GENERAL STRUCTURAL NOTES

CODE:
All construction shall comply with 2021 International Residential Code.

Design Load Criteria:	Live Load (psf)	Dead Load (psf)
Floor	40	20
Roof (4:12 and greater)	16	24
Flat Roof	20	15
Patio	20	10
Balconies	60	10
Deck	40	20

Seismic: Per 2021 IBC. Site Class 'D', Seismic Use Group 'I'

Wind: Ultimate design wind speed 115 mph, Exposure C. (Wind Design per ASCE 7-10 Minimum Design Loads for Buildings and Other Structures.)

GENERAL REQUIREMENTS:
Method of Construction: The contractor shall be solely responsible for construction means, methods, techniques, sequences and procedures. Contractor shall provide all temporary bracing, shoring, guying or other means to avoid excessive stresses and to hold structural elements in place during construction. Contractor shall provide all measures necessary for the protection of life and property during construction. All work or construction shall comply with adopted building codes, applicable regulations, and safety requirements.

Typical Details: Typical details and notes on these sheets shall apply unless specifically shown or noted otherwise. Details on the construction drawings are typical as indicated by cuts, references, or titles, unless noted otherwise.

Discrepancies: The contractor shall be responsible for verification of all dimensions and conditions with architectural drawings prior to start of construction. The contractor shall inform the architect or engineer of any discrepancies or omissions noted on the drawings. Any such discrepancies, omissions, or variation not reported shall be the responsibility of the contractor.

Other Trades: Establish and verify all openings and inserts for architectural, mechanical, plumbing and electrical with appropriate trades, drawings and subcontractor prior to construction.

GEOTECHNICAL NOTES:
Foundations designed in conformance with IBC for class 4 soil type

Foundations designed for stable soil conditions. Allowable soil bearing pressure = 1500 P.S.F. at 1'-6" below lowest adjacent grade on undisturbed soil.

CONCRETE NOTES:
The contractor shall take precautions to insure that mix designs, curing procedures and placing methods will minimize shrinkage cracking.

Concrete shall produce of minimum compressive strength of 3000 PSI at 28 days (2500 PSI used for design). Concrete mixes shall be designed and certified by an independent laboratory and approved by the engineer. Maximum size of aggregate shall be 1 inch per ASTM C57 or C33. Portland cement shall conform to ASTM C-150, Type II.

VAPOR RETARDER MEMBRANE:
Vapor retarder membranes shall meet or exceed the requirements of ASTM E1745-97 (2004) Class A water vapor retarders. Thickness of the retarder (plastic) shall not be less than 10 mils and shall have a water vapor transmission rate of 0.3 Perms or less (Stego® Wrap 10-mil Vapor Retarder, Griffolyn® 10 mil Green, Moistop Ultra® 10, or equal).

Install per manufacturer's recommendations and ASTM E1643-98 (2005). Overlap joints 6" min. and seal with manufacturer's recommended seam tape. Seal all penetrations (including pipes, conduits, interior block-outs) with tape, mastic or liquid membrane per manufacturer's recommendations. Wrap membrane up the side of vertical form boards a minimum of 6" and staple or tape to form board as needed to hold in place. Avoid use of stakes driven through vapor retarder membrane.

Repair any damage with a patch of membrane that overlaps the damaged area by at least 6" and tape perimeter of patch following manufacturer's recommendations for overlaped joints.

ANCHORAGE TO CONCRETE:
Typical sole plate ancharge at all interior and exterior structural walls shall be Simpson MSA mudsill anchors at 4'-0" o.c. minimum, unless noted otherwise on plans and shear wall schedule. Place anchors not more that 1'-0" from the end of each sill piece. A minimum of 2 anchors required each sill piece.

REINFORCING STEEL NOTES:
ASTM A615 Grade 40 (FY = 40 KSI) for all deformed bars #4 and smaller.
ASTM A615 Grade 60 for all deformed bars #5 and larger.

ORSI Manual and ACI Detailing Manual apply. Provide clearance coverages per ACI Code.

Lap Splices and Extensions in Concrete: Provide the following lengths, unless noted otherwise on drawings: #3, 19"; #4, 25"; #5, 31".

Lap Splices in Masonry: Shall be 48 diameters. Vertical lap bars shall be at least 6" longer than required minimum lap to account for variations in grout operations.

Minimum clear cover for spliced reinforcing is greater than one bar diameter, and minimum clear spacing is greater than two bar diameters.

STRUCTURAL STEEL:
ASTM A-36, except as follows: Bolts and plain anchors ASTM A-307. Minimum embedment of all bolts and plain anchors in concrete shall be 7 inches including head, or 7 inches with a 2 inch hook.

WOOD:
General: Comply with 2021 International Residential Code standards. All lumber pieces, in place, shall be grade stamped.

Glulam Beams: West Coast Douglas Fir with fb = 2,400 p.s.i. 24F-V4 stress grade, except at continuous and cantilevered beams use 24F-V8. Fabrication and handling per latest AITC Standards. Exterior (wet-use) glue. Beams to bear AITC stamp with certificates.

Sawn Lumber: West Coast Douglas Fir, except as noted.

Posts, 4X and 6X Beams: No. 1

Built up Beams/Headers and 2X Joists: No. 2 or Hem Fir No. 2.

Studs: At wall heights up to 12'-1" – All exterior wall and bearing wall studs shall be 2 x 6 at 16" o.c., DF-L or Hem-Fir Stud grade or Spruce-Pine-Fir (SPF) Stud Grade

At wall heights above 12'-2" to 14'-1" – All exterior wall and bearing wall studs shall be 2 x 6 at 16" o.c., DF-L #2 grade.

At wall heights above 14'-2" to 16'-1" – All exterior wall and bearing wall studs shall be 2 x 6 at 12" o.c., DF-L #1 grade.

Sole Plates: All plates on concrete in permanent contact with the earth (interior and exterior, load bearing and non-load bearing) shall be pressure treated or foundation grade redwood. Interior plates shall be pressure treated wood or wood of natural resistance to decay unless the provisions of minimum three inch slab and impervious membrane have been met. Sodium borate (SBX) preservative treatment shall be utilized for all pressure treated lumber.

SUPPLEMENTARY FRAMING NOTES:
1x4 diagonal bracing at all exterior corners & at 25'-0" o.c. and/or 3/8" A.P.A. rated sheathing (or equal) shear panel where let-in bracing is not applicable, is not required, but may be used for temporary shoring and to resist racking during construction only.

WOOD Cont.:
Top Plates: All bearing partitions shall have double top plates.

Roof Sheathing: Use 15/32" A.P.A. rated plywood with exterior glue, PS 1-95, or 1/2" A.P.A. rated oriented strand board (O.S.B.) with exterior glue, PS 2-04, 32/16 span index. Panel edges shall bear on the framing member and butt along their center line. Stagger joints. Fasten sheathing with 8d common, 0.131" x 2 1/4" P-nails installed per NER-272. Fastener spacings shall be 6" o.c. at diaphragm boundary nailing and at supported panel edges, and 12" o.c. at Boundary nailing shall occur at blocking over exterior walls and at trusses used to transfer force to shearwalls. Minimum edge distance 3/8" with 1/8" gap between sheets. Lay up sheathing with face grain perpendicular to supports. Sheathing shall conform to N.E.R.-108.

Walk Deck Sheathing: Use 19/32" A.P.A. rated plywood with exterior glue, PS 1-95, or 5/8" A.P.A. rated oriented strand board (O.S.B.) with exterior glue, PS 2-04, 40/20 span index. Panel edges shall bear on the framing member and butt along their center line. Stagger joints. Fasten sheathing with 10d common, 0.131" x 2 1/2" P-nails installed per NER-272. Fastener spacings shall be 6" o.c. at diaphragm boundary nailing and at supported panel edges, and 10" o.c. at Boundary nailing shall occur at blocking over exterior walls and at trusses used to transfer force to shearwalls. Minimum edge distance 3/8" with 1/8" gap between sheets. Lay up sheathing with face grain perpendicular to supports. Sheathing shall conform to N.E.R.-108.

Exterior Wall Sheathing (At shearwall locations and all exterior walls.): Use 3/8" minimum A.P.A. rated plywood with exterior glue, PS 1-95, or oriented strand board (O.S.B.) with exterior glue, PS 2-04. Panel edges shall butt along framing member center line. Minimum nailing edge distance 3/8". Fasten sheathing with 8D nails at 6" o.c. minimum nailing, see plans for additional nailing at shear walls.

Connections: All framed connections shall be made with framing anchors each side or joist hangers. Joist hangers and other miscellaneous framing anchors shall be by Simpson, or an approved equal, appropriate for the member for upward and downward loads, in accordance with current N.E.R. Field drill all holes for proper matching and bearing. Provide cut washers at bolts in wood. Predrill all holes larger than 20d.

Nails: Nailing requirements shall be those set forth in IRC Table R602.3(1), unless noted otherwise. See Nailing Schedule reproduced on this sheet. Where indicated on the plans or in the details, 16d nails shall be minimum 0.131" diameter by 3" long (16d Framer).

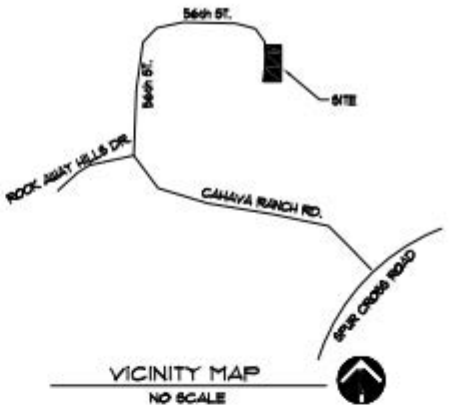
PREFABRICATED WOOD TRUSSES:
The trusses shall be preapproved for the proposed application, by the Building Department. Provide a design according to the Truss Plate Institute and 2021 International Residential Code capable of supporting the following loads:

Roof Trusses:
Top Chord Live Load – 20 psf (Reducible)
Top Chord Dead Load – 14 psf
Bottom Chord Dead Load – 10 psf
Bottom Chord Live Load – 10 psf (Attics without storage. Not considered concurrently with Top Chord Live Load)
Bottom Chord Live Load – 20 psf (Attics with limited storage Considered concurrently with Top Chord Live Load)
*See IRC Table R301.5 footnotes for definition of limited storage.

Prior to manufacturing, fabricator shall submit design calculations and shop drawings sealed by an Engineer registered in Arizona for review. Calculations shall address the notching of the top chord for lookouts Calculations shall include weight of any attic mounted mechanical equipment. See Mechanical & Architectural drawings for exact quantity, size, and weight of attic units. All erection bracing shall conform to the recommendations of T.P.I. All permanent web bracing shall be designed by manufacturer, with each individual web Tee braced with full length 2 x 4 with 0.131" dia. x 3" nails at 8" o.c.

GYPSUM WALLBOARD
Gypsum wallboard shall be installed in accordance with IRC Table R702.3.5. Gypsum wallboard shall be attached to all studs, to top and bottom plates and blocking where present. Fasteners for attachment of gypsum wallboard to wood shall conform with ASTM C514, "Nails for the Application of Gypsum Wallboard."

INTERIOR SHEATHING
1/2" Gypsum Board on walls and ceiling.



VICINITY MAP
NO SCALE

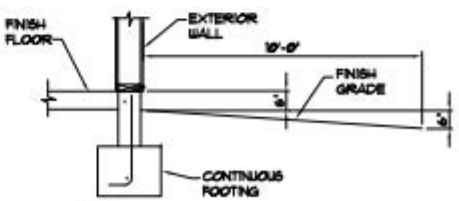
PROJECT DATA

PARCEL NO.	211-07-036S
LOT	97
ZONING	CR-1SP
LOT AREA	205,060 SQ. FT.
EXISTING LIVABLE SPACE	2,810 SQ. FT.
EXISTING GARAGE	566 SQ. FT.
EXISTING MECHANICAL ROOM	24 SQ. FT.
EXISTING COVERED ENTRY	60 SQ. FT.
EXISTING PATIO COVER	634 SQ. FT.
NEW LIVABLE SPACE (MAIN HOUSE)	256 SQ. FT.
NEW LIVABLE SPACE (GUEST HOUSE)	1,044 SQ. FT.
NEW CARPORT	816 SQ. FT.
NEW ENTRY COVER	348 SQ. FT.
TOTAL UNDER ROOF	6,556 SQ. FT.
TOTAL LOT COVERAGE	3,249
OCCUPANCY	SINGLE FAMILY RESIDENTIAL
CONSTRUCTION: TYPE V (WOOD FRAME)	NA
FIRE SPRINKLER	NO
FIRE ALARMS	YES
SUBDIVISION	NA

BUILDING CODES

ALL CONSTRUCTION SHALL COMPLY WITH THE FOLLOWING CODES AND AMENDMENTS PER THEIR ADOPTED ORDINANCES

2021 INTERNATIONAL RESIDENTIAL CODE
2021 INTERNATIONAL PLUMBING CODE
2021 INTERNATIONAL MECHANICAL CODE
2020 NATIONAL ELECTRIC CODE
2021 INTERNATIONAL FIRE CODE
2021 INTERNATIONAL FUEL GAS CODE
2021 INTERNATIONAL ENERGY CONSERVATION CODE



1 REQUIRED MIN. DRAINAGE

FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

COMMUNITY NO.	PANEL NO.	SUFFIX	DATE OF FIRM	FIRM ZONE	BASE FLOOD ELEVATION
040129	0539	L	10-16-13	AE	N/A

CITY COMMENTS 2-1-23

NEW QUEST HOUSE, ROOM ADDITION AND CARPORT FOR THE CAYNESS FAMILY
41260 N. 56th STREET
CAVE CREEK, ARIZONA 85331

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