERIOR PARTITION: 2x4 WOOD STUDS AT 16" O.C. W/ 1/2" GYP. BD. EA. SIDE. PROVIDE WATER RESISTANT GYP. BD. AT SINK LOCATIONS AND BATHROOMS.
- PROVIDE 1/2" DUROCK UNDERLAYMENT UNDER ALL CERAMIC TILE.
- PROVIDE COMBO CO/SMOKE DETECTORS ON EACH FLOOR AND IN THE VICINITY OF ALL BEDROOMS. PROVIDE SMOKE DETECTORS IN ALL BEDROOMS.
- PROVIDE EGRESS WINDOW FROM 2ND FLOOR BEDROOMS WITH MIN. 5.7 SQ. FT. CLEAR OPENING W/ MAX. SILL HEIGHT 44" AND MIN. CLEAR WIDTH 20" W/ 24" MIN. HT.
- PROVIDE ARTIFICIAL LIGHT AND VENTILATION WITH EXHAUST TO THE EXTERIOR FOR BATHROOMS.
- CABINETS, COUNTERTOPS, APPLIANCES, FIXTURES AND FLOORING AS SELECTED.
- PROVIDE BATH TUB AND DIVERTER ACCESS PANELS.
- TYP. FLOOR CONSTRUCTION: 14" ENGINEERED WOOD I-JOISTS AT 19.2" O.C. WITH 3/4" 1/6" SHEATHING GLUED AND SCREWED WITH FIN. FLOOR AS SELECTED.
- WINDOWS - DESIGNATION ARE CALLED OUT IN FEET & INCHES. EXAMPLE: 3052 = 3'-0" X 5'-2"
- PROVIDE ATTIC ACCESS AS REQUIRED PER R207.1

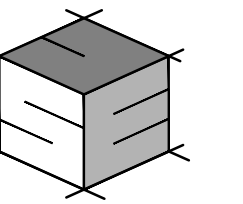


SECOND FLOOR PLAN

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

Laine Street Homes LLC
244 N Market St
Frederick, MD 21701
(C) (301)524-4471

These plans are the property of
Builders National Cooperative, LLC.
No unauthorized use is permitted.
Plan is a lot specific ACL3 model.



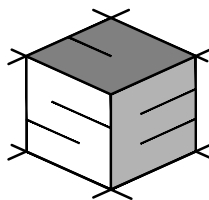
STRUCTURAL ENGINEERING
UNLIMITED, LLC
341 W. PATRICK STREET
FREDERICK, MD 21701
240-815-6760
301-748-2769

ACL3 HOUSE MODEL:
(LOT #1) 7452 Heritage
Oak Terr., Middletown
MD., 21769

JOB #:	B0714
REVISIONS:	DATE:
PERMIT PLANS	7/21/26
DATE:	07 / 21 / 2026
SCALE:	AS SHOWN
PAGE DESCRIPTION:	SECOND FLOOR PLAN

SHEET:
A003

These plans are the property of
Builders National Cooperative, LLC.
No unauthorized use is permitted.
Plan is a lot specific ACL3 model.



STRUCTURAL ENGINEERING
UNLIMITED, LLC
341 W. PATRICK STREET
FREDERICK, MD 21701
240-815-6760
301-748-2769

ACL3 HOUSE MODEL:
(LOT #1) 7452 Heritage
Oak Terr., Middletown
MD., 21769

JOB #: BOT14

REVISIONS: DATE:
PERMIT PLANS 7/21/26

DATE: 07 / 21 / 2026

SCALE: AS SHOWN

PAGE DESCRIPTION:

ELEVATIONS

SHEET:

A004



FRONT ELEVATION

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

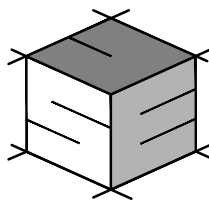


REAR ELEVATION

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

Laine Street Homes LLC
244 N Market St
Frederick, MD 21701
(C) (301)524-4471

These plans are the property of
Builders National Cooperative, LLC.
No unauthorized use is permitted.
Plan is a lot specific ACL3 model.



STRUCTURAL ENGINEERING
UNLIMITED, LLC
341 W. PATRICK STREET
FREDERICK, MD 21701
240-815-6760
301-748-2769

ACL3 HOUSE MODEL:
(LOT #1) 7452 Heritage
Oak Terr., Middletown
MD., 21769

JOB #:	B0714
REVISIONS:	DATE:
PERMIT PLANS	7/21/26
DATE:	07 / 21 / 2026
SCALE:	AS SHOWN
PAGE DESCRIPTION:	

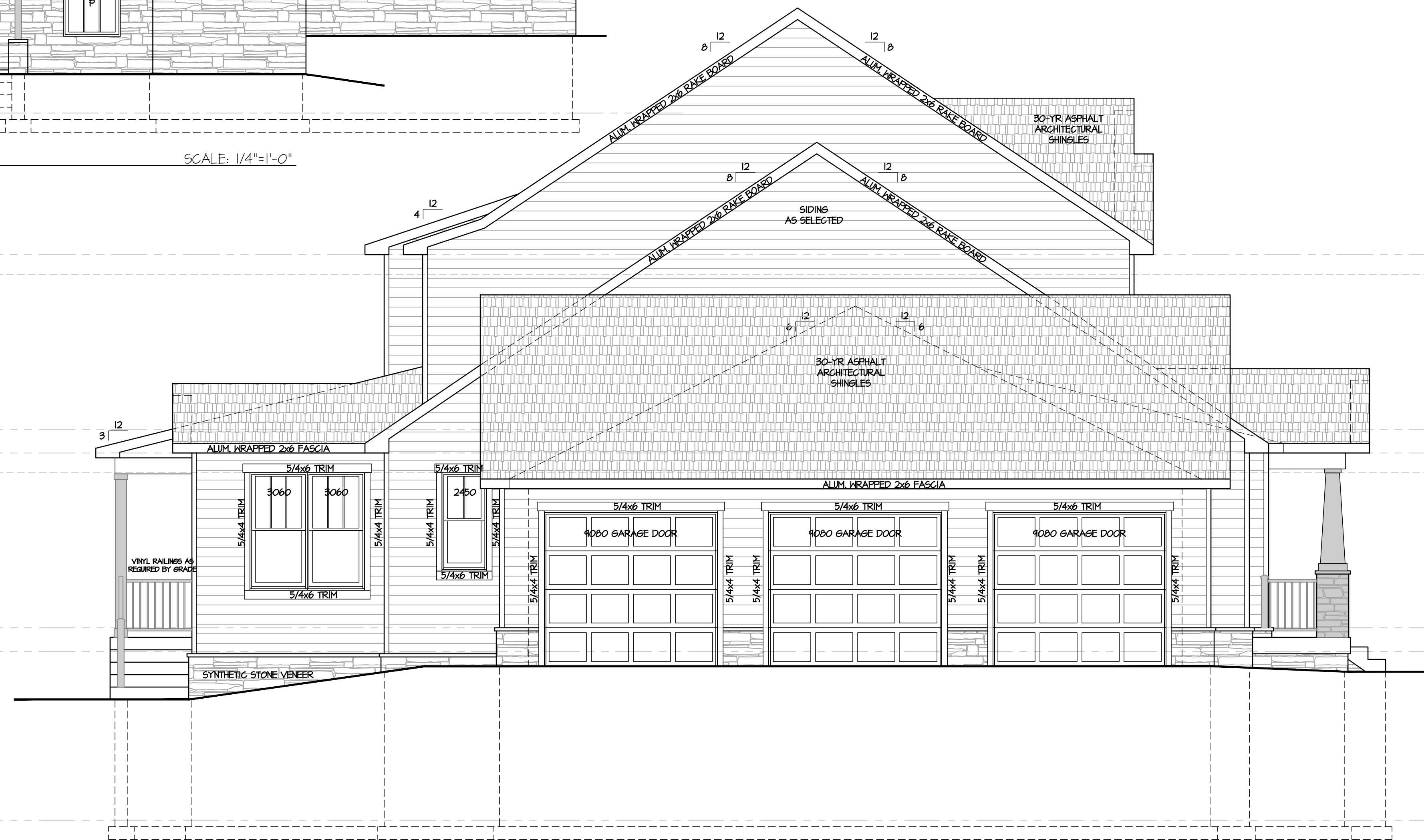
ELEVATIONS

SHEET:
A005



RIGHT SIDE ELEVATION

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

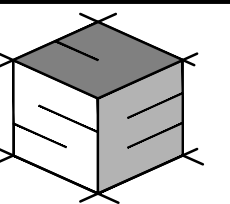


LEFT SIDE ELEVATION

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

Laine Street Homes LLC
244 N Market St
Frederick, MD 21701
(C) (301)524-4471

These plans are the property of
Builders National Cooperative, LLC.
No unauthorized use is permitted.
Plan is a lot specific ACL3 model.



STRUCTURAL ENGINEERING
UNLIMITED, LLC
341 W. PATRICK STREET
FREDERICK, MD 21701
240-815-6760
301-748-2769

ACL3 HOUSE MODEL:
(LOT #1) 7452 Heritage
Oak Terr., Middletown
MD., 21769

JOB #:	B014
REVISIONS:	DATE:
PERMIT PLANS	7/21/26
DATE:	07 / 21 / 2026
SCALE:	AS SHOWN
PAGE DESCRIPTION:	

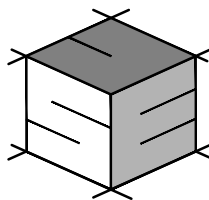
ELEVATIONS

SHEET:

A006

Laine Street Homes LLC
244 N Market St
Frederick, MD 21701
(C) (301)524-4471

These plans are the property of
Builders National Cooperative, LLC.
No unauthorized use is permitted.
Plan is a lot specific ACL3 model.



STRUCTURAL ENGINEERING
UNLIMITED, LLC
341 W. PATRICK STREET
FREDERICK, MD 21701
240-815-6760
301-748-2769

ACL3 HOUSE MODEL:
(LOT #1) 7452 Heritage
Oak Terr., Middletown
MD., 21769

JOB #:	B014
REVISIONS:	DATE:
PERMIT PLANS	7/21/26

DATE: 07 / 21 / 2026

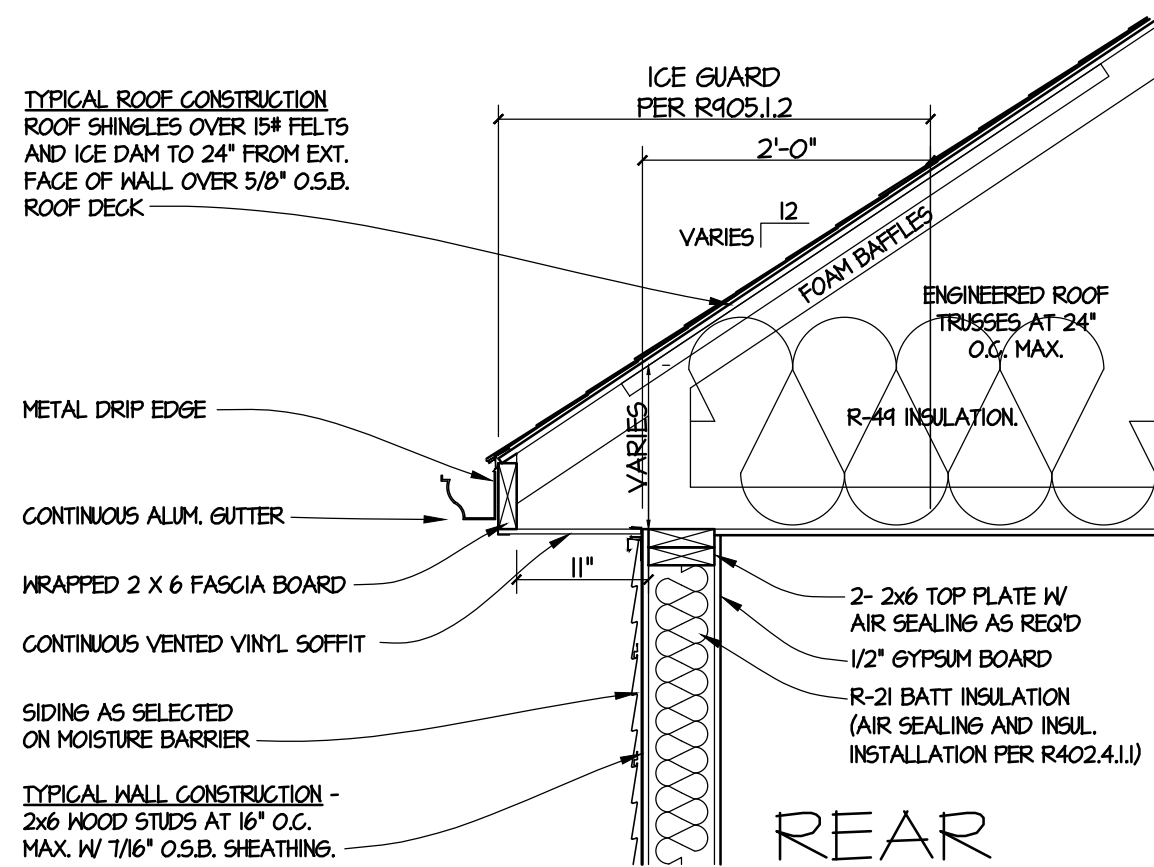
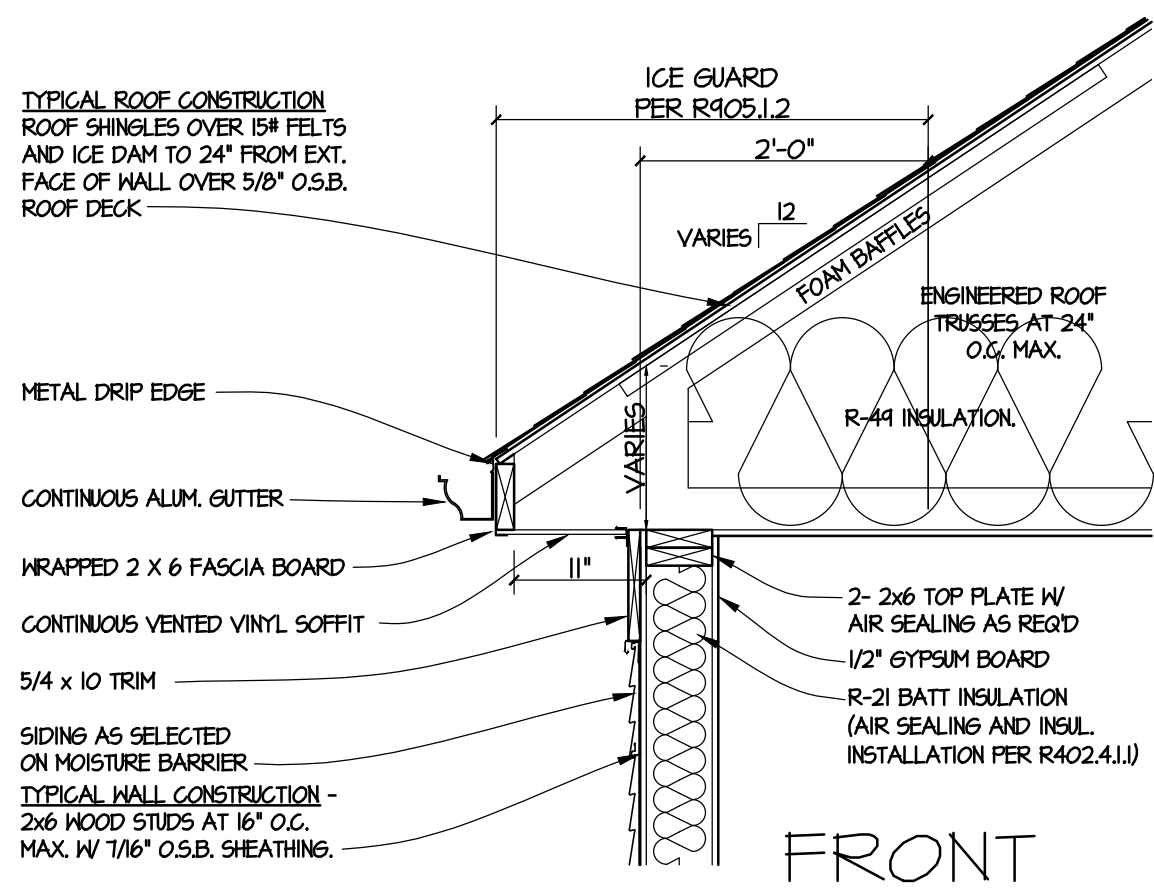
SCALE: AS SHOWN

PAGE DESCRIPTION:

SECTIONS &
DETAILS

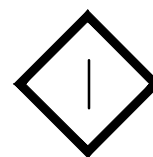
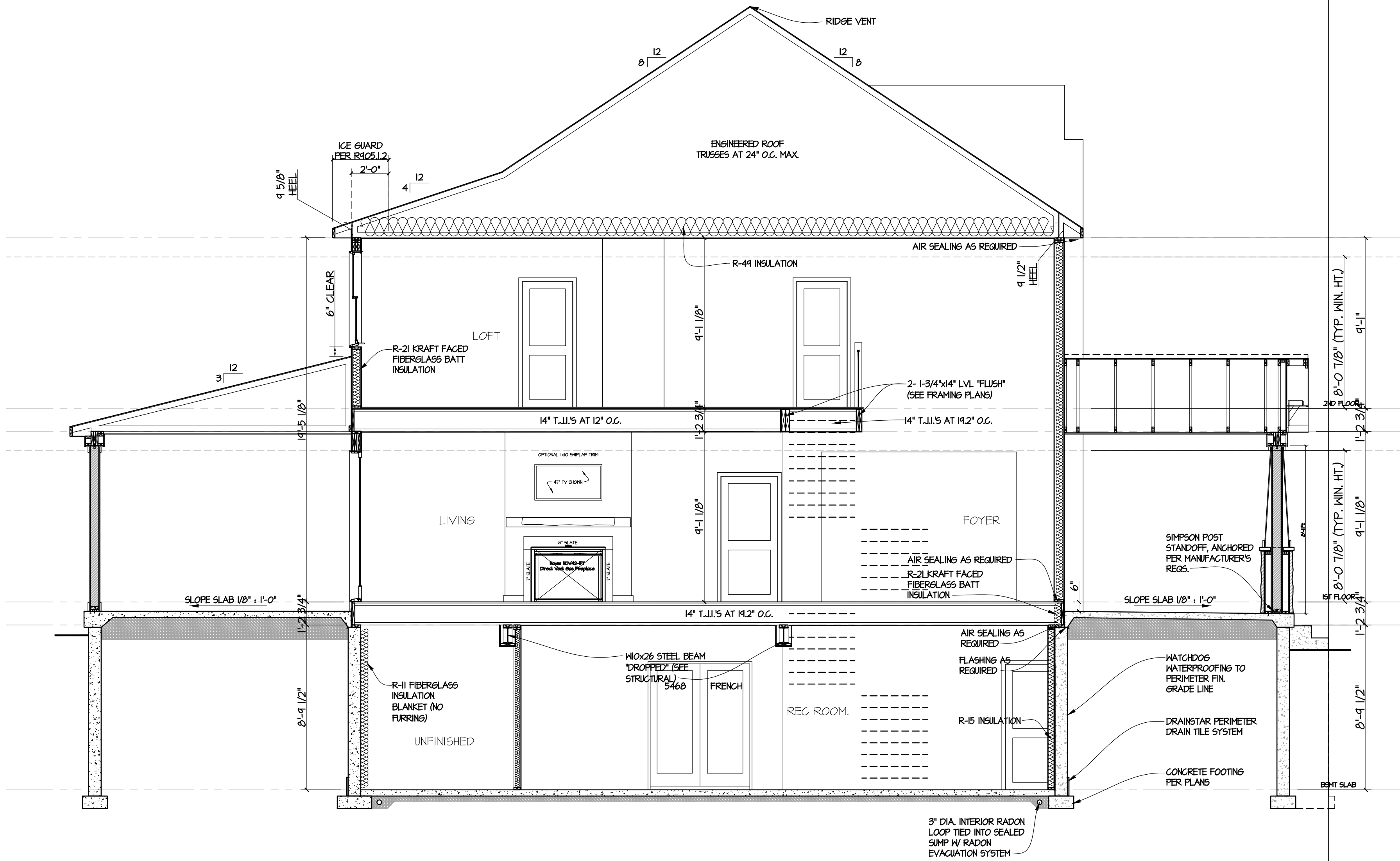
SHEET:

A007



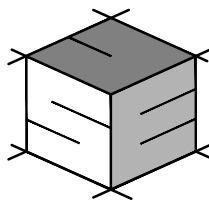
TYPICAL EAVE DETAILS

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



BUILDING SECTION

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



STRUCTURAL ENGINEERING
UNLIMITED, LLC
341 W. PATRICK STREET
FREDERICK, MD 21701
240-815-6760
301-748-2769

ACL3 HOUSE MODEL:
(LOT #1) 7452 Heritage
Oak Terr., Middletown
MD., 21769

JOB #: BOT14

REVISIONS:

DATE:

PERMIT PLANS

7/21/26

DATE: 07 / 21 / 2026

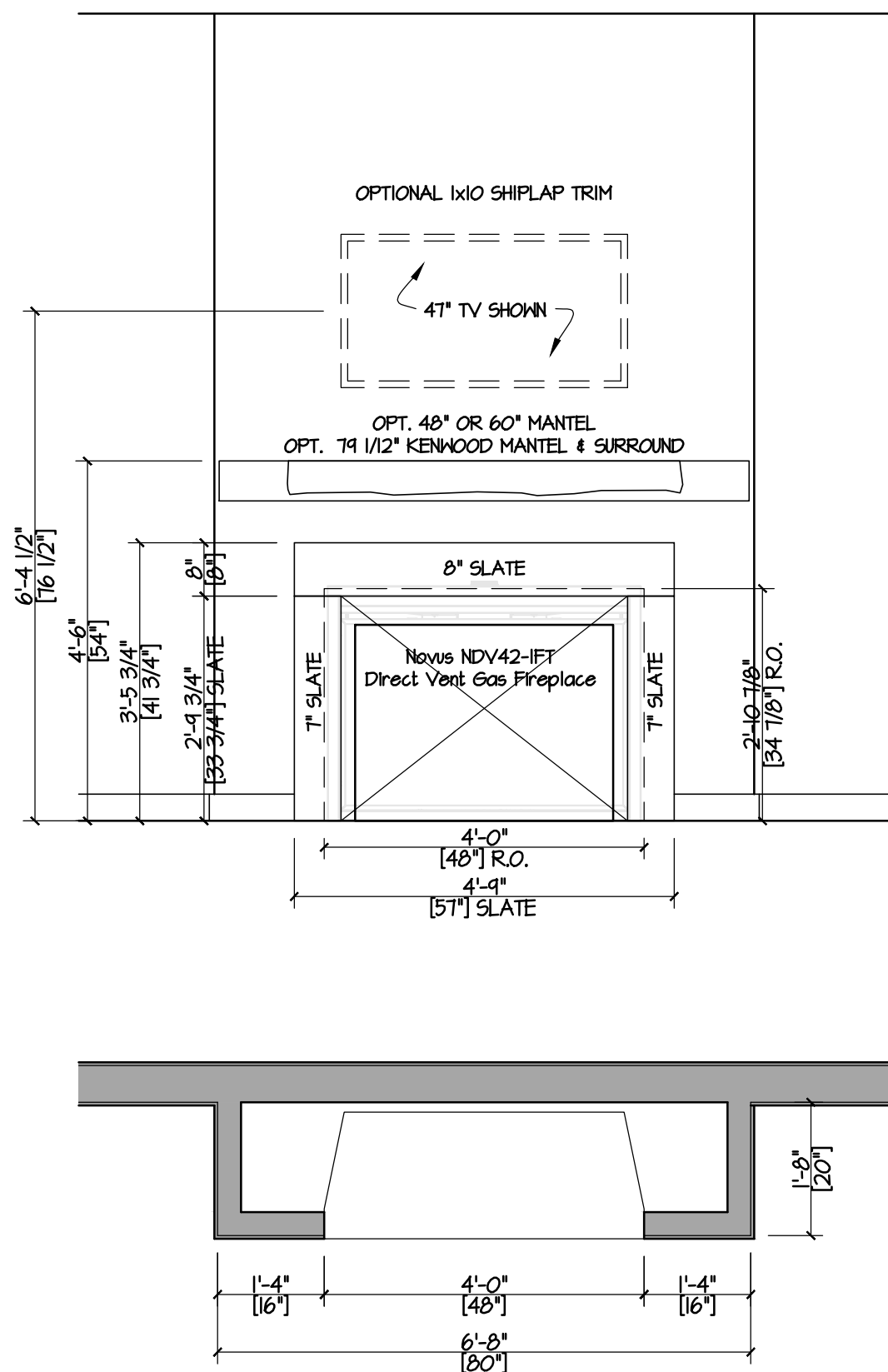
SCALE: AS SHOWN

PAGE DESCRIPTION:

SECTIONS &
DETAILS

SHEET:

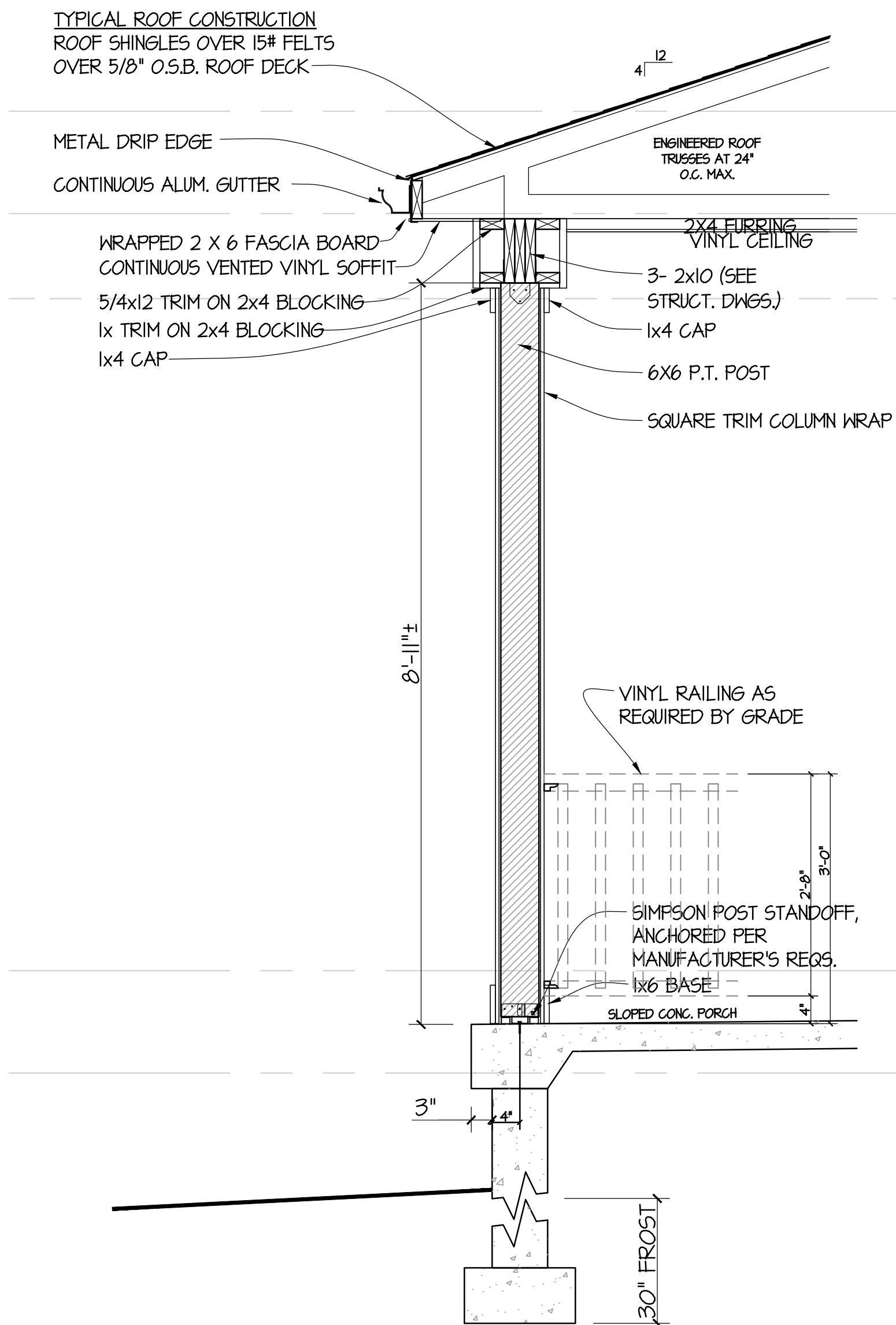
A008



FIREPLACE LEVEL B GAS (TRADITIONAL)
Novus NDV42-IFT Direct Vent Gas Fireplace
Rough in framing: 48"W x 34 7/8"H x 19 5/8"D
Dimension with Surround: 57"W x 41 3/4"H
Total Fireplace Enclosure Dimension: 80"W x Ceiling Height x 20"D

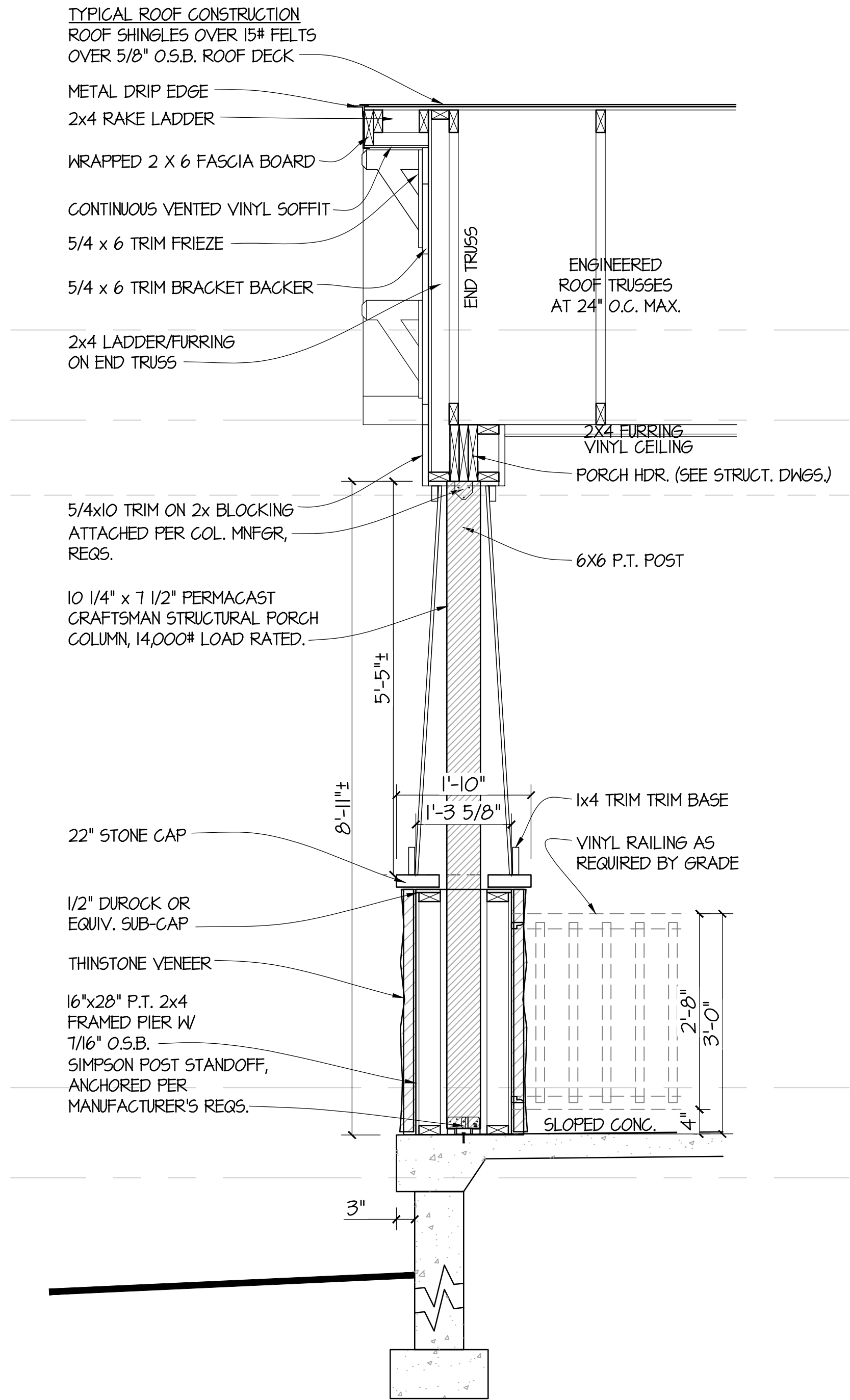
FIREPLACE DETAILS

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



REAR PORCH SECTION

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

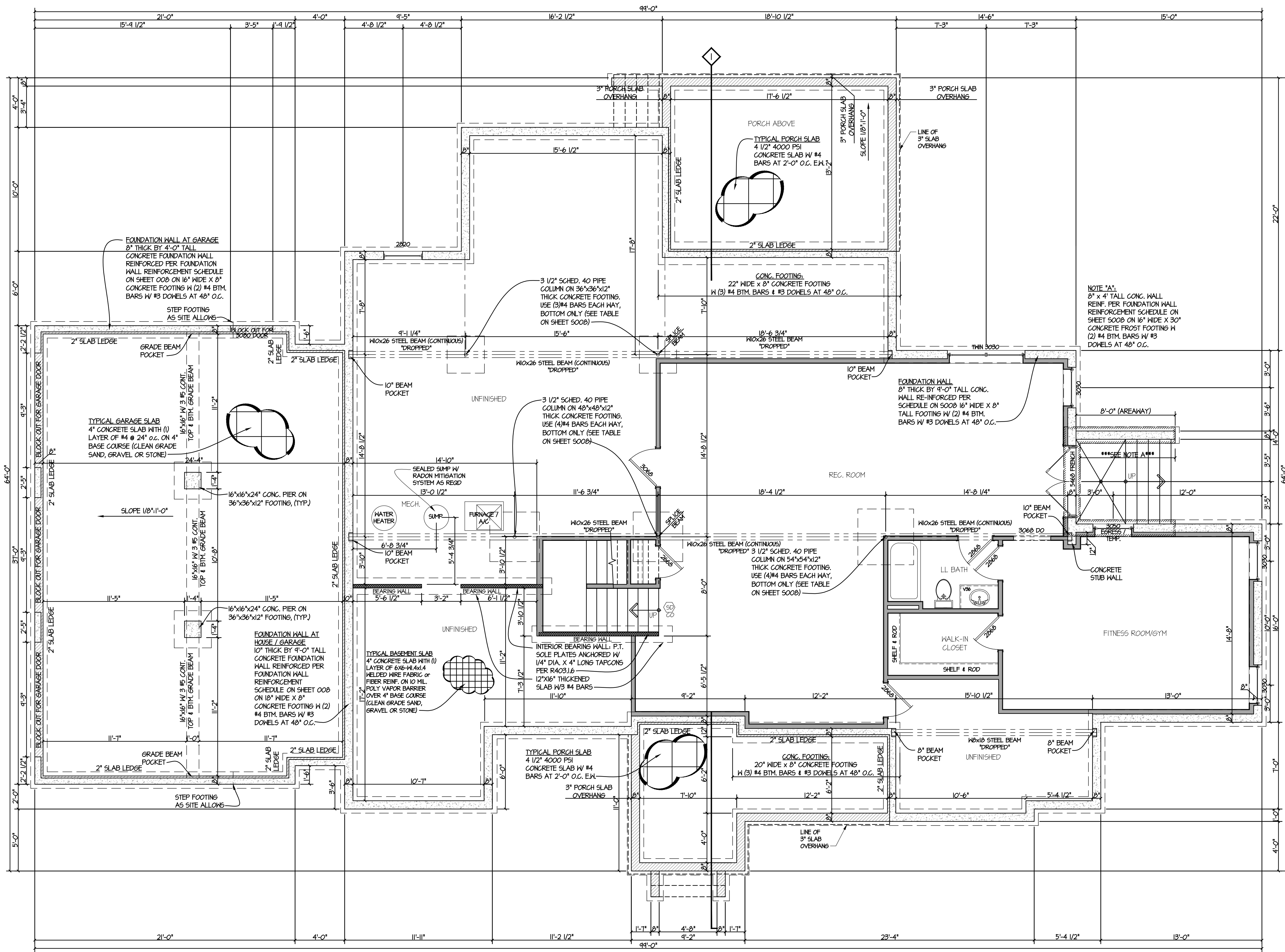


FRONT PORCH SECTION

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

DRAWING SYMBOL LEGEND

- NEW CONCRETE FOUNDATION WALL
- NEW INTERIOR PARTITION - 2x4 WOOD STUDS AT 16" O.C. MAX. W/ 1/2" GYP. BD. EACH SIDE
- NEW EXTERIOR WALL - 2 X 6 WOOD STUDS AT 16" O.C. MAX. WITH R-21 BATT INSULATION, O.S.B. SHEATHING, W/ SIDING AS SELECTED
- BEARING WALL
- NEW WINDOW, TYP.
- NEW DOOR, TYP.



FOUNDATION PLAN

SEE SOIO FOR FOUNDATION CHARTS & DETAILS

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

Laine Street Homes LLC
244 N Market St
Frederick, MD 21701
(C) (301)524-4471

These plans are the property of of Builders National Cooperative, LLC. No unauthorized use is permitted. Plan is a lot specific ACL3 model.



STRUCTURAL ENGINEERING UNLIMITED, LLC
341 W. PATRICK STREET
FREDERICK, MD 21701
240-815-6760
301-748-2769



PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO.: 24518
EXPIRATION DATE: 09-21-2027

ACL3 HOUSE MODEL:
(LOT #1) 7452 Heritage
Oak Terr., Middletown
MD., 21769

JOB #:	B0714
REVISIONS:	DATE:
PERMIT PLANS	7/21/26

DATE: 07 / 21 / 2026

SCALE: AS SHOWN

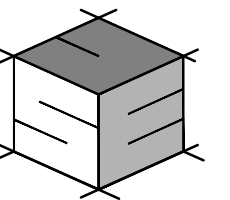
PAGE DESCRIPTION:

FOUNDATION / SUB-FOUND. PLAN

SHEET:

S001

These plans are the property of Builders National Cooperative, LLC. No unauthorized use is permitted. Plan is a lot specific ACL3 model.



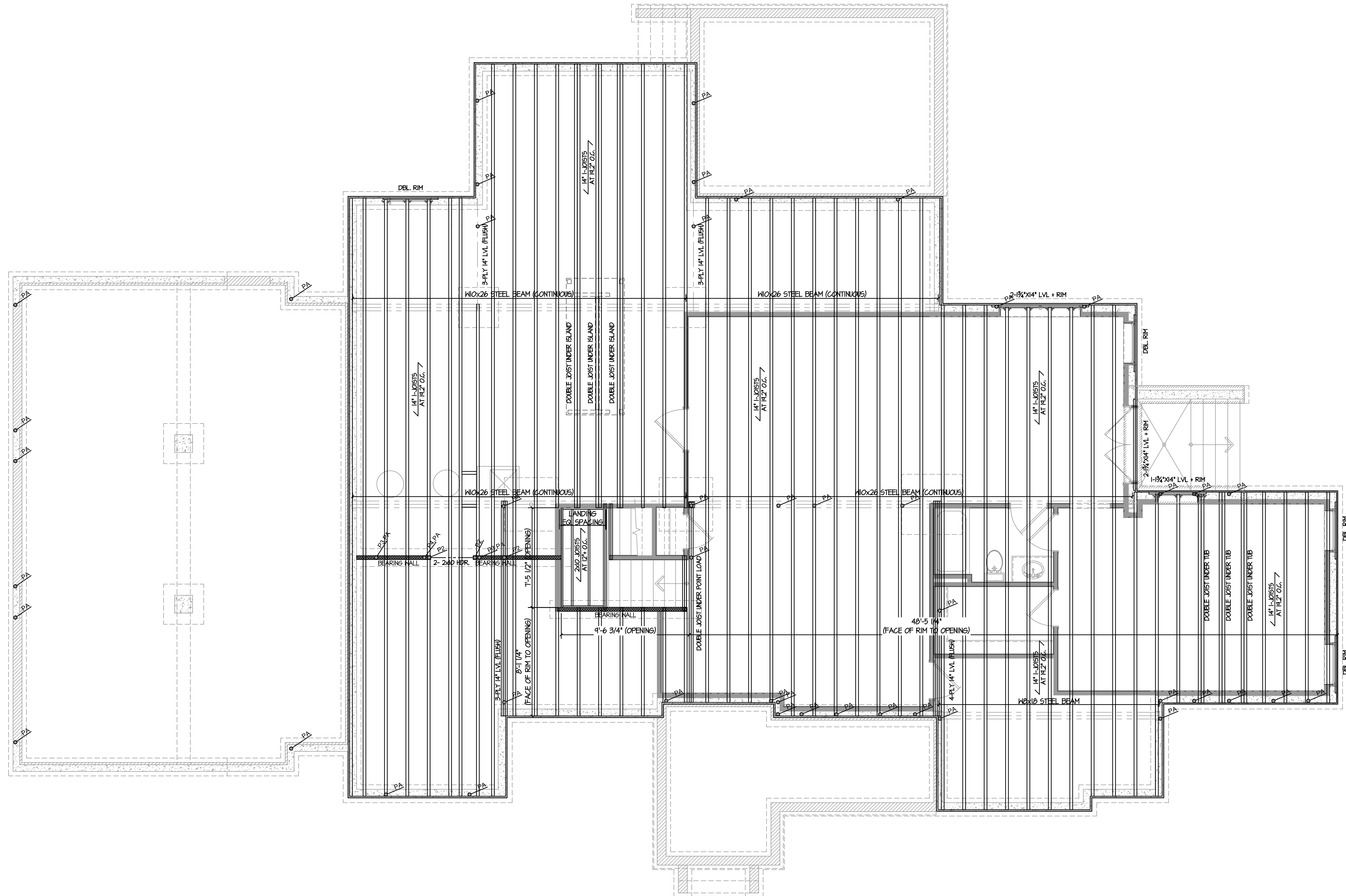
07/27/2026

**ACL3 HOUSE MODEL:
(LOT #1) 7452 Heritage
Oak Terr., Middletown
MD., 21769**

FIRST FLOOR FRAMING PLAN

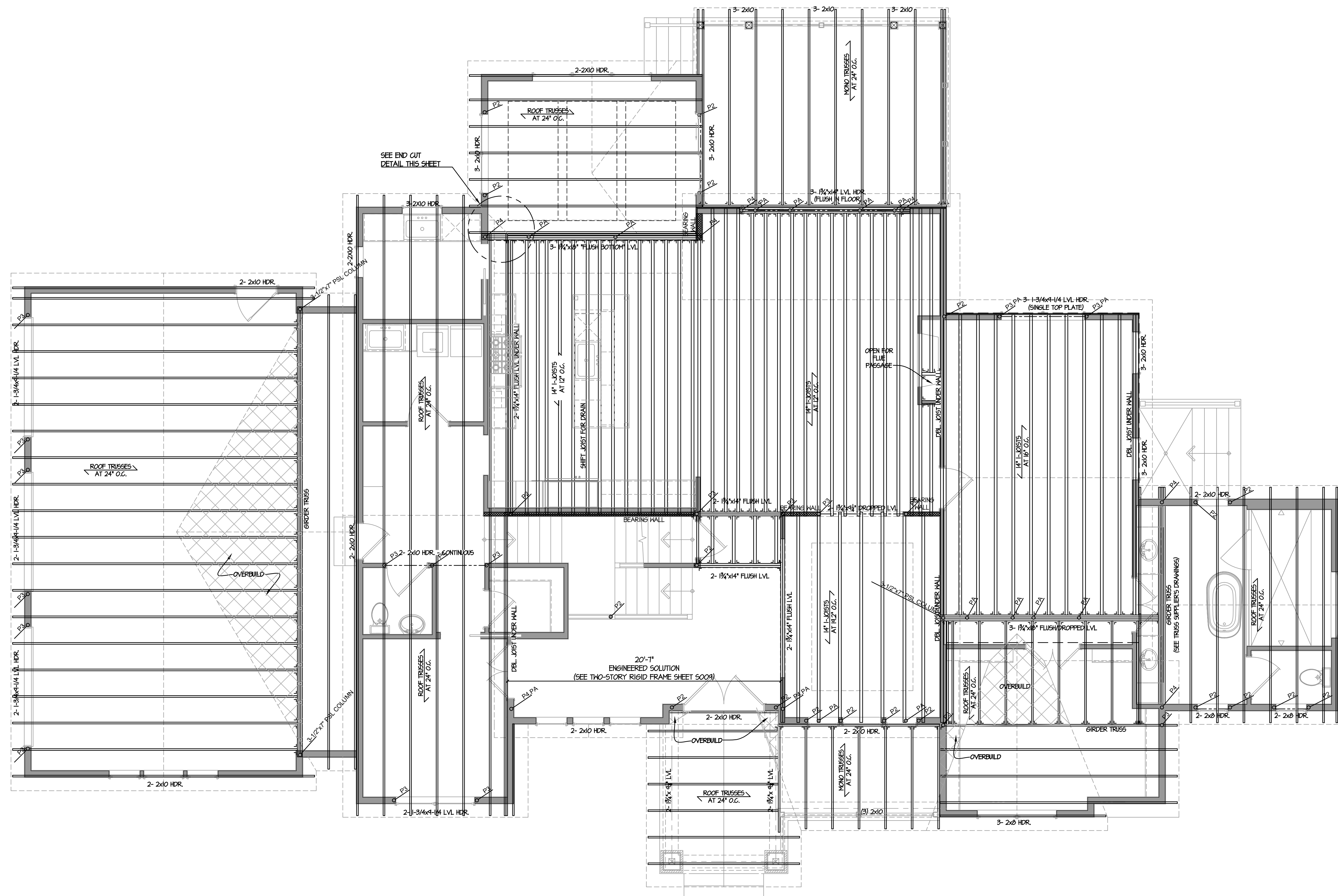
S002

POST SCHEDULE
PA POST ABOVE
P1 1-2x4* POST
(DEFAULT, IF NOT SPECIFIED)
P2 2-2x4* BUILT-UP POST
P3 3-2x4* BUILT-UP POST
P4 4-2x4* BUILT-UP POST
P5 5-2x4* BUILT-UP POST
*BUILT-UP POSTS SHALL MATCH
WALL/ BEAM DIMENSION.
EXAMPLE: P3=3-2x6 IN 6" WALL
OR UNDER 5/14" BEAM



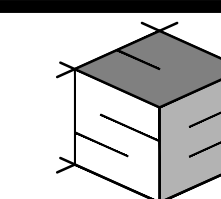
SCALE: 1/4"=1'-0"

POST SCHEDULE
PA POST ABOVE
P1 1-2x4" POST
(DEFAULT, IF NOT SPECIFIED)
P2 2-2x4" BUILT-UP POST
P3 3-2x4" BUILT-UP POST
P4 4-2x4" BUILT-UP POST
P5 5-2x4" BUILT-UP POST
*BUILT-UP POSTS SHALL MATCH
WALL/ BEAM DIMENSION.
EXAMPLE: P3=3-2x6 IN 6" WALL
OR UNDER 5 1/4" BEAM



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

These plans are the property of of
Builders National Cooperative, LLC.
No unauthorized use is permitted.
Plan is a lot specific ACL3 model.



**STRUCTURAL ENGINEERING
UNLIMITED, LLC**
341 W. PATRICK STREET
FREDERICK, MD 21701
240-815-6760
301-748-2769



PROFESSIONAL CERTIFICATION. I HEREBY
CERTIFY THAT THESE DOCUMENTS WERE
PREPARED OR APPROVED BY ME, AND THAT I
AM A DULY LICENSED PROFESSIONAL ENGINEER
UNDER THE LAWS OF THE STATE OF
MARYLAND.
LICENSE NO.: 24518
EXPIRATION DATE: 09-21-2027

ACL3 HOUSE MODEL:
(LOT #1) 7452 Heritage
Oak Terr., Middletown
MD., 21769

JOB #:		B0714
REVISIONS:	DATE:	
PERMIT PLANS	7/27/20	
DATE: 07 / 27 / 2026		
SCALE: AS SHOWN		
PAGE DESCRIPTION:		

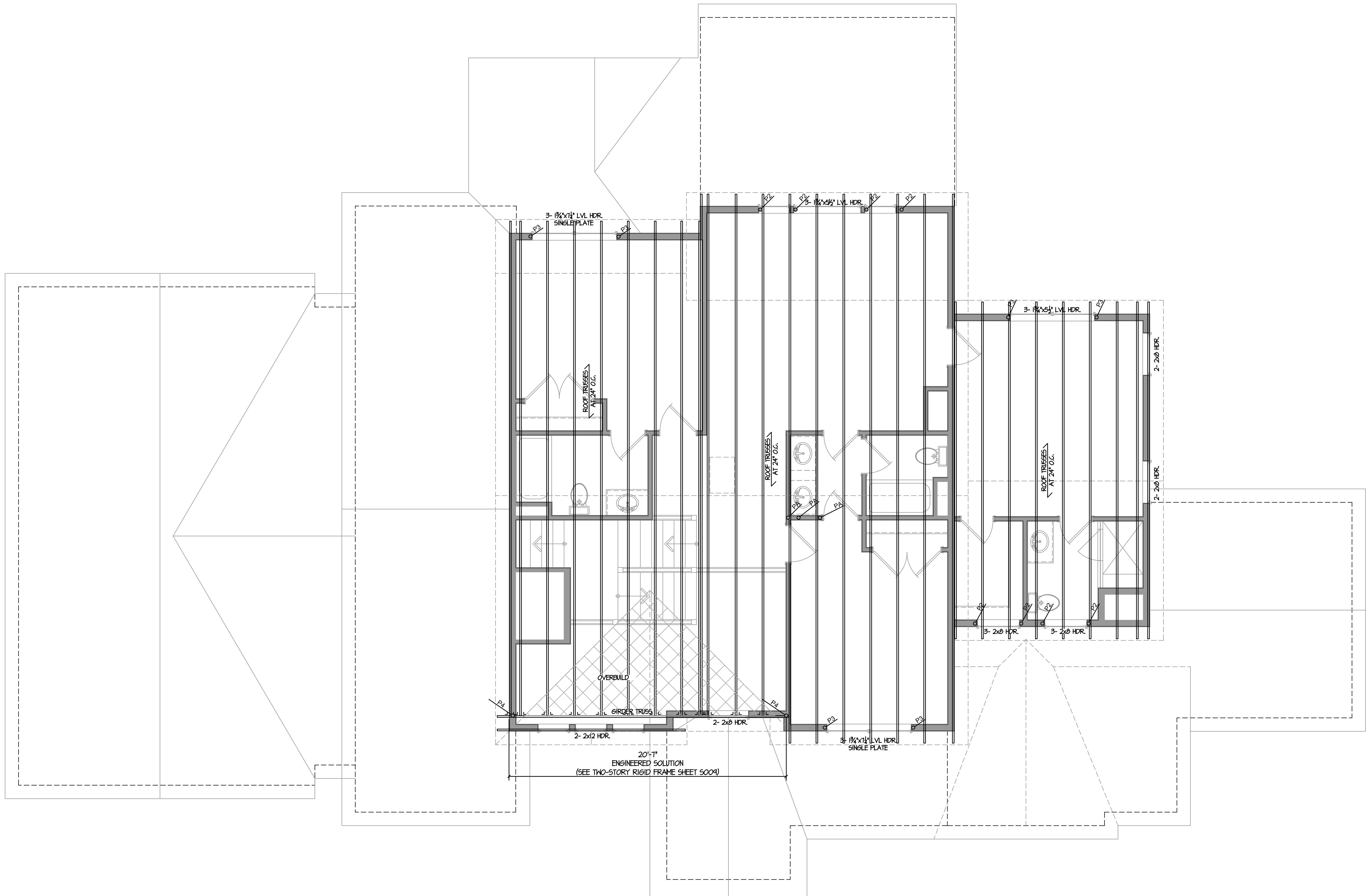
SECOND FLOOR FRAMING PLAN

SHEET:

S003

NOTE:
REFER TO TRUSS SUPPLIERS ENGINEERED
TRUSS LAYOUT AND SHOP DRAWINGS

POST SCHEDULE
PA POST ABOVE
P1 1-24" POST
(DEFAULT, IF NOT SPECIFIED)
P2 2-24" BUILT-UP POST
P3 3-24" BUILT-UP POST
P4 4-24" BUILT-UP POST
P5 5-24" BUILT-UP POST
*BUILT-UP POSTS SHALL MATCH
WALL/BEAM DIMENSION.
EXAMPLE: P3-3-26 IN 6" WALL
OR UNDER 5/16" BEAM

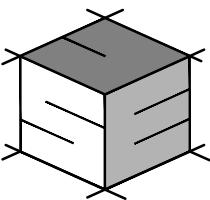


ROOF FRAMING PLAN

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

Laine Street Homes LLC
244 N Market St
Frederick, MD 21701
(C) (301)524-4471

These plans are the property of of
Builders National Cooperative, LLC.
No unauthorized use is permitted.
Plan is a lot specific ACL3 model.



STRUCTURAL ENGINEERING
UNLIMITED, LLC
341 W. PATRICK STREET
FREDERICK, MD 21701
240-815-6760
301-748-2769



PROFESSIONAL CERTIFICATION. I HEREBY
CERTIFY THAT THESE DOCUMENTS WERE
PREPARED OR APPROVED BY ME, AND THAT I
AM A DULY LICENSED PROFESSIONAL ENGINEER
UNDER THE LAWS OF THE STATE OF
MARYLAND.
LICENSE NO.: 24518
EXPIRATION DATE: 09-21-2027

ACL3 HOUSE MODEL:
(LOT #1) 7452 Heritage
Oak Terr., Middletown
MD., 21769

JOB #:	B0714
REVISIONS:	DATE:
PERMIT PLANS	7/21/26

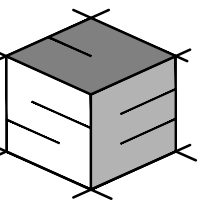
DATE: 07 / 27 / 2026

SCALE: AS SHOWN

PAGE DESCRIPTION:
ROOF FRAMING
PLAN

SHEET:
S004

These plans are the property of Builders National Cooperative, LLC. No unauthorized use is permitted. Plan is a lot specific ACL3 model.



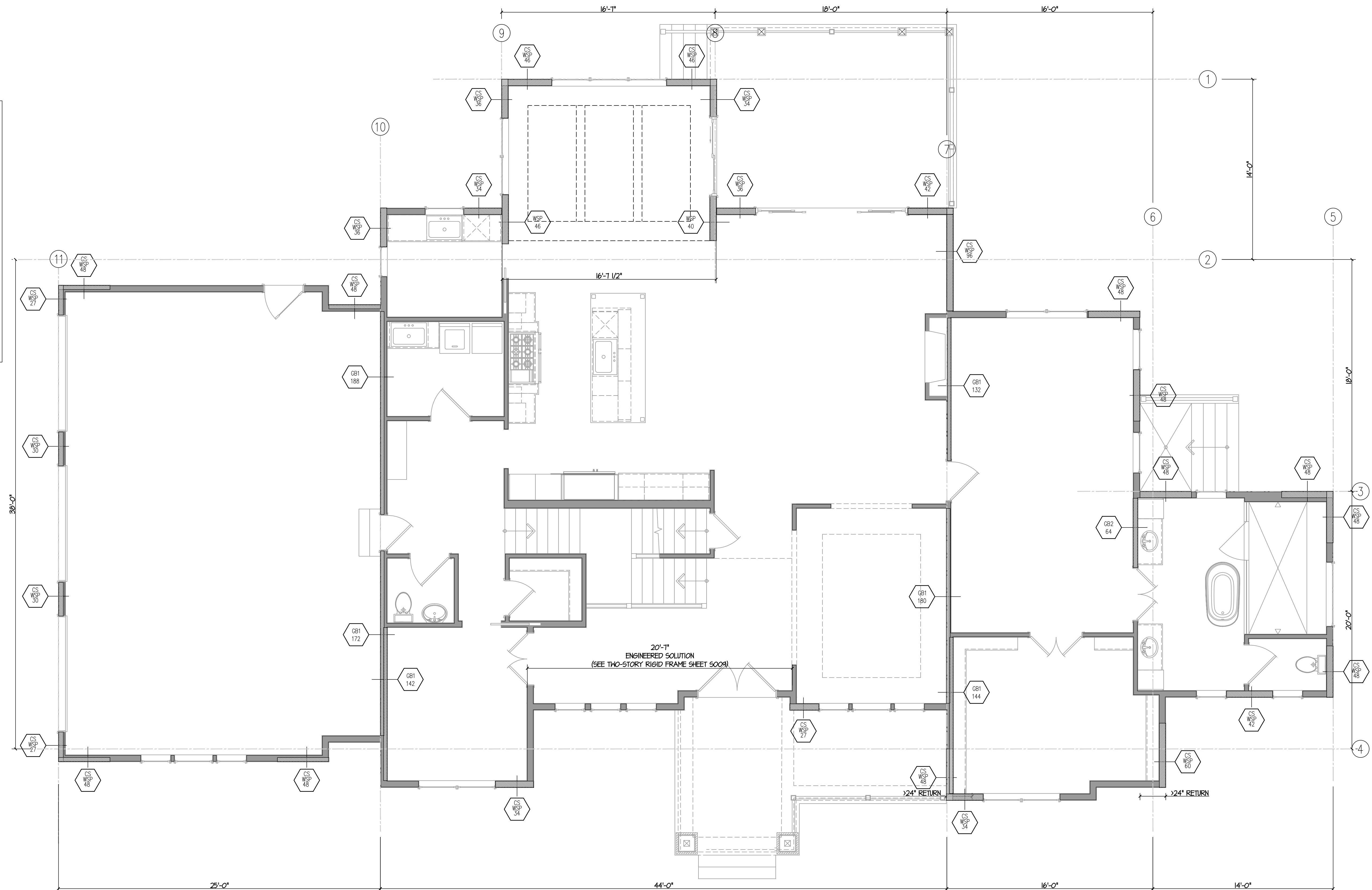
07/27/2026

**ACL3 HOUSE MODEL:
(LOT #1) 7452 Heritage
Oak Terr., Middletown
MD., 21769**

S005

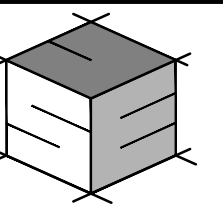
A perspective view of a 1500mm x 1000mm x 100mm LST24 STRAP assembly. The diagram shows a long, narrow metal strap with a series of vertical slots. A label 'LST24 STRAP' points to one of the slots. The strap is shown in a slightly bent position, highlighting its flexibility.

HTT5 INSTALLATION



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

These plans are the property of Builders National Cooperative, LLC. No unauthorized use is permitted. Plan is a lot specific ACL3 model.



07/27/2026

**ACL3 HOUSE MODEL:
(LOT #1) 7452 Heritage
Oak Terr., Middletown
MD., 21769**

REVISIONS:	DATE:
PERMIT PLANS	7/27/26

SCALE: AS SHOWN

SECOND FLOOR WALL BRACING PLAN

S006

A 3D perspective view of a printed part. A label 'LST/A24 STRAP' with a leader line points to a vertical, ribbed strap that is part of the structure.

Architectural floor plan of a two-story building. The plan includes a central staircase labeled "20'-1\" ENGINEERED SOLUTION (SEE TWO-STORY RIGID FRAME SHEET 5009)". To the left of the stairs is a bathroom with a bathtub, toilet, and sink. To the right of the stairs is a larger room, possibly a living or dining area, with a bathtub, toilet, and sink. The plan also shows a kitchen area with a sink and a 24" return. Structural details are indicated by callouts: "15" and "14" for vertical dimensions, "31'-1 1/2\" for a horizontal dimension, and "20'-1\" for the staircase width. The plan is surrounded by a dashed line indicating the building's footprint.

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

STEEL

FABRICATION AND ERECTION OF ALL STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE LATEST SPECIFICATION OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION.

PROVIDE WELDED CONNECTIONS TYPICALLY UNLESS OTHERWISE NOTED.

WELDS SHALL BE MADE ONLY BY WELDERS WHO HAVE BEEN PREQUALIFIED BY TESTS OF THE AMERICAN WELDING SOCIETY, PRESCRIBED IN THE STRUCTURAL WELDING CODE," AWS D1J (LATEST EDITION).

ANY CONNECTION NOT SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS SHALL BE DESIGNED AND DETAILED BY THE STRUCTURAL STEEL FABRICATOR. SEE THE TYPICAL BEAM CONNECTION DETAILS ON THE DRAWINGS.

MILL BOTTOM OF ALL COLUMNS AND FINISH TOP OF ALL BASE PLATES IN ACCORDANCE WITH A.I.S.C. SPECIFICATIONS. BASE PLATES SHALL BE WELDED TO BOTTOM OF COLUMNS.

CONNECTIONS SHALL BE AISC STANDARD.

PROVIDE BASE PLATE FOR ALL STRUCTURAL STEEL BEAMS BEARING ON CONCRETE OR MASONRY. GROUT FOR SETTING BEARING SURFACES SHALL BE NON-SHRINK, NOT-STAINING, EQUAL TO "MASTERFLOW 713" BY THE MASTER BUILDERS CORPORATION.

SPECIFIED GROUT THICKNESS INCLUDES 1/4 INCH THICK LEVELING PLATES WHICH SHALL BE USED UNDER ALL BEAMS AND COLUMNS RESTING ON CONCRETE.

PRE-ENGINEERED WOOD TRUSSES

TRUSSES SHALL BE DESIGNED IN ACCORDANCE WITH THESE SPECIFICATIONS AND WHERE ANY APPLICABLE DESIGN FEATURE IS NOT SPECIFIED HEREIN, DESIGN SHALL BE IN ACCORDANCE WITH APPLICABLE PROVISIONS OF LATEST EDITION OF NATIONAL DESIGN SPECIFICATIONS FOR WOOD CONSTRUCTION (NDS) AMERICAN FOREST AND PAPER ASSOCIATION (AFPA), AND DESIGN SPECIFICATIONS FOR METAL PLATE CONNECTED WOOD TRUSSES (ANSI/TPI 1), TRUSS PLATE INSTITUTE (TPI), AND CODES OF JOINTS, FABRICATE, SUPPLY AND ERECT WOOD TRUSSES AS SHOWN ON THE DRAWINGS AND AS SPECIFIED. WORK SHALL INCLUDE ALL ANCHORAGE, BLOCKING, CURBING, MISCELLANEOUS FRAMING AND BRACING.

LUMBER USED FOR TRUSS MEMBERS SHALL BE IDENTIFIED BY GRADE MARK OF A LUMBER INSPECTION AGENCY, AND SHALL BE AS SHOWN ON DESIGN DRAWINGS. TRUSSES SHALL BE HANDLED DURING FABRICATION, DELIVERY AND AT JOBSITE SO AS NOT TO BE SUBJECTED TO EXCESSIVE BENDING. TRUSSES SHALL BE UNLOADED ON SMOOTH GROUND TO AVOID LATERAL SWAY. TRUSSES SHALL BE PROTECTED FROM DAMAGE THAT MIGHT RESULT FROM ON-SITE ACTIVITIES AND ENVIRONMENTAL CONDITIONS. PREVENT TOPPLING WHEN HANDING IS REMOVED.

HANDLE DURING INSTALLATION IN ACCORDANCE WITH HANDLING, INSTALLING AND BRACING WOOD TRUSSES (HIB-91), TPI, AND ANSI/TPI 1-1995. INSTALLATION SHALL BE CONSISTENT WITH GOOD WORKMANSHIP AND GOOD BUILDING PRACTICES. TRUSSES SHALL BE SET AND SECURED LEVEL AND PLUMB, AND IN CORRECT LOCATION. TRUSSES SHALL BE HELD IN CORRECT ALIGNMENT UNTIL SPECIFIED PERMANENT BRACING IS INSTALLED. CUTTING AND ALTERING OF TRUSSES IS NOT PERMITTED. CONCENTRATED LOADS (FULL BUNDLES OF DECKING) SHALL NOT BE PLACED ATOP TRUSSES UNTIL ALL SPECIFIED BRACING HAS BEEN INSTALLED AND DECKING IS PERMANENTLY NAILED IN PLACE. ERECTION BRACING IS ALWAYS REQUIRED. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND FURNISHING THE MATERIALS USED FOR INSTALLATION AND PERMANENT BRACING.

STRUCTURAL ENGINEER OF RECORD SHALL APPROVE SHOP DRAWINGS PRIOR TO SUBMITTAL TO BUILDING OFFICIAL. BUILDING OFFICIAL SHALL APPROVE SHOP DRAWING PRIOR TO INSTALLATION. TRUSSES SHALL BE FABRICATED FROM APPROVED SHOP DRAWINGS.

MANUFACTURER SHALL SUBMIT 3 COPIES OF TRUSS DESIGN DRAWINGS BEARING SEAL OF PROFESSIONAL ENGINEER FOR APPROVAL PRIOR TO ERECTION AND ENGINEERING FRAMING PLANS FOR ALL FLAT CHORD TRUSSES. ALL TRUSS SHOP DRAWINGS MUST BE REVIEWED AND APPROVED IN WRITING, BY GENERAL CONTRACTOR, PRIOR TO SUBMITTAL OF SHOP DRAWINGS TO STRUCTURAL ENGINEER AND MUST INCLUDE THE FOLLOWING:

1. STAMP AND SIGNATURE OF ENGINEER, WHO IS REGISTERED IN THE STATE WHERE THE JOB IS TO BE CONSTRUCTED, RESPONSIBLE FOR PREPARATION OF ALL TRUSS DESIGN AND LAYOUT DRAWING.
2. ALLOWABLE LOADS IN LBS/EFFECTIVE NAIL OR PSI FOR LUMBER & PLATES USED AS ALLOWED BY ICBO, CURRENT ICBO REPORT NUMBER & BY SOUTHERN BUILDING CODE CONGRESS INTERNATIONAL.
3. STRESS REDUCTION FACTORS USED FOR PLATES.
4. TOP AND BOTTOM CHORD DESIGN LOADS IN PLF.
5. SIZE, GAUGE, AND EXACT LOCATION BY DIMENSION OF PLATES.
6. LUMBER SPECIES AND GRADES USED.
7. NAME & TRADEMARK OF PLATE MANUFACTURER, TRUSS FABRICATOR & PROJECT NAME/LOCATION
8. CONCENTRATED LOAD REQUIREMENTS HAVE BEEN DESIGNED FOR AND SHOWN ON DOCUMENTS.
9. TRUSS CONNECTION HARDWARE REQUIREMENTS.

ALL TRUSSES MUST BE DESIGNED FOR UPLIFT LOADS. UPLIFT VALUES @ EACH TRUSS BEARING POINT MUST BE SHOWN ON TRUSS ENGINEERING SHEET.

ALL ROOF TRUSSES SHALL BE ATTACHED TO PERPENDICULAR NON-LOAD BEARING WALLS WITH TRUSS CLIPS. CEILING GWB SHALL BE ATTACHED TO BLOCKING ON THE WALL AND NOT TO THE TRUSS FOR A DISTANCE OF 18" FROM THE WALL.

ALL FLOOR TRUSSES ON THE LOWEST FLOOR W/ TRUSSES SHALL BE ATTACHED TO PERPENDICULAR NON-LOAD BEARING WALLS WITH TRUSS CLIPS. CEILING GWB SHALL BE ATTACHED TO BLOCKING ON THE WALL AND NOT TO THE TRUSS FOR A DISTANCE OF 18" FROM THE WALL.

LIVE LOAD DEFLECTION SHALL NOT EXCEED $\frac{1}{8}"$ OR L/480 FOR FLOOR TRUSSES AND $\frac{1}{8}"$ OR L/360 FOR ROOF TRUSSES.

THE MANUFACTURER SHALL SUPPLY ALL REQUIRED HANGERS, HOLD-DOWN CLIPS, AND OTHER SPECIAL HARDWARE.

WOOD FRAMING

NAIL IN ACCORDANCE WITH RECOMMENDED WOOD FASTENING SCHEDULE IN APPLICABLE BUILDING CODES (LATEST EDITION/HIGH WIND REGION). PROVIDE BLOCKING, BRIDGING AND BRACING PER SAME CODE. AT A MIN., PROVIDE BRIDGING AT EACH END OF THE JOIST, AND ONE ROW OF SOLID BRIDGING BELOW ALL INTERIOR BRACING PARTITIONS.

FASTENERS: JOIST HANGERS, HURRICANE ANCHORS, POST BASES AND OTHER FRAMING ANCHORS ARE TO BE AS MANUFACTURED BY SIMPSON STONG-TIE, U.S.P., OR EQUAL, AND ARE TO BE USED IN STRICT ACCORDANCE WITH MANUFACTURER'S WRITTEN SPECIFICATIONS. ALL FASTENERS TO BE 16 GA. MIN. UNLESS NOTED OTHERWISE. UNLESS OTHERWISE SPECIFIED, FINISH UNLESS OTHERWISE. JOIST HANGERS SHALL BE MIN. 16 GA. WITH SIZE AND PROFILE TO SUIT APPLICATION (U.N.O.). PROVIDE JOIST HANGERS FOR ALL FLUSH FRAMED JOISTS. ALL FASTENERS IN CONTACT WITH PRESSURE TREATED WOOD SHALL BE 2X-MAX OR TRIPLE ZINC COATED, U.N.O.

THE NUMBER OF WALL STUDS AT BEARING POINTS OF 2X MEMBER BEAMS SHALL EXCEED THE NUMBER OF MEMBERS IN THE BEAM BY ONE. THE CENTERLINE OF THE BEAM SHALL BE THE CENTERLINE OF THE SUPPORTING WALL STUDS. (UNLESS NOTED OTHERWISE ON PLAN) ALL MICRO-LAM BEAMS SHALL HAVE 3 STUDS (MIN. & EXCEED WIDTH OF BEAM). CONTINUE THESE STUDS TO THE FOUNDATION WITH INTERMEDIATE SUPPORTS THROUGH FLOOR, BETWEEN LOWER WALL TOP PLATE & UPPER WALL BOTTOM PLATE.

ALL EXTERIOR POSTS TO BE TREATED 6X6 (U.N.O.). NOTCH TOP OF POST FOR BEAM BRG. (3" MAX.) AND THRU BOLT BEAM TO POST WITH (2) 1/2" DIA. GALV. BOLTS. ALTERNATE: PROVIDE COLUMN CAP CONNECTION WITH #4C SERIES BY SIMPSON STONG-TIE OR EQ. PROVIDE SOLID BLOCKING BELOW ALL COLUMNS, TO TRANSFER LOAD DIRECTLY TO FRAMING/FOUNDATION BELOW.

PROVIDE DOUBLE JOIST UNDER ALL PARTITIONS PARALLEL TO JOIST SPAN AND AROUND ALL FLOOR AND ROOF OPENINGS. SPACE & BLOCK IF PARTITIONS ABOVE IS A PLUMBING WALL. PROVIDE SOLID BLOCKING AT 12"oc BETWEEN JOISTS UNDER PARTITIONS ABOVE WHICH ARE PARALLEL TO THE JOISTS BUT NOT DIRECTLY OVER THE JOISTS. BLOCKING SHALL BE NOT LESS THAN 2" IN. THICKNESS & SHALL MATCH THE DEPTH OF THE JOISTS. TRUSSES MAY USE TRUSS BLOCKS.

ALL MULTI-PLY BEAMS SHALL BE NAILED WITH 3 ROWS OF 10d NAILS AT 8"oc STAGGERED OR BOLTED WITH 1/2" DIA. BOLTS AT 16"oc STAGGERED (U.N.O.).

PROVIDE COLLAR TIES OF 1X6 BOARDS AT UPPER 1/3 DOWN FROM RIDGE BEAMS SPACED 48"oc MAXIMUM. (FOR CONVENTIONAL FRAMING)

BALLOON FRAME ALL END WALLS WITH CATHEDRAL CEILING (U.N.O.):

2x4 @ 16"oc UP TO 9'-0", 2x6 @ 16"oc UP TO 14'-0" & 2x8 @ 16"oc UP TO 18'-0"

FASTEN GABLE-END WALL STUDS TO CEILING DIAPHRAGM BY FASTENING NAILER TO EACH STUD AND BY FASTENING CEILING TO NAILER WITH 8d NAILS AT 6"oc

WHERE DECKS FASTEN TO HOUSE FRAMING, PROVIDE CONTINUOUS TREATED LEDGER THRU-BOLTED TO FLOOR STRUCTURE WITH (2) 1/2" DIA. BOLTS AT 16"oc PROVIDE HOT-DIPPED GALV. JST. HANGER TO LEDGER.

ALL EXTERIOR WALLS SHALL BE STUDS AT 16"oc AS SPECIFIED ON PLANS WITH 7/16" OSB EXTERIOR SHEATHING. BLOCKING OF HORIZONTAL PANEL EDGES IS NOT REQUIRED. NAIL ALL REQUIRED PANEL EDGES WITH 8d NAILS AT 6"oc AND INTERMEDIATE STUDS WITH 8d NAILS AT 12"oc

ROOF AND FLOOR FRAMING LAYOUTS ARE PROVIDED TO ILLUSTRATE CONDITIONS OF CONSTRUCTION AND DO NOT NECESSARILY INDICATE SPECIFIC QUANTITIES OF MATERIALS OR COMPONENTS REQUIRED FOR CONSTRUCTION.

CONSTRUCTION BRACING SHALL BE PROVIDED BY THE CONTRACTOR TO MAINTAIN THE BUILDING PLUMB AND TRUE. THIS BRACING SHALL REMAIN UNTIL THE SPECIFIED SHEARWALLS ARE TOTALLY INSTALLED.

PRESCRIPTIVE BRACED WALL SEGMENTS SHALL HAVE STUDS AT 16"oc (MAX.) WITH $\frac{1}{8}"$ OSB EXTERIOR SHEATHING. BLOCKING OF HORIZONTAL PANEL EDGES IS NOT REQUIRED. NAIL ALL SHEATHING PANEL EDGES WITH 8d NAILS AT 6"oc AND INTERMEDIATE STUDS WITH 8d NAILS AT 12"oc

SHEARWALLS SHALL HAVE STUDS @ 16"oc (MAX.) WITH $\frac{1}{8}"$ OSB EXTERIOR SHEATHING (U.N.O., SEE PLAN). BLOCKING OF HORIZONTAL PANEL EDGES IS REQUIRED. NAIL ALL SHEATHING PANEL EDGES WITH 8d NAILS AT 6"oc (U.N.O., SEE PLAN) AND INTERMEDIATE STUDS WITH 8d NAILS AT 12"oc (U.N.O., SEE PLAN)

SHEAR WALL HOLD-DOWNS: ALL SHEAR WALLS SHOWN ON PLANS TO HAVE HOLD-DOWNS AT THE BASE AT EACH WALL END SHALL BE AS FOLLOWS:

- * AT UPPER FLOORS USE (2) SIMPSON H8A'S OR (1) SIMPSON FAT7 AT EACH END OF SHEAR WALL SEGMENT AND EACH EXTERIOR CORNER OF BUILDING.(U.N.O., SEE PLAN)
- * AT CONCRETE FOUNDATIONS USE (1) SIMPSON HD2A AT EACH END OF SHEAR WALL SEGMENT AND AT EACH EXTERIOR CORNER OF BUILDING.(U.N.O., SEE PLAN)
- * AT PILE/GRADER SUPPORTED FLOOR, USE (2) SIMPSON H8A'S OR (1) SIMPSON FAT7 AT EACH END OF SHEAR WALL SEGMENT AND AT EACH EXTERIOR CORNER OF BUILDING.(U.N.O., SEE PLAN)
- * PROVIDE 3 STUDS MIN. AT EACH HOLD-DOWN.(U.N.O., SEE PLAN)
- * PROVIDE TRIPLE JOISTS BELOW SHEAR WALLS THAT RUN PARALLEL TO FLOOR FRAMING.(U.N.O., SEE PLAN)

ALL INTERIOR SHEAR WALLS SHOWN ON THE PLANS SHALL HAVE STRUCTURAL SHEATHING THAT EXTENDS TO THE UNDERSIDE OF THE FLOOR SHEATHING ABOVE. WHERE JOISTS RUN PARALLEL TO THE SHEAR WALL, PROVIDE A DBL.-JOIST ABOVE THE SHEAR WALL. WHERE JOISTS RUN PERPENDICULAR, PROVIDE 2X BRIDGING ABOVE SHEAR WALL AND "TOOTH" PLYWOOD AROUND JOISTS. NAIL THROUGH FLOOR SHEATHING ABOVE INTO WALL WITH (2) 10d NAILS AT 4"oc

ALTERNATE POWER NAILS (FOR FRAMING MEMBERS ONLY-- 0.113d x 2 $\frac{1}{2}$ " FOR 8d NAILS & 0.131d x 3" FOR 16d NAILS
PROVIDE DEFORMED SHANK NAILS AS REQD. BY U.L. RATINGS.

SCHEDULE OF CONSTRUCTION MATERIALS

CONCRETE	LOCATION	COMP. STRENGTH	SUMP
	BASEMENT WALLS & FDN NOT EXPOSED TO WEATHER	3000 PSI (2)	4" +/- 1"
	BASEMENT SLABS AND INTERIOR SLABS ON GRADE	3000 PSI	4" +/- 1"
	BASEMENT WALLS, FENS, EXTERIOR WALLS & OTHER CONCRETE EXPOSED TO WEATHER	3000 PSI (3)	4" +/- 1"
	DRIVEWAYS, CURBS, WALKS, PATIOS, STEPS AND UNHEATED GARAGE FLOORS EXPOSED TO WEATHER	3500 PSI (3)	4" +/- 1"

- NOTES:
- 1) THE COMPRESSIVE STRENGTH IS BASED 28-DAY COMPRESSIVE STRENGTH.
 - 2) CONCRETE SUBJECTED TO FREEZE AND THAW CONDITIONS DURING CONSTRUCTION SHALL BE AIR-ENTRAINED (8% +/- .1%).
 - 3) CONCRETE SHALL BE AIR-ENTRAINED (6% +/- .1%).

MASONRY	MATERIAL	SPECIFICATION
	HOLLOW CMU	NORMAL WEIGHT: ASTM C90, GRADE N, Fm= 1500 PSI
	FACE BRICK	ASTM C216, SEVERE WEATHER BRICK, TYPE FBX, Fm=2000 PSI
	STONE VENEER	OWNER APPROVED
	CONCRETE BRICK	ASTM C95 TYPE 1, GRADE 8
	SOLID CMU	NORMAL WEIGHT: ASTM C145, GRADE N
	MORTAR: SINGLE WYTHE ABOVE GRADE	ASTM C270 PROJECTION SPECIFICATION MORTARS SHALL CONSIST OF TYPE 1 PORTLAND CEMENT, TYPE S HYDRATED LIME AND APPROVED AGGREGATE, WITH 1800 psi MINIMUM AVERAGE COMPRESSIVE STRENGTH OF 2-INCH CUBES AT 28-DAYS.
	MORTAR: SINGLE WYTHE BELOW GRADE	ASTM C270 PROJECTION SPECIFICATION MORTARS SHALL CONSIST OF TYPE 1 PORTLAND CEMENT, TYPE N HYDRATED LIME AND APPROVED AGGREGATE, WITH 2500 psi MINIMUM AVERAGE COMPRESSIVE STRENGTH OF 2-INCH CUBES AT 28-DAYS.
	MORTAR: VENEER	ASTM C270 PROJECTION SPECIFICATION MORTARS SHALL CONSIST OF TYPE 1 PORTLAND CEMENT, TYPE N HYDRATED LIME AND APPROVED AGGREGATE, WITH 750 psi MINIMUM AVERAGE COMPRESSIVE STRENGTH OF 2-INCH CUBES AT 28-DAYS.

REINFORCING STEEL	MATERIAL	SPECIFICATION
	REBAR	HIGH STRENGTH NEW BILLET STEEL CONFORMING TO ASTM A-615, GRADE 60 (60,000 PSI) - DEFORMED
	WELDED WIRE FABRIC	ASTM A-185
		PROTECTION
		LOCATION
		FOOTINGS AND OTHER CONCRETE POURED AGAINST EARTH
		FORMED CONCRETE EXPOSED TO EARTH
		FORMED CONCRETE NOT EXPOSED TO WEATHER OR EARTH
		SLABS ON GROUND, UNLESS OTHERWISE NOTED
		REINFORCED MASONRY WALLS

STRUCTURAL STEEL	SHAPE	SPECIFICATION
	I-BEAMS	STRUCTURAL STEEL I BEAMS SHALL CONFORM TO ASTM A572 GRADE 50 (50 KSI)
	TUBE	STRUCTURAL STEEL TUBING SHALL CONFORM TO ASTM A500, GRADE B, UNLESS OTHER SIDE NOTED IN THE PROJECT SPECIFICATIONS
	PIPE	STRUCTURAL STEEL PIPE SHALL CONFORM TO ASTM A36 (36KSI), UNLESS OTHER SIDE NOTED IN THE PROJECT SPECIFICATIONS
	ALL OTHER SHAPES	ALL OTHER STRUCTURAL STEEL, INCLUDING PLATES AND MISCELLANEOUS SHAPES SHALL CONFORM TO ASTM A36 (36KSI).
	CONNECTION	SPECIFICATION
	BOLTS	BOLTS FOR CONNECTING STRUCTURAL STEEL SHAPES SHALL BE ASTM A325-A, 1-1/2 INCH DIAMETER, UNLESS OTHERWISE NOTED ON THE DRAWINGS OR IN THE PROJECT SPECIFICATION
	ANCHOR BOLTS	ANCHOR BOLTS SHALL CONFORM TO ASTM A307.
	WELDS	WELDING ELECTRODES SHALL BE E70 SERIES.

WOOD	DIMENSION AND STRUCTURAL COMPOSITE LUMBER
	DESIGN VALUES (F)
	F _b F _t F _v F _c F _c F _e E x 10 ⁶
	UNTREATED FRAMING (2)
	2X 3X, OR 4X
	875 450 135 425 1150 1.4
	5X5 AND LARGER(B)
	600 300 125 425 425 1.0
	5X5 AND LARGER(F)
	500 325 125 425 500 1.0
	TREATED FRAMING (3)
	2X4
	1500 825 175 565 1650 1.6
	2X6
	1250 725 175 565 1600 1.6
	2X8
	1200 650 175 565 1550 1.6
	2X10
	1050 575 175 565 1500 1.6
	2X12
	975 550 175 565 1450 1.6
	5X5 AND LARGER
	850 550 165 375 525 1.2
	LVL
	COLUMNS AND BEAMS
	2650 1650 285 750 3000 1.7
	LVL (2.0E)
	BEAMS
	3100 2150 285 750 3000 2.0

STRUCTURAL GLUED LAMINATED TIMBER (GLULAM)	
MATERIAL	DESIGN VALUES (F)
	F _b F _t F _v F _c F _c F _e E x 10 ⁶
UNTREATED FRAMING	BEAMS 24F-1.8E
	2400 1850 240 650 1600 1.8
COLUMNS #2 DF	F _b F _t F _v F _c F _c F _e E x 10 ⁶
	1700 1800 180 560 1950 1.6
ENGINEERED WOOD PRODUCTS	
MATERIAL	SPECIFICATION
PREFABRICATED WOOD I-JOISTS	PREFABRICATED WOOD I-JOISTS SHALL BE MANUFACTURED BY BOISE CASCADE, LLC, OR APPROVED SUBSTITUTE. THE MANUFACTURER SHALL SUPPLY ALL REQUIRED HANGERS, WEB STIFFENERS, SQUARE BLOCKS, BEARER BEARING PLATES, AND OTHER SPECIAL HARDWARE. THE MANUFACTURER SHALL SUBMIT ERECTION DRAWINGS TO THE ENGINEER PRIOR TO FABRICATION. ALL PREFABRICATED WOOD I-JOISTS SHALL BE INSTALLED AND BRACED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
PLYWOOD/OSB	DOO PSI, DOO PSI, CSA0437 OR CSA0325 ADVANTYTECH, STRUCTURE WOOD NOT ALLOWED.
NOTES	1) DESIGN VALUES ARE FOR NORMAL LOAD DURATION AND DRY SERVICE CONDITIONS. SEE NDS OR MANUFACTURER SPECIFICATION FOR A COMPREHENSIVE DESCRIPTION OF DESIGN VALUE ADJUSTMENT FACTORS. 2) FRAMING DESIGN VALUES ARE BASED ON SYP No.2. 3) FRAMING DESIGN VALUES ARE BASED ON SYP No.2.

GOVERNING BUILDING CODES AND STANDARDS

THE FOLLOWING CODES AND STANDARDS, INCLUDING ALL SPECIFICATIONS REFERENCED WITHIN, SHALL APPLY TO THE DESIGN, CONSTRUCTION, QUALITY CONTROL AND SAFETY OF ALL WORK PERFORMED ON THE PROJECT. USE THE LATEST EDITIONS UNLESS NOTED OTHERWISE.

- * INTERNATIONAL RESIDENTIAL CODE (IRC), INTERNATIONAL CODE COUNCIL, INC., 2021
- * MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES (ANSI/ASCE 07-10), AMERICAN SOCIETY OF CIVIL ENGINEERS.
- * BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, ACI 318-11, AMERICAN CONCRETE INSTITUTE.
- * ACI MANUAL OF CONCRETE PRACTICE - PARTS 1 THROUGH 5 - 2011
- * MANUAL OF STANDARD PRACTICE, CONCRETE REINFORCING STEEL INSTITUTE.
- * MANUAL OF STEEL CONSTRUCTION - 13TH EDITION, AMERICAN INSTITUTE OF STEEL CONSTRUCTION (INCLUDING SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS, SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS, AND ALSO CODE OF STANDARD PRACTICE WITH EXCEPTION, IF ANY, AS INDICATED IN THE SPECIFICATIONS).
- * MANUAL OF STEEL CONSTRUCTION, VOLUME II CONNECTIONS, ASD 13TH EDITION/LRFD 1ST EDITION, AMERICAN INSTITUTE OF STEEL CONSTRUCTION.
- * DETAILING FOR STEEL CONSTRUCTION, AMERICAN INSTITUTE OF STEEL CONSTRUCTION.
- * STRUCTURAL WELDING CODE ANSI/AWS D 1.1-92, AMERICAN WELDING SOCIETY.
- * DESIGN MANUAL FOR FLOOR DECKS AND ROOF DECKS, STEEL DECK INSTITUTE.
- * SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS AMERICAN IRON AND STEEL INSTITUTE, AISI S100-2007.
- * BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES (ACI 530-10/ASCE 5-05/TMS 402-05) & SPECIFICATIONS FOR MASONRY STRUCTURES (ACI 530.1-05/ASCE 6-05/TMS 602-05).
- * NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION/ 2012, AMERICAN FOREST & PAPER ASSOCIATION.

DESIGN LOADS

	LIVE LOADS	DEAD LOADS	TOTAL
ROOF TRUSSES	30 PSF	10 PSF (TOP & BOTTOM)	50 PSF
RAFTERS	30 PSF	12 PSF	42 PSF
ATTIC FLOORS (TYP)	30 PSF	12 PSF	42 PSF
LTD STORAGE	20 PSF	12 PSF	32 PSF
NO STORAGE	10 PSF	5 PSF	15 PSF
SLEEPING ROOMS	30 PSF	12 PSF	42 PSF
OTHER FLOORS	40 PSF	12 PSF	52 PSF
GARAGE FLOORS	50 PSF	50 PSF	100 PSF
DECKS	40 PSF	10 PSF	50 PSF
BALCONY	60 PSF	10 PSF	70 PSF
STAIRS	40 PSF	20 PSF	60 PSF
ROOF LIVE LOAD DESIGN MINIMUM		30 PSF	16 PSF

WIND LOAD BASIC WIND SPEED (3 SEC GUST)
WIND PRESSURE (ROOF AVG.)
WIND PRESSURE (WALL AVG.)
WIND LOAD IMPORTANCE
WIND EXPOSURE CATEGORY

SNOW LOAD GROUND SNOW LOAD (P_g)
THERMAL FACTOR
SNOW EXPOSURE FACTOR (C_e)
SNOW LOAD IMPORTANCE FACTOR
SNOW LOAD (ROOF)
MINIMUM SNOW LOAD
RAIN-ON-SNOW
ADDITIONAL DRIFT AND SLIDING SNOW LOADS HAVE BEEN CONSIDERED WHERE APPLICABLE.

SEISMIC PEAK VELOCITY-RELATED ACCELERATION(A)
PEAK ACCELERATION (A)
SEISMIC HAZARD EXPOSURE GROUP
SEISMIC DESIGN CATEGORY
SOIL PROFILE TYPE
BASIC STRUCTURAL SYSTEM AND SEISMIC RESISTING SYSTEM
RESPONSE MODIFICATION FACTOR (R)
DEFLECTION AMPLIFICATION FACTOR (C)
ANALYSIS PROCEDURE (CLEP OR MAP)
SOIL BEARING CAPACITY

IF IT IS DETERMINED THAT THE SOIL CAPACITY AT THE SITE IS LESS THAN 2000 PSF, THE FOUNDATION MUST BE RE-EVALUATED.

BACK FILL 60 PCF EQUIVALENT FLUID WEIGHT, UNLESS OTHERWISE NOTED

MECHANICAL UNITS & OTHER EQUIPMENT SUPPORTED BY THE STRUCTURE WITH WEIGHTS IN EXCESS OF 200# SHALL BE BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER PRIOR TO INSTALLATION.

WOOD

FLUTCH BEAMS SHALL BE SIZED AS INDICATED ON THE DRAWINGS, USING #2 SPF MINIMUM AND A-86 STEEL PLATE. USE TWO ROWS OF 1/2" DIAMETER THROUGH BOLTS 2" FROM TOP AND BOTTOM, SPACED 16"oc AT TOP AND 32"oc AT THE BOTTOM. BEGIN BOLTING ROWS 6" FROM ENDS. STEEL FLUTCH PLATES MUST BE EITHER FULL LENGTH OR FULL MOMENT BUTT SPLICE.

WOOD EXPOSED TO THE ELEMENTS, WOOD IN CONTACT WITH CONCRETE OR MASONRY, AND WOOD DESIGNATED "TREATED" SHALL BE #2 GRADE SOUTHERN PINE OR BETTER & PRESSURE IMPREGNATED WITH ALKALINE COPPER QUATERNARY (ACQ) IN ACCORDANCE WITH AMERICAN WOOD PRESERVERS ASSOCIATION (AWPA) STANDARD C2, WITH A MIN. RETENTION OF 0.40 LBS. PER CUBIC FOOT OF WOOD. MIN. DEPTH OF PENETRATION SHALL BE 2.5" OR 85% OF THE SAPWOOD.

ALL STUDS SHALL BE INSTALLED IN ACCORDANCE WITH WFOPA. MEMBERS ARE NOT TO BE DRILLED IN EXCESS OF NDS OR LOCAL CODE REQUIREMENTS, WHOEVER IS MORE STRINGENT. ALL POSTS AND MULTIPLE STUDS SHALL BE RUN CONTINUOUSLY TO SOLID BEARING ON FOUNDATION WALL OR BEAMS, PROVIDE SOLID BLOCKING AT FLOORS. COLUMNS SHALL BE ADEQUATELY ANCHORED TO PREVENT INTERNAL DISPLACEMENT.

FRAME CHIMNEYS: FRAME CHIMNEYS SHALL BE CONSTRUCTED OF MINIMUM #2 SPF STUDS, MAXIMUM 16"oc USE 2 X 4 IF CHIMNEY EXTENDS LESS THAN 8' ABOVE ROOF, OTHERWISE USE 2 X 6. SEATH WITH 1/2" APA OR APPROVED SUBSTITUTE. RATED SHEATHING CONTINUOUS ACROSS PLATES AND JOISTS, GLUE, AND NAIL WITH 8D NAILS @ 6"oc SECURE TO ROOF. STUDS MUST BE CONTINUOUS ACROSS ROOF INTERSECTION.

NO STRUCTURAL MEMBER SHALL BE OMITTED, NOTCHED, CUT, BLOCKED OUT OR RELOCATED WITHOUT PRIOR APPROVAL BY THE DESIGNER OR STRUCTURAL ENGINEER. DO NOT ALTER SIZES OF MEMBERS NOTED WITHOUT APPROVAL OF BOTH.

CUTTING OF WOOD BEAMS, JOISTS AND RAFTERS SHALL BE LIMITED TO CUTS AND BORED HOLES NOT DEEPER THAN ONE-SIXTH THE MEMBER DEPTH AND SHALL NOT BE LOCATED WITHIN THE MIDDLE THIRD OF THE SPAN. NOTCHES LOCATED CLOSER TO SUPPORTS THAN THREE TIMES THE MEMBER DEPTH SHALL NOT EXCEED ONE-FIFTH THE DEPTH. HOLES BORED OR CUT INTO JOISTS SHALL BE MIN. 2" CLEAR FROM THE TOP OR BOTTOM OF THE JOIST AND THE HOLE DIAMETER SHALL NOT EXCEED ONE-THIRD OF THE JOIST DEPTH.

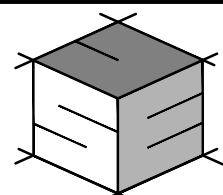
THERE SHALL NOT BE LESS THAN ONE LINE OF BRIDGING IN EVERY EIGHT FEET OF SPAN IN FLOOR, ATTIC AND ROOF FRAMING. THE BRIDGING SHALL CONSIST OF NOT LESS THAN ONE BY THREE INCH LUMBER DOUBLE NAILED AT EACH END OR OF EQUIVALENT METAL BRACING OF EQUAL RIGIDITY. MIDSPAN BRIDGING IS NOT REQUIRED FOR FLOOR, ATTIC OR ROOF FRAMING WHERE JOIST DEPTH DOES NOT EXCEED TWELVE INCHES NOMINAL. BLOCK ALL STUD WALLS AT MAXIMUM INTERVALS OF EIGHT FEET WITH A MINIMUM OF TWO-BY SOLID MATERIAL WITH TIGHT JOINTS. PROVIDE TWO-BY FIRE STOPPING AT MID-POINT OF STUD WALLS.

UNLESS NOTED OTHERWISE, BRACE EXTERIOR CORNERS OF BUILDING WITH 1 X 4 DIAGONALS, LET INTO STUDS, OR 4 X 8 PLYWOOD SHEET OF THICKNESS TO MATCH THAT OF SHEATHING, OR WITH METAL STRAPS. LAP PLATES AT ALL CORNERS.

Laine Street Homes LLC

244 N Market St
Frederick, MD 21701
(C) (301)524-4471

These plans are the property of of
Builders National Cooperative, LLC.
No unauthorized use is permitted.
Plan is a lot specific ACL3 model.



STRUCTURAL ENGINEERING
UNLIMITED, LLC
341 W. PATRICK STREET
FREDERICK, MD 21701
240-815-6760
301-748-2769



PROFESSIONAL CERTIFICATION I HEREBY
CERTIFY THAT THESE DOCUMENTS WERE
PREPARED OR APPROVED BY ME, AND THAT I
AM A DULY LICENSED PROFESSIONAL ENGINEER
UNDER THE LAWS OF THE STATE OF
MARYLAND.
LICENSE NO.: 24518
EXPIRATION DATE: 09-21-2027

ACL3 HOUSE MODEL:
(LOT #1) 7452 Heritage
Oak Terr., Middletown
MD., 21769

JOB #:

B0714

REVISIONS:

DATE:

PERMIT PLANS

1/21/26

DATE:

07 / 21 / 2026

SCALE

CONCRETE

ALL CONCRETE SHALL BE MADE IN ACCORDANCE WITH DESIGN MIXES WHICH ARE TO BE APPROVED BY THE ARCHITECT OR ENGINEER PRIOR TO CASTING ANY CONCRETE. MIXES SHALL BE IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE ACI 318. ALL PLAN CONCRETE TO CONFORM TO ACI 318.1 AND ACI 332 GUIDE TO RESIDENTIAL CAST IN PLACE CONCRETE CONSTRUCTION. MIXES SHALL HAVE A MINIMUM CEMENT CONTENT OF 520 LB. PER CUBIC YD., MAXIMUM WATER/CEMENT RATIO OF 0.53 FOR INTERIOR CONCRETE PROTECTED FROM FREEZING AND 0.45 FOR ALL EXTERIOR EXPOSED CONCRETE.

CONCRETE MATERIALS SHALL CONFORM TO ASTM C150, TYPE I FOR PORTLAND CEMENT AND ASTM C33 FOR AGGREGATES. WATER-REDUCING ADMIXTURES SHALL CONFORM TO ASTM C494, TYPE A (FREE OF CALCIUM CHLORIDES), AIR-ENTRAINING ADMIXTURES SHALL CONFORM TO ASTM C260, AND HIGH-RANGE WATER REDUCERS (SUPER-PLASTICIZERS) SHALL CONFORM TO ASTM C494, TYPE F. FLY ASH SHALL COMPLY WITH ASTM C619 FOR CLASS F AND SHALL NOT BE PROPORTIONED IN MIXES WITH MORE THAN 20% CEMENT BY WEIGHT. LIQUID-MEMBRANE CURING COMPOUNDS SHALL BE HIGH-SOLIDS, WATER AND ACRYLIC-BASED, COMPLYING WITH ASTM C309 AS TESTED UNDER ASTM C156. SLUMP OF THE CONCRETE SHALL BE A MINIMUM OF 4-INCHES AND A MAXIMUM OF 6-INCHES. SEE THE PROJECT SPECIFICATIONS. THE COMPRESSIVE STRENGTH IS BASED 28-DAY COMPRESSIVE STRENGTH.

SLAB ISOLATION JOINTS: PROVIDE PRE-MOLDED JOINT FILLER AROUND ALL PIPING, PIERS & FOUNDATION WALLS.

ALL CONCRETE TO BE PLACED IN THE CELLS OF CONCRETE MASONRY UNITS (CMU BLOCK FILL), OR IN THE VOIDS OF BRICK MASONRY CONSTRUCTION, SHALL CONTAIN PEA GRAVEL (3/8" Ø STONE) IN LIEU OF COARSE AGGREGATE. THE CONCRETE MIX SHALL CONTAIN A HIGH-RANGE WATER REDUCER (SUPER-PLASTICIZER). SLUMP OF THE CONCRETE SHALL BE A MINIMUM OF 6" AND A MAXIMUM OF 9". SEE THE PROJECT SPECIFICATIONS.

ALL EXTERIOR CONCRETE AND CONCRETE EXPOSED TO WEATHER SHALL BE AIR-ENTRAINED, 6% +/- 1% USE OF ADDITIVES SHALL NOT BE PERMITTED UNLESS SPECIFICALLY APPROVED BY THE STRUCTURAL ENGINEER. USE OF ADDITIVES CONTAINING CALCIUM CHLORIDE SHALL NOT BE PERMITTED. DO NOT USE HIGH-RANGE WATER REDUCING ADMIXTURES IN AIR-ENTRAINED CONCRETE. CONFORM TO ASTM C260.

ADDITION OF WATER TO THE CONCRETE AT THE JOB SITE FOR THE PURPOSE OF INCREASING THE SLUMP OR FOR RETEMPERING THE CONCRETE WHICH HAS BEGUN TO SET IS STRICTLY PROHIBITED. SEE THE PROJECT SPECIFICATIONS FOR REQUIREMENTS OF WATER ADDITION TO CONCRETE AT THE JOBSITE.

SLABS ON GRADE SHALL BE 4" THICK CONCRETE AND REINFORCED w/6x6 W4-W6 W/W. WELDED WIRE FABRIC SHALL BE SUPPORTED ON HIGH CHAIRS SO THAT THE FABRIC IS POSITIONED AT MID-DEPTH OF THE SLAB THICKNESS. LAP ONE FULL MESH PLUS 2" AT SPICES IN EACH DIRECTION. PLACE CONCRETE OVER 10 MIL. POLYETHYLENE VAPOR BARRIER AND 4" MINIMUM COURSE AGGREGATE OR AS RECOMMENDED BY SOILS ENGINEER. THE AGGREGATE LAYER SHALL BE PLACED OVER FIRM NATURAL SUBGRADE OR ON COMPACTED AND CONTROLLED FILL. FILL UNDER SLABS SHALL BE COMPACTED IN 8 INCH LAYERS TO 95% MAX. DENSITY. USE AIR-ENTRAINED AT ALL EXTERIOR SLABS.

CONCRETE FOR SLABS-ON-GRADE SHALL BE PLACED IN A SEQUENCE AND MANNER THAT IS CONSISTENT WITH THE RECOMMENDATIONS OF THE AMERICAN CONCRETE INSTITUTE. LOCATE CONSTRUCTION AND CONTROL JOINTS IN SUCH A WAY TO MINIMIZE THE EFFECTS OF SHRINKAGE OF THE CONCRETE SLAB SECTIONS. SUBMIT TO THE ARCHITECT/ENGINEER THE SEQUENCE AND METHOD OF CASTING CONCRETE SLABS-ON-GRADE PRIOR TO PLACING THESE ELEMENTS. POUR SLABS IN ALTERNATE PANELS WITH A MAXIMUM OF 600 SF AND PROVIDE CONTROL AND CONSTRUCTION JOINTS AT 15'-0" MAXIMUM OR AS REQUIRED TO PREVENT UNCONTROLLED CRACKING.

SLAB CONTROL JOINTS: SAW CUT OR FORM TO 1/3 SLAB DEPTH. SPACE NO MORE THAN 15 FEET APART. DISCONTINUE WELDED WIRE FABRIC AT CONTROL JOINTS. PROVIDE JOINTS ON GROUND SUPPORTED SLABS IN RECTANGULAR CONFIGURATION, WITH THE LONGER SIDE NO MORE THAN ONE-AND-ONE-HALF TIMES THE LENGTH OF THE SHORTER SIDE.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING ANCHOR BOLTS, CLIPS, INSERTS, CONNECTION PLATES, SLEEVES, SLOTS AND OTHER REQUIRED ITEMS IN ACCORDANCE WITH THE CONTRACT DRAWINGS, AND IN COOPERATION WITH OTHER TRADES PRIOR TO PLACING CONCRETE.

ALL REINFORCING SHALL BE DETAILED, FABRICATED, AND PLACED IN ACCORDANCE WITH ACI'S MANUAL OF STANDARD PRACTICE FOR DETAILING CONCRETE STRUCTURES, (ACI-315). DETAILS OF REINFORCEMENT SHALL CONFORM TO ACI 318, ACI 315, AND CRSI STANDARDS.

ALL REINFORCING STEEL (INCLUDING WELDED WIRE FABRIC) SHALL BE SECURELY TIED AND ANCHORED IN PLACE TO PREVENT DISLOCATION DURING THE PLACING OPERATION.

REINFORCING STEEL SHALL BE CLEAN OF MUD, DEBRIS, LOOSE RUST, CEMENT, GROUT, OR ANY OTHER MATERIAL WHICH MAY INHIBIT THE BOND BETWEEN THE STEEL AND CONCRETE.

PROVIDE 8" x 8" CORNER BARS TO MATCH ALL HORIZONTAL REINFORCING IN WALLS AND FOOTINGS. ALL LAPS SHALL BE A MINIMUM OF 36 BAR DIAMETERS. PROVIDE DOWELS BETWEEN ALL FOOTINGS, WALLS AND PIERS TO MATCH SIZE AND SPACING OF VERTICAL REINFORCING.

DRY PACK SHALL CONSIST OF SIKKA GROUT 212 OR APPROVED SUBSTITUTE. INSTALL PER MANUFACTURERS RECOMMENDATIONS.

MASONRY

ALL MASONRY WORK SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF BIA AND NOMA SPECIFICATION FOR CONCRETE MASONRY CONSTRUCTION (ACI 513.1-76) AND "SPECIFICATIONS FOR MASONRY STRUCTURE (ACI 530.1-02)" PUBLISHED BY THE AMERICAN CONCRETE INSTITUTE.

PROVIDE CONTINUOUS MASONRY BOND BEAM SPANNING ALL EXPANSION JOINTS & WALL INTERSECTIONS.

PROVIDE (2) #5 BENT BARS WITH 3-FOOT LEGS AT EVERY CORNER OR WALL INTERSECTION.

CONTINUOUS TIE OR BOND BEAMS SHALL BE REINFORCED WITH NOT LESS THAN 2 #5 CONTINUOUS BARS. LINTELS SHALL BE THE SIZES SHOWN AND REINFORCED AS INDICATED ON THE DRAWINGS.

REINFORCED MASONRY WALLS SHALL HAVE ALL REINFORCED CELLS FILLED WITH CONCRETE. CONCRETE MAY BE PLACED IN MAXIMUM VERTICAL LIFTS NOT TO EXCEED 4'-FEET. ROUGHEN ALL SURFACES OF CONCRETE FILL WHICH ARE TO RECEIVE ADDITIONAL LIFTS ABOVE.

MASONRY WALLS SHALL HAVE "DUR-O-WALL" (OR APPROVED EQUAL) TRUSS TYPE HORIZONTAL REINFORCEMENT AT 16"oc VERTICALLY ABOVE GRAVELLY BELOW GRADE. COORDINATE BRICK TIE BACK REQUIREMENTS WITH ARCHITECTURAL DRAWINGS. UNLESS NOTED OTHERWISE, STOP ALL HORIZONTAL JOINT REINFORCING AT CONTROL JOINTS.

BRICK VENEER WALLS TO HAVE NON-CORROSIVE METAL TIES AT 16"oc VERTICALLY AND HORIZONTALLY AND COMPLY WITH ASTM A82 WITH A153, CLASS B-2 COATING. MINIMUM WIRE DIAMETER SHALL BE 0.1875 INCHES. PROVIDE WEEP HOLES AT 24"oc AT BASE FLASHING.

PROVIDE MIN. 2 COURSES 8"x 16" SOLID BEARING AT BEAM & HEADER BEARING POINTS IN CMU WALLS.

A36 STEEL LINTEL SIZES FOR OPENINGS PER 4" THICKNESS OF MASONRY WALL AS FOLLOWS:
4'-0" SPAN OR LESS L3"x 3" 1/2"x 5/16" 7'-6" SPAN OR LESS L5"x 3 1/2"x 5/16"
5'-6" SPAN OR LESS L4"x 3 1/2"x 5/16" 9'-0" SPAN OR LESS L6"x 3 1/2"x 5/16"
PROVIDE MIN. 6" BEARING, EACH END & BRICK TIES, 16"oc @ 1st COURSE ABOVE LINTEL.

FILL SOLIDLY w/2,500psi ASTM C-476 GROUT, ALL BOND BEAMS, CELLS THAT ARE REINFORCED, WILL SECURE EXPANSION BOLTS, SLIT PLATE ANCHOR BOLTS OR OTHER MECHANICAL ATTACHMENTS AND ALL CELLS BELOW GRADE.

REINFORCING STEEL SHALL BE IN ACCORDANCE WITH ASTM A-615, GRADE 60. SHOP FABRICATES REINFORCING BARS, WHICH ARE SHOWN TO BE HOOKED, OR BENT. PROVIDE A MINIMUM LAP OF 48 BAR DIAMETERS AT ALL SPICES, UNLESS INDICATED OTHERWISE.

UNLESS OTHERWISE NOTED, ALL WALLS SHALL BE LAID IN RUNNING BOND. BOND CORNERS AND INTERSECTIONS OF LOAD-BEARING WALLS.

PROVIDE VERTICAL REINFORCING BARS OF THE GIVEN SIZE AND SPACING AS INDICATED. PROVIDE BARS AT ALL WALL CORNERS, INTERSECTIONS AND OPENINGS EDGES.

PROVIDE REBAR DOWELS FROM FOUNDATIONS TO MATCH VERTICAL REINFORCING SIZE AND SPACING. DOWELS SHALL HAVE STANDARD 90-DEGREE HOOKS AND LAP WITH THE FIRST LIFT OF REINFORCING.

PROVIDE BOND BEAM LINTELS AND BRICK SHELF ANGLES ABOVE ALL WALL OPENINGS.

PROVIDE JOIST & BEAM BEARING PLATES w/OTHER ACCESSORIES AS INDICATED, WITH 3 COURSES OF SOLIDLY GROUTED CMU BELOW ALL BEAM BEARINGS OVER A WIDTH OF 2'-8" CENTERED ON THE BEAM.

PROVIDE CMU CONTROL JOINTS AS INDICATED, w/ADDITIONAL JOINTS SUCH THAT THE SPACING BETWEEN JOINTS DOES NOT EXCEED A SPACING OF 3x WALL HEIGHT, 35' MAXIMUM. WHERE BEAMS OR LINTELS BEAR AT CMU CONTROL JOINTS, OFFSET & LAP THE VERTICAL REINFORCING AS INDICATED.

MASONRY CONTRACTOR SHALL PROVIDE ALL REQUIRED TEMPORARY BRACING DURING CONSTRUCTION.

MISCELLANEOUS

THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL SAFETY REGULATIONS, PROGRAMS AND PRECAUTIONS RELATED TO ALL WORK ON THIS PROJECT AND FOR THE PROTECTION OF PERSONS AND PROPERTY EITHER ON OR ADJACENT TO THE PROJECT AND SHALL PROTECT SAME AGAINST INJURY, DAMAGE OR LOSS.

THE CONTRACTOR IS RESPONSIBLE FOR LIMITING THE AMOUNT OF CONSTRUCTION LOAD IMPOSED ON THE STRUCTURE. SUCH LOADS SHALL NOT EXCEED THE CAPACITY OF THE STRUCTURE AT ANY TIME.

THE STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION, AND ANY TEMPORARY BRACING OR SUPPORT REQUIRED TO ACCOMMODATE THE CONTRACTOR'S MEANS AND METHODS ARE THE RESPONSIBILITY OF THE CONTRACTOR.

THE CONTRACTOR IS TO VERIFY ALL OPENING SIZES AND LOCATIONS WITH THE REQUIREMENTS OF OTHER TRADES PRIOR TO FABRICATION AND ERECTION.

STRUCTURAL DRAWINGS SHALL BE STRICTLY FOLLOWED BY THE CONTRACTOR OR SUBCONTRACTOR DURING ALL TIMES OF WORK ON THIS PROJECT. THE ARCHITECT OR ENGINEER SHALL NOT HAVE CONTROL OR CHARGE OF, AND SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, FOR ACTS OF OMISSIONS OF THE CONTRACTOR, SUBCONTRACTORS, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

EARTH RETAINING WALLS, OTHER THAN CANTILEVERED TYPE WALLS, SHALL BE ADEQUATELY BRACED UNTIL CONCRETE FOR SUPPORTING SLABS HAS BEEN PLACED AND ALL CONCRETE HAS CURED.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGNING, FURNISHING, ERECTING AND REMOVING ANY TEMPORARY SHORING AND BRACING DURING CONSTRUCTION.

THE ARCHITECT AND ENGINEER SHALL BE NOTIFIED AT THE PROPER TIME WHEN ALL ITEMS ARE READY FOR OBSERVATION. SUFFICIENT NOTICE SHALL BE GIVEN BY THE CONTRACTOR TO ALLOW FOR SCHEDULING OF OBSERVATIONS.

SAFETY REGULATIONS SHALL BE STRICTLY FOLLOWED BY THE CONTRACTOR OR SUBCONTRACTOR DURING ALL TIMES OF WORK ON THIS PROJECT. THE ARCHITECT OR ENGINEER SHALL NOT HAVE CONTROL OR CHARGE OF, AND SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, FOR ACTS OF OMISSIONS OF THE CONTRACTOR, SUBCONTRACTORS, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

ALL SPECIALTY BOLTS, INCLUDING EXPANSION TYPE AND EPOXY TYPE ANCHORS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS.

THE CONTRACTOR SHALL PROTECT FROM DAMAGES EXISTING BUILDING(S), OWNER EQUIPMENT, ROADS, WALKS AND UTILITIES. THE CONTRACTOR SHALL MAINTAIN THESE DURING THE COURSE OF THE WORK, AND SHALL REPAIR ALL DAMAGES AT NO ADDITIONAL EXPENSE TO THE OWNER.

IN AREAS WHERE THE DRAWINGS DO NOT ADDRESS METHODOLOGY, THE CONTRACTOR SHALL BE BOUND TO PERFORM IN STRICT COMPLIANCE WITH MANUFACTURER'S SPECIFICATIONS AND/OR RECOMMENDATIONS.

ON-SITE VERIFICATION OF ALL DIMENSIONS AND CONDITIONS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND HIS SUBCONTRACTORS. NOTED DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALE.

THE GENERAL NOTES AND TYPICAL DETAILS APPLY THROUGHOUT THE JOB UNLESS OTHERWISE NOTED OR SHOWN.

THE CONTRACTOR SHALL COMPARE AND COORDINATE ALL DRAWINGS. IF A DISCREPANCY EXISTS, HE SHALL PROMPTLY REPORT IT FOR PROPER ADJUSTMENT BEFORE PROCEEDING WITH THE WORK.

IN THE EVENT THAT CERTAIN FEATURES OF THE CONSTRUCTION ARE NOT FULLY SHOWN ON THE DRAWINGS, THEIR CONSTRUCTION SHALL BE OF THE SAME CHARACTER AS SIMILAR CONDITIONS THAT ARE SHOWN OR NOTED.

THESE PLANS ARE SUBJECT TO MODIFICATIONS AS NECESSARY TO MEET CODE REQUIREMENTS OR TO FACILITATE MECHANICAL, PLUMBING INSTALLATIONS OR TO INCORPORATE DESIGN IMPROVEMENTS.

DO NOT BUILD OVER GAS LINES OR ENCLOSE THE METER. CONSULT THE LOCAL GAS COMPANY PRIOR TO CONSTRUCTION.

CHIMNEY SHALL EXTEND AT LEAST 2 FEET HIGHER THAN ANY PORTION OF THE BUILDING WITHIN 10 FEET, BUT SHALL NOT BE LESS THAN 3 FEET ABOVE THE POINT WHERE IT PASSES THROUGH THE ROOF.

DECKS ARE NOT APPROVED FOR FUTURE HOT TUB INSTALLATION.

NO OPENING NOR ANY CHANGES IN SIZE, DIMENSION OR LOCATION SHALL BE MADE IN ANY STRUCTURAL ELEMENTS WITHOUT WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER.

CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO ORDERING MATERIALS OR PROCEEDING WITH NEW WORK IN AREAS AFFECTED BY EXISTING CONDITIONS. STRUCTURAL ENGINEER SHALL BE INFORMED IN WRITING OF CONFLICTS BETWEEN EXISTING AND PROPOSED NEW CONSTRUCTION.

CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL DIMENSIONS SHOWN ON THE CONTRACT DOCUMENTS. INCONSISTENCIES ON THE STRUCTURAL DRAWINGS OR BETWEEN THE STRUCTURAL DRAWINGS AND ANY OTHER CONTRACT, SHOP, FABRICATION, OR OTHER DRAWINGS OR INFORMATION SHALL BE BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER PRIOR TO PROCEEDING WITH AFFECTED WORK.

THE STRUCTURAL INTEGRITY OF THE BUILDING IS DEPENDANT UPON COMPLETION ACCORDING TO PLANS AND SPECIFICATIONS. THE STRUCTURAL ENGINEER ASSUMES NO LIABILITY FOR THE STRUCTURE DURING CONSTRUCTION. THE METHOD OF CONSTRUCTION AND SEQUENCE OF OPERATIONS IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL SUPPLY ANY NECESSARY SHORING, BRACKING, BRACING, ETC., TO PROPERLY BRACE THE STRUCTURE AGAINST WIND, DEAD AND LIVE LOADS UNTIL THE BUILDING IS COMPLETED ACCORDING TO THE PLANS AND SPECIFICATIONS.

CONTRACTOR SHALL NOT PLACE BACK FILL AGAINST BASEMENT WALLS UNTIL THE FLOOR SYSTEM IS COMPLETELY INSTALLED OR CONTRACTOR HAS PROVIDED ADEQUATE SHORING AND BRACING. ANY QUESTIONS REGARDING TEMPORARY SHORING REQUIREMENTS SHOULD BE FORWARDED TO THE STRUCTURAL ENGINEER FOR REVIEW.

FOUNDATION STEM WALL REINFORCEMENT SCHEDULE

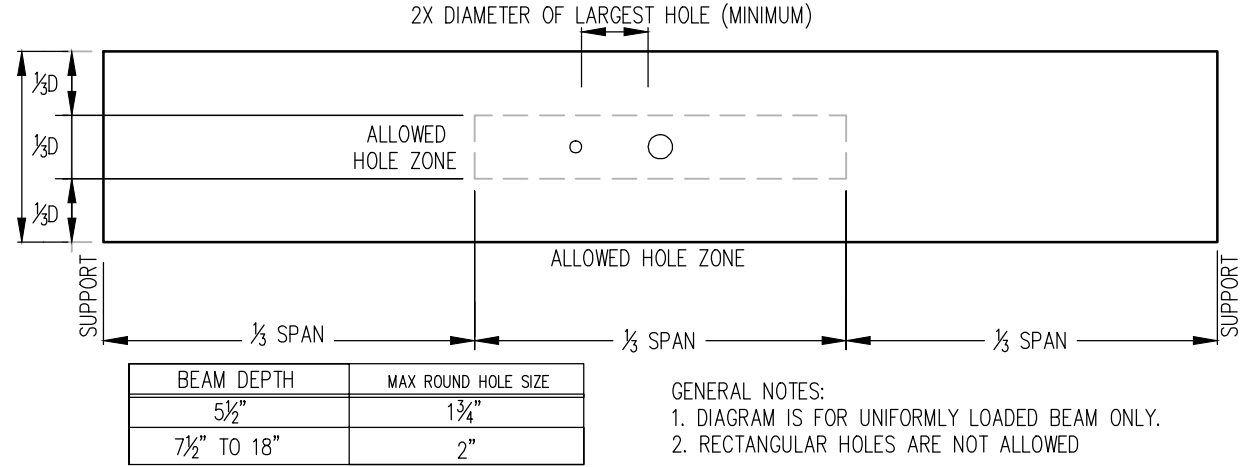
6" CONCRETE STEM WALL (D) VERT. REINFORCEMENT		SOIL CLASSIFICATIONS (EQUIVALENT FLUID PRESSURE)	
STEM WALL HEIGHT (H _{max})	LENGTH (L)	GW, GP, SW & SP (30pcf)	GM, GC, SM, SC (45 pcf) ML-CL INORGANIC CL (60 pcf)
		8' WALL HEIGHT (H)	
16"	36"	N/A	
24"	44"	N/A	
32"	52"	#4 @ 18"oc	
40"	60"	#4 @ 16"oc	
48"	68"	#4 @ 12"oc	
		9' WALL HEIGHT (H)	
16"	36"	N/A	
24"	44"	N/A	
32"	52"	#4 @ 18"oc	
40"	60"	#4 @ 16"oc	
48"	68"	#4 @ 12"oc	

Diagram illustrating the vertical reinforcement details for a 6" concrete stem wall. The wall height is labeled H_{max} and the length is labeled L. The wall is shown with a footing. The footing is 12" thick and 12" wide. The wall is shown with a footing. The footing is 12" thick and 12" wide. The wall is shown with a footing. The footing is 12" thick and 12" wide.

d = 3.5"(MIN), CONCRETE COMPRESSIVE STRENGTH = 3,000 psi

d = 3.5"(MIN), CONCRETE COMPRESSIVE STRENGTH = 3,000 psi

LVL BEAM HOLE DETAIL



FOUNDATION WALL STRIP FOOTING SCHEDULE

8" CONCRETE WALL (D) FOOTING SIZES				
SOIL CLASSIFICATIONS / PRESUMPTIVE BEARING CAPACITIES				
MARK	CL, ML, MH & CH (1500 psf)	SW, SP, SM, SC, GM & GC (2000 psf)	(2500 psf)	GW, GP (3000 psf)
SIZE (TxW)	SIZE (TxW)	SIZE (TxW)	SIZE (TxW)	SIZE (TxW)
W8A	8" x 16"	8" x 16"	8" x 16"	8" x 16"
W8B	8" x 18"			
W8C	8" x 20"			
W8D	8" x 22"	8" x 16"	8" x 16"	8" x 16"
W8E	8" x 24"			
W8F	10" x 26"	8" x 20"	8" x 16"	8" x 16"
W8G	10" x 28"	8" x 22"		
W8H	12" x 30"	8" x 24"	8" x 20"	8" x 18"
W8I	12" x 32"	8" x 26"		
W8J	12" x 34"	10" x 26"	8" x 22"	8" x 18"
W8K	14" x 36"	10" x 28"		

10" CONCRETE WALL (D) FOOTING SIZES				
SOIL CLASSIFICATIONS / PRESUMPTIVE BEARING CAPACITIES				
MARK	CL, ML, MH & CH (1500 psf)	SW, SP, SM, SC, GM & GC (2000 psf)	(2500 psf)	GW, GP (3000 psf)
SIZE (TxW)	SIZE (TxW)	SIZE (TxW)	SIZE (TxW)	SIZE (TxW)
W10B	8" x 18"	8" x 18"	8" x 18"	8" x 18"
W10C	8" x 20"			
W10D	8" x 22"			
W10E	8" x 24"	8" x 18"	8" x 18"	8" x 18"
W10F	8" x 26"			
W10G	10" x 28"	8" x 20"	8" x 18"	8" x 18"
W10H	10" x 30"	8" x 22"		
W10I	12" x 32"	8" x 24"	8" x 20"	8" x 18"
W10J	12" x 34"	8" x 26"		
W10K	14" x 36"	10" x 28"	8" x 22"	8" x 18"
W10L	14" x 36"	10" x 28"		

12" CONCRETE WALL (D) FOOTING SIZES				
SOIL CLASSIFICATIONS / PRESUMPTIVE BEARING CAPACITIES				
MARK	CL, ML, MH & CH (1500 psf)	SW, SP, SM, SC, GM & GC (2000 psf)	(2500 psf)	GW, GP (3000 psf)
SIZE (TxW)	SIZE (TxW)	SIZE (TxW)	SIZE (TxW)	SIZE (TxW)
W12C	8" x 20"	8" x 20"	8" x 20"	8" x 20"
W12D	8" x 22"			
W12E	8" x 24"			
W12F	8" x 26"	8" x 20"	8" x 20"	8" x 20"
W12G	8" x 28"			
W12H	10" x 30"	8" x 22"	8" x 20"	8" x 20"
W12I	12" x 32"	8" x 24"		
W12J	12" x 34"	8" x 26"	8" x 22"	8" x 20"
W12K	14" x 36"	10" x 28"		

ISOLATED FOOTING SCHEDULE

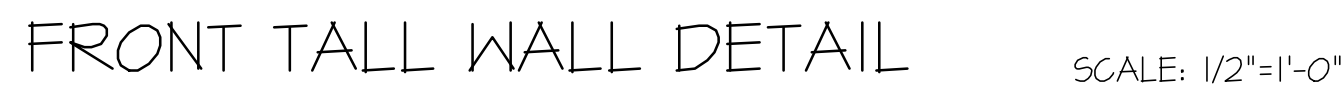
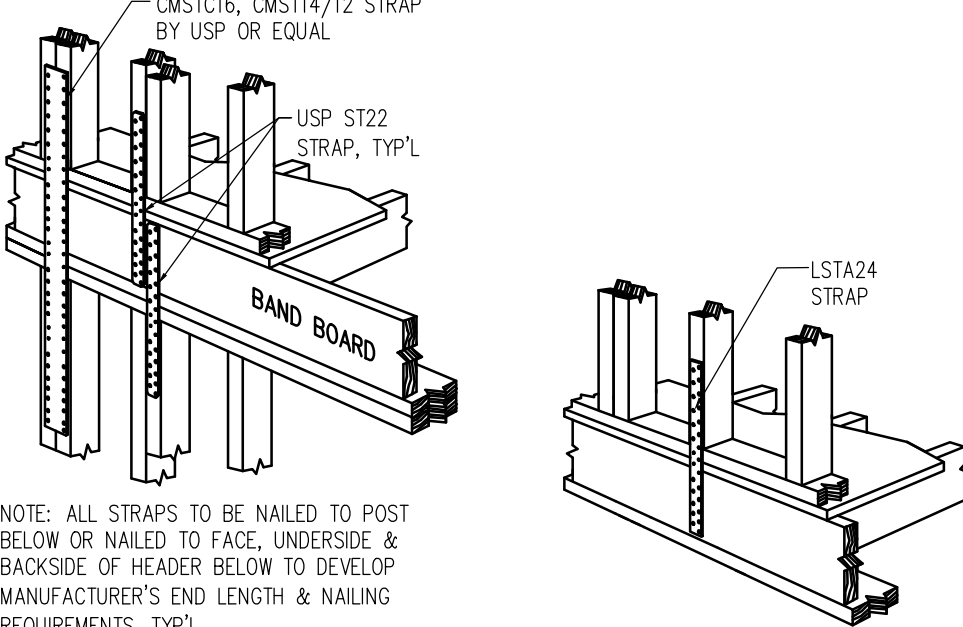
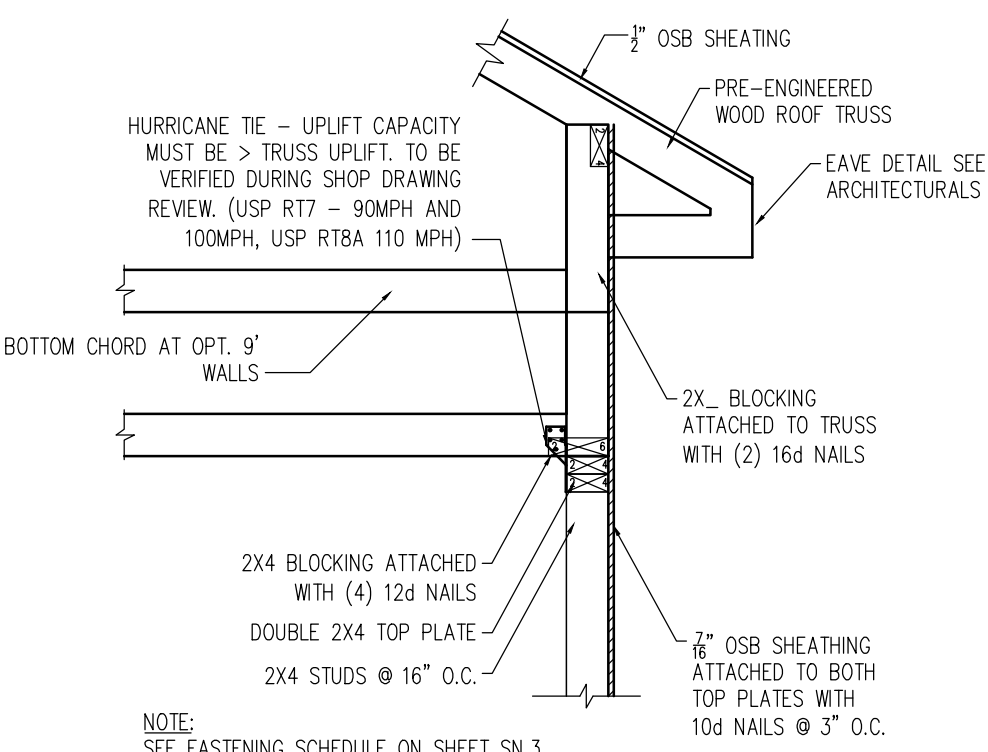
SQUARE, ISOLATED FOOTING SPECIFICATIONS				
SOIL CLASSIFICATIONS/PRESUMPTIVE BEARING CAPACITIES				
EQUIVALENT FOOTINGS				
MARK, FT#	CL, ML, MH & CH (1500psf) FOOTING SIZE (ft#)	SW, SP, SM, SC, GM & GC (2000psf) FOOTING SIZE (ft#)	(2500psf) FOOTING SIZE (ft#)	GW, GP (3000psf) FOOTING SIZE (ft#)
FA	30"x12"-0	24"x12"-0	24"x12"-0	24"x12"-0
FB	32"x12"-0	26"x12"-0	24"x12"-0	24"x12"-0
FC	34"x12"-0	28"x12"-0	24"x12"-0	24"x12"-0
FD	36"x12"-0	30"x12"-0	26"x12"-0	26"x12"-0
FE	38"x12"-0	32"x12"-0	30"x12"-0	28"x12"-0
FF	40"x12"-0	34"x12"-0	32"x12"-0	28"x12"-0
FG	42"x12"-0	36"x12"-0	32"x12"-0	30"x12"-0
FH	44"x12"-0	38"x12"-0	34"x12"-0	32"x12"-0
FI	46"x12"-0	40"x12"-0	36"x12"-0	34"x12"-0
FJ	48"x12"-0	42"x12"-0	38"x12"-0	36"x12"-0
FK	50"x12"-0	44"x12"-0	40"x12"-0	36"x12"-0
FL	52"x12"-0	46"x12"-0	42"x12"-0	38"x12"-0
FM	54"x12"-0	48"x12"-0	44"x12"-0	40"x12"-0
FN	56"x12"-0	50"x12"-0	46"x12"-0	42"x12"-0
FO	58"x12"-0	52"x12"-0	48"x12"-0	42"x12"-0
FP	60"x12"-0	54"x12"-0	48"x12"-0	44"x12"-0
FQ	62"x12"-0	56"x12"-0	50"x12"-0	46"x12"-0
FR	64"x12"-0	58"x12"-0	52"x12"-0	48"x12"-0
FS	66"x12"-0	60"x12"-0	54"x12"-0	50"x12"-0
FT	68"x12"-0	62"x12"-0	56"x12"-0	52"x12"-0
FU	70"x12"-0	64"x12"-8	58"x12"-4	52"x12"-6
FV	76"x12"-4	66"x12"-8	60"x12"-8	54"x12"-7
FW	80"x12"-11	68"x12"-4	62"x12"-8	56"x12"-7
FX	82"x12"-11	70"x12"-4	62"x12"-8	58"x12"-8
FY	86"x12"-4	72"x12"-10	64"x12"-9	58"x12"-8
FZ	88"x12"-13	74"x12"-11	66"x12"-9	60"x12"-8

N = NUMBER OF #4 BOTTOM BARS, EACH WAY

ROUND FOOTING SCHEDULE				
SOIL CLASSIFICATIONS & PRESUMPTIVE BEARING CAPACITIES				
EQUIVALENT FOOTINGS				
MARK, FT#	CL, ML, MH & CH (1500psf) FOOTING SIZE (ft#)	SW, SP, SM, SC, GM & GC (2000psf) FOOTING SIZE (ft#)	(2500psf) FOOTING SIZE (ft#)	GW, GP (3000psf) FOOTING SIZE (ft#)
F18	14"x12"-0	12"x12"-0	12"x12"-0	12"x12"-0
F28	18"x12"-0	14"x12"-0	12"x12"-0	12"x12"-0
F38	20"x12"-0	16"x12"-0	14"x12"-0	12"x12"-0
F48	22"x12"-0	18"x12"-0	16"x12"-0	16"x12"-0
F58	24"x12"-0	20"x12"-0	18"x12"-0	18"x12"-0
F68	N/A	22"x12"-0	20"x12"-0	18"x12"-0
F78	N/A	24"x12"-0	22"x12"-0	20"x12"-0

FLEXURE REINFORCEMENT, BOTH DIRECTIONS PER FOOTING SCHEDULE, MIN. 2" x 3" CLEAR FROM FOOTING SIDE & BOTTOM, RESPECTIVELY.

SQUARE FOOTING, TYPICAL SECTION	
REINFORCEMENT EQUIVALENTS	
NUMBER #4 BARS	NUMBER #5 BARS
2	2
3	3
4	4
5	5
6	6
8	7
10	9
12	10



PARTIAL SHEATHING SCHEDULE

2-PLY, 2x₄, TOP PLATE, EDGE NAILED

EDGE NAILED

2x₄ STUD WALL PER FRAMING PLANS

3/8"

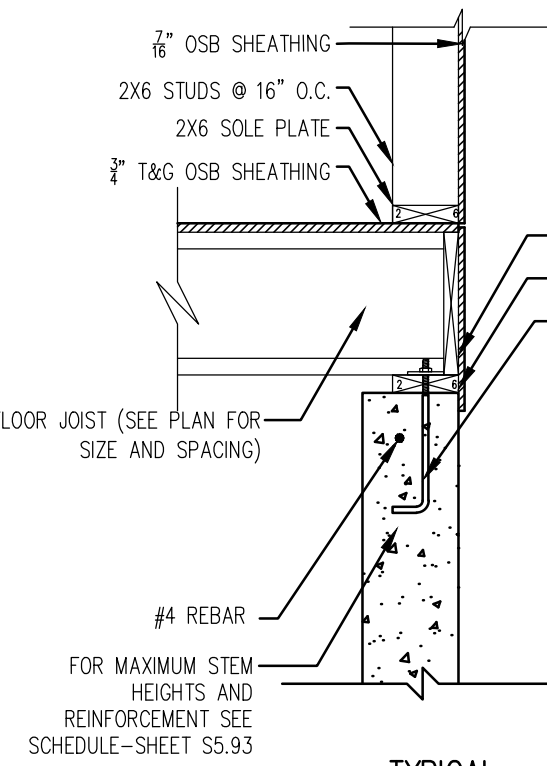
2x₄, BOTTOM PLATE, EDGE NAILED

SHEATHING	FASTENERS	S. SPACING OF FASTENERS	
		PANEL EDGES	PANEL FIELD
3/4" - 1" PLYWOOD	5d COMMON, FLOOR, WALL 8d COMMON, ROOF	6	12
3/8" - 1" PLYWOOD	8d COMMON	6	12
1/2" - 3/4" PLYWOOD	10d COMMON OR 8d DEFORMED	6	12
1/2" GYPSUM	1 1/2" GALV. ROOFING; 6d COMMON;	4	8
	1 1/2" GALV. STAPLE;		
	1 1/2" SCREW, TYPE S OR W		
5/8" GYPSUM	1 1/2" GALV. ROOFING; 6d COMMON;	4	8
	1 1/2" GALV. STAPLE;		
	1 1/2" SCREW, TYPE S OR W		

DOUBLE NAIL EDGE SPACING

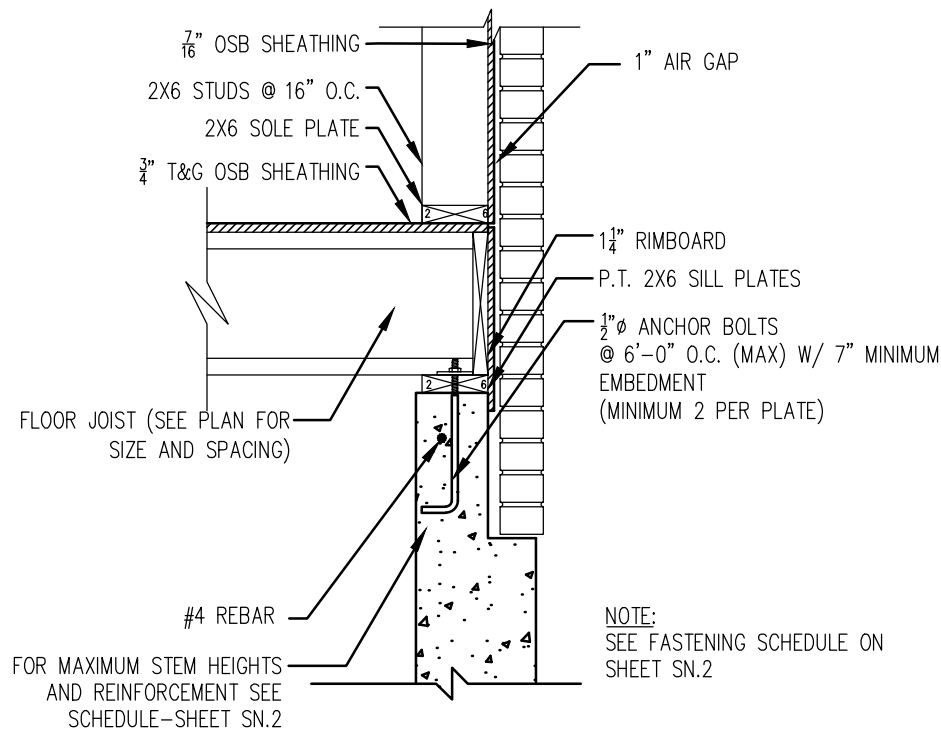
ACL3 HOUSE MODEL:
(LOT #1) 7452 Heritage
Oak Terr., Middletown
MD., 21769

S009



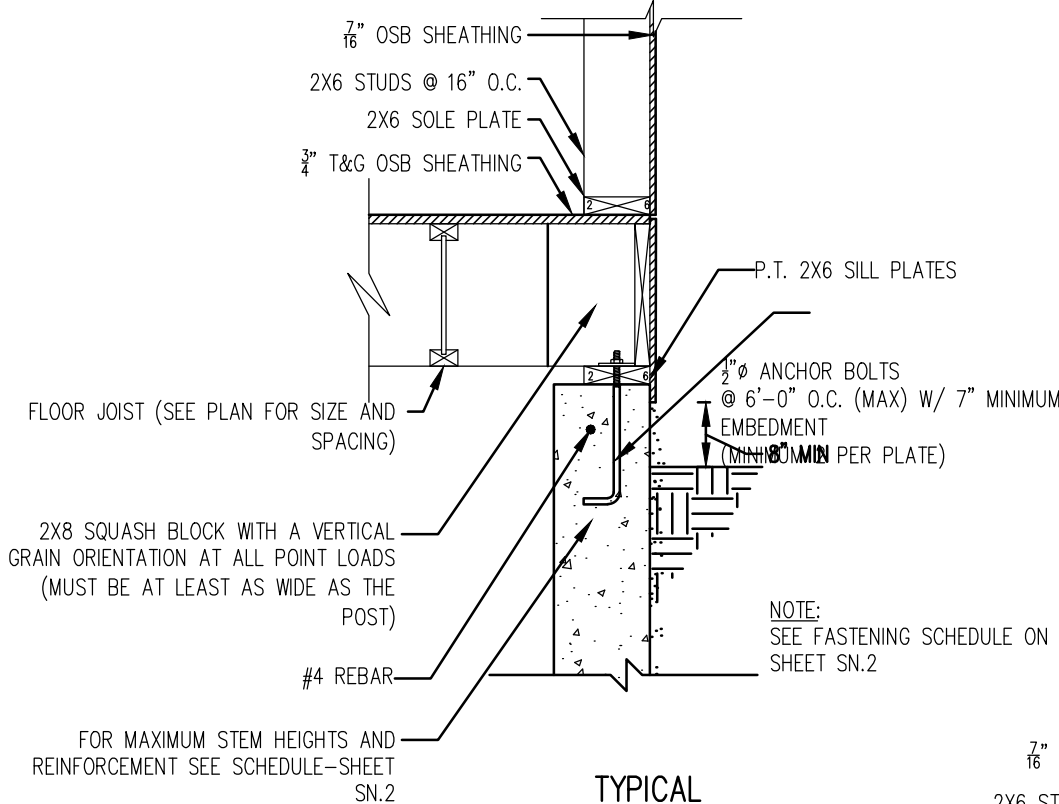
TYPICAL
3/4" PER FOOT

NOTE:
SEE FASTENING SCHEDULE ON
SHEET SN.2



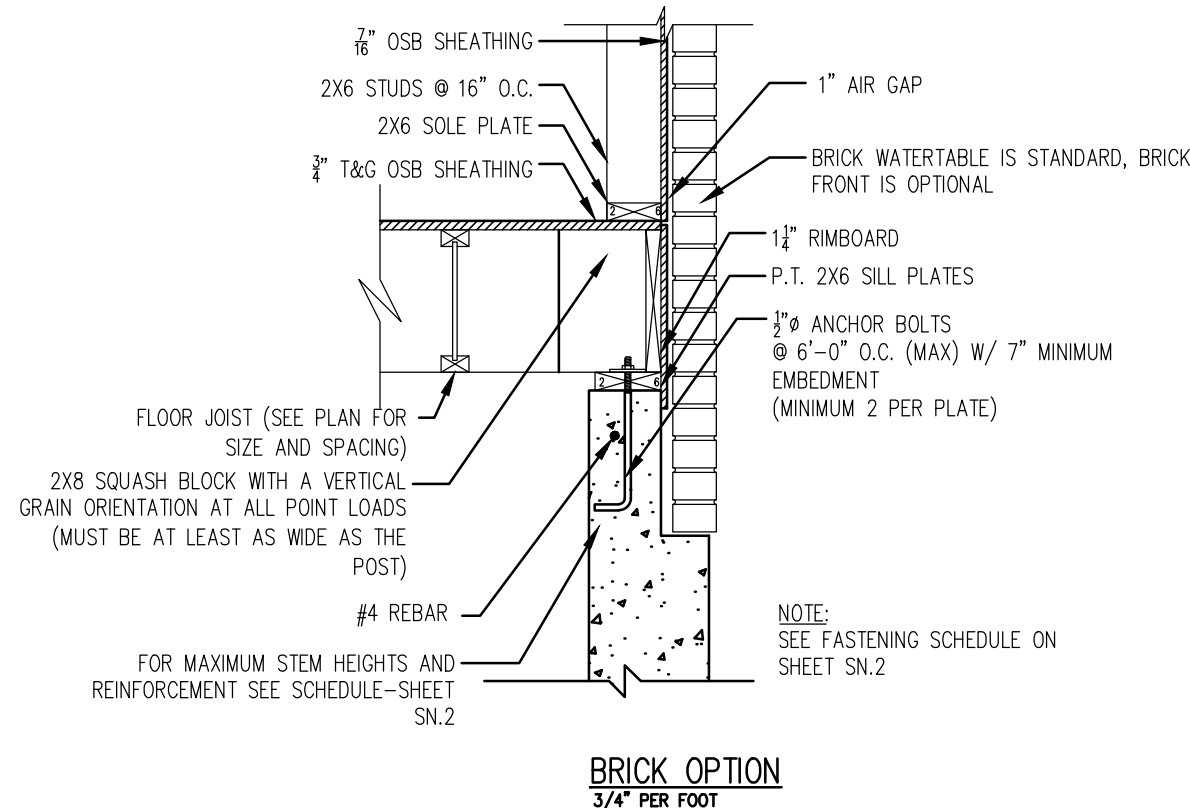
BRICK OPTION
3/4" PER FOOT

NOTE:
SEE FASTENING SCHEDULE ON
SHEET SN.2

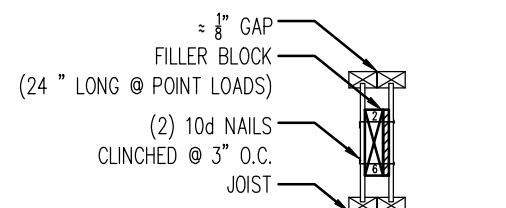


TYPICAL
3/4" PER FOOT

NOTE:
SEE FASTENING SCHEDULE ON
SHEET SN.2



BRICK OPTION
3/4" PER FOOT

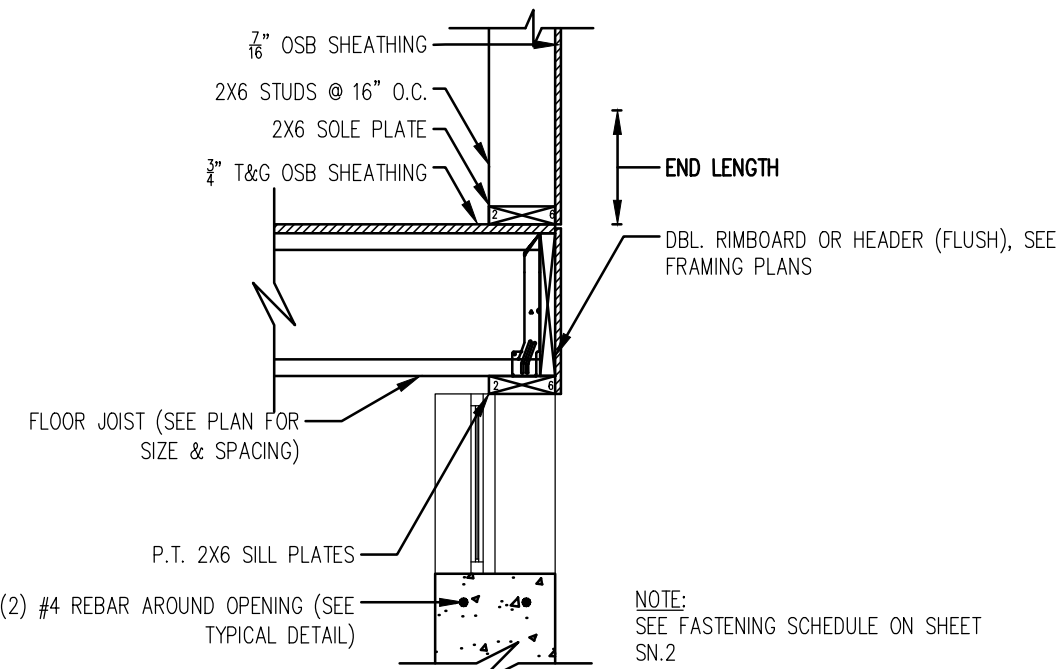


DOUBLE JOIST DETAIL (TYP)
3/4" PER FOOT

FILLER AND BACKER BLOCK SCHEDULE							
BOISE	5000s	6000s AND 6500s		60s	90s		
DEPTH	9-1/2" OR 11-3/4"	14"	9-1/2" OR 11-3/4"	14" OR 16"	11-3/4" OR 16"	14" OR 16"	11-3/4" OR 16"
FILLER BLOCK*	2X6	2X8	2X6 + 8" SHEATHING	2X8 + 8" SHEATHING	2X8 + 8" SHEATHING	TWO 2X6	TWO 2X8

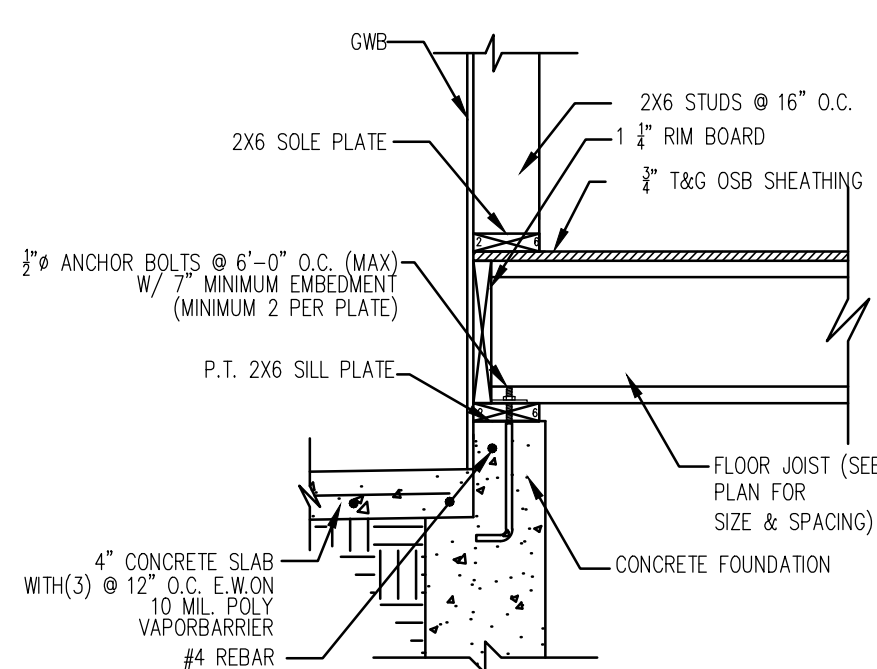
* IF NECESSARY, INCREASE FILLER AND BACKER BLOCK HEIGHT FOR FACE MOUNT HANGERS AND MAINTAIN 1/2" GAP AT TOP OF JOIST.

RIM/FLOOR JOIST CONNECTION SCHEDULE			
DECK JOIST SPACE	FLOOR SPACING		
	16"	19.2"	24"
≤ 8'-0"	MP34	MP34	MPA1
10'-0"	MP34	MPA1	(2)MP34
12'-0"	MPA1	MPA1	(2)MP34
14'-0"	MPA1	(2)MP34	(2)MPA1
16'-0"	(2)MP34	(2)MP34	(2)MPA1
18'-0"	(2)MP34	(2)MPA1	(2)MPA1
20'-0"	(2)MPA1	(2)MPA1	(2)MPA1

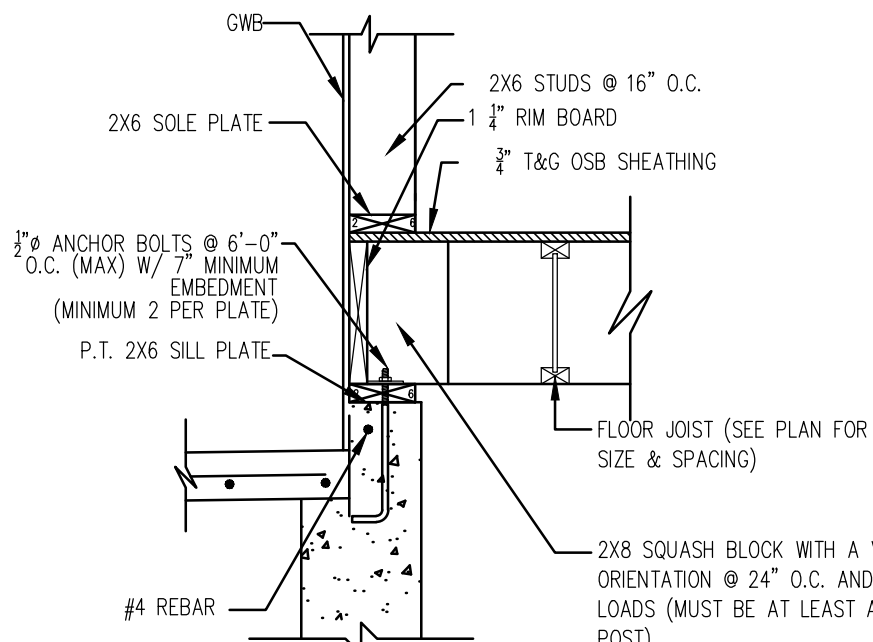


SECTION
3/4" PER FOOT

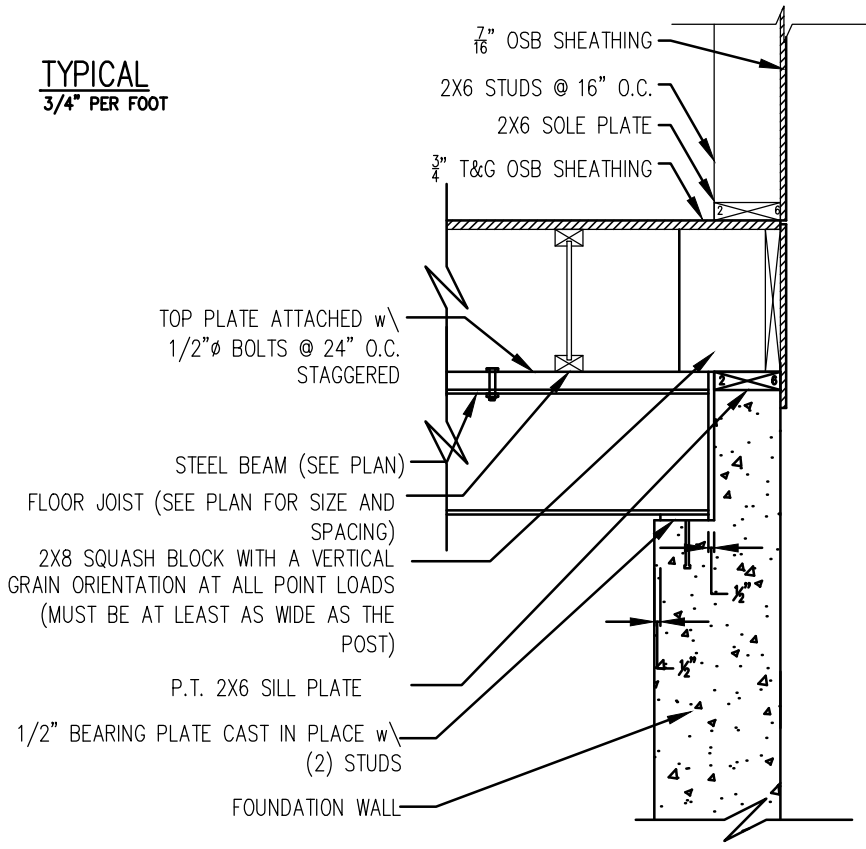
NOTE:
SEE FASTENING SCHEDULE ON SHEET
SN.2



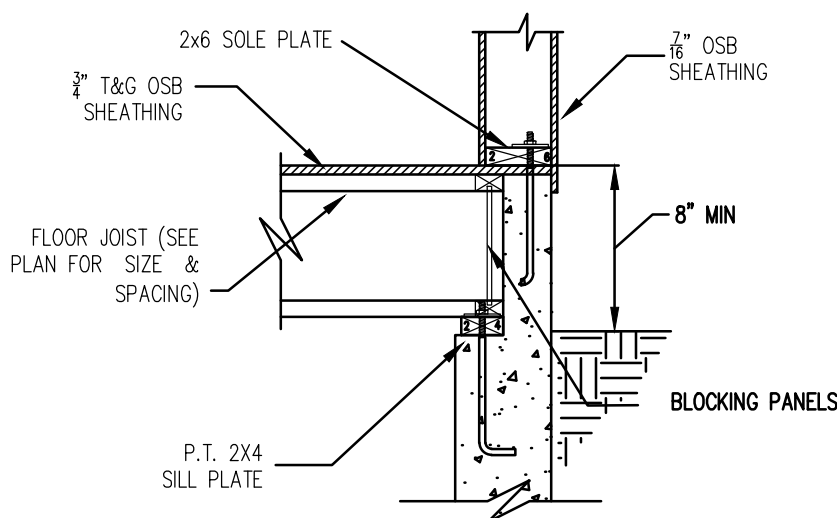
SECTION - GARAGE
3/4" PER FOOT



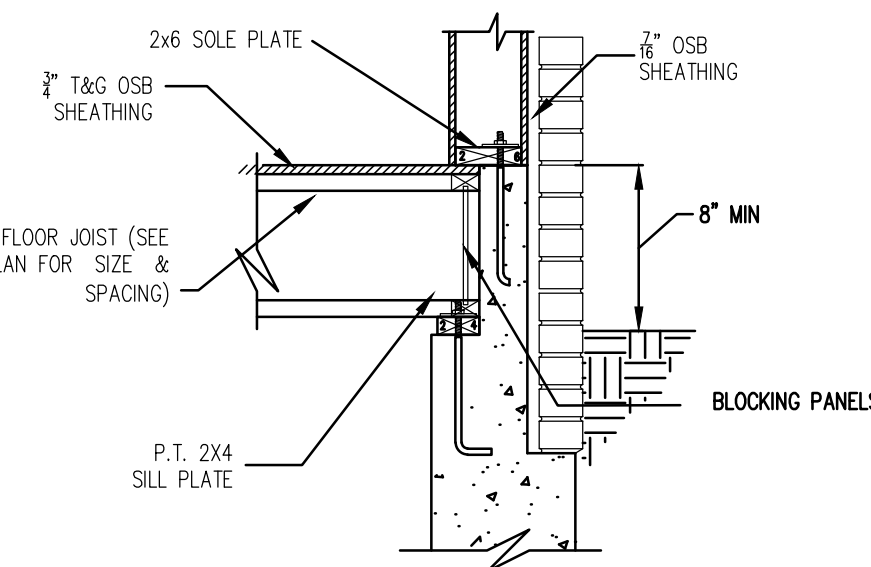
SECTION - GARAGE
3/4" PER FOOT



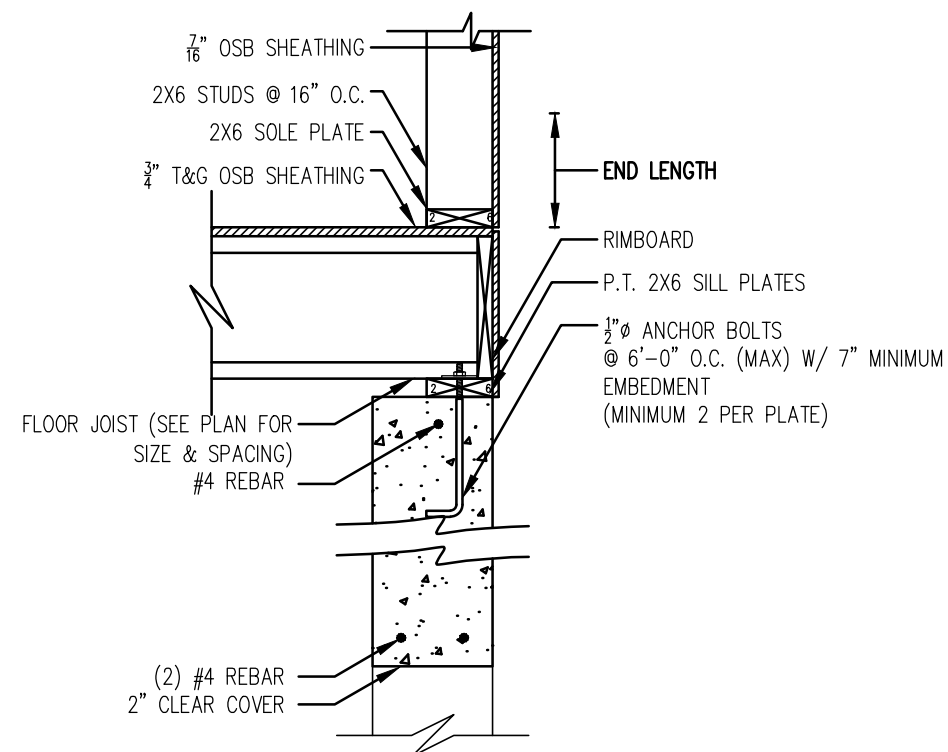
SECTION - BEAM POCKET
3/4" PER FOOT



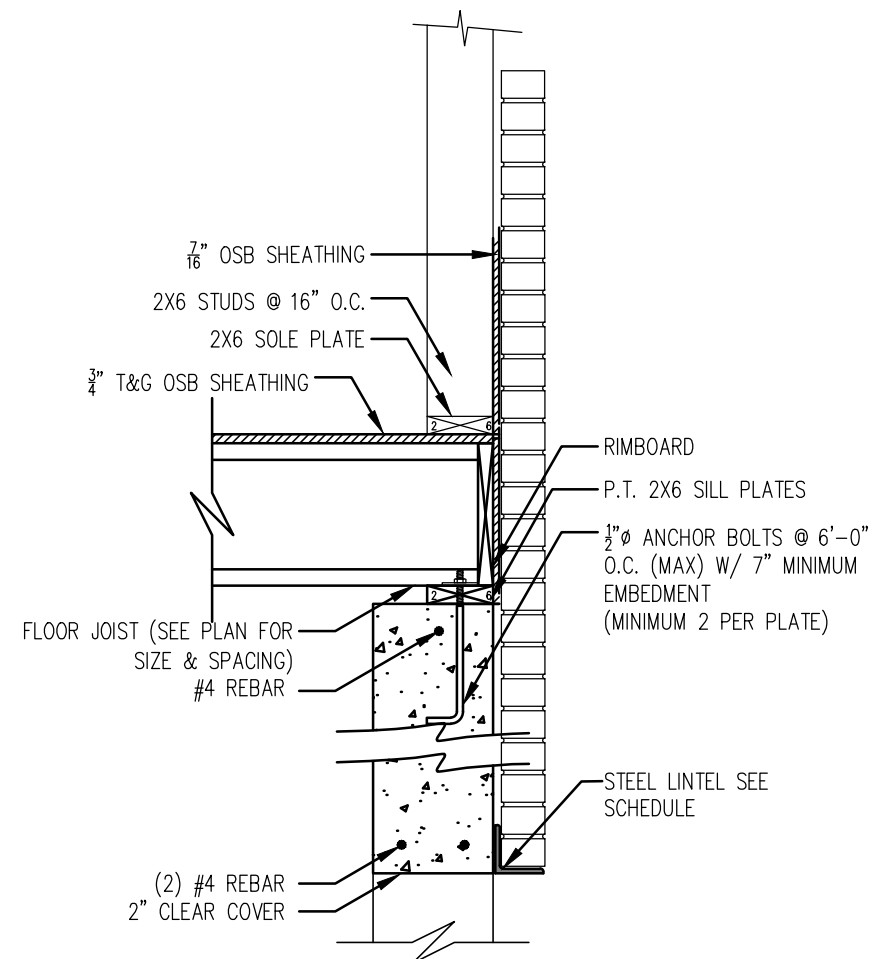
SECTION @ REVERSED LEDGE
3/4" PER FOOT



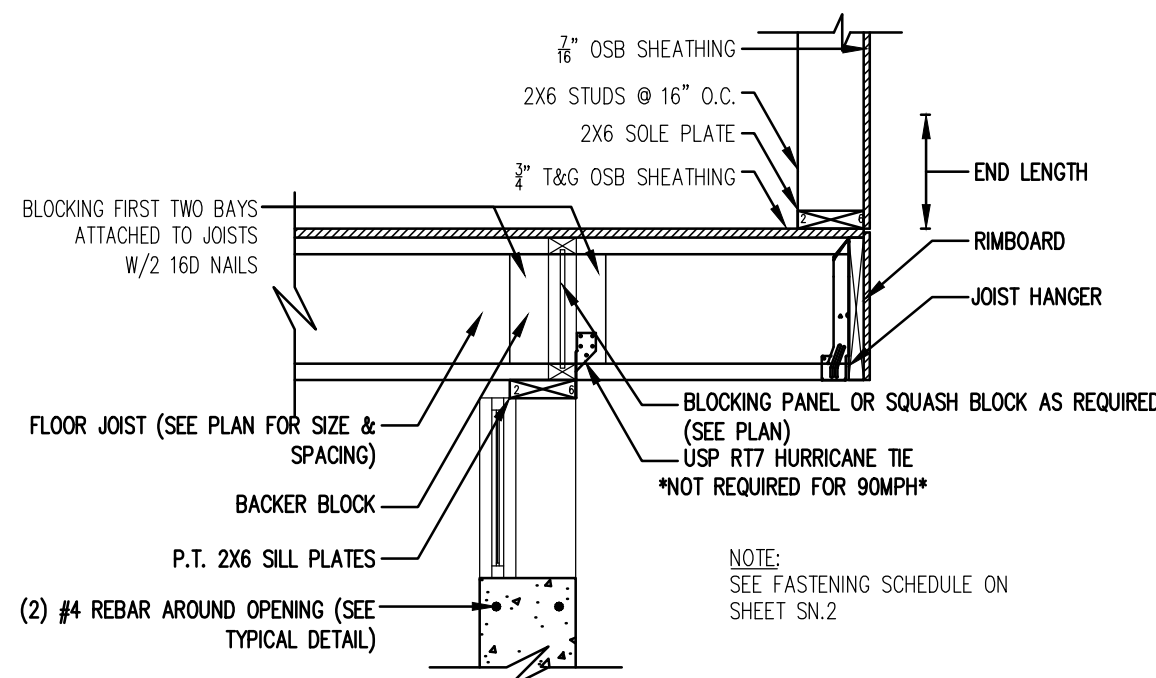
SECTION @ REVERED LEDGE W/ BRICK
3/4" PER FOOT



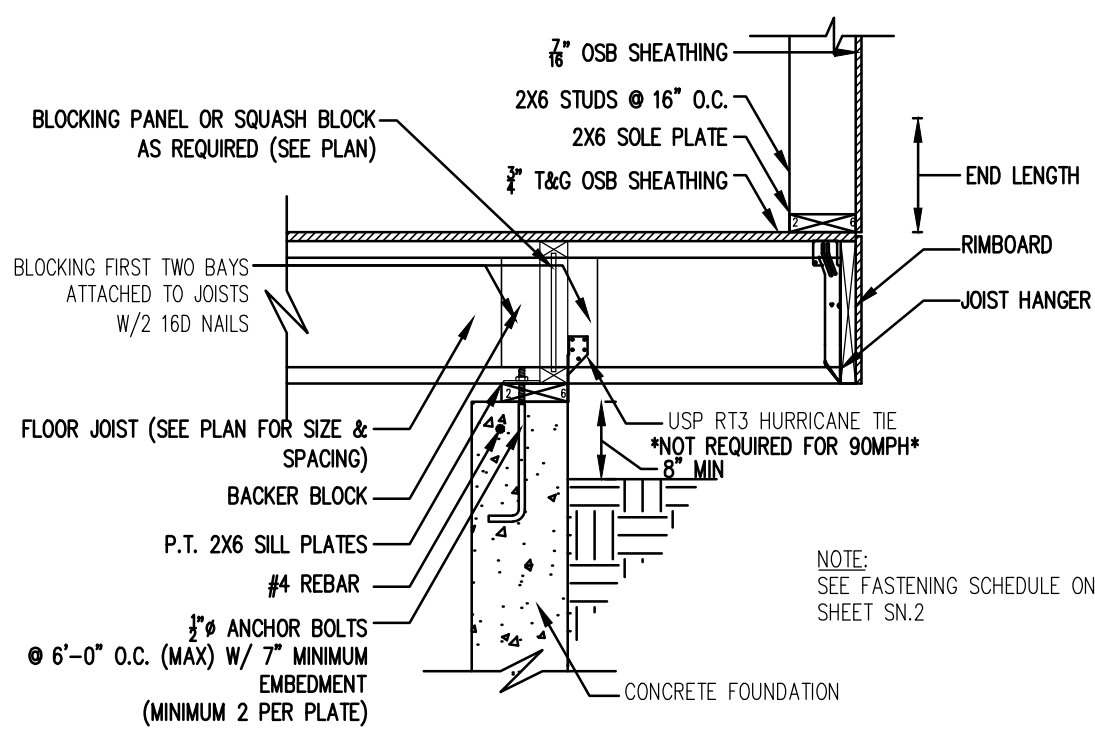
SECTION @ CONC. HEADER
3/4" PER FOOT



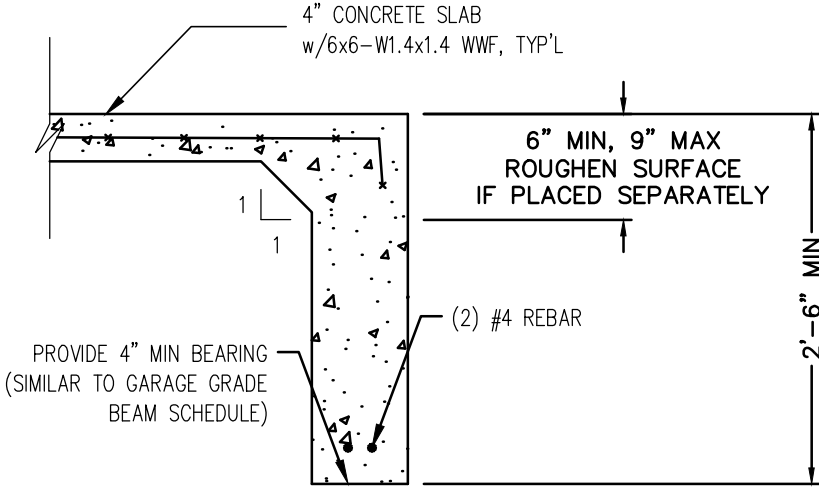
SECTION @ CONC. HEADER W/ BRICK
3/4" PER FOOT



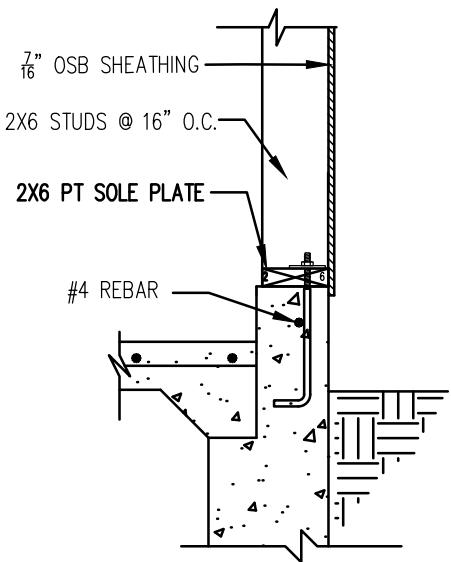
SECTION @ CANT. JOIST OVER WINDOW
3/4" PER FOOT



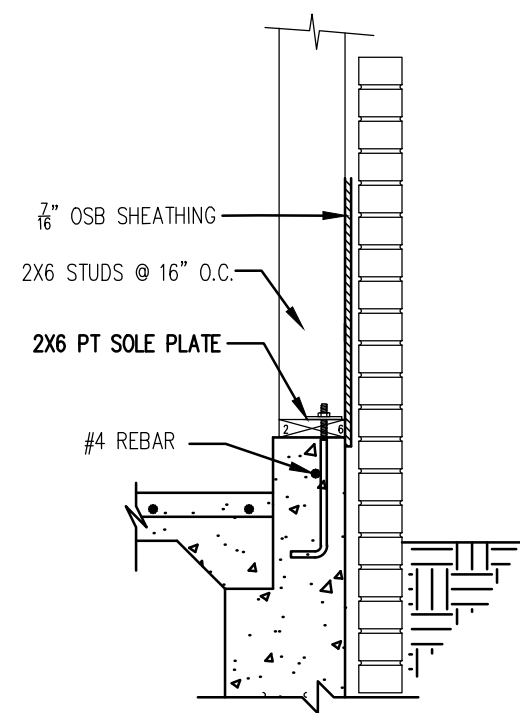
SECTION @ CANT. JOIST W/ SUPPORTING RIM BOARD
3/4" PER FOOT



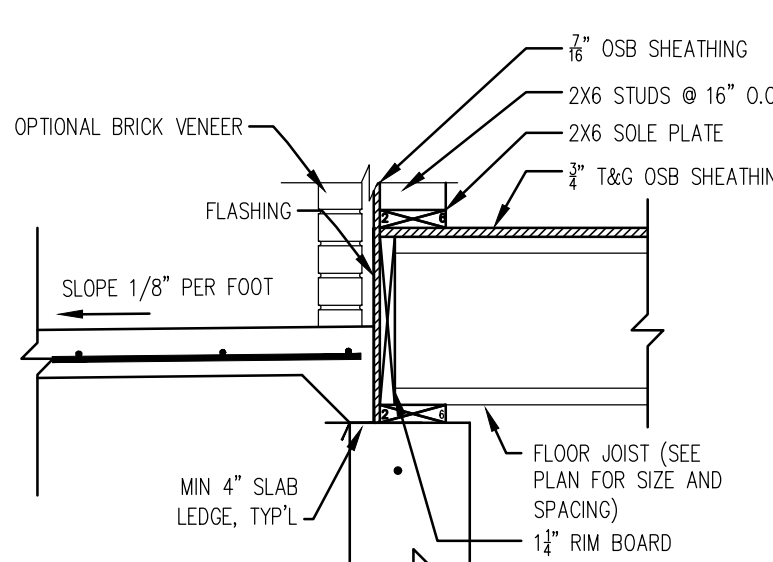
TURN DOWN SLAB
3/4" PER FOOT



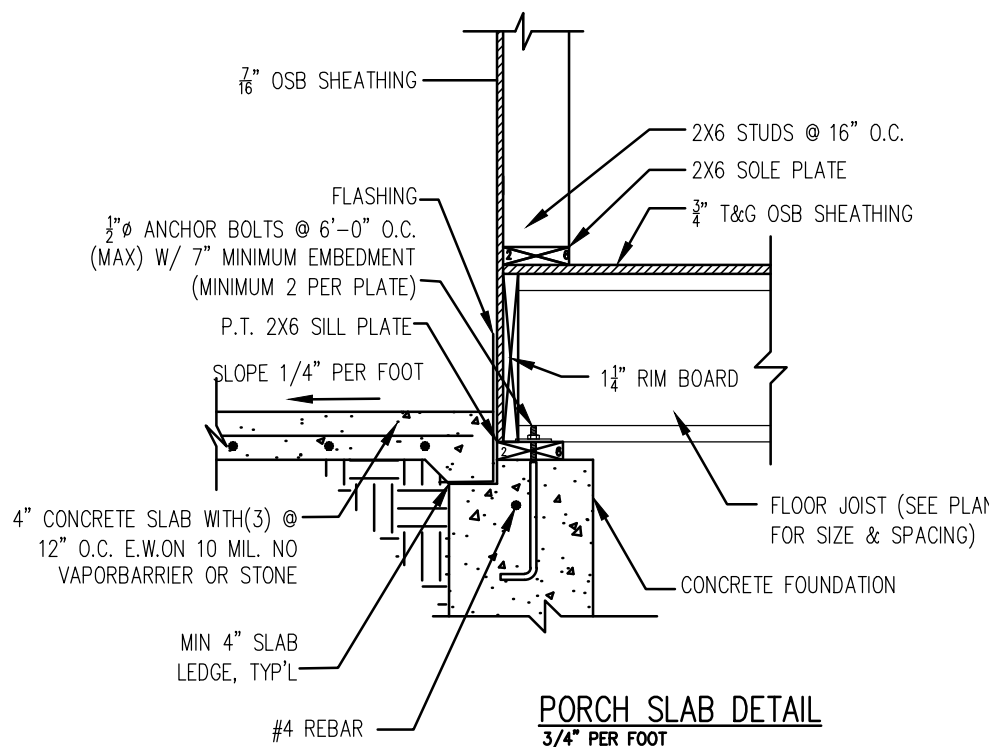
SECTION @ GARAGE EXTERIOR
3/4" PER FOOT



SECTION @ GARAGE EXTERIOR W/ BRICK
3/4" PER FOOT



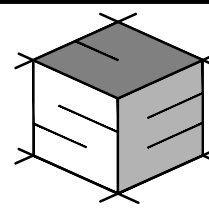
PORCH SLAB DETAIL W/ BRICK
3/4" PER FOOT



PORCH SLAB DETAIL
3/4" PER FOOT

Laine Street Homes LLC
244 N Market St
Frederick, MD 21701
(C) (301)524-4471

These plans are the property of of
Builders National Cooperative, LLC.
No unauthorized use is permitted.
Plan is a lot specific ACL3 model.



STRUCTURAL ENGINEERING
UNLIMITED, LLC
341 W. PATRICK STREET
FREDERICK, MD 21701
240-815-6760
301-748-2769



PROFESSIONAL CERTIFICATION. I HEREBY
CERTIFY THAT THESE DOCUMENTS WERE
PREPARED OR APPROVED BY ME, AND THAT I
AM A DULY LICENSED PROFESSIONAL ENGINEER
UNDER THE LAWS OF THE STATE OF
MARYLAND.
LICENSE NO.: 24518
EXPIRATION DATE: 09-21-2027

ACL3 HOUSE MODEL:
(LOT #1) 7452 Heritage
Oak Terr., Middletown
MD., 21769

JOB #:	B0114
REVISIONS:	DATE:
PERMIT PLANS	7/21/26

DATE: 07 / 21 / 2026

SCALE: AS SHOWN

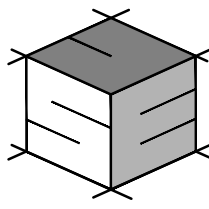
PAGE DESCRIPTION:
GENERAL
STRUCTURAL
DETAILS & NOTES

SHEET:

S010

Laine Street Homes LLC
244 N Market St
Frederick, MD 21701
(C) (301)524-4471

These plans are the property of of
Builders National Cooperative, LLC.
No unauthorized use is permitted.
Plan is a lot specific ACL3 model.



STRUCTURAL ENGINEERING
UNLIMITED, LLC
341 W. PATRICK STREET
FREDERICK, MD 21701
240-815-6760
301-748-2769



PROFESSIONAL CERTIFICATION. I HEREBY
CERTIFY THAT THESE DOCUMENTS WERE
PREPARED OR APPROVED BY ME, AND THAT I
AM A DULY LICENSED PROFESSIONAL ENGINEER
UNDER THE LAWS OF THE STATE OF
MARYLAND.
LICENSE NO.: 24518
EXPIRATION DATE: 09-21-2027

ACL3 HOUSE MODEL:
(LOT #1) 7452 Heritage
Oak Terr., Middletown
MD., 21769

JOB #:	B0714
REVISIONS:	DATE:
PERMIT PLANS	7/21/26

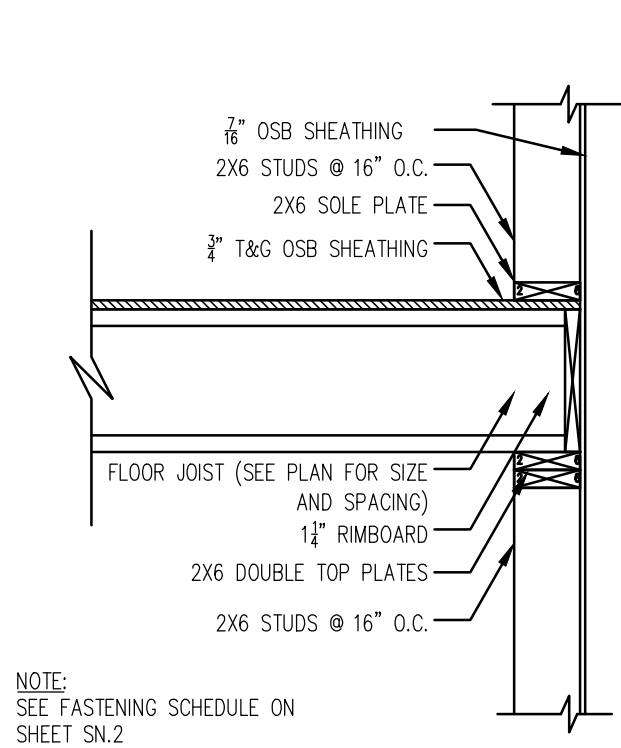
DATE: 07 / 21 / 2026

SCALE: AS SHOWN

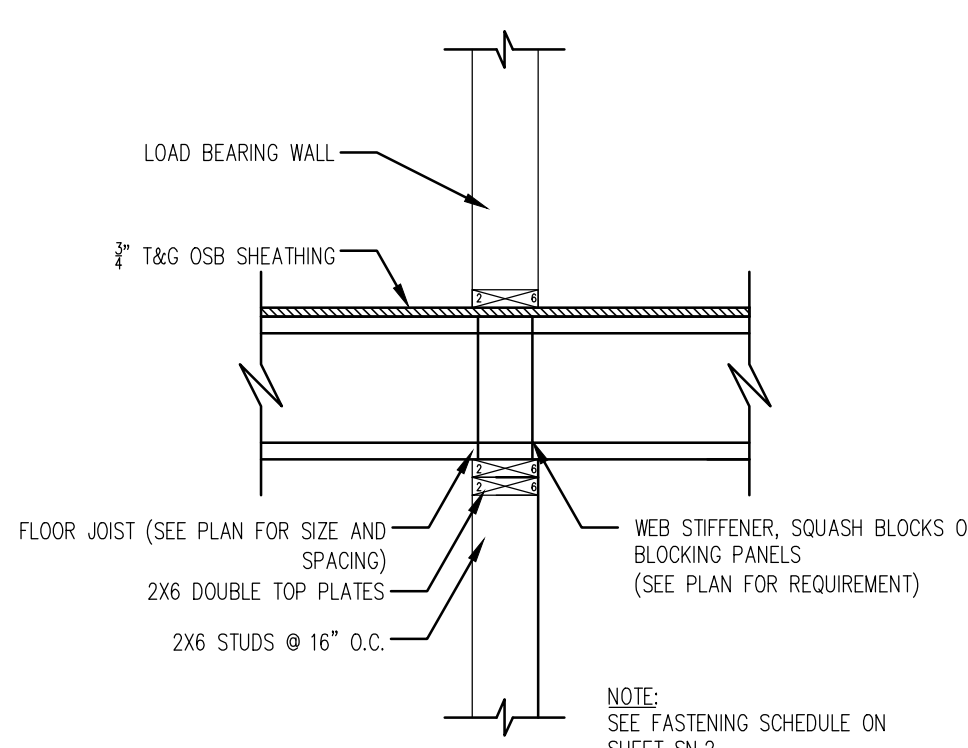
PAGE DESCRIPTION:
GENERAL
STRUCTURAL
DETAILS & NOTES

SHEET:

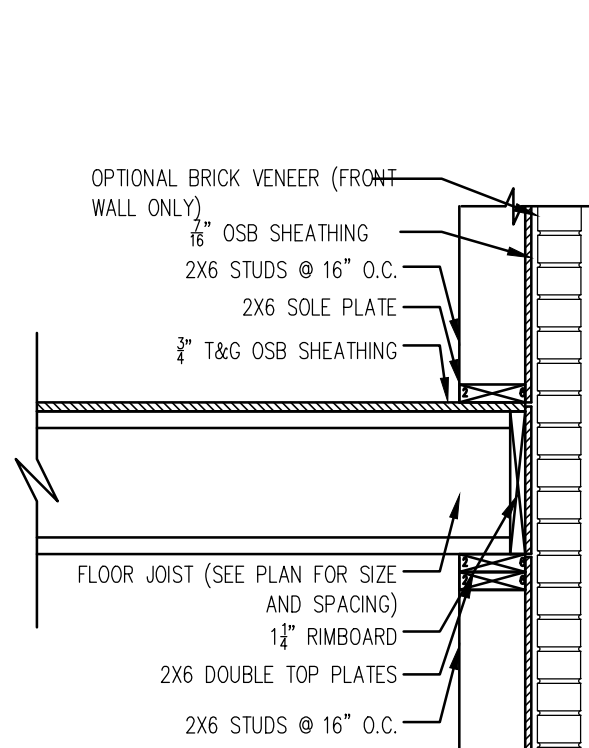
S011



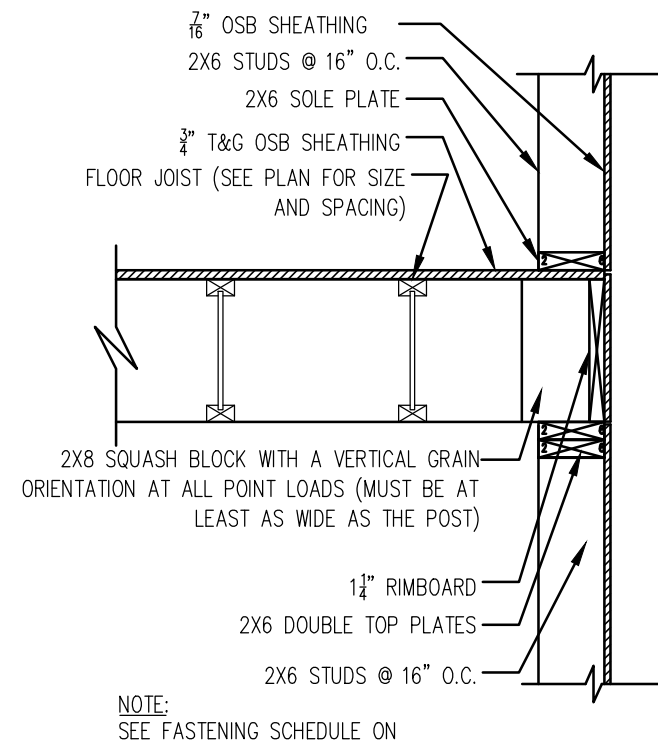
SECTION - EXTERIOR WALL
3/4" PER FOOT



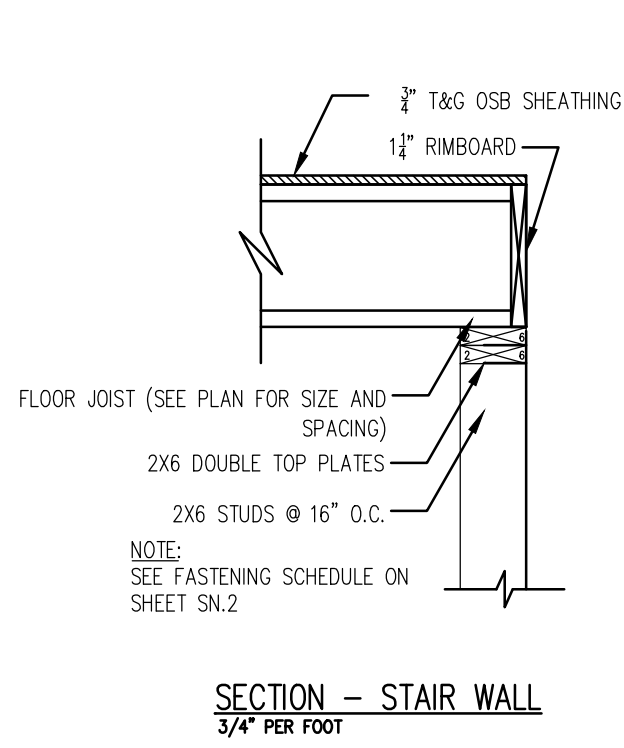
SECTION
3/4" PER FOOT



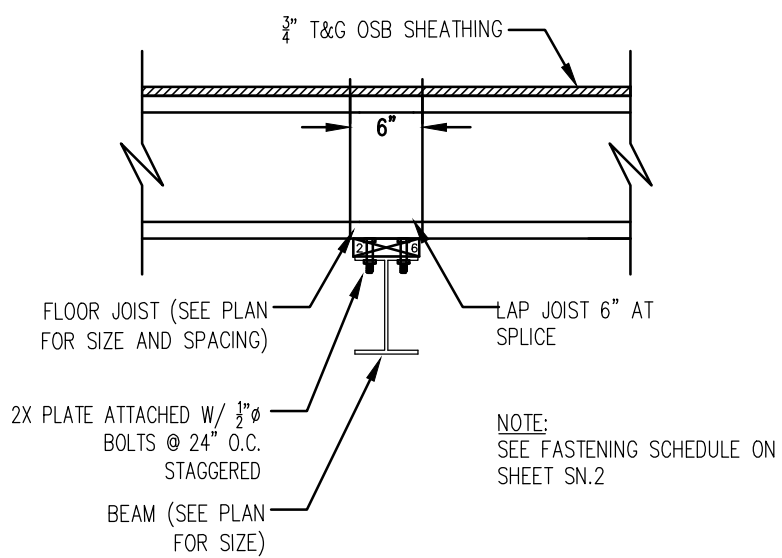
SECTION - EXTERIOR WALL W/ BRICK
3/4" PER FOOT



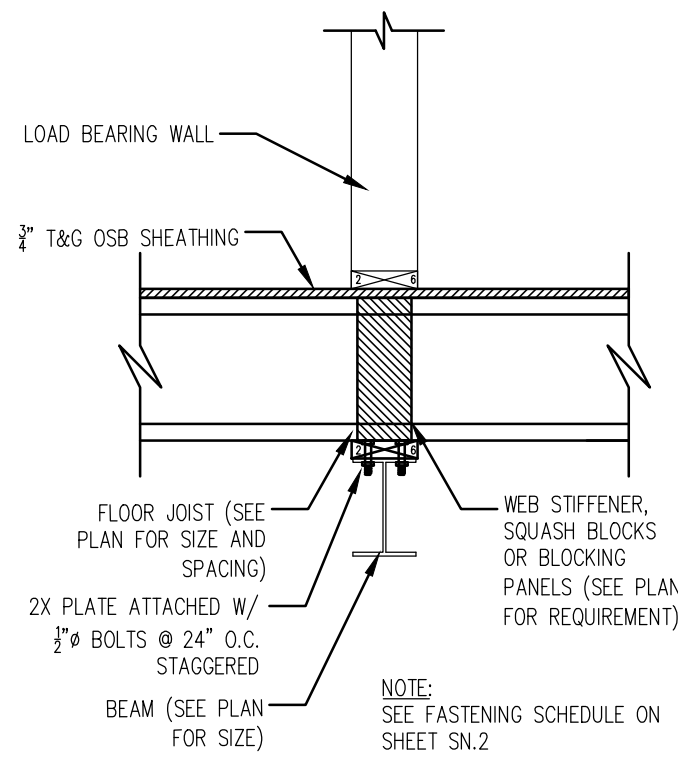
SECTION - EXTERIOR WALL
3/4" PER FOOT



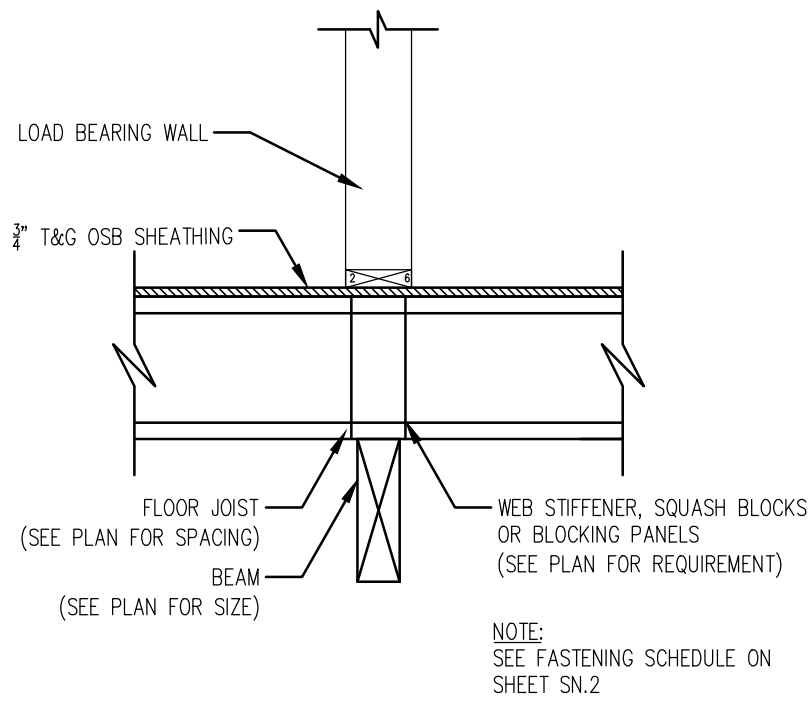
SECTION - STAIR WALL
3/4" PER FOOT



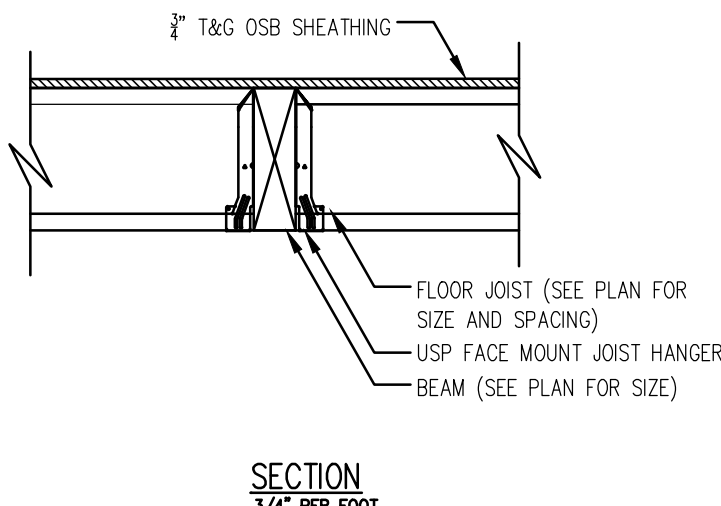
SECTION - LAPPING JOISTS
3/4" PER FOOT



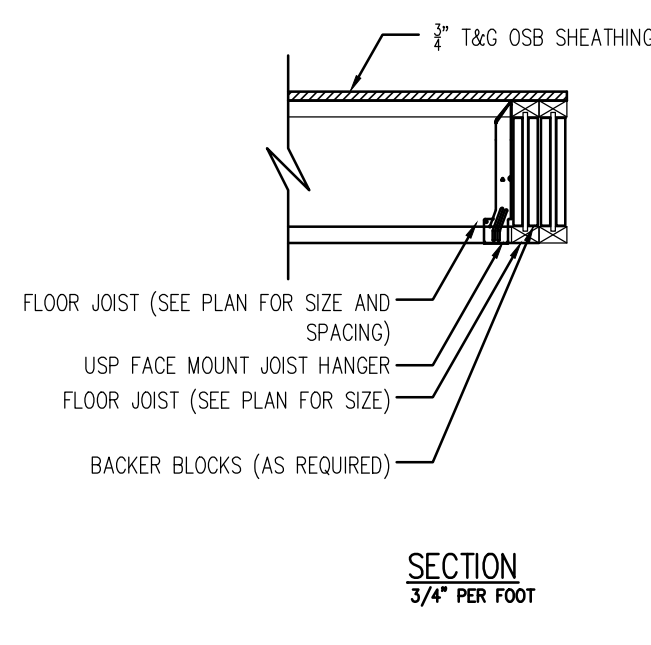
SECTION
3/4" PER FOOT



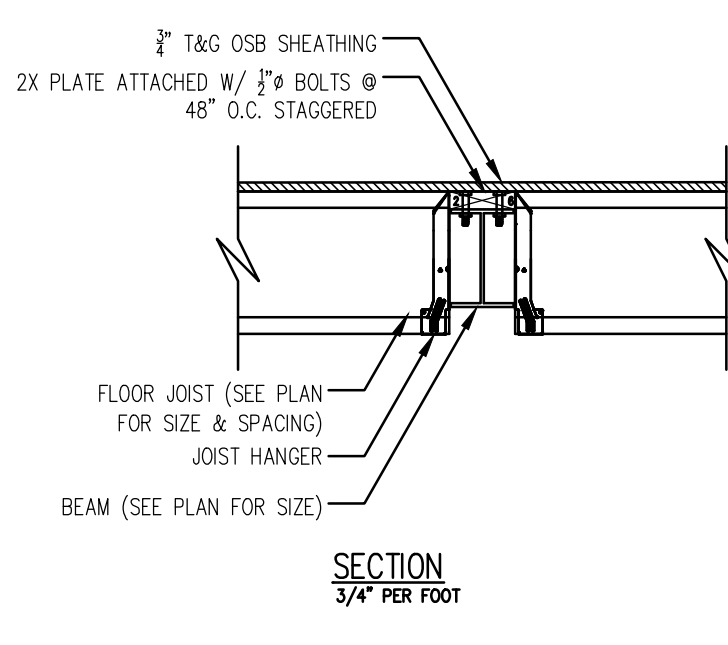
SECTION
3/4" PER FOOT



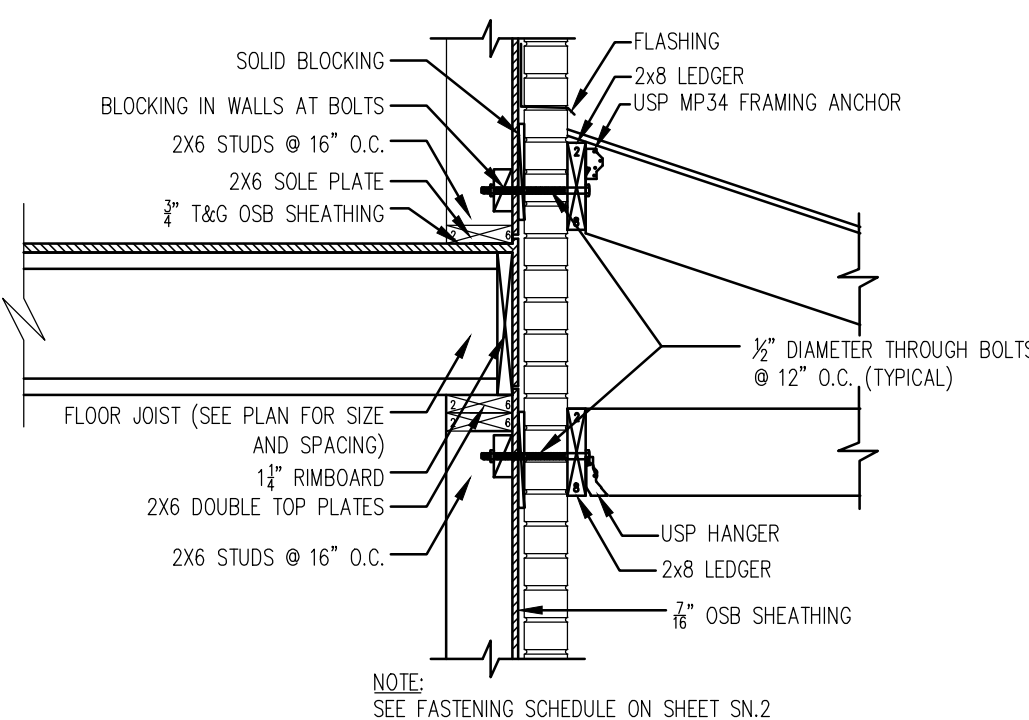
SECTION
3/4" PER FOOT



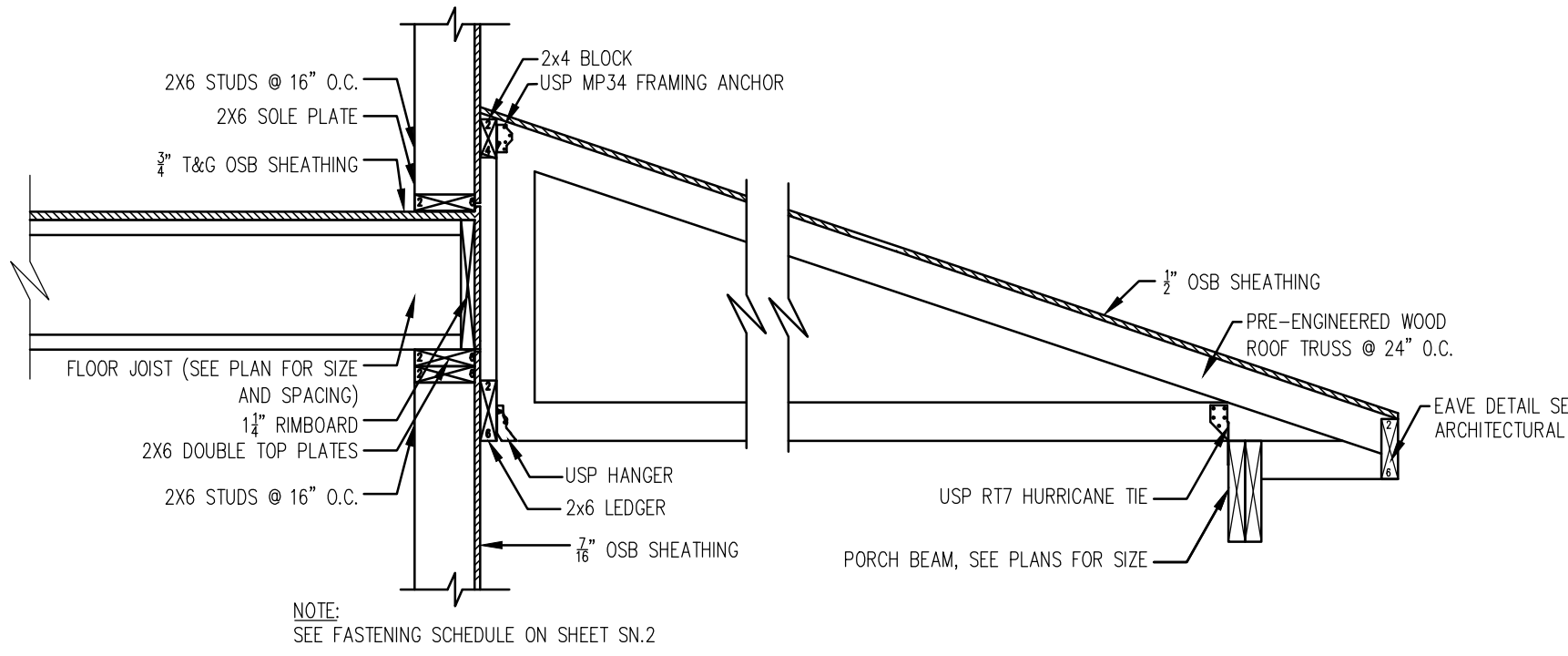
SECTION
3/4" PER FOOT



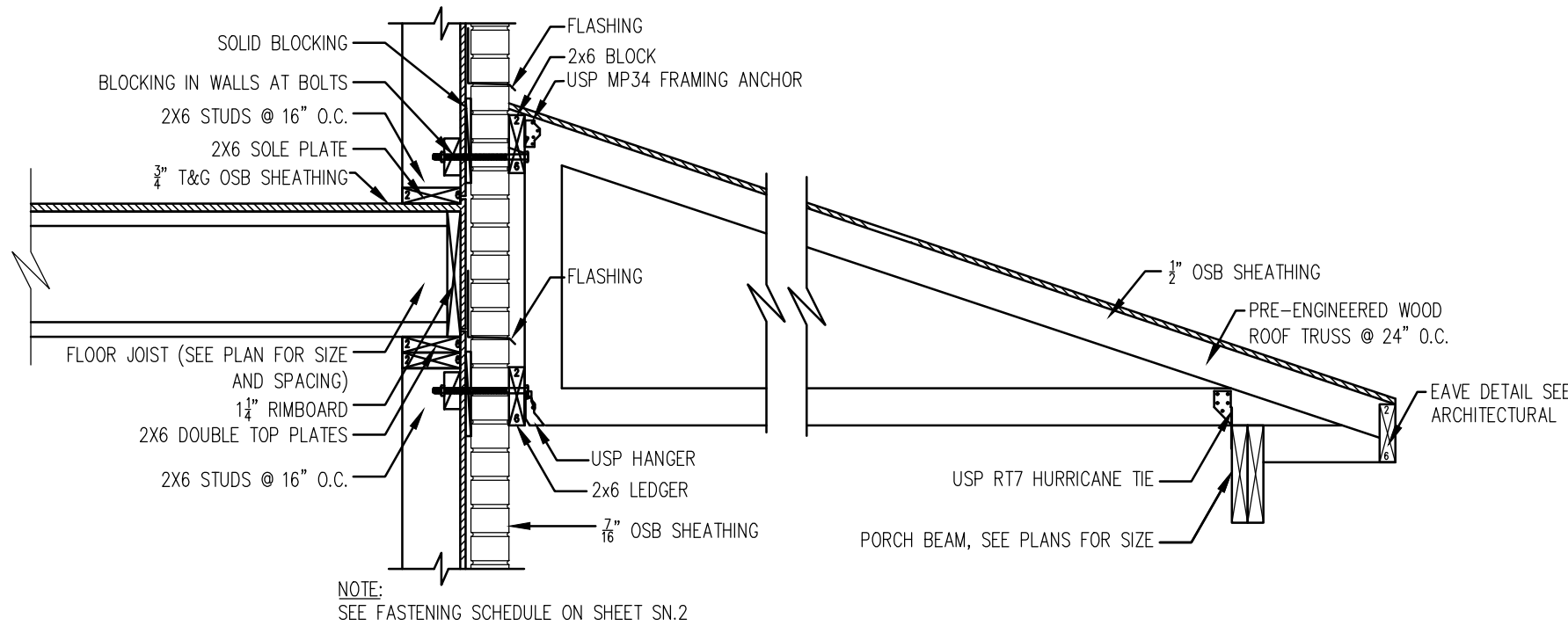
SECTION
3/4" PER FOOT



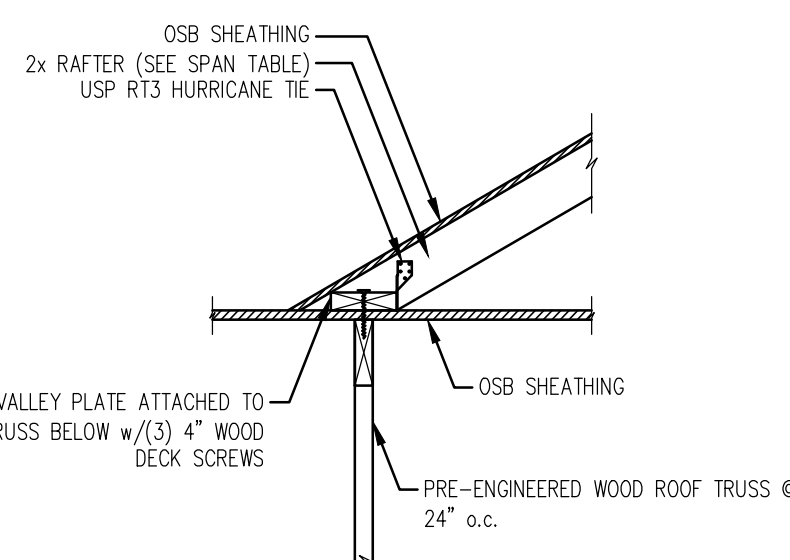
DETAIL FOR RAFTER CONNECTION @ WALL W/ BRICK
3/4" PER FOOT



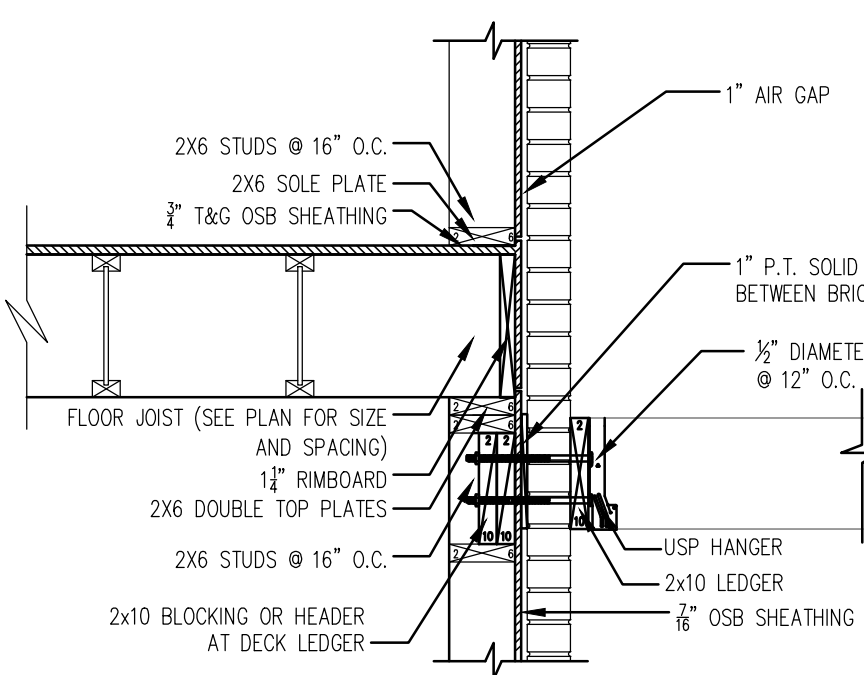
DETAIL FOR TRUSS CONNECTION @ WALL
3/4" PER FOOT



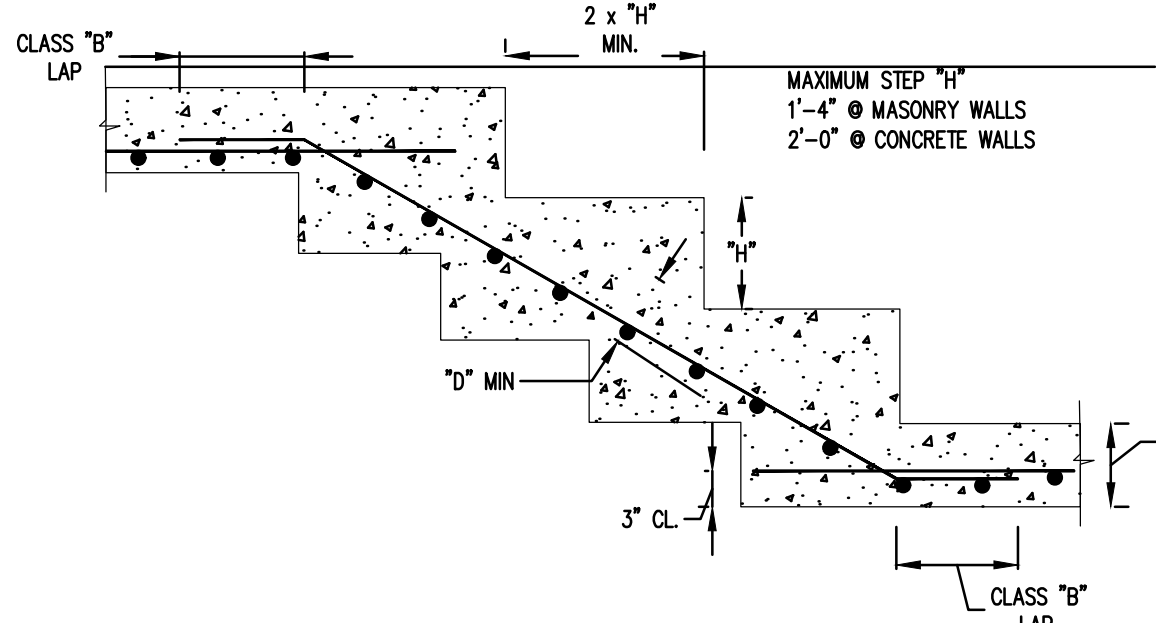
DETAIL FOR TRUSS CONNECTION @ WALL W/ BRICK
3/4" PER FOOT



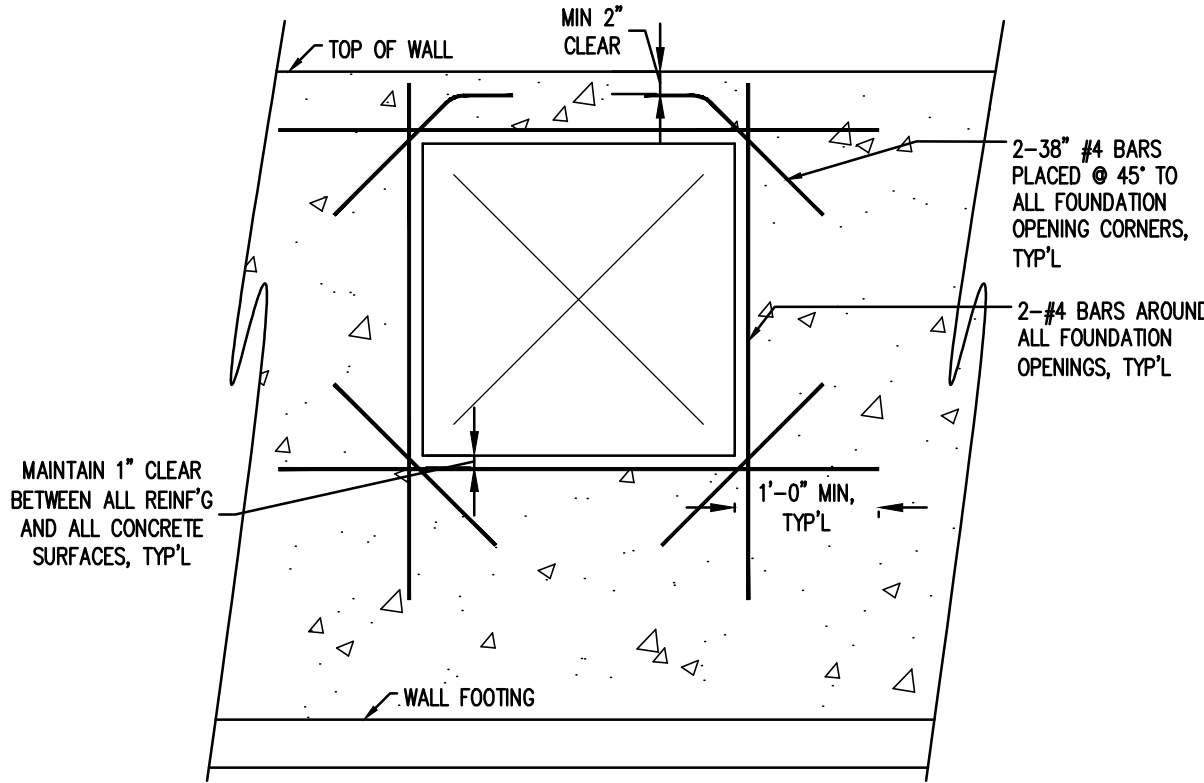
TYP OVER FRAMING CONNECTION DETAIL
3/4" PER FT



DETAIL FOR DECK JOISTS CONNECTION @ WALL W/ BRICK
3/4" PER FOOT

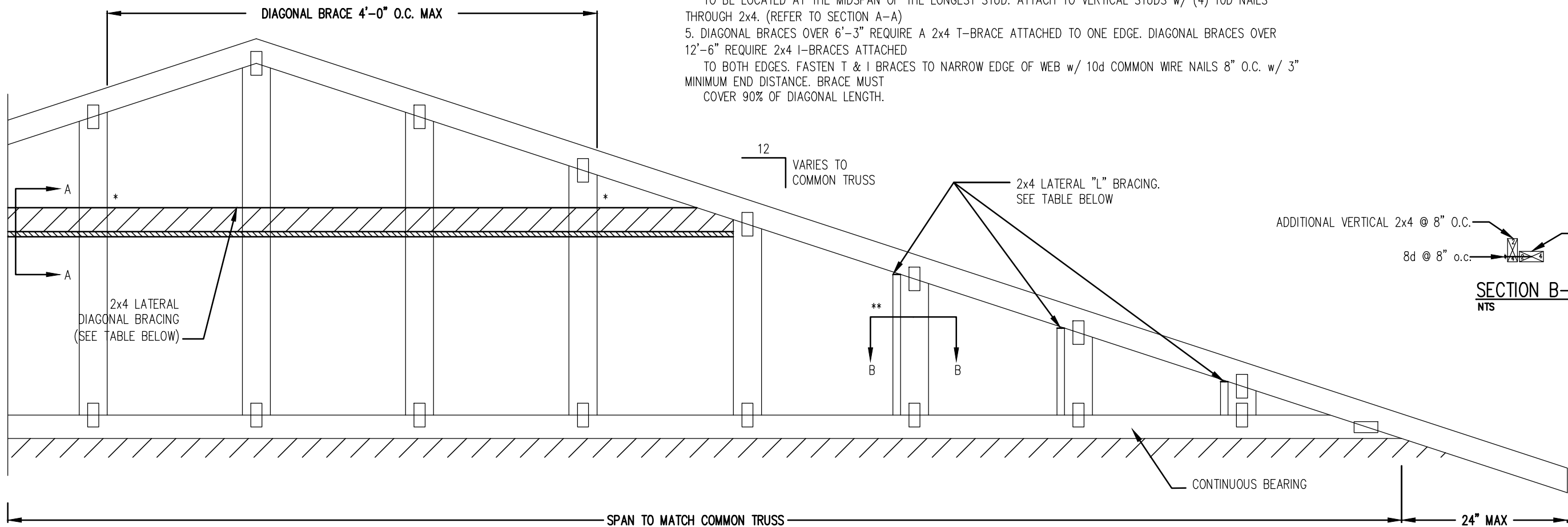


STEP FOOTING DETAIL (TYP.)
N.T.S.



WALL OPENING DETAIL (TYP.)
N.T.S.

- NOTE:
1. FURNISH A COPY OF THIS DETAIL TO THE SUB-CONTRACTOR BRACING INSTALLATION
 2. "L" BRACES SPECIFIED ARE TO BE FULL LENGTH. GRADES: 2x4 STUD OR BETTER w/ 1 ROW OF 10d NAILS SPACED @ 8" O.C.
 3. DIAGONAL BRACE TO BE APPROXIMATELY 45° TO ROOF DIAPHRAGM @ 4" O.C.
 4. CONSTRUCT HORIZONTAL BRACE CONNECTING A 2x6 STUD AND A 2x4 STUD AS SHOWN w/ 16d NAILS SPACED @ 6" O.C. HORIZONTAL BRACE TO BE LOCATED AT THE MIDSPAN OF THE LONGEST STUD. ATTACH TO VERTICAL STUDS w/ (4) 10d NAILS THROUGH 2x4. (REFER TO SECTION A-A)
 5. DIAGONAL BRACES OVER 6'-3" REQUIRE A 2x4 T-BRACE ATTACHED TO ONE EDGE. DIAGONAL BRACES OVER 12'-6" REQUIRE 2x4 I-BRACES ATTACHED TO BOTH EDGES. FASTEN T & I BRACES TO NARROW EDGE OF WEB w/ 10d COMMON WIRE NAILS 8" O.C. w/ 3" MINIMUM END DISTANCE. BRACE MUST COVER 90% OF DIAGONAL LENGTH.



*-DIAGONAL BRACING. REFER TO SECTION A-A

**-"L" BRACING. REFER TO SECTION B-B

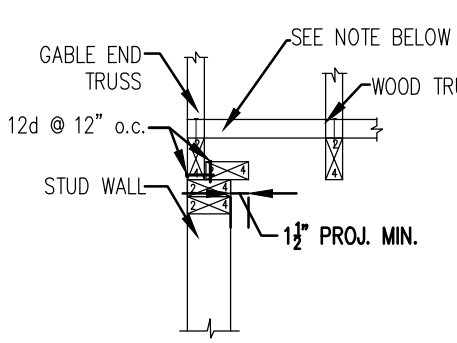
LATERAL BRACING NAILING SCHEDULE	
VERTICAL HEIGHT	NUMBER OF NAILS
UP-TO 6'-11"	2-16d
7'-0" & 8'-5"	3-16d
8'-6" & OVER	4-16d

MAXIMUM VERTICAL STUD HEIGHT				
SPACING OF VERTICALS	W/O LATERAL BRACE	WITH "L" BRACE	WITH DIAGONAL BRACE	WITH 2 DIAGONAL BRACES AT 1/3 POINTS
12" o.c.	4'-9-3/4"	7'-10"	9'-7-1/2"	14'-5-1/4"
16" o.c.	4'-4-1/2"	6'-9-3/4"	8'-8-3/4"	13'-1-1/4"
24" o.c.	3'-9-1/2"	5'-6-1/2"	7'-7-1/4"	11'-4-3/4"

THIS TABLE CANNOT BE USED WITH BRICK VENEER

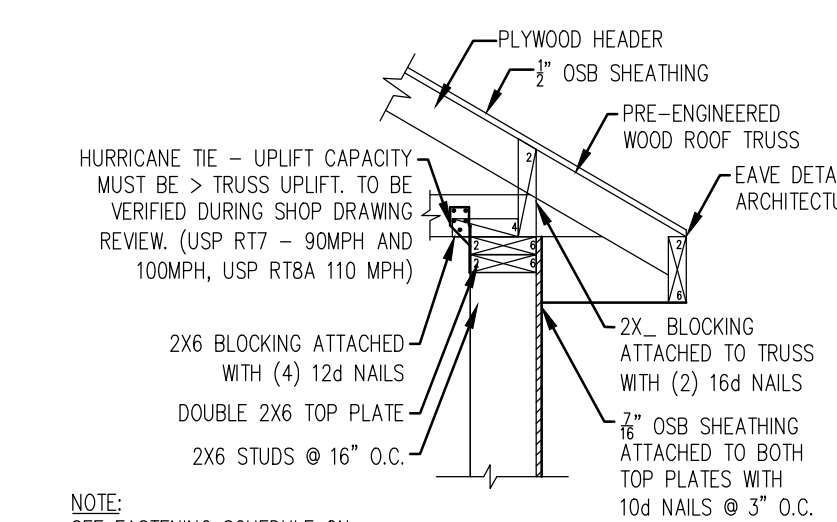
MAXIMUM WIND SPEED = 100 MPH
MAX MEAN ROOF HEIGHT = 30'-0"
CATEGORY II BUILDING
EXPOSURE B or C
ASCE 7-98
DURATION OF LOAD INCREASE: 1.60

NOTE:
BOTTOM CHORD HORIZONTAL BRACING, 2x4 (FLAT)
ATTACHED TO 4 TRUSS @ 3'-0" o.c. NAIL TO
TOP OF EACH BOTTOM CHORD WITH 2-16d NAILS.

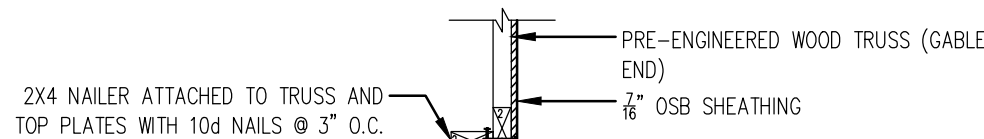


DETAIL "B"

NTS

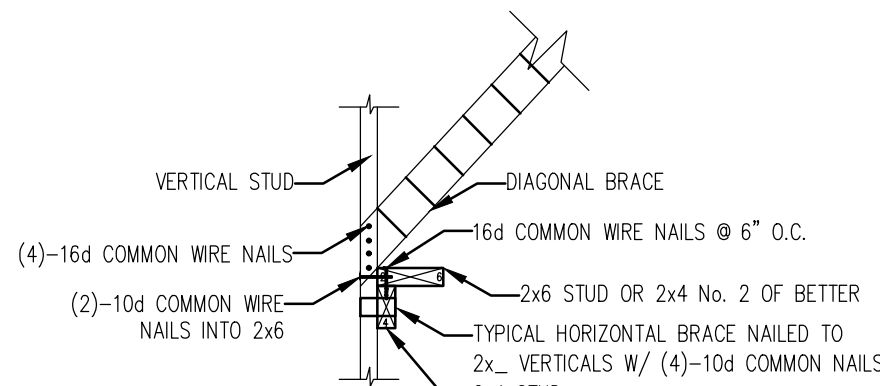


SECTION
3/4" PER FOOT



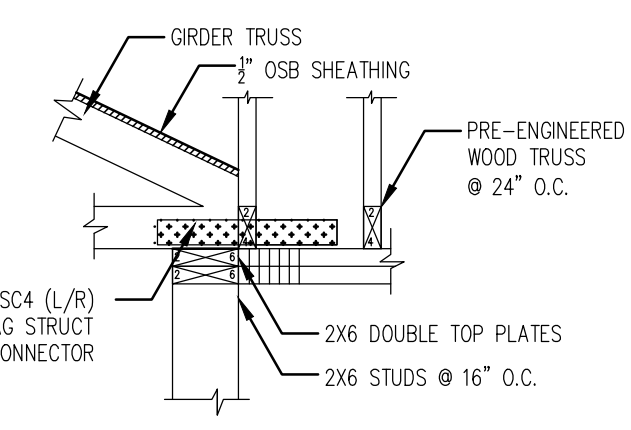
NOTE:
SEE FASTENING SCHEDULE ON
SHEET SN.2

SECTION
3/4" PER FOOT

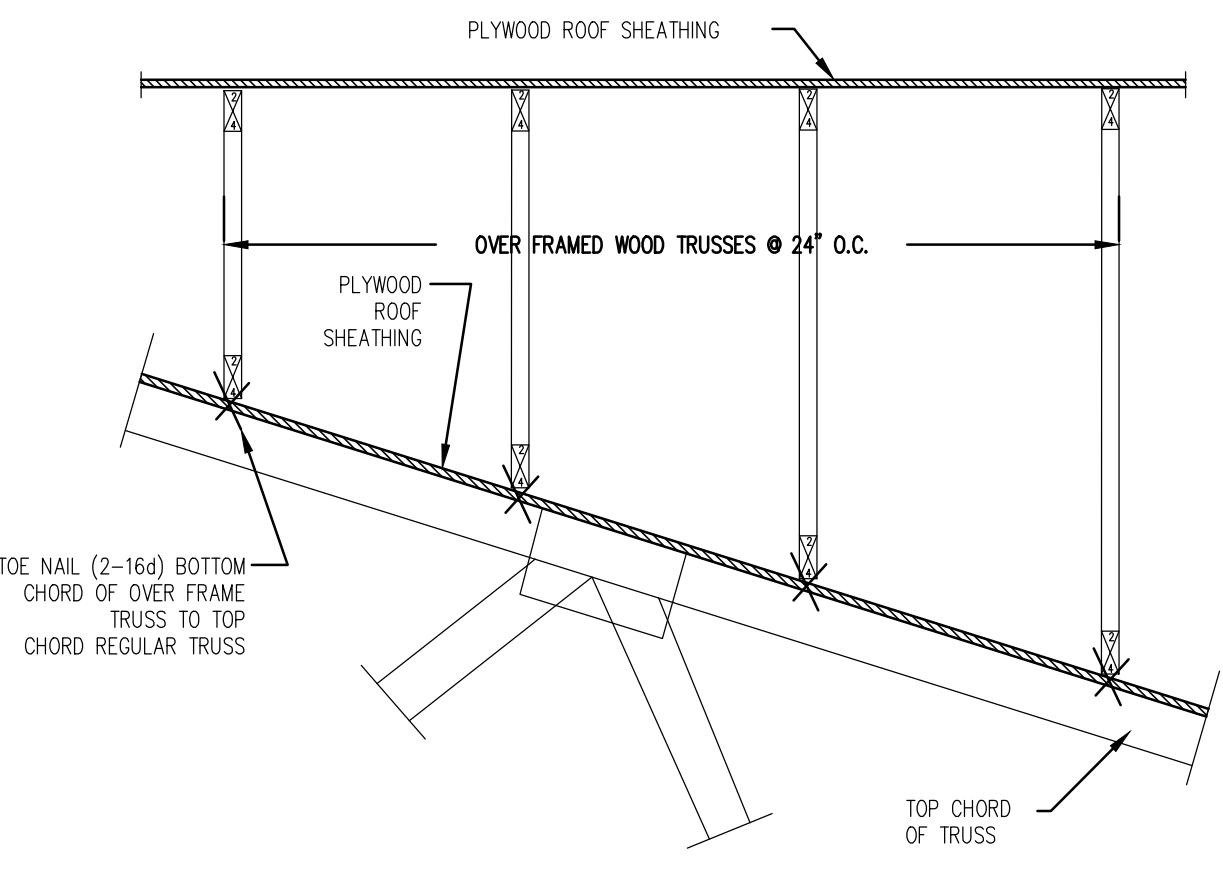


SECTION A-A

NTS

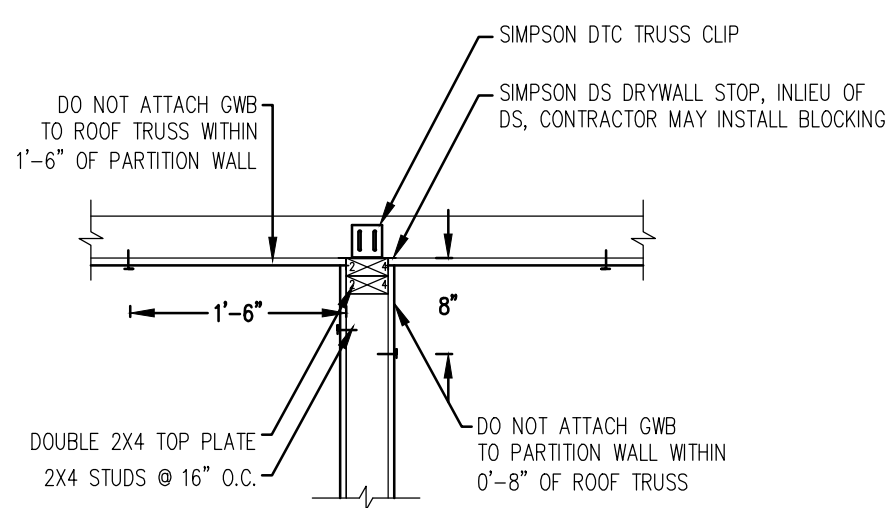


SECTION
3/4" PER FOOT



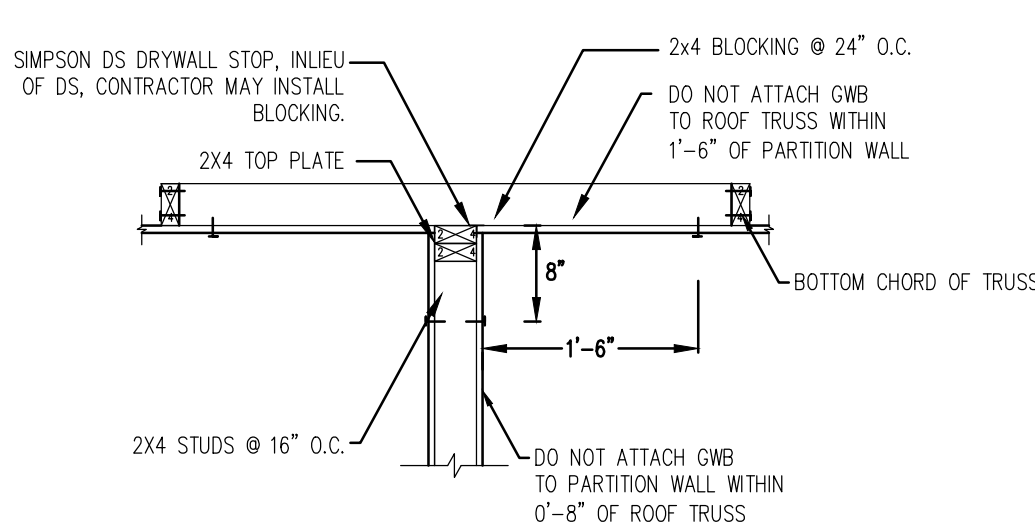
OVERFRAMING (TRUSSES) DETAIL

NTS



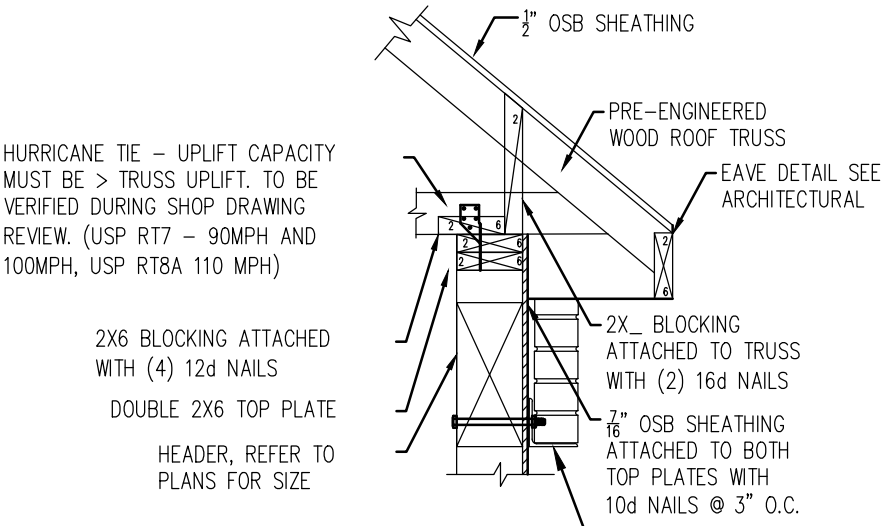
PERPENDICULAR PARTITION DETAIL (TYP)

NTS

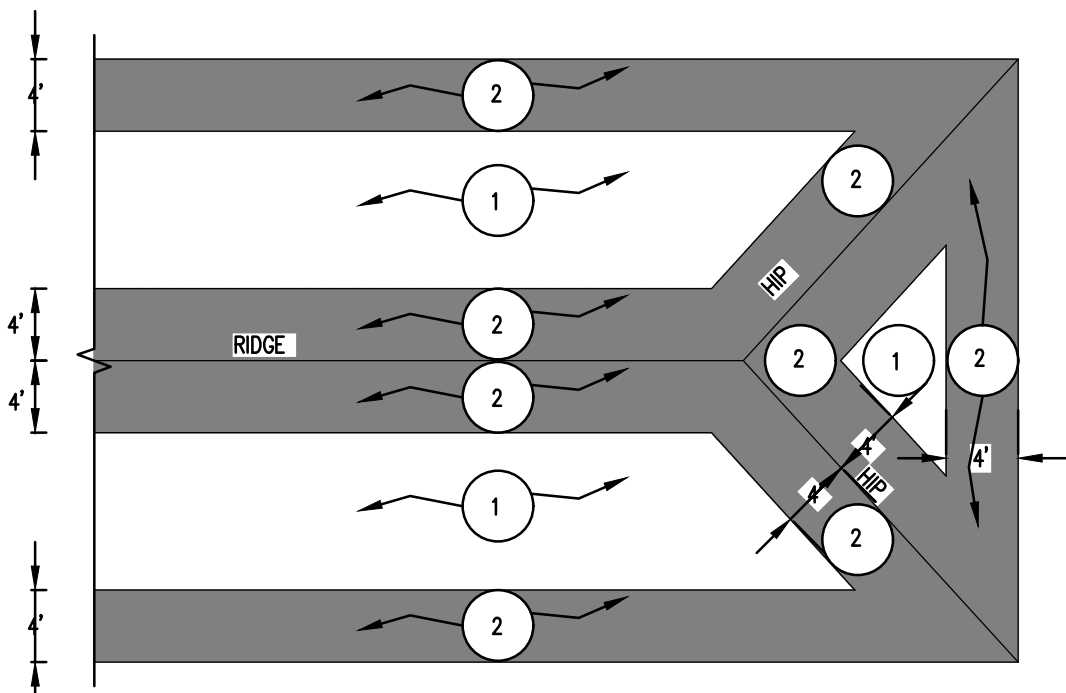


PARALLEL PARTITION DETAIL (TYP)

NTS



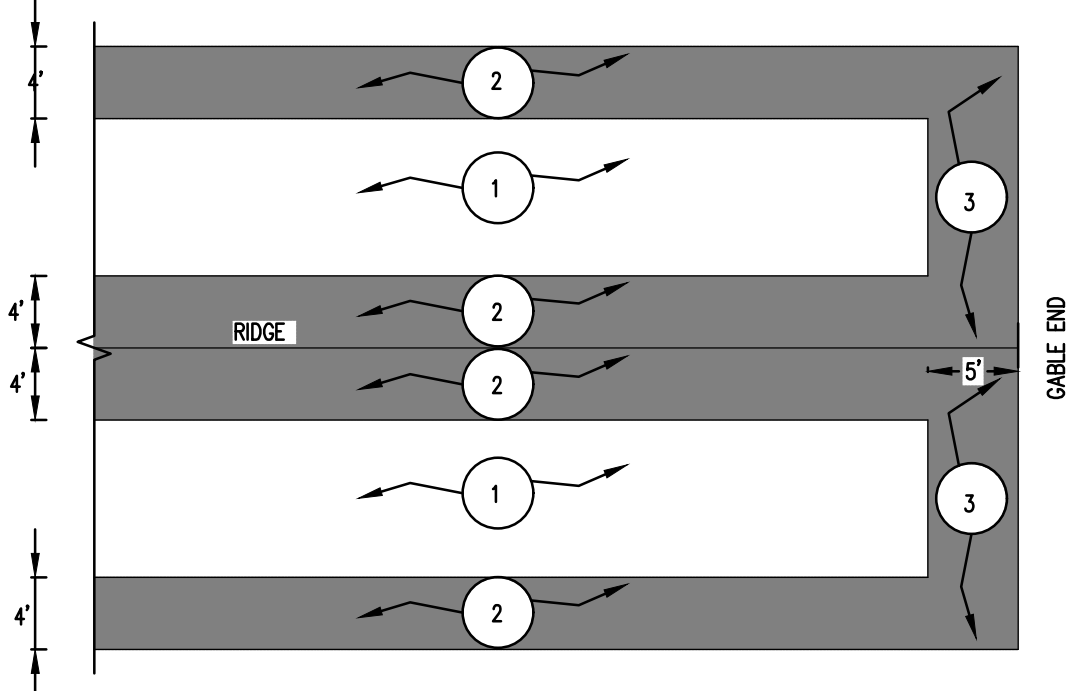
SECTION
3/4" PER FOOT



NAIL SPACING SCHEDULE				
ZONE	1		2	
	<110 MPH (3SEC GUST)	≥110 MPH (3SEC GUST)	<110 MPH (3SEC GUST)	≥110 MPH (3SEC GUST)
PANEL EDGE	6" O.C.	4" O.C.	6" O.C.	6" O.C.
PANEL INTERIOR	12" O.C.	6" O.C.	12" O.C.	6" O.C.

NOTE: USE 8d RING SHANK NAILS

PARTIAL ROOF (PLAN VIEW) SHOWING
SHEATHING/FASTENING DETAIL



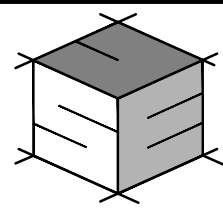
NAIL SPACING SCHEDULE						
ZONE	1		2		3	
	<110 MPH (3SEC GUST)	≥110 MPH (3SEC GUST)	<110 MPH (3SEC GUST)	≥110 MPH (3SEC GUST)	<110 MPH (3SEC GUST)	≥110 MPH (3SEC GUST)
PANEL EDGE	6" O.C.	4" O.C.	6" O.C.	6" O.C.	6" O.C.	4" O.C.
PANEL INTERIOR	12" O.C.	6" O.C.	12" O.C.	6" O.C.	6" O.C.	6" O.C.

NOTE: USE 8d RING SHANK NAILS

PARTIAL ROOF (PLAN VIEW) SHOWING
SHEATHING/FASTENING DETAIL

Laine Street Homes LLC
244 N Market St
Frederick, MD 21701
(C) (301)524-4471

These plans are the property of
Builders National Cooperative, LLC.
No unauthorized use is permitted.
Plan is a lot specific ACL3 model.



STRUCTURAL ENGINEERING
UNLIMITED, LLC
341 W. PATRICK STREET
FREDERICK, MD 21701
240-815-6760
301-748-2769



PROFESSIONAL CERTIFICATION. I HEREBY
CERTIFY THAT THESE DOCUMENTS WERE
PREPARED OR APPROVED BY ME, AND THAT I
AM A DULY LICENSED PROFESSIONAL ENGINEER
UNDER THE LAWS OF THE STATE OF
MARYLAND.
LICENSE NO.: 24518
EXPIRATION DATE: 09-21-2027

ACL3 HOUSE MODEL:
(LOT #1) 7452 Heritage
Oak Terr., Middletown
MD., 21769

JOB #:

B0714

REVISIONS:

DATE:

PERMIT PLANS

7/21/26

DATE: 07 / 21 / 2026

SCALE:

AS SHOWN

PAGE DESCRIPTION:

GENERAL
STRUCTURAL
DETAILS & NOTES

SHEET:

S012