

STRUCTURAL NOTES

GENERAL

A. THE STANDARD GENERAL CONDITIONS FOR THE CONSTRUCTION CONTRACT N.S.P.E. DOCUMENT 1910-B SHALL GOVERN THIS WORK AS IF ENTIRELY INCLUDED ON THESE DRAWINGS.

B. THE BASIC STABILITY OF THE STRUCTURE IS DEPENDENT UPON THE DIAPHRAGM ACTION OF FLOORS, WALLS, AND ROOF ACTING TOGETHER. PROVIDE GUYS, BRACES, STRUTS, ETC., TO ACCOMMODATE LIVE, DEAD, AND WIND LOADS UNTIL FINAL CONNECTIONS BETWEEN THESE ELEMENTS ARE MADE.

C. CANTILEVER AND BASEMENT RETAINING WALLS HAVE NOT BEEN DESIGNED FOR SURCHARGE LOADING ASSOCIATED WITH CONSTRUCTION TRAFFIC BEHIND THE WALL. THE CONTRACTOR AND HIS SUBS SHALL PROVIDE ADEQUATE TEMPORARY BRACING TO RESIST INCREASED LATERAL LOADS ON THE WALLS ASSOCIATED WITH THEIR MEANS AND METHODS OF CONSTRUCTION.

1.1 DESIGN LOADS

A. THE STRUCTURE WAS DESIGNED FOR THE LIVE LOADS SHOWN BELOW AND DEAD LOADS AS REQUIRED BY CONSTRUCTION IN ACCORDANCE WITH IBC 2018. LOADS DUE TO SNOW LOAD BUILD-UP WERE CONSIDERED IN DESIGN OF STRUCTURAL COMPONENTS ADJACENT TO PARAPETS, HIGH BUILDING WALLS, ETC. INCREASE IN THESE LOADINGS, DUE TO CHANGE IN FUNCTION, CONSTRUCTION MATERIALS, ETC., TO HAVE WRITTEN APPROVAL FROM THE DESIGNING STRUCTURAL ENGINEER.

B. THE BASIC STABILITY OF THE STRUCTURE IS DEPENDENT UPON THE DIAPHRAGM ACTION OF FLOORS, WALLS, AND ROOF ACTING TOGETHER. PROVIDE GUYS, BRACES, STRUTS, ETC., TO ACCOMMODATE LIVE, DEAD, AND WIND LOADS UNTIL FINAL CONNECTIONS BETWEEN THESE ELEMENTS ARE MADE.

C. LIVE LOADS SHOWN BELOW ARE IN POUNDS PER SQUARE FOOT (PSF).
 ROOF LIVE LOAD: 30 GROUND SNOW LOAD (PG): 25
 FLOOR LIVE LOAD: 40 FLAT ROOF SNOW LOAD (PF): 30
 FLOOR DEAD LOAD: 10
 STAIRS: 30 SNOW LOAD IMPORTANCE FACTOR: 1.0
 SNOW EXPOSURE FACTOR (Ce): 0.7
 DECK LL 40. DL 10

D. WIND CRITERIA:
 ULTIMATE DESIGN WIND SPEED: 115 MPH (3 SECOND GUST)
 NOMINAL DESIGN WIND SPEED: 90 MPH (3 SECOND GUST)
 RISK CATEGORY: II
 WIND EXPOSURE CATEGORY: B

1.2 SHORING

A. PROVIDE SHORING AS REQUIRED TO MAINTAIN STABILITY OF THE STRUCTURE, ADJACENT UTILITIES, CONSTRUCTION, AND EMBANKMENTS DURING THE CONSTRUCTION PERIOD. STRENGTH AND PLACEMENT OF SHORING IS TOTALLY THE RESPONSIBILITY OF THE CONTRACTOR.

B. REMOVE FINISHES, SUCH AS PLASTER, STUCCO, ETC., SO THAT SHORING WILL BE IN DIRECT CONTACT WITH STRUCTURAL MEMBERS.

C. WHERE SPACES BETWEEN SHORING AND EXISTING MEMBERS EXIST, DRIVE HARDWOOD WEDGES SNUG AND TOE NAIL TO SHORING.

1.3 EXISTING CONDITIONS

A. EXPOSE EXISTING FRAMING AND NOTIFY ENGINEER PRIOR TO INSTALLATION OF NEW FRAMING.

B. CONTRACTOR MUST FIELD CHECK AND VERIFY DIMENSIONS AND ELEVATIONS OF EXISTING WORK PRIOR TO FABRICATION OF NEW MATERIALS.

C. USE NON-DESTRUCTIVE TESTING METHODS TO DETERMINE LOCATION OF REINFORCING. DO NOT CUT EXISTING REINFORCING. ADJUST LOCATIONS OF NEW HOLES TO MISS REINFORCING.

D. RELOCATE EXISTING PLUMBING AND HVAC AS REQUIRED TO ALLOW INSTALLATION OF NEW FRAMING.

2.1 DEMOLITION

A. DEMOLITION INCLUDES CONTROLLED DESTRUCTION OF STRUCTURES AND THE REMOVAL AND DISPOSAL OF DEMOLISHED MATERIALS AS SHOWN ON THE DRAWINGS AND INCLUDED IN THESE NOTES.

B. PERFORM DEMOLITION IN SECTIONS SMALL ENOUGH TO PREVENT DAMAGE OF MATERIALS AND FACILITIES AND FOR EMBANKMENTS TO REMAIN IN PLACE.

C. PROVIDE ADEQUATE SHORING, BRACING, AND PROTECTION TO PREVENT MOVEMENT, SETTLEMENT, COLLAPSE OR DAMAGE TO EXISTING MATERIALS AND FACILITIES AND FOR EMBANKMENTS TO REMAIN. SUBMIT COMPLETE DETAILS OF SHORING PROCEDURES SIGNED BY A PROFESSIONAL ENGINEER (REGISTERED IN THE JURISDICTION WHERE THE PROJECT IS LOCATED) PRIOR TO BEGINNING WORK.

D. PROMPTLY REPAIR DAMAGES CAUSED BY THE DEMOLITION TO ADJACENT FACILITIES, MATERIALS, OR EMBANKMENTS AT NO COST TO THE OWNER.

E. PROMPTLY REMOVE FROM SITE AND PROPERLY DISPOSE OF DEBRIS, RUBBISH, AND OTHER MATERIALS RESULTING FROM THE DEMOLITION.

2.3 FOUNDATIONS

A. A SOIL BEARING CAPACITY OF 2000 PSF WAS USED FOR FOOTING DESIGN. ENGAGE THE SERVICES OF A GEOTECHNICAL ENGINEER TO VERIFY EXCAVATIONS AND SOIL BEARING CAPACITY. IF SOIL OF THIS CAPACITY IS NOT ENCOUNTERED AT ELEVATIONS INDICATED, CONTACT ENGINEER OF RECORD (EOR).

3.1 CONCRETE

A. UNLESS GOVERNED BY BUILDING CODE OR LOCAL AMENDMENTS: CONCRETE WORK INCLUDING FORMING, MIXING, PLACING, AND CURING SHALL BE IN ACCORDANCE WITH ACI 301. PLACEMENT OF REINFORCING SHALL BE IN ACCORDANCE WITH ACI 315 AND 318. WHEN THERE IS A CONFLICT, THE MOST STRINGENT IS TO APPLY.

B. SUBMIT COMPLETE SHOP AND ERECTION DRAWINGS FOR REVIEW PRIOR TO FABRICATION OR ERECTION. REPRINTS OF CONTRACT DRAWINGS ARE NOT ACCEPTABLE. SUBMIT DESIGN MIXES FOR EACH CLASS OF CONCRETE PRIOR TO USE.

C. CONCRETE REINFORCING: ASTM A-615, GRADE 60.

D. WELDED WIRE REINFORCEMENT: ASTM A-1064.

E. PORTLAND CEMENT: ASTM C-150, TYPE I.

F. BLENDED HYDRAULIC CEMENT: ASTM C-595.

G. FLY ASH: ASTM C-618, CLASS F (30% MAX.)

H. AGGREGATE: ASTM C-33. 1" MAXIMUM FOR FOOTINGS, WALLS, AND SLABS ON GRADE, 1/2" MAXIMUM FOR THIN SLABS, AND 3/8" FOR WALL FILL.

I. CONCRETE SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH OF: 3,000 PSI.

J. EXTERIOR CONCRETE TO BE AIR-ENTRAINED AND SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH OF: 3,500 PSI.

K. WATER CEMENT RATIO NOT TO EXCEED 0.54 FOR 3,000 PSI CONCRETE AND 0.45 FOR AIR ENTRAINED CONCRETE.

L. INSTALL WELDED WIRE REINFORCEMENT 2" BELOW UPPER SURFACE OF CONCRETE SLAB.

M. REINFORCING FOR FOOTINGS AND OTHER CONCRETE USING EARTH FORMS SHALL HAVE 3" CONCRETE COVER. REINFORCING FOR CONCRETE EXPOSED TO GROUND OR WEATHER AFTER REMOVAL OF FORMS SHALL HAVE 2" CONCRETE COVER. REINFORCING SHALL HAVE 3/4" CONCRETE COVER FOR SLABS AND WALLS AND 1 1/2" COVER FOR BEAMS, GIRDERS, AND COLUMNS.

N. USE A WATER REDUCING ADMIXTURE IN ALL CONCRETE.

O. USE A MINIMUM OF 5 1/2 BAGS OF CEMENT AND A MAXIMUM OF 6 1/2 GALLONS OF WATER PER BAG FOR EACH CUBIC YARD OF CONCRETE.

P. SLUMP - AS REQUIRED BY ACI (211.1), EXCEPT THAT SLABS-ON-GRADE AND THIN-FRAMED SLABS SHALL HAVE A MAXIMUM SLUMP OF 4". SHOULD EXTRA WATER BE REQUIRED BEFORE DEPOSITING CONCRETE AND WATER/CEMENT RATIO OF ACCEPTED MIX DESIGN HAS NOT BEEN EXCEEDED, GENERAL CONTRACTOR'S SUPERINTENDENT SHALL HAVE SOLE AUTHORITY TO AUTHORIZE ADDITION OF WATER. ANY ADDITIONAL WATER ADDED TO MIX AFTER LEAVING BATCH PLANT SHALL BE INDICATED ON THE TRUCK TICKET AND SIGNED BY PERSON RESPONSIBLE. SUBMIT COPY OF TRUCK TICKET FOR REVIEW.

Q. AIR ENTRAIN EXTERIOR EXPOSED CONCRETE 5% +/- 1%.

R. NO CALCIUM CHLORIDE WILL BE PERMITTED IN CONCRETE.

6.1 WOOD FRAMING

A. WOOD FRAMING AND FASTENERS - COMPLY WITH THE RECOMMENDATIONS OF THE AMERICAN WOOD COUNCIL (AWC).

B. SPACING OF NAILS OR SCREWS FOR FLOOR OR ROOF PANELS: PANEL EDGES AT 12" O/C AND 16" O/C ON EACH INTERIOR SUPPORT.

C. SPACING OF NAILS OR SCREWS FOR WALL PANELS: PANEL EDGES AT 6" O/C AND 16" O/C ON EACH INTERIOR SUPPORT.

D. PROVIDE DOUBLE STUD AT VERTICAL PANEL JOINTS FOR WALL APPLICATIONS AND SPACE PANELS MINIMUM 1/8".

E. PLYWOOD: APA - THE ENGINEERED WOOD ASSOCIATION GRADE TRADE MARKED MEETING THE REQUIREMENTS OF THE LATEST EDITION, PER CODE, OF U.S. PRODUCT STANDARD PS-1.

F. PANEL THICKNESS AND IDENTIFICATION INDEX SHALL BE AT LEAST EQUAL TO THAT SHOWN ON THE DRAWINGS. INSTALL AND CONNECT IN ACCORDANCE WITH THE RECOMMENDATIONS OF APA - THE ENGINEERED WOOD ASSOCIATION.

G. ATTACH PLYWOOD FLOOR SHEATHING USING GLUE AND NAILS.

H. UNLESS OTHERWISE NOTED ON DRAWINGS, ATTACH PLYWOOD TO FRAMING WITH MIN. 8d NAILS AT 6" O/C ON EDGES OF SHEET AND 12" O/C ON EACH INTERIOR SUPPORT.

I. FOR PLYWOOD 1/2" IN THICKNESS AND LESS, USE H CLIPS AT MIDPOINT FOR SPANS GREATER THAN 16" O/C. FOR PLYWOOD 5/8" AND THICKER, USE TONGUE AND GROOVE EDGES OR H CLIPS AT MIDPOINT FOR SPANS GREATER THAN 16" O/C. FOR 48" SPANS, PROVIDE 2-H CLIPS AT 1/3 POINTS OF SPAN OR PROVIDE TONGUE AND GROOVE PLYWOOD.

J. STRUCTURAL LUMBER (2"-4" THICK, EXCEPT NONBEARING STUDS AND PLATES) - Spruce Pine Fir No.1 OR BETTER WITH 19% MAXIMUM MOISTURE CONTENT IN USE AND SHALL HAVE THE FOLLOWING MINIMUM UNFACTORED PROPERTIES:

E	= 1,400,000 PSI	fe	= 425 PSI
Fb	= 900 PSI	ft	= 450 PSI
fc (PARALLEL TO GRAIN)	= 1,150 PSI	fv	= 135 PSI

STRUCTURAL LUMBER (5"X6" AND LARGER) - Spruce Pine Fir No. 1 OR BETTER WITH 19% MAXIMUM MOISTURE CONTENT IN USE AND SHALL HAVE THE FOLLOWING MINIMUM UNFACTORED PROPERTIES:

E	= 1,300,000 PSI	fe	= 425 PSI
Fb	= 850 PSI	ft	= 550 PSI
fc (PARALLEL TO GRAIN)	= 700 PSI	fv	= 125 PSI

K. PRESSURE TREATED LUMBER - SOUTHERN PINE #1 WITH THE FOLLOWING RETENTION LEVELS: FOR ABOVE GROUND USE - 0.4 PCF FOR PROCESSES USING ACQ AND CBA-A, 0.2 FOR PROCESS USING CA-B.

L. INSTALL DOUBLE JOISTS UNDER PARTITIONS PARALLEL TO FRAMING.

M. ATTACH MULTIPLE MEMBERS TOGETHER AS FOLLOWS:

(2) 2X: 2 ROWS 16d NAILS @ 16" O/C
 TOP LOADED WITH 3_2X: 2 ROWS 16d NAILS @ 16" O/C
 SIDE LOADED 3_2X10 AND 3_2X12: 3 ROWS - 6d NAILS @ 12" O/C

N. PROVIDE FLUSH FRAMED JOISTS AND HEADERS WITH A PREFABRICATED GALVANIZED (SADDLE TYPE) METAL CONNECTOR UNLESS NOTED OTHERWISE. HANGERS SHALL BE 18 GAGE MINIMUM THICK AND HAVE CAPACITY TO RESIST 500# MINIMUM FOR EACH 2X MEMBER IN SHEAR FOR SPECIES OF WOOD USED.

O. BRIDGING FOR WOOD JOISTS (ROOF AND FLOOR) TO BE DIAGONAL WOOD SPACED AS FOLLOWS: SPANS OVER 8'-0" - ONE ROW

P. EXPOSED STRUCTURAL FRAMING MEMBERS IN ABOVE GROUND USE AND WOOD PLATES IN CONTACT WITH SLABS ON GRADE TO BE PRESSURE TREATED LUMBER. TREAT WOOD WITH A WATERBORNE PRESERVATIVE MATERIAL WITH ONE OF THE FOLLOWING: ALKALINE COPPER QUAT (ACQ) TYPES B OR D, OR COPPER AZOLE (CBA-A, CA-B).

Q. STEEL MATERIALS IN CONTACT WITH PRESSURE TREATED LUMBER TO BE HOT DIPPED GALVANIZED. MINIMUM GALVANIZED COATING FOR PREFABRICATED METAL CONNECTORS TO BE G-185 PER ASTM A-653. CONNECTORS, HOT DIPPED GALVANIZED AFTER FABRICATION, IN ACCORDANCE WITH ASTM A-123. FASTENERS HOT DIPPED GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A-153. MECHANICALLY GALVANIZED FASTENERS IN ACCORDANCE WITH ASTM B-695, CLASS 55.

R. PROVIDE SOLID (CONTINUOUS) BRIDGING AT BEARING POINTS.

S. INSTALL DOUBLE STUD EACH END OF WOOD BEAMS, UNLESS NOTED OTHERWISE.

T. ATTACH WOOD BLOCKING, NAILERS, ETC. TO STEEL OR CONCRETE FRAMING WITH POWER ACTUATED FASTENERS UNLESS NOTED OTHERWISE. SPACE FASTENERS AT 2'-0" MAXIMUM O/C, STAGGERED. MINIMUM CAPACITY OF EACH FASTENER SHALL BE 100 POUNDS IN SHEAR AND PULLOUT, UNLESS NOTED OTHERWISE.

U. EXTERIOR WALL SHEATHING - THERMO-PLY INSULATIVE SHEATHING AS MANUFACTURED BY SIMPLEX PRODUCTS DIVISION, ADRIAN, MICHIGAN 49221. USE STRUCTURAL GRADE (RED PRINT) FOR STUD SPACING OF 16" O/C. USE SUPER STRENGTH (BLUE PRINT) FOR STUD SPACING OF 24" O/C.

V. SHIP AND INSTALL THERMO-PLY SHEATHING IN COMPLIANCE WITH MANUFACTURERS RECOMMENDATIONS. INSTALL 48" X 96" SHEETS WITH 1/8" TO 1/16" GAP BETWEEN PANELS. INSTALL 48 3/4" X 96" SHEETS WITH A 3/4" OVERLAP. NAIL THROUGH THERMO-PLY INTO STUDS USING 11 GAUGE X 1 1/8" GALVANIZED ROOFING NAILS. FASTEN RED PRINT THERMO-PLY AT 3" O/C AT PERIMETER (WHERE EDGE OF PANEL IS UNSUPPORTED BETWEEN STUDS, PROVIDE BLOCKING) AND 6" O/C TO INTERMEDIATE STUDS. FASTEN BLUE PRINT THERMO-PLY AT 3" O/C TO BOTH PERIMETER AND INTERMEDIATE STUDS AND TO BLOCKING AT PANEL EDGES.

6.1A WOOD LINTEL SCHEDULE

A. FOR STUD WALL OPENINGS NOT SPECIFICALLY SHOWN IN PLAN (OPENINGS FOR MECHANICAL TRADES, OPENINGS IN BEARING AND NON BEARING WALLS, ETC.) PROVIDE WL-1, WL-2, OR WL-3 AS DIRECTED BY THE ARCHITECT.

B. PROVIDE ONE BEARING STUD AND ONE FULL HEIGHT JAMB STUD EACH END OF WOOD LINTELS AND HEADERS, UNLESS NOTED OTHERWISE. FOR OPENINGS OVER 7'-0", PROVIDE TWO BEARING STUDS AND ONE FULL HEIGHT JAMB STUD, UNLESS NOTED OTHERWISE.

C. LOOSE ANGLE LINTELS SUPPORTING BRICK VENEER AND SPANNING 4'-0" OR MORE SHALL HAVE PRE-PUNCHED HOLES SPACED AT 2'-0" MAXIMUM O/C IN VERTICAL LEG OF ANGLE FOR 10d NAIL ATTACHMENT TO WOOD LINTEL.

MARK	MATERIAL	REMARKS
WL-1	2-2x8 FOR 4" STUD WALL 3-2x6 FOR 6" STUD WALL	FOR OPENINGS UP TO 4'-6"
WL-2	2-2x10 FOR 4" STUD WALL 3-2x8 FOR 6" STUD WALL	FOR OPENINGS 4'-7" TO 5'-6"
WL-3	2-2x12 FOR 4" STUD WALL 3-2x10 FOR 6" STUD WALL	FOR OPENINGS 5'-7" TO 7'-0"
WL-4	3-2x12 FOR 6" STUD WALL	FOR OPENINGS 7'-1" TO 8'-4"

6.3 PREFABRICATED WOOD TRUSSES

A. DESIGN AND INSTALL TRUSSES, BRACING, AND CONNECTORS FOR TRUSSES IN STRICT ACCORDANCE WITH APPLICABLE BUILDING CODE REQUIREMENTS AS WELL AS THE STRUCTURAL BUILDING COMPONENTS ASSOCIATION (SBCA) AND BY THE TRUSS PLATE INSTITUTE (TPI), UNLESS NOTED OTHERWISE ON THE DRAWINGS.

B. DESIGN TRUSSES TO RESIST LOADS SHOWN ON THE DRAWINGS. ONLY THE OUTLINES OF THE TRUSSES HAVE BEEN SHOWN. WEB CONFIGURATION SHALL BE THE RESPONSIBILITY OF THE MANUFACTURER.

C. TRUSSES TO BE DESIGNED FOR DEFLECTIONS AS FOLLOWS:
 ROOF: LIVE LOAD L/240, L/360 WITH PLASTER OR STUCCO CEILINGS.
 TOTAL LOAD - L/240.

D. PROVIDE TRUSSES WITH CAMBER IN ACCORDANCE WITH "DESIGN SPECIFICATIONS FOR LIGHT METAL PLATE CONNECTED WOOD TRUSSES," LATEST EDITION PER CODE, TPI-85P AND PCT-85.

E. INSTALL BRACING OF WOOD TRUSSES IN ACCORDANCE WITH MANUFACTURERS DESIGN, SBCA, AND TPI, UNLESS NOTED OTHERWISE. THE MINIMUM BRACING ELEMENTS NOTED BELOW ARE TO REMAIN IN PLACE IN THE FINISHED STRUCTURE:

- CONTINUOUS LATERAL BRACING REQUIRED BY TRUSS DESIGN INCLUDING DIAGONAL BRACING AT ENDS OF THE BUILDING AND AT 16'-0" MAXIMUM INTERVALS IN THE LENGTH OF THE BUILDING.
- WEB MEMBER PLANE BRACING.
- BOTTOM CHORD PLANE BRACING.

F. TRUSS SUPPLIER SHALL TAKE SPECIAL CARE TO DESIGN AND SUPPLY LATERAL BRACING FOR COMPRESSION MEMBERS OF TRUSSES SHIPPED IN MULTIPLE PIECES AND FIELD CONNECTED.

G. LUMBER SHALL CONFORM TO THE RECOMMENDATIONS OF THE "NATIONAL DESIGN SPECIFICATIONS FOR WOOD CONSTRUCTION," LATEST EDITION PER CODE AS PUBLISHED BY THE AMERICAN WOOD COUNCIL. EACH PIECE SHALL BE GRADE MARKED.

H. TRUSS MANUFACTURER SHALL COORDINATE PLATE MATERIAL WITH ANY SPECIFIED TREATMENT PROCESS.

I. CONNECT ROOF TRUSSES AT EACH BEARING POINT WITH PREFABRICATED GALVANIZED METAL CONNECTORS AT EACH TRUSS, UNLESS OTHERWISE NOTED. EACH CONNECTOR SHALL BE 18 GAGE MINIMUM THICK AND SHALL HAVE THE UPLIFT AND SHEAR CAPACITY AS REQUIRED BY THE TRUSS MANUFACTURER, BUT SHALL NOT BE LESS THAN 350# UPLIFT AND 130# SHEAR (EQUIVALENT TO 2 - H2.5A SIMPSON ANCHORS) FOR THE SPECIES OF WOOD USED.

J. TRUSS-TO-TRUSS AND TRUSS-TO-HEADER CONNECTIONS SHALL BE DESIGNED BY TRUSS MANUFACTURER.

K. THE BASIC STABILITY OF THE STRUCTURE IS DEPENDENT UPON THE DIAPHRAGM ACTION OF FLOORS, WALLS, AND ROOF ACTING TOGETHER. CONTRACTOR TO PROVIDE GUYS, BRACES, STRUTS, ETC., AS REQUIRED TO ACCOMMODATE LIVE, DEAD, AND WIND LOADS UNTIL FINAL CONNECTIONS BETWEEN THESE ELEMENTS ARE MADE. PERMANENT BRIDGING REQUIRED BY TRUSS DESIGN SHALL BE SIZED AND SUPPLIED BY TRUSS MANUFACTURER. SPECIAL CARE SHALL BE TAKEN TO SIZE AND SUPPLY LATERAL BRACING REQUIRED FOR COMPRESSION MEMBERS OF TRUSSES SHIPPED IN TWO PIECES AND FIELD CONNECTED.

L. BRIDGING, MEMBER BRACING, ETC., SHALL BE AS REQUIRED BY MANUFACTURERS DESIGN AND SHALL BE INSTALLED BY CONTRACTOR IN STRICT ACCORDANCE WITH MANUFACTURERS REQUIREMENTS.

M. ENGAGE THE SERVICES OF AN INDEPENDENT INSPECTION AGENCY TO VISUALLY INSPECT TRUSSES BEFORE AND AFTER ERECTION. INSPECTION AGENCY SHALL CERTIFY THAT THE TRUSSES, CONNECTIONS, AND BRACING HAVE BEEN INSTALLED IN COMPLIANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

6.4 LAMINATED VENEER LUMBER

A. LVL SHALL BE OF WIDTH, DEPTH, AND OF MULTIPLES AS SHOWN ON PLANS.

B. EACH LVL BEAM SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:
 E = 2,000,000 PSI
 Fb = 2,900 PSI
 fc (PARALLEL TO GRAIN) = 3,200 PSI
 fe = 750 PSI
 ft = 1,800 PSI
 fv = 285 PSI

C. WRAP EACH LVL BEAM WITH A WATERPROOF COVERING UNTIL AREA WHERE BEAM IS PLACED IS PROTECTED FROM THE ELEMENTS.

D. ATTACH MULTIPLE MEMBERS TOGETHER AS FOLLOWS:
 SIDE LOADED: 3- LVL MEMBERS- 2 ROWS 1/2" BOLTS @ 16" O/C.

E. HOLES, NOTCHES, ETC., SHALL BE APPROVED BY THE LVL MANUFACTURER.

6.6 WOOD STAIRS, GUARDRAILS, & HANDRAILS

A. STAIR SUPPLIER SHALL DESIGN STAIR FRAMING INCLUDING HANDRAILS AND GUARDRAILS TO SUPPORT THE FOLLOWING DESIGN LOADS:

STAIR:
 - DEAD LOAD - AS REQUIRED BY CONSTRUCTION.
 - LIVE LOAD - 100 PSF OR 300-POUND CONCENTRATED LOAD APPLIED ON A 4-SQUARE-INCH AREA AT CENTER OF TREAD OR AT ANY POINT ON A LANDING.

HANDRAILS: A LIVE LOAD OF 20 POUNDS PER LINEAL FOOT OR 200-POUND CONCENTRATED LOAD, WHICHEVER IS GREATER, APPLIED AT ANY POINT AND IN ANY DIRECTION. THESE LIVE LOADS NEED NOT BE ASSUMED TO ACT CONCURRENTLY.

GUARDRAILS: A LIVE LOAD OF 200-POUND CONCENTRATED LOAD, APPLIED AT ANY POINT AND IN ANY DIRECTION TO TOP RAIL AND 50-POUND CONCENTRATED LOAD APPLIED ON A 1-SQUARE-FOOT AREA AT ANY POINT FOR REMAINING GUARDRAIL INFILL COMPONENTS. THESE LIVE LOADS NEED NOT BE ASSUMED TO ACT CONCURRENTLY. EXTERIOR GUARDRAILS SHALL BE DESIGNED TO RESIST APPLICABLE COMPONENTS & CLADDING WIND LOADS IN CONJUNCTION WITH THE LIVE LOADS LISTED ABOVE.

B. PROVIDE HANGERS, CLIP ANGLES, ETC., AS REQUIRED FOR CONNECTION OF STAIR FRAMING TO SURROUNDING FRAMING. SUBMIT SHOP AND ERECTION DRAWINGS INDICATING FRAMING SIZES AND WOOD GRADES AS WELL AS CONNECTIONS OF STAIR COMPONENTS.

6.7 STEEL

1. THE STRUCTURAL STEEL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ANCHOR BOLT LOCATIONS, ELEVATION OF TOP OF CONCRETE AND BEARING PLATES, ALIGNMENT ETC. PRIOR TO START OF STEEL ERECTION.

2. THE LATEST EDITION OF THE FOLLOWING SPECIFICATIONS SHALL GOVERN:
 A. AISC - "ALLOWABLE STRESS DESIGN SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS"
 B. AISC - "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES"
 C. AWS - "D1.1 STRUCTURAL WELDING CODE - STEEL".

3. MATERIAL, UNLESS OTHERWISE NOTED, SHALL CONFORM TO THE FOLLOWING ASTM SPECIFICATIONS

STRUCTURAL WIDE FLANGE & M SHAPES	A992 OR A572
	Fy = 50KSI
OTHER STRUCTURAL SHAPES AND PLATES	A36, Fy = 36 KSI
STRUCTURAL TUBING	A500, GRADE B
	Fy = 46 KSI
HIGH STRENGTH BOLTS	A325
THREADED RODS	A354, GRADE BC
ANCHOR BOLTS	A325 OR A354 BC
PIPE (HANDRAIL)	SCH 80 PIPE
PIPE (COLUMN)	SCH 80 PIPE

4. ALL WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1 USING E70XX ELECTRODES UNLESS OTHERWISE NOTED. PROVIDE CONTINUOUS MINIMUM SIZED FILLET WELDS PER AISC REQUIREMENTS.

5. HOLES IN STEEL SHALL BE DRILLED OR PUNCHED. ALL SLOTTED HOLES SHALL BE PROVIDED WITH SMOOTH EDGES. BURNING OF HOLES AND TORCH CUTTING AT THE SITE IS NOT PERMITTED. ALL HOLES IN BEARING PLATES SHALL BE DRILLED.

6. ALL STEEL TO BE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123.


7. EPOXY ANCHORS TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.

8. ALL BOLTS SHALL BE TIGHTENED USING TURN-OF-THE-NUT METHOD PER AISC SPECIFICATIONS USING STANDARD HOLES.

9. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND FIT PRIOR TO FABRICATION.

10. THE FABRICATOR SHALL FURNISH CHECKED SHOP AND ERECTION DRAWINGS TO THE ENGINEER AND OBTAIN APPROVAL PRIOR TO FABRICATING ANY STRUCTURAL STEEL. SHOP DRAWINGS SHALL CONFORM TO AISC DETAILING FOR STEEL CONSTRUCTION.

(OWNER)
 13545 PATERNAL GIFT DR, HIGHLAND,
 MARYLAND 20777

DRAWING PROVIDED BY:

AMS
 ENGINEERING

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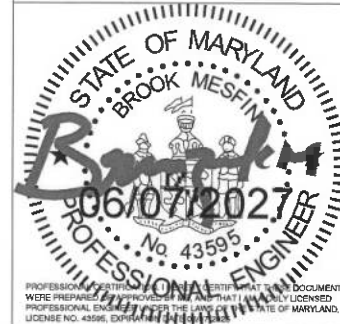
DESIGN THE FUTURE

13545 PATERNAL GIFT DR,
 HIGHLAND,
 MARYLAND 20777

REVISIONS

REV	DATE	DESCRIPTION	BY
1	06/11/2025	REVISED PER COUNTY COMMENTS	BM
0	05/09/2025	PRELIMINARY	BM

PROFESSIONAL STAMP

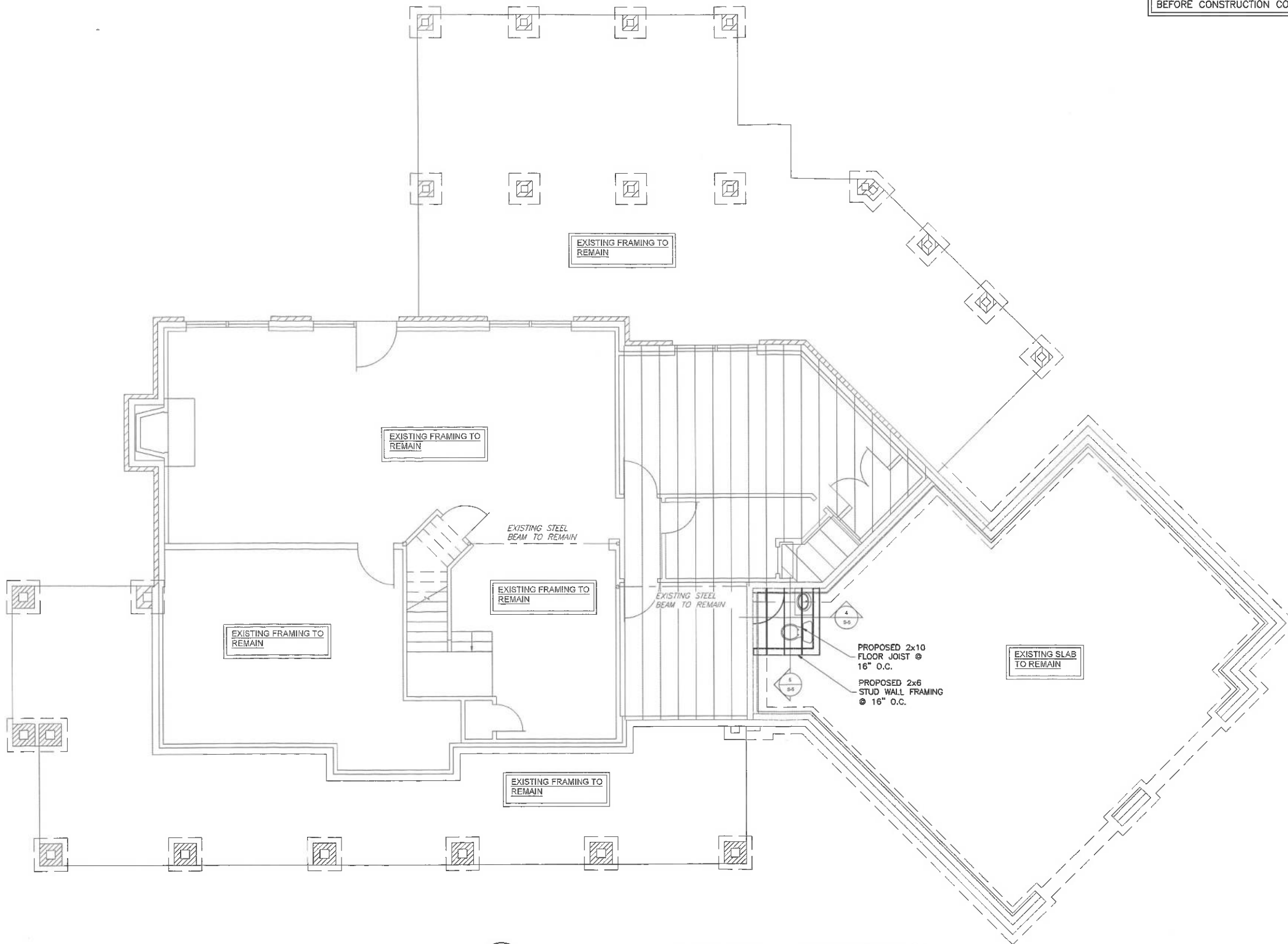


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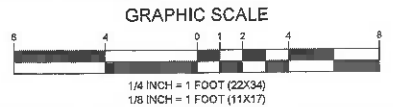
STRUCTURAL NOTES

S-1

NOTE: GENERAL CONTRACTOR TO FIELD VERIFY ALL EXISTING AND PROPOSED DIMENSIONS BEFORE CONSTRUCTION COMMENCES.



1 PROPOSED AND EXISTING LOWER FLOOR FRAMING PLAN
 S-3 SCALE: 1/4" = 1' (22X34)
 SCALE: 1/8" = 1' (11X17)



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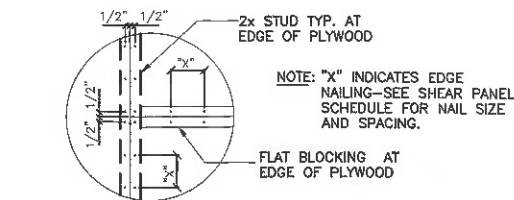
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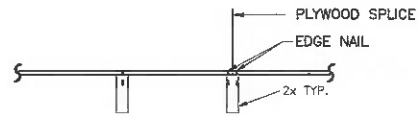
BROOK MESFIN, P.E.
 MD PROFESSIONAL ENGINEER LIC. #43595

PROPOSED AND EXISTING LOWER FLOOR FRAMING PLAN

S-3



PLYWOOD NAILING AT SPLICE



PLAN : PLYWOOD ONE SIDE

1 NAILING AT SPLICE
S-4 NTS

3 NAIL SPACING
S-4 NTS

NAIL SIZE	GPI 20		GPI 45, GPI 55		WI 40, WI 60, WI 80	
	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
8D BOX, 8D COMMON	3"	16"	2"	24"	4"	24"
10D BOX, 12D BOX	3"	16"	2"	24"	4"	24"
10D COMMON, 12D COMMON	4-1/2"	16"	3"	24"	4"	24"

1. IF MORE THAN ONE ROW OF NAILS IS REQUIRED, ROWS MUST BE OFFSET BY AT LEAST 1/2" (3/4" FOR WI JOISTS) AND STAGGERED.
2. 14 GAUGE STAPLES MAY BE SUBSTITUTED FOR 8D NAILS IF STAPLES PENETRATE THE JOIST FLANGE AT LEAST 1".
3. DO NOT USE NAILS LARGER THAN THOSE SHOWN ABOVE WHEN ATTACHING SHEATHING TO FLANGES OF WOOD I BEAM JOISTS.

FOUNDATION REINFORCEMENT

1. REINFORCEMENT SHALL BE DEFORMED AND CONFORM TO THE REQUIREMENTS OF ASTM A615 GRADE 60 UNLESS OTHERWISE NOTED, SPLICES IN REINFORCEMENT SHALL NOT BE ALLOWED UNLESS OTHERWISE NOTED.
2. REINFORCEMENT SHALL BE PROPERLY PLACED PRIOR TO ANY CONCRETE PLACEMENT. REINFORCING SHALL BE BRACED TO RETAIN PROPER DIMENSIONS DURING HANDLING AND THROUGHOUT PLACEMENT OF CONCRETE.
3. WELDING IS PROHIBITED ON REINFORCING STEEL AND EMBEDMENTS, UNLESS NOTED OTHERWISE.
4. MINIMUM CONCRETE COVER FOR REINFORCEMENT SHALL BE 3 INCHES. REBAR CHAIRS MUST BE USED TO ENSURE THE 3 INCH MINIMUM COVER. INCH MINIMUM COVER. CONCRETE BLOCKS ARE NOT TO BE USED TO OBTAIN MINIMUM COVER.

6 FOUNDATION REINFORCEMENT NOTE
S-4 NTS

FOUNDATION CONCRETE

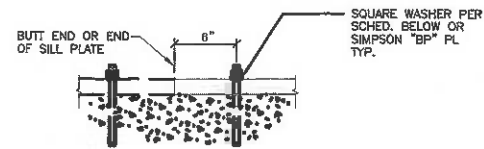
1. WORK SHALL BE IN ACCORDANCE WITH THE LATEST VERSION OF ACI 318 BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE SPECIFICATIONS.
2. PROPORTIONS OF CONCRETE MATERIALS SHALL BE SUITABLE FOR THE INSTALLATION METHOD UTILIZED AND SHALL RESULT IN DURABLE CONCRETE FOR RESISTANCE TO LOCAL ANTICIPATED AGGRESSIVE ACTIONS. THE DURABILITY REQUIREMENTS OF ACI 318 CHAPTER 4 SHALL BE SATISFIED BASED ON THE CONDITIONS EXPECTED AT THE SITE. AS A MINIMUM, CONCRETE SHALL DEVELOP A COMPRESSIVE STRENGTH OF 4000 PSI IN 28 DAYS.
3. CONCRETE SHALL BE PLACED IN A MANNER THAT WILL PREVENT SEGREGATION OF CONCRETE MATERIALS, INFILTRATION OF WATER OR SOL, AND OTHER OCCURRENCES THAT MAY DECREASE THE STRENGTH OR DURABILITY OF THE CONCRETE.
4. LOOSE MATERIAL SHALL BE REMOVED FROM BOTTOM OF EXCAVATION PRIOR TO CONCRETE PLACEMENT. CONCRETE SHALL BE PLACED ON UNDISTURBED SOIL, AND LOOSE CUTTINGS SHALL BE REMOVED FROM SIDES OF EXCAVATION PRIOR TO CONCRETE PLACEMENT. UNDER NO CIRCUMSTANCES SHALL CONCRETE FALL THROUGH WATER.
5. IN COLD WEATHER CONDITIONS, WORK SHALL BE IN ACCORDANCE WITH ACI 306.1-90 (REAPPROVED 2002). SEE ACI 306 FOR DESCRIPTION OF COLD WEATHER CONDITIONS.
6. SULFATE RESISTANT CEMENT SHALL BE USED IN AREAS WHICH ARE KNOWN TO HAVE HIGH SULFATES IN SOIL AND GROUND WATER.

FOUNDATION NOTES:

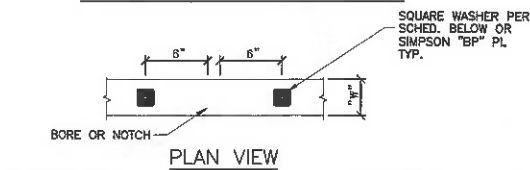
1. ALL WORK SHALL BE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL CODES AND ORDINANCES.
2. PROCEDURES FOR THE PROTECTION OF EXCAVATIONS, EXISTING CONSTRUCTION AND UTILITIES SHALL BE ESTABLISHED PRIOR TO FOUNDATION INSTALLATION.
3. THE CONTRACTOR MUST HAVE EXPERIENCE IN PERFORMANCE OF WORK DESCRIBED HEREIN. BY ACCEPTANCE OF THIS ASSIGNMENT, THE CONTRACTOR ACCEPTS THAT THEY HAVE SUFFICIENT EXPERIENCE, ABILITY, AND KNOWLEDGE OF WORK TO BE PERFORMED AND THAT THEY ARE PROPERLY LICENSED, REGISTERED, AND/OR ENSURED TO PERFORM THIS WORK.
4. CONTRACTOR IS SOLELY RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION, INCLUDING BUT NOT LIMITED TO, INITIATING, MAINTAINING, LAYOUT AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. CONTRACTOR IS SOLELY RESPONSIBLE FOR ENSURING THE WORK COMPLIES WITH ALL APPLICABLE SAFETY CODES AND REGULATIONS.
5. ALL DIMENSIONS AND/OR ELEVATIONS, OR SIMILAR EXISTING CONDITIONS SHOWN ON THE DRAWING ARE TO BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO THE BEGINNING ANY ORDERING, FABRICATION, OR CONSTRUCTION WORK. ANY DISCREPANCIES ARE TO BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER/OWNER. DISCREPANCIES MUST BE RESOLVED BEFORE CONTRACTOR IS TO PROCEED WITH THE WORK.
6. THOROUGHLY COMPACT ALL FOOTING EXCAVATIONS PRIOR TO PLACING ANY CONCRETE.
7. FOUNDATION SUB-GRADE SOIL SHALL HAVE A MINIMUM BEARING CAPACITY OF 2000 PSF.

4 CONCRETE NOTE
S-4 NTS

7 FOUNDATION NOTES
S-4 NTS



TYPICAL SILL PLATE ELEVATION



PLAN VIEW



MINIMUM SILL BOLT PROJECTION

SILL BOLT REQUIREMENTS

1. PROVIDE A MINIMUM SILL BOLT EMBEDMENT OF 7" BELOW FINISH FLOOR OR TOP OF CRUB.
2. PROVIDE AN ADDITIONAL SILL BOLT 6 INCHES FROM EACH END OF EACH PIECE OF SILL PLATE.
3. WHERE SILL PLATES ARE BORED OR NOTCHED IN EXCESS OF 1/3 OF THE SILL PLATE WIDTH, PROVIDE ADDITIONAL SILL BOLTS 6 INCHES EACH SIDE OF BORE OR NOTCH.
4. SET ALL SILL BOLTS WITH A SETTING TEMPLATE BEFORE PLACING CONCRETE. STABBING OR PUSHING OF SILL BOLTS INTO WET CONCRETE IS EXPRESSLY PROHIBITED.
5. RECOMMENDED TO USE SIMPSON ANCHORMATE ANCHOR BOLT HOLDER.
6. PROVIDE A MINIMUM SILL BOLT PROJECTION ABOVE THE CONCRETE AS SHOWN ON DETAIL ABOVE.
7. MINIMUM SIZE OF SQUARE PLATE WASHERS:

BOLT SIZE	PLATE SIZE
5/8"	1 1/4" x 3" x 3"
3/4"	5/16" x 3" x 3"
7/8"	5/16" x 3" x 3"
1"	3/8" x 3 1/2" x 3 1/2"

PLYWOOD SHEAR PANEL SCHEDULE						
PANEL DESIGNATION	STRUCT. PLYWOOD	EDGE NAILING	FOUNDATION BOLTS SIZE & SPACING	SILL SCREW SIZE & SPACING	MIN. NO. OF SILL BOLTS PER 6'-0" WIDTH (BTWN FLOORS)	A35 MAX. SPACING WALL TOP & BOTTOM ***
A	1/2"	10d@6" O.C.	5/8" @ 36" O.C.	SIMPSON SDS 6x6 SCREWS @ 6" O.C.	3	12"

NOTES:

1. USE 12" LONG ANCHORE BOLTS EXTENDING 4-1/2" OUT OF CONCRETE.
2. USE SIMPSON "BP" BEARING PLATE T ALL SHEAR WALL FND. BOLTS.
3. PLYWOOD SHALL BE APPLIED OVER STUDS @ 16" O.C. ON ONE SIDE OF STUD.
4. NAILING AT INTERMEDIATE MEMBERS TO BE SPACED AT 12" O.C.
5. ALL EXTERIOR FOOTINGS SHALL HAVE SILL BOLTS, SEE DETAIL 5/S104.
6. TYP. U.N.O. SILL BOLTS ARE 12" LONG (MIN)
7. STAGGER NAILS WHERE PANELS ARE APPLIED ON BOTH FACES AND WHEN NAILING SPACING IS LESS THAN 6" O.C. ON EITHER SIDE, OR WHERE PANEL APPLIED IN ONE SIDE & NAIL LESS THAN 3" O.C.

***A35 CLIPS BY SIMPSON FOR SHEAR TRANSFER BETWEEN RIM JOIST/TOP PLATE AND RIM JOIST/BOTTOM PLATE AT TOP AND BOTTOM OF SHEAR PANELS

2 SILL PLATE DETAIL
S-4 NTS

5 NAILING AT SPLICE
S-4 NTS

(OWNER)
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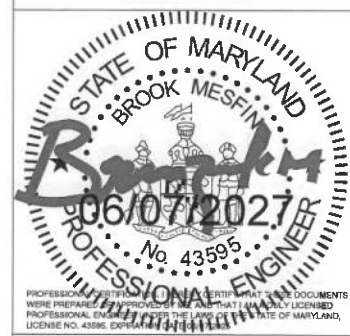
DESIGN THE FUTURE

13545 PATERNAL GIFT DR,
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REVISIONS

REV	DATE	DESCRIPTION	BY
1	06/11/2025	REVISED PER COUNTY COMMENTS	EM
0	05/08/2025	PRELIMINARY	EM

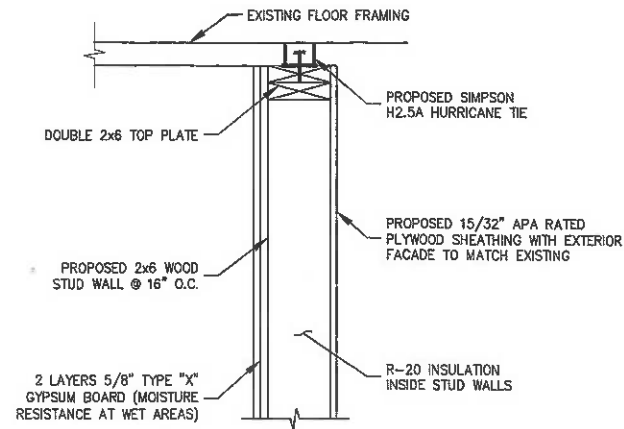
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STRUCTURAL
DETAILS

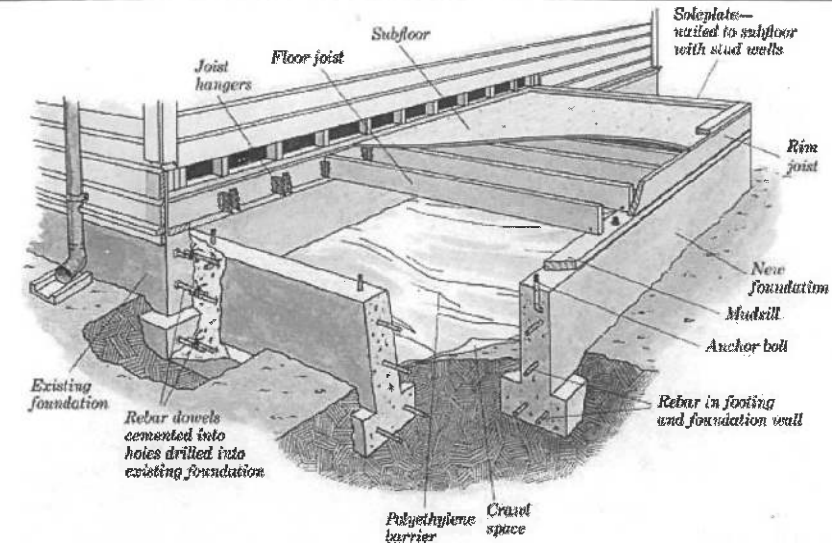
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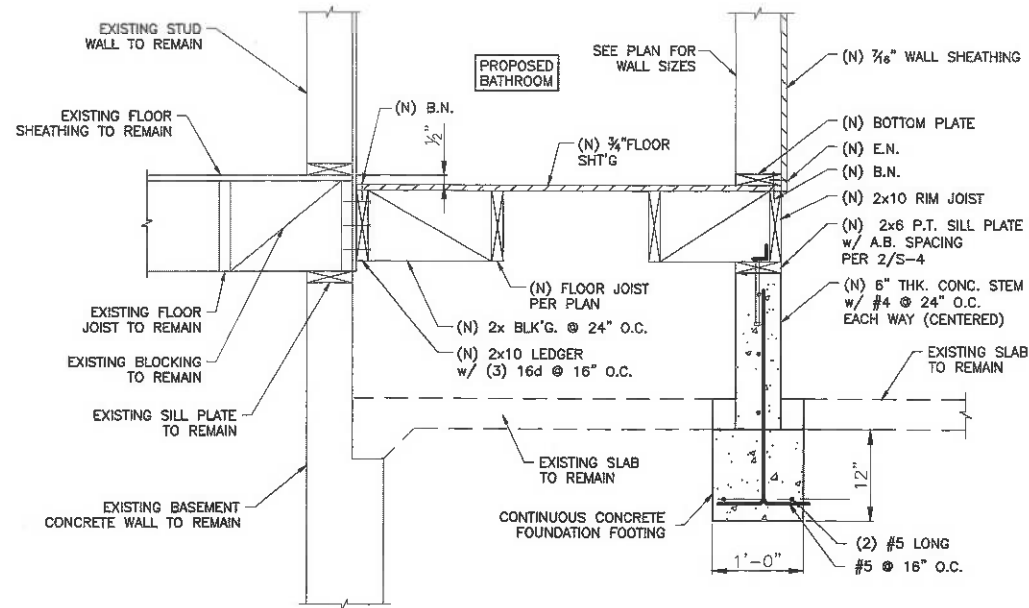
1
S-5 NTS
NEW STUD WALL WITH EXISTING FLOOR JOIST AT TOP

STRUCTURAL NOTES	
CONCRETE:	
DESIGN SOIL BEARING PRESSURE:	2,000 PSF
DESIGN SOIL LATERAL PRESSURE:	45 PCF
CONCRETE COMPRESSIVE STRENGTH:	
BASEMENT SLAB:	2,500 PSI
FOUNDATION:	3,000 PSI

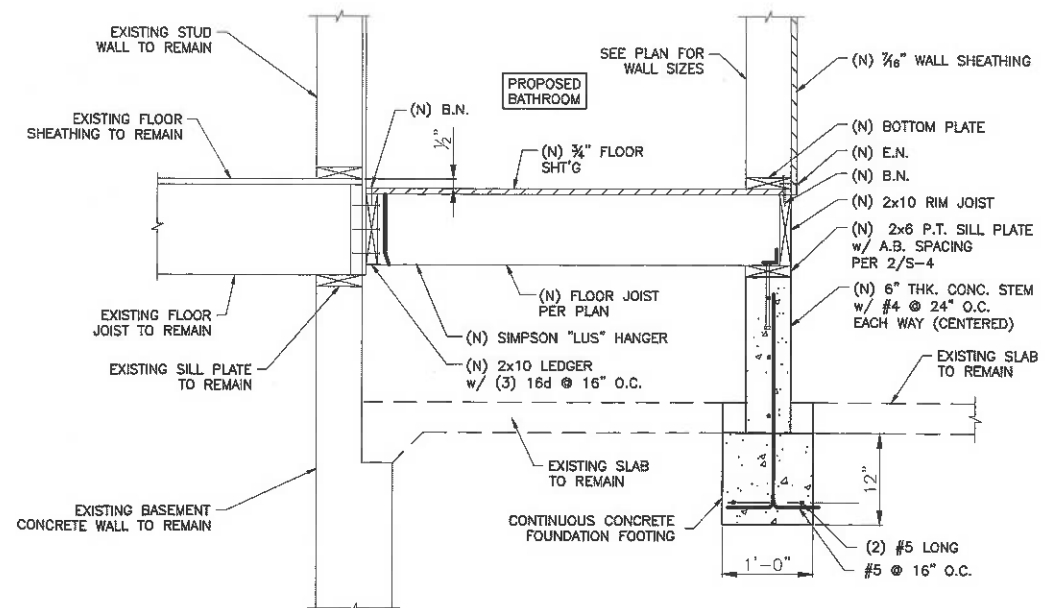
2
S-5 NTS
STRUCTURAL NOTES



3
S-5 NTS
NEW FOOTING TO EXISTING TIE-IN DETAIL



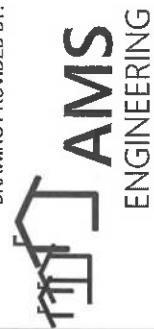
4
S-5 NTS
NEW FLOOR JOIST AT NEW STEM WALL



5
S-5 NTS
NEW FLOOR JOIST AT NEW STEM WALL

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STRUCTURAL
DETAILS

S-5