STRUCTURAL NOTES

GENERAL NOTES

1. THE DESIGN CRITERIA FOR THIS PROJECT ARE BASED ON THE FOLLOWING CODES.

   - FLORIDA BUILDING CODE (SEVENTH EDITION, 2020).
   - ASCE/SEI 7-16 (MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHERS STRUCTURES)
   - ACI 318-14 (BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE)
   - NDS 2018 (NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION)
   - TSM 402/602-16 (BUILDING CODE REQUIREMENTS AND SPECIFICATION FOR MASONRY STRUCTURES)

2. THE STRUCTURAL DRAWINGS AND SPECIFICATIONS COMPLY WITH THE APPLICABLE REQUIREMENTS OF THESE CODES AND ALL OTHER APPLICABLE FEDERAL, STATE, AND LOCAL CODES, STANDARDS, REGULATIONS AND LAWS.

DRAWING NOTES

1. FOR COMPLETE INFORMATION USE THE STRUCTURAL DOCUMENTS IN CONJUNCTION WITH ALL OTHER DRAWINGS AND DOCUMENTS. COORDINATE ALL DIMENSIONS, ELEVATIONS & OPENINGS WITH ARCHITECTURAL AND M.E.P. DRAWINGS.

2. WHERE MEMBER LOCATIONS ARE NOT DIMENSIONED, MEMBERS ARE EITHER CENTERED ON GRID LINES OR ARE EQUALLY SPACED BETWEEN LOCATED MEMBERS.

3. WHERE FEATURES OR MEMBERS ARE NOT FULLY SHOWN OR SPECIFIED ON THE DRAWINGS OR SPECIFICATIONS, THEIR CONSTRUCTION SHALL BE OF THE SAME CHARACTER AS SHOWN OR SPECIFIED IN SIMILAR CONDITIONS.

CONTRACTOR REQUIREMENTS

1. THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE CODES AND ORDINANCES OF THE EVENT OF CONFLICT OR OVERSIGHT IN THE DRAWINGS.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS, CONDITIONS AND ELEVATIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO START OF CONSTRUCTION. THE CONTRACTOR SHALL INFORM THE ARCHITECT IN WRITING OF ANY DISCREPANCIES OR OMISSIONS NOTED ON THE DRAWINGS. ANY SUCH DISCREPANCY, OMISSION, OR VARIATION NOT REPORTED BEFORE START OF CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

3. THE CONTRACTOR SHALL SUPERVISE AND DIRECT ALL WORK AND SHALL BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, PROCEDURES, TECHNIQUES, AND SEQUENCE. THE CONTRACTOR HAS SOLE RESPONSIBILITY FOR THE QUALITY AND CORRECTNESS OF THE WORK. THE CONTRACTOR SHALL PROTECT ADJACENT PROPERTY, HIS OWN WORK AND THE PUBLIC FORM HARM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR JOBSITE SAFETY, PROCEDURES AND PROGRAMS, INCLUDING ALL O.S.H.A. REQUIREMENTS.

4. THE CONTRACTOR SHALL NOT OVERLOAD THE STRUCTURE DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR STABILITY AND TEMPORARY BRACING TO STRUCTURAL ELEMENTS THAT REQUIRE IT. THE CONTRACTOR IS RESPONSIBLE FOR ALL SHORING AND ALL RESHORING.

DESIGN LOADS

1. GRAVITY LOADS

OCCUPANCY	DEAD LOAD	LIVE LOAD
ROOF (WOOD TRUSSES)	25 PSF	20 PSF
RESIDENTIAL	30 PSF	40 PSF

2. WIND LOADS

RISK CATEGORY	II
ULTIMATE WIND SPEED	V = 175 MPH
ALLOWABLE WIND SPEED	V = 136 MPH
MEAN ROOF HIGH	13.50 FEET
DIRECTIONALITY FACTOR	Kd = 0.85
TOPOGRAPHIC FACTOR	Kht = 1.0
GUST-EFFECTS FACTOR	Gh = 0.85
EXPOSURE	C
ENCLOSURE CLASSIFICATION	ENCLOSED
INTERNAL PRESSURE COEFFICIENT	GCpi = 0.18

TERMITE PROTECTION

1. AS PER F.B.C. 105.11 BUILDING COMPONENTS AND BUILDING SURROUNDINGS REQUIRED TO BE PROTECTED FROM TERMITE DAMAGE SHALL TO HAVE CHEMICAL SOIL TREATMENT IN ACCORDANCE WITH R318.

2. ALL BUILDINGS SHALL HAVE PRE-CONSTRUCTION TREATMENT PROTECTION AGAINST SUBTERRANEAN TERMITES AS PER F.B.C. 1816 A CERTIFICATE OF COMPLIANCE SHALL BE ISSUED TO THE BUILDING DEPARTMENT BY THE LICENSED PEST CONTROL COMPANY THAT CONTAINS THE FOLLOWING STATEMENT: "THE BUILDING HAS RECEIVED A COMPLETE TREATMENT FOR THE PREVENTION OF SUBTERRANEAN TERMITES. TREATMENT IS IN ACCORDANCE WITH THE RULES AND LAWS ESTABLISHED BY THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES".

SOIL STATEMENT

1. FOUNDATION DESIGN ARE BASED ON AN ASSUMED ALLOWABLE SOIL BEARING CAPACITY OF 2000 PSF BASED ON A VISUAL INSPECTION OF THE SITE.

2. THE SOIL APPEARS TO BE WELL COMPACTED COARSE SAND GRAVEL & ROCK AT THE TIME OF CONSTRUCTION, THE ENGINEER OF RECORD SHALL SUBMIT TO THE BUILDING OFFICIAL A SIGNED AND SEALED LETTER ATTESTING THAT THE SITE HAS BEEN OBSERVED AND THE FOUNDATIONS CONDITIONS ARE SIMILAR TO THOSE UPON WHICH THE DESIGN IS BASED.

3. CENTER ALL FOOTINGS UNDER THEIR RESPECTIVE COLUMNS OR WALLS, U.N.O.

EARTHWORK

1. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING AND PROTECTION OF ADJACENT PROPERTY, STRUCTURES, STREETS AND UTILITIES IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL BUILDING DEPARTMENT AND OSHA REGULATIONS. DO NOT EXCAVATE WITHIN ONE FOOT OF THE ANGLE OF REPOSE OF ANY SOIL BEARING FOUNDATION UNLESS THE FOUNDATION IS PROPERLY PROTECTED AGAINST SETTLEMENT.

2. DO NOT BACKFILL AGAINST WALLS UNTIL 7 DAYS AFTER THE WALLS ARE BRACED BY THE STRUCTURE OR ARE TEMPORARILY BRACED.

3. THE CONTRACTOR IS RESPONSIBLE FOR THE DISPOSAL OF ALL ACCUMULATE WATER IN A MANNER THAT DOES NOT INCONVENIENCE OR DAMAGE THE WORK.

BUILDING PAD PREPARATION

1. REMOVE ALL VEGETATION, SOILS AND ORGANIC MATERIALS WITHIN THE BUILDING AREAS PLUS FIVE (5) FEET OUTSIDE THE BUILDING.

2. ABOVE SUBGRADE, USE FILL CONTAINING NOT MORE THAN 10% PASSING #200 SLEVE AND MAXIMUM 1 INCH DIAMETER. COMPACT TI 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY MODIFIED PROCTOR A.S.T.M. D-1557. EACH LAYER OF FILL SHALL NOT EXCEED 12" LOOSE THICKNESS TO ELEVATE THE REQUIRED GRADE. COMPACT PRIOR TO PLACEMENT OF THE NEXT LAYER.

3. COMPACT EACH LIFT OF FILL MATERIAL AND EXCAVATED FOOTINGS TO A MINIMUM COMPACTION OF 95 PERCENT OF THE DRY SOIL DENSITY AS DETERMINED BY THE MODIFIED PROCTOR TEST ASTM D-1557 PRIOR TO PLACEMENT OF ANY ADDITIONAL FILL REQUIRED.

4. FILL PLACEMENT AND COMPACTION SHALL BE MONITORED AND ACCEPTED BY THE TESTING AGENCY. TAKE A MIN. OF ONE FIELD DENSITY TEST (A.S.T.M. D-1556 OR D-2922) FOR EACH 2500 SQUARE FEET OF EACH LAYER. THE TENTING AGENCY SHALL RANDOMLY SELECT TEST LOCATIONS.

SLABS ON GRADE

1. FOR INTERIOR SLABS PLACE WATERPROOF MEMBRANES BETWEEN SOIL AND BOTTOM OF SLAB.

2. USE 4" THICK SLABS ON GRADE REINFORCED WITH 6X6-W1.4XW1.4 WELDED WIRE REINFORCEMENT SUPPLIED IN FLAT SHEETS ONLY.

3. ISOLATION JOINTS MUST BE USED AT JUNCTIONS WITH WALLS AND COLUMNS, USE 1/2" THICK PREMOLDED JOINTS FULL DEPTH OF SLAB.

4. PROVIDE CRACK CONTROL JOINTS AT 12 FEET MAXIMUM TO LIMIT AREAS BETWEEN JOINTS TO 144 SQ FT IN ALL FLOATING SLAB ON GRADE. LOCATE TO CONFORM TO BAY SPACING WHENEVER POSSIBLE, ADD CRACK CONTROL JOINTS AT RE-ENTRANT CORNERS WHICH TENT TO INVITE CRACKS.

5. IN SIDEWALKS AND WALKWAYS, LOCATE ISOLATION JOINTS AT 20 FT O.C. MAXIMUM SCORE AND TOOL BETWEEN ISOLATION JOINTS IN EQUAL BAYS OF 5 FT OR LESS.

REINFORCED CONCRETE

1. PROVIDE STRUCTURAL CONCRETE WITH A MINIMUM ULTIMATE COMPRESSIVE DESIGN STRENGTH IN 28 DAYS AS FOLLOW:

ELEMENTS	STRENGTH
FOOTINGS	3000 PSI
SLABS ON GRADE	3000 PSI
ELEVATED BEAMS AND SLABS	3000 PSI
COLUMNS	3000 PSI
ALL OTHER POURED-IN-PLACE CONCRETE	3000 PSI
GROUT	3000 PSI

2. USE NORMAL WEIGHT FOR ALL STRUCTURAL MEMBERS, U.O.N.

3. PROVIDE A.S.T.M. A-615 GRADE 60 REINFORCING STEEL. REINFORCING SHALL BE ACCURATELY PLACED, RIGIDLY SUPPORTED AND FIRMLY TIED IN PLACE, WITH APPROPRIATE BAR SUPPORTS AND SPACERS. LAP CONTINUOUS REINFORCING 48 BAR DIA.

4. PROVIDE COVER OVER REINFORCING AS FOLLOWS AND CONFORMING WITH ACI 318-14 SECTION 20.6.1.3:

CONCRETE EXPOSURE	MEMBER	REINFORCE	COVER
CAST AGAINST AND PERMANENTLY IN CONTACT WITH GROUND	ALL	ALL	3"
EXPOSED TO WEATHER OR IN CONTACT WITH GROUND	ALL	No. 6 – No. 18	2"
		No. 5 AND SMALLER	1 ½"
NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND	SLABS, JOISTS, AND WALLS	No. 11 AND SMALLER	¾"
	BEAMS AND COLUMNS	ALL	1 ½"

5. TRANSPORTING, PLACING, CURING AND DEPOSITING OF CONCRETE SHALL COMPLY WITH ACI 301.

6. MIX DESIGNS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCEMENT OF ANY CONCRETE WORK. SUBMIT STATISTICAL DATA FOR EACH CLASS OF CONCRETE.

REINFORCING STEEL

1. REINFORCING BARS CONFORMING TO A.S.T.M. A-615 GRADE 60, INCLUDING COLUMN AND BEAM TIES.

2. WELDED FIRE FABRIC CONFORMING TO A.S.T.M. A-185 AND SUPPORTED ON SLAB BOLSTERS SPACED AT 3'-0" O/C. SUPPLY IN FLAT SHEETS ONLY. LAP SPLICE ONE CROSS WIRE SPACING PLUS TWO INCHES.

3. REINFORCING BARS REQUIRED TO BE WELDED SHALL CONFORM TO THE REQUIREMENTS OF ASTM A706 GRADE 60. WELDING OF REINFORCING OTHER THAN SPECIFIED IS PROHIBITED.

4. MECHANICAL CONNECTORS SHALL BE IN ACCORD WITH ACI 439-3R-07.

5. FABRICATION AND DETAILING ACCORDING TO A.C.I.-315.

6. ALL ACCESSORIES TO HAVE UPTURNED LEGS AND BE PLASTIC DIPPED AFTER FABRICATION. THE CONTRACTOR SHALL INCLUDE IN HIS BASE BID THE COST

7. EXTRA STOCK: OF 200 LBS. OF ADDITIONAL REINFORCING STEEL, INCLUDING FABRICATION, BENDING, FURNISHING AND PLACING. THIS EXTRA STOCK SHALL BE FURNISHED AND USED FOR SPECIAL CONDITIONS AS DIRECTED BY THE ARCHITECT, THE ARCHITECTS AGENT, OR THE OWNERS CONSTRUCTION SUPERVISOR. THE PRICE OF ALL UN-USED EXTRA STOCK SHALL BE CREDITED TO THE OWNERS ACCOUNT.

MASONRY WALL

1. CONCRETE BLOCK MASONRY BLOCK SHALL BE IN ACCORDANCE WITH ACI 530/ASCE 5, "BUILDING CODE REQUIREMENTS FOR CONCRETE MASONRY STRUCTURES", AND ACI 530.1/ASCE 6, "SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF LOAD-BEARING CONCRETE MASONRY".

2. THE CONCRETE BLOCK UNIT (NOMINAL 8X8X16) TO BE TYPE II, CONFORMING TO A.S.T.M. C90 WITH A MINIMUM NET AREA COMPRESSIVE STRENGTH OF 1900 PSI.

3. USE TYPE S MORTAR IN ACCORDANCE WITH A.S.T.M. C270 WITH A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS.

4. USE STANDARD (9 GAUGE) HORIZONTAL REINFORCING (LADDER TYPE) IN EVERY OTHER COURSE. EXTEND JOINT REINFORCING A MINIMUM OF 4" INTO THE TIE COLUMNS.

5. USE A.S.T.M. A-615 GRADE 60 REINFORCING STEEL. REINFORCED WALLS WHERE INDICATED ON THE DRAWING AND AT ALL INTERSECTIONS, EACH SIDE OF OPENINGS AND AT THE ENDS OF WALLS.

6. USE FINE GROUT CONFORMING TO A.S.T.M. C-476, WITH A MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI IN 28 DAYS AND SLUMP OF 8" TO 10". GROUT ALL MASONRY CONTAINING REINFORCING AND WHERE INDICATED ON THE DRAWINGS. ALLOW MORTAR TO CURE 24 HOURS PRIOR TO GROUTING.

WOOD MEMBERS, PRE-MANUFACTURED WOOD TRUSSES & STRUCTURAL SHEATHING

1. ALL STRUCTURAL LUMBER SHALL CONFORM WITH DIVISION 6 SPECIFICATIONS, THE "NATIONAL DESIGN SPECIFICATION FOR STRESS-GRADE LUMBER AND ITS FASTENINGS" AND TO BE TO BE SOUTHERN PINE No. 2 OR BETTER. FABRICATION, ERECTION AND CONNECTIONS TO BE AS PER RECOMMENDATIONS OF THE A.C.T.C. (AMERICAN INSTITUTE OF TIMBER CONSTRUCTION), LATEST EDITION.

2. TREAT ALL FRAMING IN CONTACT WITH CONCRETE OR MASONRY IN ACCORD WITH AMERICAN WOOD PRESERVER'S BUREAU LP-2 OR PROVIDE 1/4" THICK 60 DUROMETER BEARING PAD BETWEEN CONCRETE OR MASONRY AND UNTREATED WOOD MEMBER. ALL LUMBER PERMANENTLY INSTALLED SHALL BE NATURALLY TERMITE RESISTANT OR TREATED ACCORDINGLY.

3. PRE-MANUFACTURED WOOD TRUSSES SHALL BE DESIGNED BY A DELEGATED ENGINEER. THE TRUSS DESIGN ENGINEER SHALL SUBMIT SHOP DRAWINGS AND CALCULATIONS (SIGNED AND SEALED) FOR EACH DIFFERENT TRUSS OF THE TRUSS SYSTEM.

4. MINIMUM DESIGN LOADS FOR ROOF TRUSSES:

	PITCHED TRUSSES	FLAT TRUSSES
TOP CHORD (LIVE LOAD)	20 PSF	30 PSF
TOP CHORD (DEAD LOAD)	15 PSF	10 PSF
BOTTOM CHORD (DEAD LOAD)	10 PSF	10 PSF

5. TEMPORARY ERECTION BRACING OF WOOD TRUSSES SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. PROVIDE PERMANENT BRACING (MINIMUM 2" THICK NOMINAL LUMBER) AS FOLLOWS:

   - IN THE PLACE OF THE BOTTOM CHORD (PERPENDICULAR TO TRUSSES): PROVIDE CONTINUOUS BRACING AT 10' INTERVALS MAXIMUM. PROVIDE DIAGONAL BRACING ALONG THE CONTINUOUS BRACING ON A 45 DEGREE ANGLE AT EACH END OF THE BUILDING AND AT INTERVALS OF NOT MORE THAN 20'.
   - IN THE PLANE OF THE WEB MEMBERS (PERPENDICULAR TO THE TRUSSES): AT EACH WEB MEMBER REQUIRING CONTINUOUS LATERAL BRACING AS INDICATE ON THE TRUSS DESIGN ENGINEER'S DRAWING, BUT NOT MORE THAN 15' INTERVALS. IN ADDITION, PROVIDE DIAGONAL BRACING ALONG THE HORIZONTAL WEB BRACES AT EACH END OF THE BUILDING AND AT INTERVALS OF NOT MORE THAN 20'.

6. ANCHOR ALL DIAGONAL BRACING TO REINFORCED MASONRY WALLS OR REINFORCED CONCRETE MEMBERS WITH PREFABRICATED (MIN. 12 GA.) GALVANIZED STEEL STRAPS OR FRAMING CONNECTORS. FASTEN STRAPS TO MASONRY WITH 2-1/2" DIA. MASONRY ANCHORS OR 4-0.17" DIA. X 1-1/2" POWER-DRIVEN PAINS IF INTO CONCRETE AND TO WOOD MEMBERS WITH NOT LESS THAN 6-16D NAILS.

7. PLYWOOD ROOF SHEATHING SHALL BE 5/8" THICK C-D, EXPOSURE 1. PLACE FACE GRAIN PERPENDICULAR TO SUPPORTS AND STAGGER JOINTS. PROVIDE 1/16" SPACE AT END JOINTS AND 1/8" AT EDGE JOINTS. PROVIDE PLYCLIPS ALONG EDGES JOINTS AT MID SPAN BETWEEN SUPPORTS.

8. SHEATHING SHALL BE CONTINUOUS OVER TWO OR MORE SPANS. WITH FACE GRAIN PERPENDICULAR TO SUPPORTS.

9. MINIMUM NAILING REQUIREMENTS SHALL BE AS FOLLOWS:

   - ROOFS: USE 8d RING SHANK NAILS WITH 19/32". NAIL SPACING SHALL BE 6" O.C. AT PANELS EDGES AND 6" AT INTERMEDIATE SUPPORTS (BASED ON A SUPPORT SPACING OF 24" O.C.).

SAFETY OSHA AND LABOR LAWS

1. THE STRCUTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE BUILDING IS FULLY COMPLETED. IT IS THE CONTRACTOR'S SOLE RESPONSABILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE AND INSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, TEMPORARY BRACING, ETC. THAT MAY BE NECCESARY. SUCH MATERIAL SHALL REMAIN THE CONTRACTOR'S PROPERTY AFTER COMPLETION OF THE PROJECT.

2. THE STRUCTURAL ENGINEER OF RECORD DOES NOT POSSES, NOR PRESUMES TO POSSES ANY KNOWLEDGE OR EXPERTISE IN MATTERS TO JOB SITE EMPLOYEE SAFETY, OSHA OR LABOR LAE REQUIREMENTS FOR A CONSTRUCTION PROJECT. SAFETY AND COMPLIANCE WITH OSHA AND LABOR LAWS ARE THE ABSOLUTE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND THOSE CONSULTANTS HE HIRES TO ADDRESS THESE MATTERS. THE STRUCTURAL ENGINEER OF RECORD SPECIALIZES IN STRUCTURAL DESIGN ONLY, AND THE BOARD OF PROFESSIONAL REGULATION FORBIDS HIM FROM ASSUMING RESPONSIBILITY OUTSIDE HIS AREA OF EXPERTISE.

SHOP DRAWING SUBMITTALS

1. SUBMIT ONE SEPIA AND ONE PRINT OF ALL SHOP DRAWINGS LISTED BELOW. IF SIGNED AND SEALED SHOP DRAWINGS ARE REQUIRED, THEN SUBMIT TWO ADDITIONAL SIGNED AND SEALED PRINTS FOR APPROVAL.

2. SHOP DRAWINGS:

   - REINFORCED STEEL
   - PREMANUFACTURED WOOD TRUSSES

3. ENGINEERING CALCULATIONS AND SHOP DRAWINGS SIGNED AND SEALED BY A P.E. MUST BE SUBMITTED TO EOR FOR REVIEW AND APPROVAL.

REALIZATION ARCHITECTS
1701 Ponce de Leon (Suite 201)
Coral Gables, FL 33134
rafael@realizationarchitects.com

ATRIUM
CONSULTING ENGINEERS
390 W 33rd ST, Hialeah, FL 33012
atrium.info@atriumengineers.com
(786) 991-7299

ENGINEER OF RECORD
YOSNIEL PADRON, P.E., S.E.
YOSNIEL PADRON LICENSE No. 87492 STATE OF FLORIDA PROFESSIONAL ENGINEER
Digitally Signed by Yosniel Padron
Date: 2023.03.30 19:49:06 -04'00'
Yosniel Padron | 87492

98 Court Residence

5125 SW 98th Court
Miami, FL 33165

revisions

date:	02-10-23
drawn by:	YP
designed by:	YP

GENERAL NOTES

S-0.0

Construction Documents | 2023