GENERAL NOTES:

1. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY THAT ALL DIMENSIONS, ROOF PITCHES, AND SQUARE FOOTAGE ARE CORRECT PRIOR TO CONSTRUCTION. K&A HOME DESIGNS, INC. IS NOT RESPONSIBLE FOR ANY DIMENSIONING, ROOF PITCH, OR SQUARE FOOTAGE ERRORS ONCE CONSTRUCTION BEGINS.
2. ALL WALLS SHOWN ON THE FLOOR PLANS ARE DRAWN AT 4" UNLESS NOTED OTHERWISE.
3. ALL ANGLED WALL SHOWN ON THE PLANS ARE 45 DEGREES UNLESS NOTED OTHERWISE.
4. STUD WALL DESIGN SHALL CONFORM TO ALL NORTH CAROLINA STATE BUILDING CODE REQUIREMENTS.
5. DO NOT SCALE PLANS. DRAWING SCALE MAY BE DISTORTED DUE TO COPIER IMPERFECTIONS.
6. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH NORTH CAROLINA RESIDENTIAL STATE BUILDING CODE, 2018 EDITION.

SQUARE FOOTAGE

HEATED SQUARE FOOTAGE		UNHEATED SQUARE FOOTAGE	
FIRST FLOOR=	2945	GARAGE=	762
SECOND FLOOR=	2164	FRONT PORCH=	107
THIRD FLOOR=	N/A	3 SEASON ROOM=	351
BASEMENT=	N/A	COVERED PORCH=	114
		DECK=	875
		RAISED PATIO=	124
TOTAL HEATED= 5109		**TOTAL UNHEATED= 2333**	

CRAWL SPACE VENTILATION CALCULATIONS

-VENT LOCATIONS MAY VARY FROM THOSE SHOWN ON THE PLAN BUT SHOULD BE PLACED TO PROVIDE ADEQUATE VENTILATION AT ALL POINTS TO PREVENT DEAD AIR POCKETS.

-100% VAPOR BARRIER MUST BE PROVIDED WITH 12" MIN. LAP JOINTS.

-THE TOTAL AREA OF VENTILATION OPENINGS MAY BE REDUCED TO 1/1500 AS LONG AS REQUIRED OPENINGS ARE PLACED SO AS TO PROVIDE CROSS-VENTILATION OF THE SPACE. THE INSTALLATION OF OPERABLE LOUVERS SHALL NOT BE PROHIBITED. (COMPLY WITH NC CODE MIN. WITH REGARD TO VENT PLACEMENT FROM CORNERS)

N/A SQ. FT. OF CRAWLSPACE/1500

N/A SQ. FT. OF REQUIRED VENTILATION

PROVIDED BY: N/A VENTS AT 0.45 SQ. FT. NET FREE

VENTILATION EACH= N/A SQ. FT. OF VENTILATION

*****FOUNDATION DRAINAGE- WATERPROOFING PER SECTIONS 405 & 406.***

ATTIC VENTILATION CALCULATIONS

- CALCULATIONS SHOWN BELOW ARE BASED ON VENTILATORS USED AT LEAST 3 FT. ABOVE THE CORNICE VENTS WITH THE BALANCE OF VENTIALTION PROVIDED BE EAVE VENTS.

- CATHEDRAL CEILINGS SHALL HAVE A MIN. 1" CLEARANCE BETWEEN THE BOTTOM OF THE ROOF DECK AND THE INSULATION.

4279 SQ. FT. OF ATTIC/300= 14.26

EACH OF INLET AND OUTLET REQUIRED.

****WALL AND ROOF CLADDING DESIGN VALUES***

- WALL CLADDING IS DESIGNED FOR A 24.1 SQ. FT. OR GREATER POSITIVE AND NEGATIVE PRESSURE.

- ROOF VALUES BOTH POSITVE AND NEGATIVE SHALL BE AS FOLLOWS:

45.5 LBS. PER SQ. FT. FOR ROOF PITCHES OF 0/12 TO 2.25/12

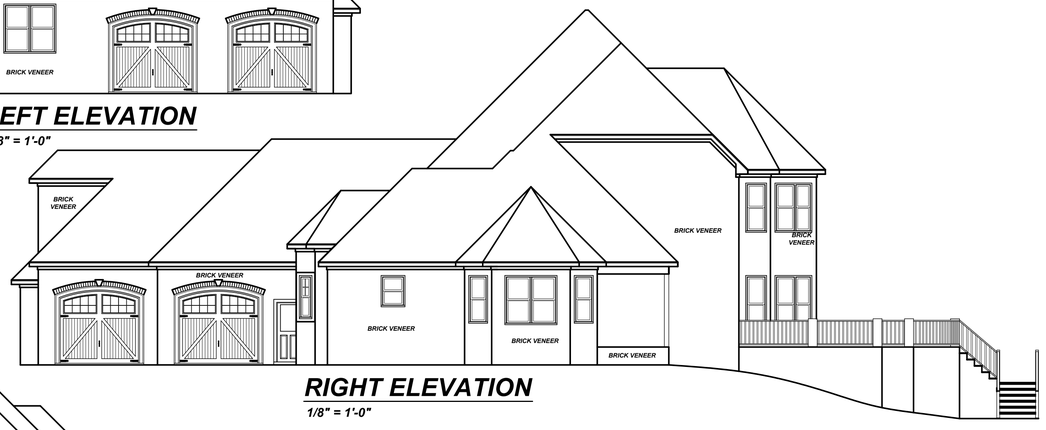
34.8 LBS. PER SQ. FT. FOR ROOF PITCHES OF 2.25/12 TO 7/12

21 LBS. PER SQ. FT. FOR ROOF PITCHES OF 7/12 TO 12/12

***** MEAN ROOF HEIGHT 30' OR LESS***

FRONT ELEVATION
3/16" = 1'-0"

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



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

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

Project #:
22-187
Date:
8-10-22
Drawn/Design By:
KBB
Scale:
REFER TO ELEV.

REVISIONS

No.	Date:	Remarks
1		
2		
3		
4		

9101 Ten-Ten Rd.
Raleigh, NC 27603
Office: (919) 302-0693
Website: www.KandAHomeDesigns.com
Email: Kent@KandAHomeDesigns.com

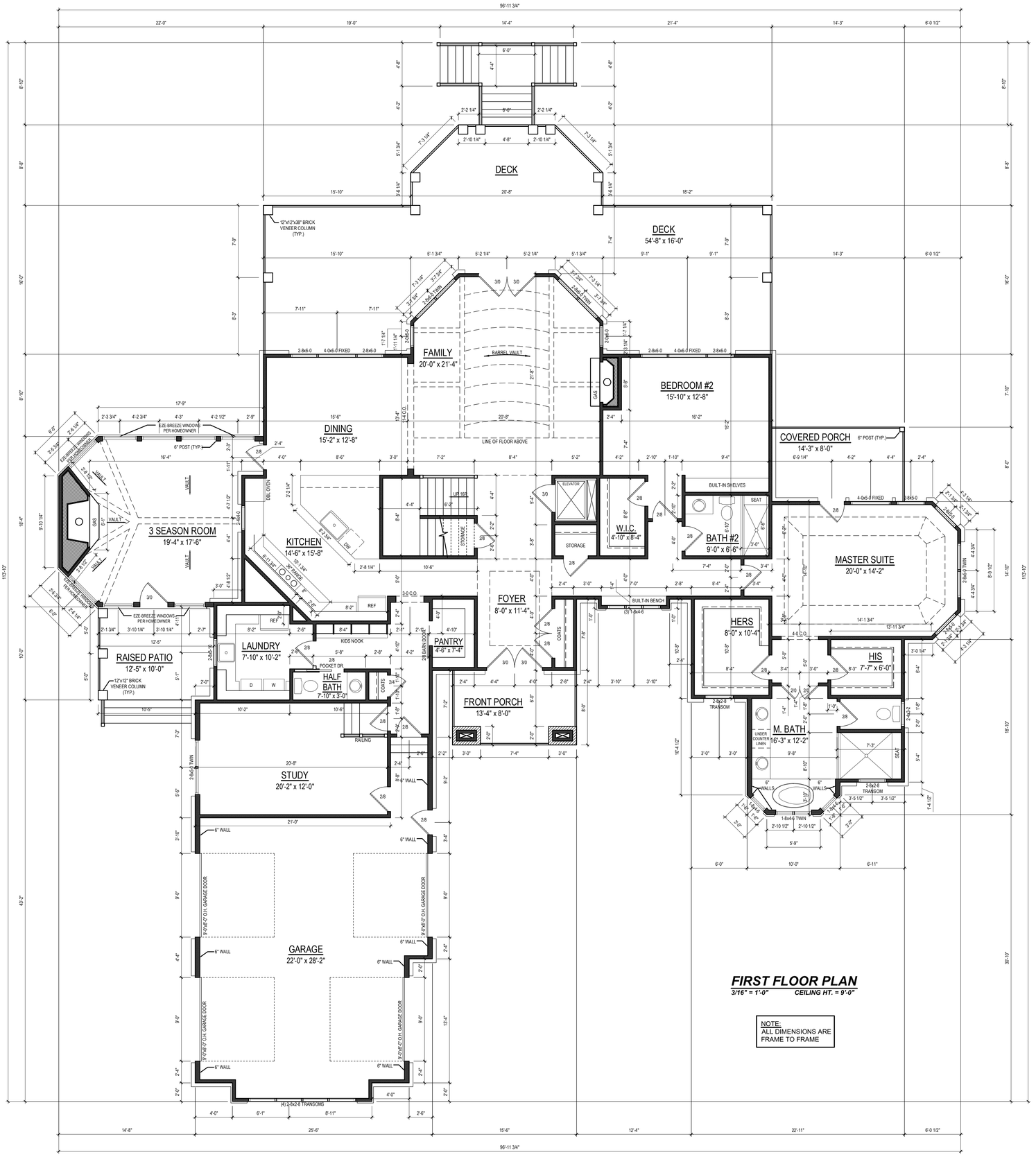
K&A HOME DESIGN Inc.

Project Name:
Alvarez Residence

Client Name:
Aaron Alvarez
14 Dallas Dr.
Coats, NC 27526

ELEVATIONS

Sheet Number
1
of 3



Sheet Number 2 of 3

FIRST FLOOR

Client Name:

Aaron Alvarez
14 Dallas Dr.
Coats, NC 27526

Project Name:

Alvarez Residence

K&A HOME DESIGN Inc.

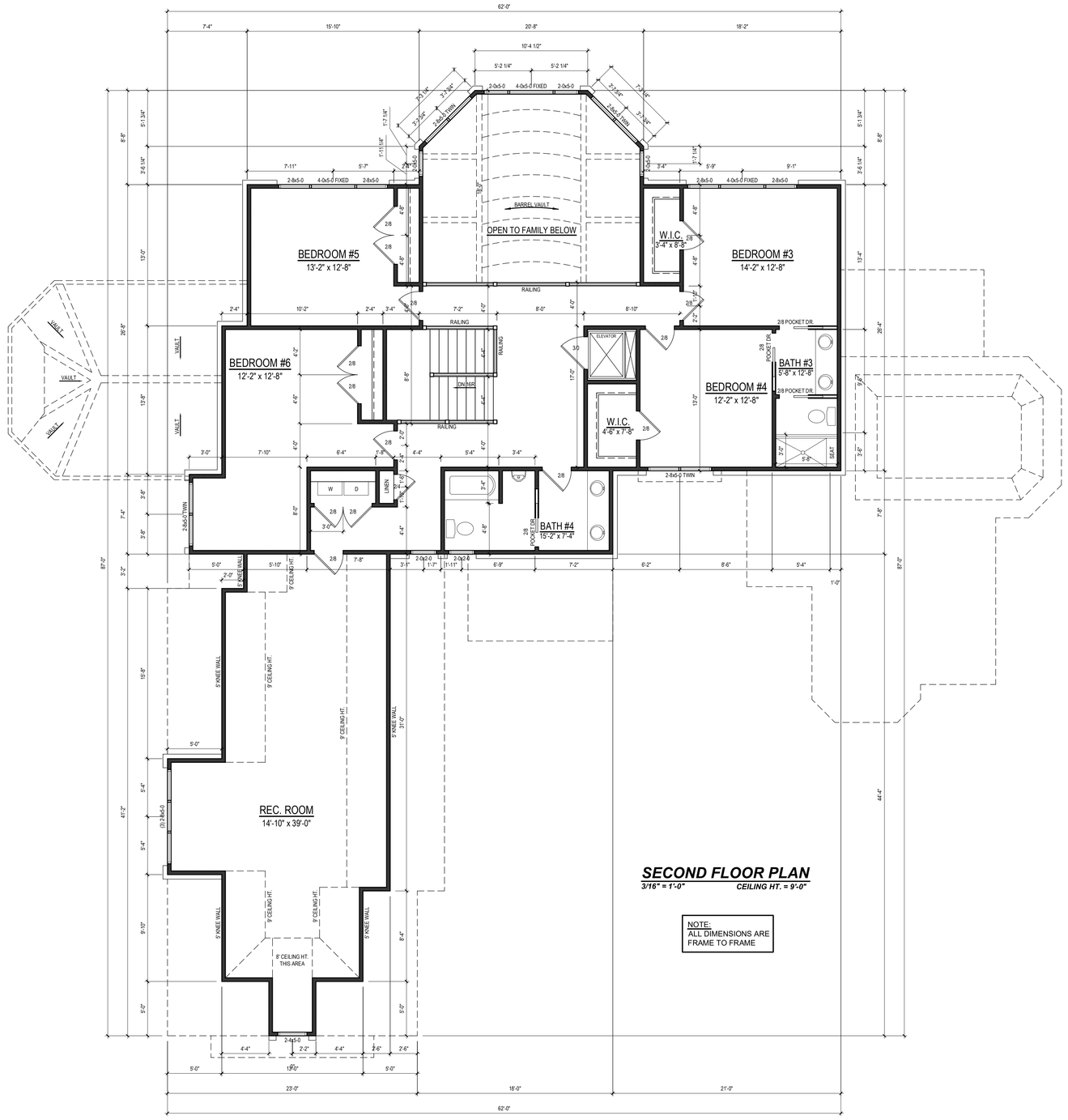
9101 Ten-Ten Rd.
Raleigh, NC 27603
Office: (919) 302-0693

Email: Kent@KandAHomeDesigns.com Website: www.KandAHomeDesigns.com

No.	Date	Remarks
1		
2		
3		
4		

REVISIONS

Project #: 22-187
Date: 8-10-22
Drawn By: KBB
Scale: 3/16"=1'-0"



SECOND FLOOR PLAN

3/16" = 1'-0" CEILING HT. = 9'-0"

NOTE:
ALL DIMENSIONS ARE FRAME TO FRAME

Sheet Number 3 of 3

SECOND FLOOR

Client Name:
Aaron Alvarez
14 Dallas Dr.
Coats, NC 27526

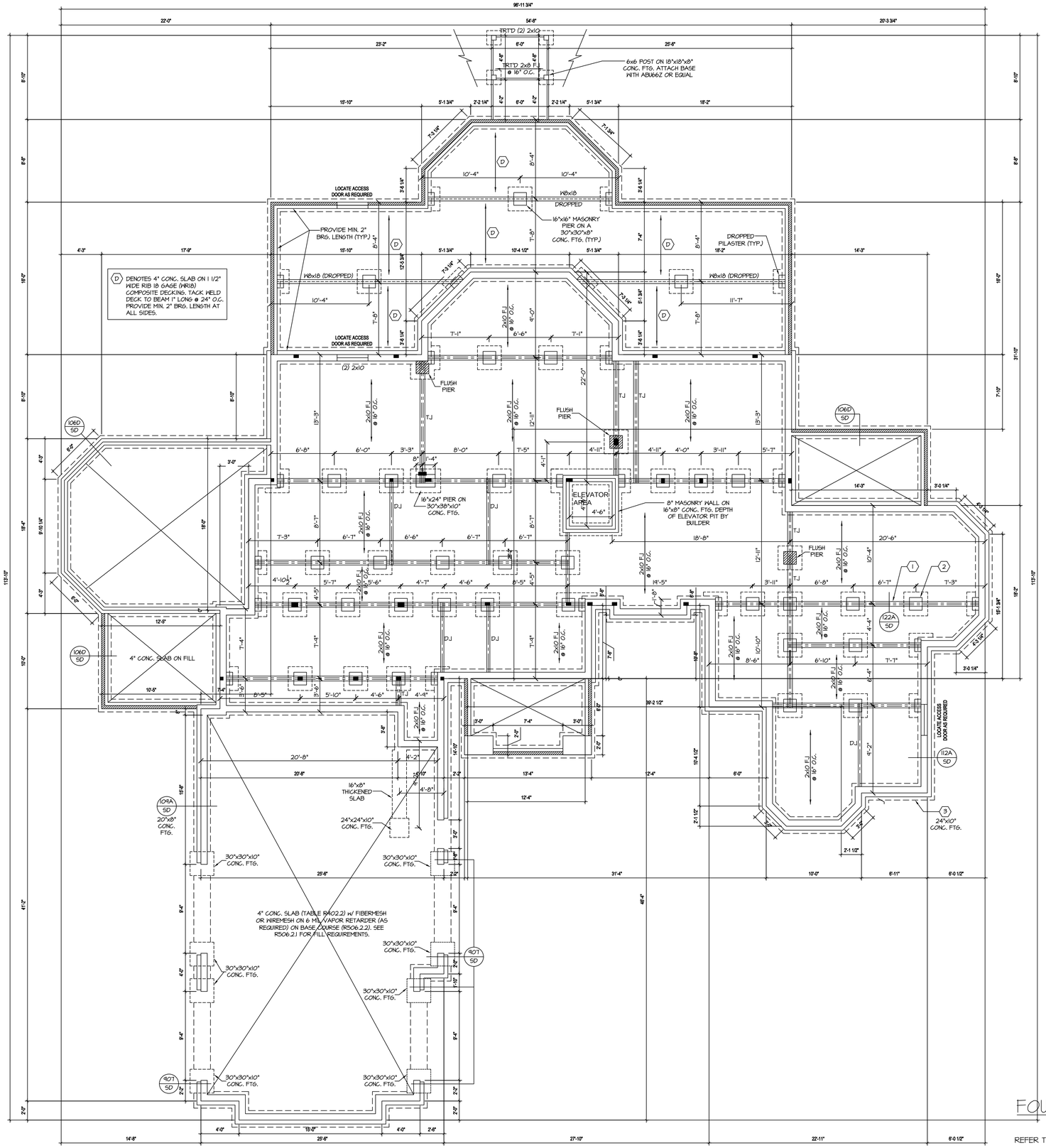
Project Name:
Alvarez Residence

K&A HOME DESIGN Inc.
9101 Ten-Ten Rd.
Raleigh, NC 27603
Office: (919) 302-0693
Email: Kent@KandAHomeDesigns.com
Website: www.KandAHomeDesigns.com

No.	Date	Remarks
4		
3		
2		
1		

REVISIONS

Project #: 22-187
Date: 8-10-22
Drawn By: KBB
Scale: 3/16"=1'-0"



FOUNDATION STRUCTURAL NOTES

NC (2018 NCRC); Wind: 115-120 mph - Cat#II

1. (3)2x10 SYP#2 OR SPF#2 GIRDER, TYPICAL UNO.
2. CONCRETE BLOCK PIER SIZE SHALL BE:

SIZE	HOLLOW	SOLID
8x16	UP TO 32"	UP TO 5'-0"
12x16	UP TO 48"	UP TO 9'-0"
16x16	UP TO 64"	UP TO 12'-0"
24x24	UP TO 96"	

WITH 30" x 30" x 10" CONCRETE FOOTING, UNO.

3. WALL FOOTING AS FOLLOWS

DEPTH:	8" - UP TO 2 STORY
	10" - 3 STORY
WIDTH:	
SIDING:	16" - UP TO 2 STORY
	20" - 3 STORY
BRICK:	16" - 1 STORY
	20" - 2 STORY
	24" - 3 STORY

- FOR FOUNDATION WALL HEIGHT AND BACKFILL REQUIREMENTS, REFER TO CODE TABLE R404.1.1 (1 THRU 4) NOTE: ASSUMED SOIL BEARING CAPACITY = 2000 PSF. CONTRACTOR MUST VERIFY SITE CONDITIONS AND CONTACT SOILS ENGINEER IF MARGINAL OR UNSTABLE SOILS ARE ENCOUNTERED.

4. (4) 2x10 SFF #2 OR SYP #2 GIRDER
5. (2) 1.75x9.25 LVL OR LSL GIRDER
6. (3) 1.75x9.25 LVL OR LSL GIRDER
7. "■" DESIGNATES A SIGNIFICANT POINT LOAD TO HAVE SOLID BLOCKING TO PIER. SOLID BLOCK ALL BEAM BEARING POINTS NOTED TO HAVE THREE OR MORE STUDS TO FND, TYPICAL.
8. ABBREVIATIONS:
   - "S.J." = SINGLE JOIST
   - "D.J." = DOUBLE JOIST
   - "T.J." = TRIPLE JOIST
9. ADJUST SUBFLOOR THICKNESS OR JOIST SPACING AS REQ'D FOR FLOOR FINISH MATERIALS.

NOTE: DIMENSIONS ARE TO FRAMING. ADD 5" FOR BRICK VENEER

FOUNDATION STRUCTURAL PLAN

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

REFER TO "SD" SHEET(S) FOR STANDARD DETAILS AND STRUCTURAL NOTES

NORTH CAROLINA PROFESSIONAL SEAL 16073 ENGINEER JAMES K. HERMAN 5/22/24

PROJECT # 22-1786.2

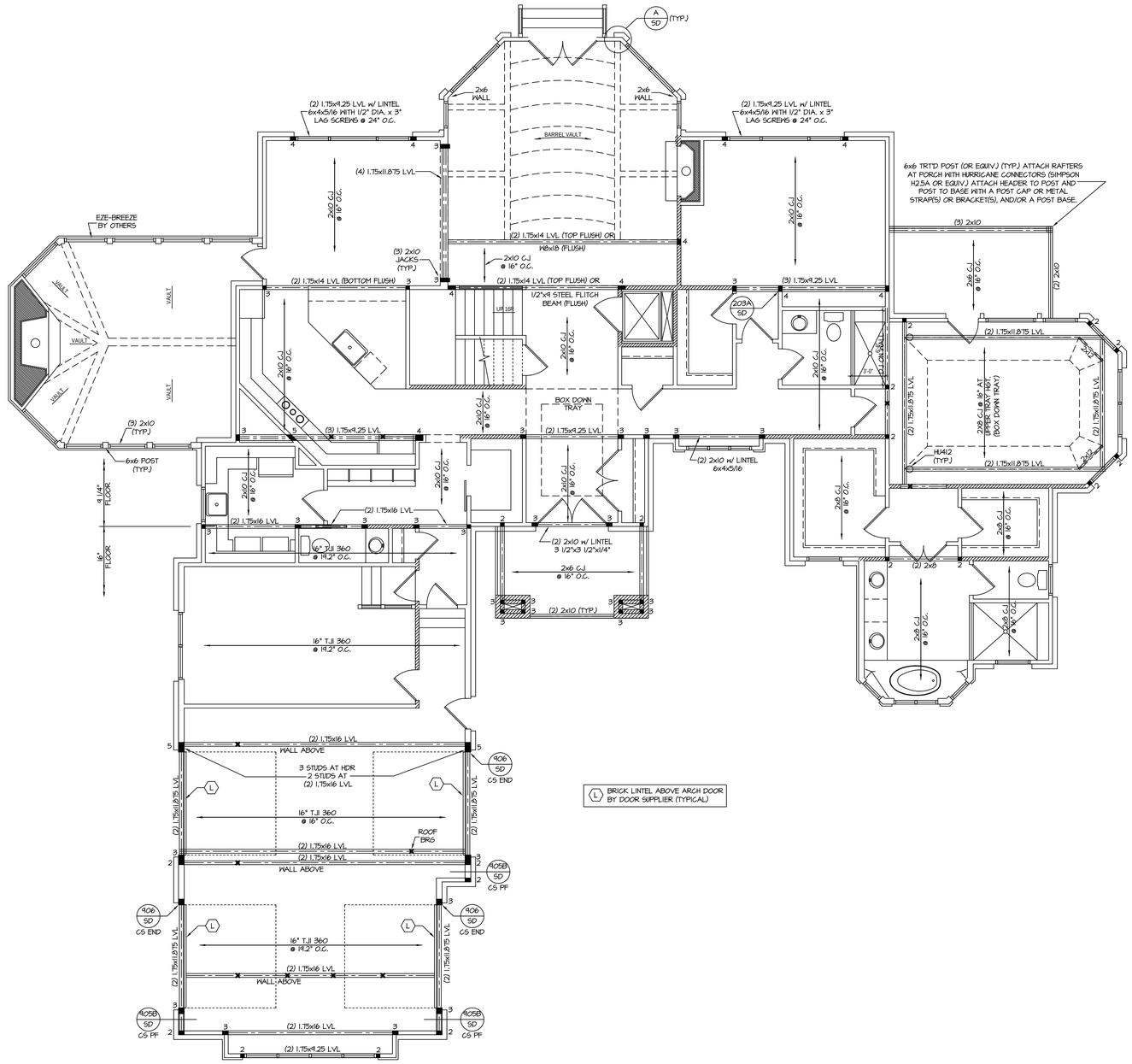
Engineers seal applies only to structural components on this document. Seal does not include construction means, methods, techniques, sequences, procedures or safety precautions. Any deviations or discrepancies on plans are to be brought to the immediate attention of Southern Engineers. Failure to do so will void Southern Engineer's liability. Seal is valid for projects permitted one year from date of seal. Use of these plans constitutes approval of terms & conditions as defined in the customer agreement.

Southern Engineers, P.A.
3716 Benson Drive, Raleigh, NC 27609
Phone: (919) 878-1617
License: C-4772
www.southernengineers.com

K&A HOME DESIGN, INC.

Alvarez Residence

S-1



L BRICK LINTEL ABOVE ARCH DOOR BY DOOR SUPPLIER (TYPICAL)

HEADER/BEAM & COLUMN NOTES

1. ALL EXTERIOR AND LOAD BEARING HEADERS SHALL BE MIN. (2)2x10 (4" WALL) OR (3)2x10 (6" WALL) WITH (1) SUPPORT STUD, UNLESS NOTED OTHERWISE.
2. THE NUMBER SHOWN AT BEAM AND HEADER SUPPORTS INDICATES THE NUMBER OF SUPPORT STUDS REQUIRED IN STUD POCKET OR COLUMN. THE NUMBER OF KING STUDS AT EACH END OF HEADERS IN EXTERIOR WALLS SHALL BE ACCORDING TO ITEM "d" IN TABLE R602.3(5) OR AS BELOW PER NCDOI COMMENTARY "KING STUDS AT WALL OPENINGS" REVISED 1-4-2020:
   - UP TO 3' SPAN: (1) KING STUD
   - OVER 3' UP TO 6' SPAN: (2) KING STUDS
   - OVER 6' UP TO 9' SPAN: (3) KING STUDS
   - OVER 9' UP TO 12' SPAN: (4) KING STUDS
   - OVER 12' UP TO 15' SPAN: (5) KING STUDS

LVL CONNECTION LEGEND

1. (2) PLY 1.75" LVL BEAMS:
   - (3) ROWS OF 10d NAILS @ 12" O.C. OR
   - (2) ROWS OF SIMPSON SDW22338 (OR EQUAL) SCREWS @ 16" O.C.
2. (3) PLY 1.75" LVL BEAMS:
   - (3) ROWS OF 10d NAILS @ 8" O.C. ON EACH SIDE OR
   - (2) ROWS OF SIMPSON SDW22500 (OR EQUAL) SCREWS @ 16" O.C.
3. (4) PLY 1.75" LVL BEAMS:
   - (2) ROWS OF SIMPSON SDW22634 (OR EQUAL) SCREWS @ 16" O.C. FOR BEAMS UP TO 18"
   - (3) ROWS OF SIMPSON SDW22634 (OR EQUAL) SCREWS @ 16" O.C. FOR BEAMS GREATER THAN 18".

WOOD "I" JOISTS

(SHALL BE ONE OF THE FOLLOWING OR EQUAL):

- TJI 360 BY I-LEVEL
- LPI 42 PLUS BY LP
- BCI 60s 2.0 BY BC
- ALL WOOD "I" JOISTS SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
- INSTALL SQUASH BLOCKS, WEB STIFFENERS, ETC. AS REQUIRED BY AND ACCORDING TO THE I-JOIST MANUFACTURER'S SPECIFICATIONS AND INSTRUCTIONS.
- HANGERS FOR I-JOISTS ARE THE RESPONSIBILITY OF THE I-JOIST SUPPLIER.

NOTE: I-JOISTS MAY BE SUBSTITUTED WITH FLOOR TRUSSES DESIGNED BY SUPPLIER (SAME DEPTH AND LAYOUT).

FRAMING NOTES

NC (2018 NCRC); Wind: 115-120 mph

1. BRACING METHOD AND TYPE: CONTINUOUSLY SHEATHED WSP; CS-WSP. NOTE THAT THE WALL BRACING AMOUNT PROVIDED ON THE PLANS (DETAILS AND SPECIFICATIONS) IS GREATER THAN THE AMOUNT OF WALL BRACING REQUIRED BY SECTION R602.10 OF THE CODE. SEE NOTES BELOW FOR DETAILS AND SPECIFICATIONS FOR WALL BRACING AND WALL FRAMING.
2. EXTERIOR WALL SHEATHING: WALLS SHALL BE BRACED BY SHEATHING WALLS ON ALL STORIES WITH WOOD STRUCTURAL PANEL SHEATHING (WSP) (EXPOSURE B: 7/16", EXPOSURE C: 15/32"). SHEATHING SHALL BE ATTACHED WITH 8d NAILS AT A 6"/12" NAILING PATTERN (6" OC AT PANEL EDGES AND 12" OC AT INTERMEDIATE SUPPORTS). INSTALL BLOCKING AT ALL PANEL EDGES.
3. WSP SHEATHING SHALL EXTEND TO THE UPPERMOST DOUBLE BEARING PLATE. BLOCK AT ROOF PER SECTION R602.10.4.5 AND ATTACH BRACED WALLS PER CODE. WSP SHEATHING BETWEEN FLOORS SHALL BE SPLICED ALONG CONTINUOUS BAND OR THE WSP SHEATHING MAY BE SPLICED ACROSS STUDS (CONTINUOUS ACROSS FLOOR SYSTEM) WITH BLOCKING AT PANEL EDGES, (MINIMUM 12" BEYOND FLOOR BREAK) OR OTHER APPROVED METHOD.
4. "HD" = HOLDOWN: HOLD-DOWN DEVICE (NOTED AS "HD" ON PLANS) SHALL BE AN 800 POUND CAPACITY ASSEMBLY AS NOTED ON PLANS. SEE DETAILS FOR HD ASSEMBLY.
   - **GROUND/FIRST FLOOR: USE "HD HOLD-DOWN DETAIL" ON SD SHEET (OR EQUIV.)
   - **UPPER FLOORS: ATTACH BASE OF KING STUD WITH A SIMPSON CS22 STRAP DOWN ACROSS THE BAND AND DOWN TO A STUD BELOW OR HEADER BELOW. EXTEND STRAP 1" MIN ALONG EACH STUD (OR HEADER) AND ATTACH EACH END W/ (1) 8d NAILS.
5. INTERIOR BRACED WALL: (NOTED AS "IBW" ON PLANS) ATTACH 1/2" GYPSUM BOARD (GB) ON EACH SIDE OF WALL WITH A MIN. OF 5d COOLER NAILS OR #6 SCREWS @ 7" O.C. ALONG THE EDGES AND AT INTERMEDIATE SUPPORTS.
6. INTERIOR BRACED WALL-WOOD STRUCTURAL PANEL: (NOTED AS "IBW-WSP" ON PLANS). ATTACH ONE SIDE WITH 7/16" WSP SHEATHING WITH 8d NAILS AT A 6"/12" NAILING PATTERN (6" OC AT PANEL EDGES AND 12" OC AT INTERMEDIATE SUPPORTS). INSTALL BLOCKING AT ALL PANEL EDGES. ATTACH GB OVER WSP AS REQUIRED. ATTACH OPPOSITE SIDE WITH 1/2" GB WITH A MIN. OF 5d COOLER NAILS OR #6 SCREWS @ 7" OC ALONG THE EDGES AND AT INTERMEDIATE SUPPORTS.

FIRST FLOOR STRUCTURAL PLAN

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

REFER TO "SD" SHEET(S) FOR STANDARD DETAILS AND STRUCTURAL NOTES

NORTH CAROLINA PROFESSIONAL SEAL 16073 ENGINEER JAMES H. HERMAN

PROJECT # 22-1786.1

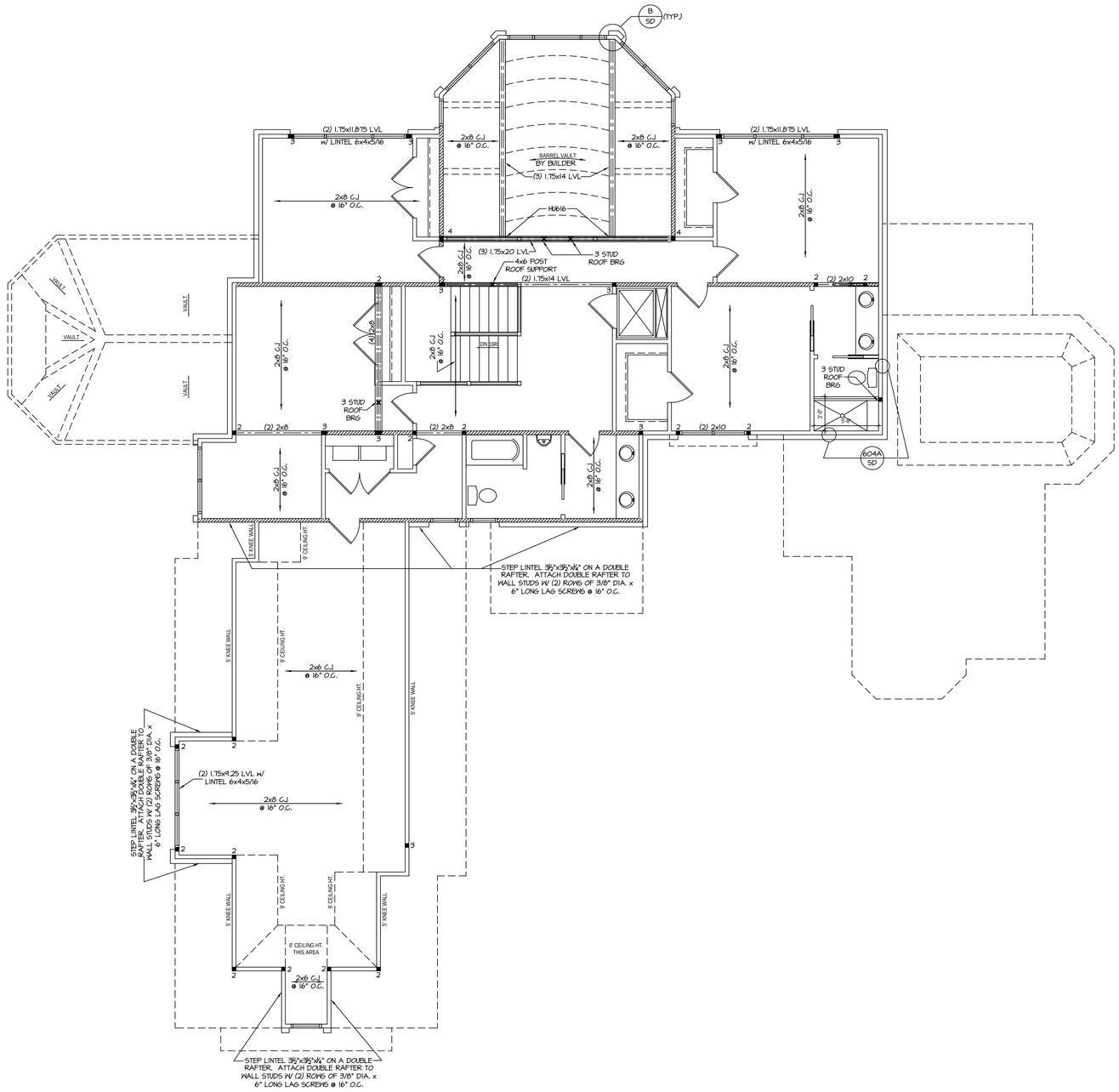
Engineers seal applies only to structural components on this document.
Seal does not include construction means, methods, techniques, sequences, procedures or safety precautions.
Any deviations or discrepancies on plans are to be brought to the immediate attention of Southern Engineers. Failure to do so will void Southern Engineer's liability.
Seal is valid for projects permitted one year from date of seal.
Use of these plans constitutes approval of terms & conditions as defined in the customer agreement.

Southern Engineers, P.A.
3716 Benson Drive, Raleigh, NC 27609
Phone: (919) 878-1617
License: C-4772
www.southernengineers.com

K&A HOME DESIGN, INC.

Alvarez Residence

S-2



HEADER/BEAM & COLUMN NOTES

1. ALL EXTERIOR AND LOAD BEARING HEADERS SHALL BE MIN. (2)2x10 (4" WALL) OR (3)2x10 (6" WALL) WITH (1) SUPPORT STUD, UNLESS NOTED OTHERWISE.
2. THE NUMBER SHOWN AT BEAM AND HEADER SUPPORTS INDICATES THE NUMBER OF SUPPORT STUDS REQUIRED IN STUD POCKET OR COLUMN. THE NUMBER OF KING STUDS AT EACH END OF HEADERS IN EXTERIOR WALLS SHALL BE ACCORDING TO ITEM "d" IN TABLE R602.3(5) OR AS BELOW PER NCDOI COMMENTARY "KING STUDS AT WALL OPENINGS" REVISED 1-4-2020:
   - UP TO 3' SPAN: (1) KING STUD
   - OVER 3' UP TO 6' SPAN: (2) KING STUDS
   - OVER 6' UP TO 9' SPAN: (3) KING STUDS
   - OVER 9' UP TO 12' SPAN: (4) KING STUDS
   - OVER 12' UP TO 15' SPAN: (5) KING STUDS

SECOND FLOOR STRUCTURAL PLAN

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

REFER TO "SD" SHEET(S) FOR STANDARD DETAILS AND STRUCTURAL NOTES

NORTH CAROLINA PROFESSIONAL SEAL 16073 ENGINEER JAMES K. HERMAN 3.16.22

PROJECT # 22-1786.1

Engineers seal applies only to structural components on this document.
Seal does not include construction means, methods, techniques, sequences, procedures or safety precautions.
Any deviations or discrepancies on plans are to be brought to the immediate attention of Southern Engineers. Failure to do so will void Southern Engineer's liability.
Seal is valid for projects permitted one year from date of seal.
Use of these plans constitutes approval of terms & conditions as defined in the customer agreement.

Southern Engineers, P.A.
3716 Benson Drive, Raleigh, NC 27609
Phone: (919) 878-1617
License: C-4772
www.southernengineers.com

K&A HOME DESIGN, INC.

Alvarez Residence

S-3

ROOF FRAMING NOTES:

NC (2018 NCRC): Wind: 115-120 mph

1. 2x8 RAFTERS @ 16" O.C. WITH 2x10 RIDGE, UNO.
2. (2) 2x10 OR 1.75x11.875 LVL HIP. (2) 2x10 HIPS MAY BE SPLICED WITH A MIN. 6'-0" OVERLAP AT CENTER
3. (2) 2x10 OR 1.75x9.25 LVL VALLEY. DO NOT SPLICE VALLEYS
4. 1.75x11.875 LVL OR (2)1.75x9.25 LVL VALLEY
5. FALSE FRAME VALLEY ON 2x10 FLAT PLATE
6. 2x8 RAFTERS @ 16" O.C. W/ 2x8 RIDGE, UNO.
7. 2x10 RAFTERS @ 16" O.C. W/ 2x12 RIDGE, UNO.
8. EXTEND RIDGE 12" BEYOND INTERSECTION

- "SR" = SINGLE RAFTER
- "DR" = DOUBLE RAFTER
- "TR" = TRIPLE RAFTER
- "RS" = ROOF SUPPORT
- "■" = (3) STUD OR 4x4 POST FOR ROOF SUPPORT (USE 2X6 STUDS OR 6X6 POST FOR SUPPORT OVER 10'-0" IN HEIGHT)
- ATTACH VAULTED RAFTERS WITH HURRICANE CLIPS; SIMPSON "H-2.5A" OR EQUIVALENT. TIES TO BE INSTALLED ON THE OUTSIDE FACE OF FRAMING.
- INSTALL RAFTER TIES AND COLLAR TIES PER SECTION RB02.3.1 OF THE 2018 NC RESIDENTIAL CODE.

ROOF STRUCTURAL PLAN

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

REFER TO "SD" SHEET(S) FOR STANDARD DETAILS AND STRUCTURAL NOTES

NORTH CAROLINA PROFESSIONAL SEAL 16073 ENGINEER JAMES E. HERMAN

PROJECT # 22-1786.1

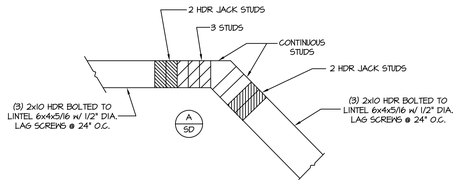
Engineers seal applies only to structural components on this document.
Seal does not include construction means, methods, techniques, sequences, procedures or safety precautions.
Any deviations or discrepancies on plans are to be brought to the immediate attention of Southern Engineers. Failure to do so will void Southern Engineer's liability.
Seal is valid for projects permitted one year from date of seal.
Use of these plans constitutes approval of terms & conditions as defined in the customer agreement.

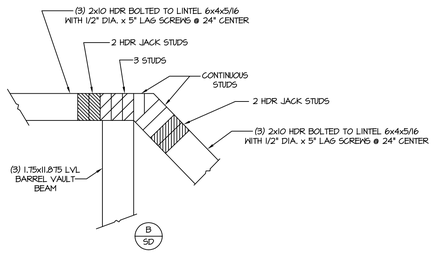
Southern Engineers, P.A.
3716 Benson Drive, Raleigh, NC 27609
Phone: (919) 878-1617
License: C-4772
www.southernengineers.com

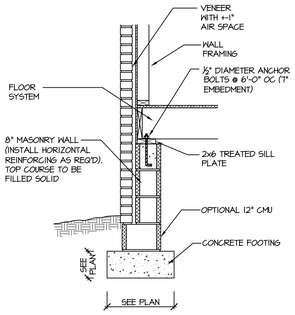
K&A HOME DESIGN, INC.

Alvarez Residence

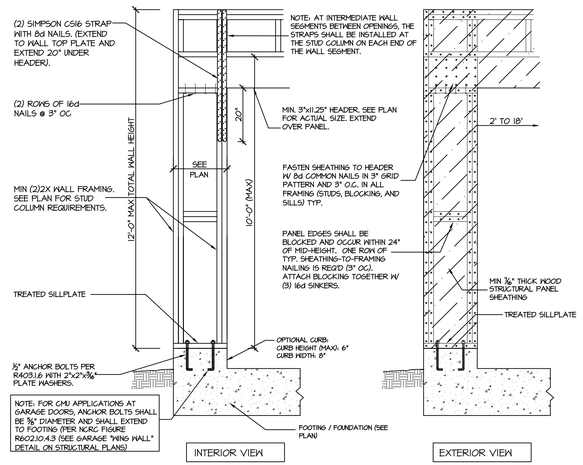
S-4



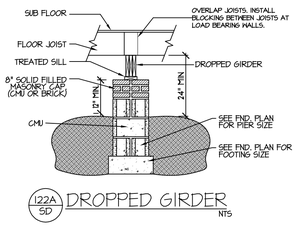




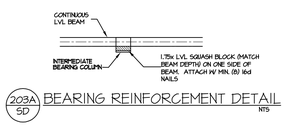
115-120 MPH | 112A 5D CRAWL SPACE FOOTING
(VENEER)



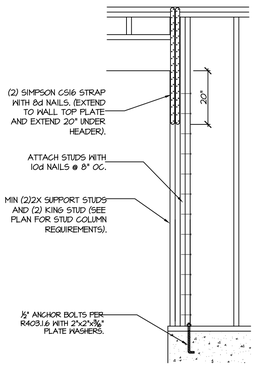
905B 5D CS-PF: CONTINUOUS PORTAL FRAME CONSTRUCTION
DETAIL AND APPLICATION BASED ON NCRC FIGURE R602.10.1 - PORTAL FRAME CONSTRUCTION



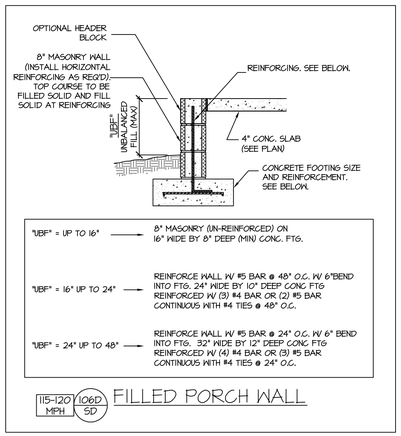
122A 5D DROPPED GIRDER
NTS



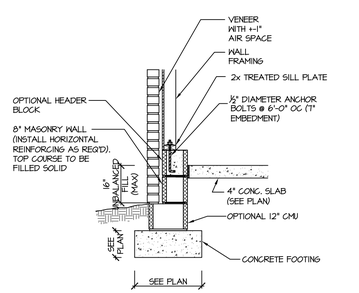
203A 5D BEARING REINFORCEMENT DETAIL
NTS



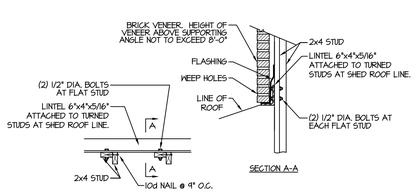
906 5D CS-PF: END CONDITION DETAIL
(FOR USE WITH SINGLE CS-PF CONDITION)
DETAIL AND APPLICATION BASED ON NCRC FIGURE R602.10.1 - PORTAL FRAME CONSTRUCTION



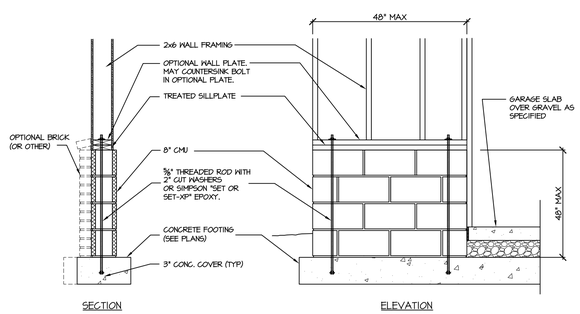
115-120 MPH | 106D 5D FILLED PORCH WALL



115-120 MPH | 109A 5D STEM WALL SLAB @ GARAGE
(VENEER)



604A 5D LINTEL DETAIL
NTS



907 5D GARAGE 'WING WALL' REINFORCING
PER IRC FIGURE R602.10.4.3

STRUCTURAL NOTES

NC (2018 NCRC): Wind: 115-120 mph

1. ENGINEER'S SEAL APPLIES ONLY TO STRUCTURAL COMPONENTS INCLUDING ROOF RAFTERS, HIPS, VALLEYS, RIDGES, FLOORS, WALLS, BEAMS AND HEADERS, COLUMNS, CANTILEVERS, OFFSET LOAD BEARING WALLS, PIER & GIRDER SYSTEM, FOOTING, AND PILING SYSTEM. ENGINEER'S SEAL DOES NOT CERTIFY DIMENSIONAL ACCURACY OR ARCHITECTURAL LAYOUT INCLUDING ROOF SYSTEM. ALL REQUIREMENTS FOR PROFESSIONAL CERTIFICATION SHALL BE PROVIDED BY THE APPROPRIATE PROFESSIONAL. SOUTHERN ENGINEERS, P.A. CERTIFIES ONLY THE STRUCTURAL COMPONENTS AS SPECIFICALLY STATED.

2. ALL CONSTRUCTION SHALL CONFORM TO THE LATEST REQUIREMENTS OF THE 2018 NC RESIDENTIAL CODE, PLUS ALL LOCAL CODES AND REGULATIONS. THE STRUCTURAL ENGINEER IS NOT RESPONSIBLE FOR, AND WILL NOT HAVE CONTROL OF, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE CONSTRUCTION WORK, NOR WILL THE ENGINEER BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE CONSTRUCTION WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. "CONSTRUCTION REVIEW" SERVICES ARE NOT PART OF OUR CONTRACT. ALL MEMBERS SHALL BE FRAMED ANCHORED, TIED AND BRACED IN ACCORDANCE WITH GOOD CONSTRUCTION PRACTICE AND THE BUILDING CODE.

3. DESIGN LOADS (LISTED AS: LIVE LOAD, DEAD LOAD, DEFLECTION)
   - ROOMS OTHER THAN SLEEPING ROOMS: (40 PSF, 10 PSF, L/360)
   - SLEEPING ROOMS: (30 PSF, 10 PSF, L/360)
   - ATTIC WITH PERMANENT STAIR: (40 PSF, 10 PSF, L/360)
   - ATTIC WITHOUT PERMANENT STAIR: (20 PSF, 10 PSF, L/360)
   - ATTIC WITHOUT STORAGE: (10 PSF, 10 PSF, L/240)
   - STAIRS: (40 PSF, 10 PSF, L/360)
   - EXTERIOR BALCONIES: (60 PSF, 10 PSF, L/360)
   - DECKS: (40 PSF, 10 PSF, L/360)
   - GUARDRAILS AND HANDRAILS: (200 LBS)
   - PASSENGER VEHICLE GARAGES: (50 PSF, 10 PSF, L/360)
   - FIRE ESCAPES: (40 PSF, 10 PSF, L/360)
   - SNOW: (20 PSF)

4. WALLS SHALL BE BRACED BY SHEATHING WALLS ON ALL STORIES WITH WOOD STRUCTURAL PANELS. SEE FRAMING NOTES FOR THICKNESS AND NAILING REQUIREMENTS.

5. SEE APPENDIX M (DCA6) FOR EXTERIOR DECK REQUIREMENTS INCLUDING ATTACHMENTS FOR LATERAL LOADS.

6. CONCRETE SHALL HAVE A MINIMUM 28 DAY STRENGTH OF 3000 PSI AND A MAXIMUM SLUMP OF 5 INCHES UNLESS NOTED OTHERWISE (UNO). AIR ENTRAINED PER TABLE 402.2. ALL CONCRETE SHALL BE PROPORTIONED, MIXED, HANDLED, SAMPLED, TESTED, AND PLACED IN ACCORDANCE WITH ACI STANDARDS. ALL SAMPLES FOR PUMPING SHALL BE TAKEN FROM THE EXIT END OF THE PUMP. CONTROL JOINTS IN SLABS SHALL BE SPACED ON A GRID OF +-30 TIMES THE DEPTH (D). CONTROL JOINTS SHALL BE SAWCUT TO A DEPTH OF 1/D. (I.E. 4" CONCRETE SLABS SHALL HAVE ¼" DEEP CONTROL JOINTS SAWCUT IN SLAB ON A +-10'-0" x +-10'-0" GRID).

7. ALLOWABLE SOIL BEARING PRESSURE ASSUMED TO BE 2000 PSF. THE CONTRACTOR MUST CONTACT A GEOTECHNICAL ENGINEER AND THE STRUCTURAL ENGINEER IF UNSATISFACTORY SUBSURFACE CONDITIONS ARE ENCOUNTERED. THE SURFACE AREA ADJACENT TO THE FOUNDATION WALL SHALL BE PROVIDED WITH ADEQUATE DRAINAGE, AND SHALL BE GRADED SO AS TO DRAIN SURFACE WATER AWAY FROM FOUNDATION WALLS.

8. ALL FRAMING LUMBER SHALL BE SPF #2 (Fb = 875 PSI) UNLESS NOTED OTHERWISE (UNO). ALL TREATED LUMBER SHALL BE SYP # 2. PLATE MATERIAL MAY BE SPF # 3 OR SYP #3 ($F_{c\perp}$ = 425 PSI - MIN).

9. L.V.L. SHALL BE LAMINATED VENEER LUMBER: Fb=2600 PSI, Fv=285 PSI, E=1.9x10 PSI.
   9.1. P.S.L. SHALL BE PARALLEL STRAND LUMBER: Fb=2900 PSI, Fv=290 PSI, E=2.0x10 PSI.
   9.2. L.S.L. SHALL BE LAMINATED STRAND LUMBER: Fb=2250 PSI, Fv=400 PSI, E=1.55x10 PSI.
   INSTALL ALL CONNECTIONS PER MANUFACTURERS INSTRUCTIONS.

10. ALL ROOF TRUSS AND I-JOIST LAYOUTS SHALL BE PREPARED IN ACCORDANCE WITH THE SEALED STRUCTURAL DRAWINGS. TRUSSES AND I-JOISTS SHALL BE INSTALLED ACCORDING TO THE MANUFACTURE'S SPECIFICATIONS. ANY CHANGE IN TRUSS OR I-JOIST LAYOUT SHALL BE COORDINATED WITH SOUTHERN ENGINEERS.

11. ALL STRUCTURAL STEEL SHALL BE ASTM A-36. STEEL BEAMS SHALL BE SUPPORTED AT EACH END WITH A MINIMUM BEARING LENGTH OF 3 1/2" INCHES AND FULL FLANGE WIDTH. PROVIDE SOLID BEARING FROM BEAM SUPPORT TO FOUNDATION. BEAMS SHALL BE ATTACHED TO EACH SUPPORT WITH TWO LAG SCREWS (1/2" DIAMETER x 4" LONG). LATERAL SUPPORT IS CONSIDERED ADEQUATE PROVIDING THE JOIST ARE TOE NAILED TO THE SOLE PLATE, AND SOLE PLATE IS NAILED OR BOLTED TO THE BEAM FLANGE @ 48" O.C. ALL STEEL TUBING SHALL BE ASTM A500.

12. REBAR SHALL BE DEFORMED STEEL, ASTM615, GRADE 60. LAP ALL REBAR SPLICES 30 BAR DIAMETERS.

13. FLITCH BEAMS SHALL BE BOLTED TOGETHER USING (2) ROWS OF 1/2" DIAMETER BOLTS (ASTM A325) WITH WASHERS PLACED UNDER THE THREADED END OF BOLT. BOLTS SHALL BE SPACED AT 24" O.C. (MAX), AND STAGGERED AT THE TOP AND BOTTOM OF BEAM (2" EDGE DISTANCE), WITH 2 BOLTS LOCATED AT 6" FROM EACH END.

14. BRICK LINTELS (WHEN REQUIRED) SHALL BE 3 1/2"x3 1/2"x1/4" STEEL ANGLE FOR UP TO 6'-0" SPAN AND 6"x4"x5/16" STEEL ANGLE WITH 6" LEG VERTICAL FOR SPANS UP TO 9'-0". SEE PLANS FOR SPANS OVER 9'-0". SEE ALSO SECTION R703.8.3 LINTELS.

NORTH CAROLINA PROFESSIONAL SEAL 16073 ENGINEER JAMES K. HERMAN 3.16.22

PROJECT # 22-1786.1

Engineers seal applies only to structural components on this document.
Seal does not include construction means, methods, techniques, sequences, procedures or safety precautions.
Any deviations or discrepancies on plans are to be brought to the immediate attention of Southern Engineers. Failure to do so will void Southern Engineer's liability.
Seal is valid for projects permitted one year from date of seal.
Use of these plans constitutes approval of terms & conditions as defined in the customer agreement.

Southern Engineers, P.A.
3716 Benson Drive, Raleigh, NC 27609
Phone: (919) 878-1617
License: C-4772
www.southernengineers.com

K&A HOME DESIGN, INC.

Alvarez Residence

SD