

GENERAL STRUCTURAL NOTES

CODES AND STANDARDS

1. WIND LOADS AS PER:
- A. FLORIDA BUILDING CODE 2023 8TH EDITION AND ASCE 7-22 FOR A 140 MPH 3-SECOND ULTIMATE GUST VELOCITY, EXPOSURE "C", RISK CATEGORY II.
2. THE PROJECT WAS DESIGNED IN ACCORDANCE WITH THE:
- A. FLORIDA BUILDING CODE 2023 8TH EDITION AND ASCE 7-22.
- B. BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318 LATEST EDITION).
- C. MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES (ACI 315 LATEST EDITION).
- D. MANUAL OF STANDARD PRACTICE FOR WELDING REINFORCING STEEL, INSERTS & CONNECTIONS IN REINFORCED CONCRETE CONSTRUCTION. AWS. D1.4 LATEST EDITION.
- E. SPECIFICATION FOR THE DESIGN, FABRICATION & ERECTION OF STRUCTURAL STEEL FOR BUILDINGS. (AMERICAN INSTITUTE OF STEEL CONSTRUCTION) AISC ASD/ 9TH EDITION.
- F. SPECIFICATION FOR STRUCTURAL CONCRETE FOR BUILDINGS, ACI 301 LATEST EDITION.
- G. BUILDING CODE REQUIREMENTS AND SPECIFICATIONS FOR MASONRY STRUCTURES (ACI 530 LATEST EDITION).

3. ARCHITECTURAL AND MECHANICAL DRAWINGS:

- A. THE STRUCTURAL DRAWINGS ARE PART OF THE CONTRACT DOCUMENTS AND DO NOT BY THEMSELVES PROVIDE ALL THE INFORMATION REQUIRED TO PROPERLY COMPLETE THE PROJECT STRUCTURE. THE GENERAL CONTRACTOR SHALL CONSULT THE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS AND COORDINATE THE INFORMATION CONTAINED IN THESE DRAWINGS WITH THE STRUCTURAL DRAWINGS TO PROPERLY CONSTRUCT THE PROJECT.
- B. REFER TO ARCHITECTURAL, MECHANICAL OR ELECTRICAL DRAWINGS FOR ADDITIONAL OPENINGS, DEPRESSIONS, FINISHES, INSERTS, BOLTS SETTINGS, DRAINS, REGLETS, ETC.
- C. BEFORE ORDERING ANY MATERIALS OR DOING ANY WORK, THE CONTRACTOR SHALL VERIFY ALL MEASUREMENTS TO PROPERLY SIZE OR FIT THE WORK. NO EXTRA CHARGE OR COMPENSATION WILL BE ALLOWED BY THE OWNER RESULTING FROM THE CONTRACTOR'S FAILURE TO COMPLY WITH THIS REQUIREMENT.
- D. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH AFFECTED WORK.

4. SECTIONS AND DETAILS:

ALL DETAILS, SECTIONS AND NOTES SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMILAR SITUATIONS ELSEWHERE UNLESS OTHERWISE SHOWN.

SPECIALTY ENGINEERED PRODUCTS

1. THE GENERAL CONTRACTOR IS RESPONSIBLE TO COORDINATE THE PROPER SUBMISSION OF SPECIALTY ENGINEERED SHOP DRAWINGS WHICH SHALL BE SIGNED AND SEALED BY AN ENGINEER REGISTERED IN THE STATE OF FLORIDA. IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO ASSURE THAT THE SPECIALTY ENGINEERED SHOP DRAWINGS ARE SUBMITTED IN A TIMELY MANNER SO AS TO ALLOW REVIEWS AND RESUBMISSIONS AS REQUIRED. ALL SPECIALTY ENGINEERED PRODUCTS SHALL BE DESIGNED FOR THE APPROPRIATE GRAVITY LOADS AND PROJECT WIND LOADS.

SPECIALTY ENGINEERED PRODUCTS SHALL INCLUDE:

- A. PRE-ENGINEERED WOOD TRUSSES

FOUNDATION

1. ALL SITE PREPARATION AND EXCAVATION WORK IS TO BE PERFORMED IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS OF THE SOILS AND FOUNDATIONS INVESTIGATION PREPARED BY THE OWNER'S TESTING LABORATORY PRIOR TO FOUNDATION WORK.
2. NOT USED
3. SOILS SUPPORTING ALL FOOTINGS MUST BE INSPECTED AND APPROVED BY A REGISTERED SOILS ENGINEER BEFORE COMMENCING WORK. APPROVAL IN WRITING MUST INDICATE THE SOIL IS ADEQUATE TO SAFELY SUSTAIN SOIL BEARING PRESSURE OF 2500 PSF.
4. NOT USED
5. EXCAVATION & BACKFILL:
- A. ALL EXCAVATION SHALL BE COMPACTED DRY. EXCAVATE TO DEPTHS AND DIMENSIONS INDICATED. TAKE EVERY PRECAUTION TO GUARD AGAINST ANY MOVEMENT OR SETTLEMENT OF ADJACENT STRUCTURES, UTILITIES, PIPING, ETC.
- B. PROVIDE ANY BRACING OR SHORING NECESSARY TO AVOID SETTLEMENT OR DISPLACEMENT OF EXISTING FOUNDATION OR STRUCTURES.
6. NOT USED
7. DIMENSIONS: ALL DIMENSIONS AND ELEVATIONS SHOWN ON THE STRUCTURAL DRAWINGS MUST BE VERIFIED AND COORDINATED WITH THE ARCHITECTURAL DRAWINGS BY THE CONTRACTOR BEFORE PROCEEDING WITH THE CONSTRUCTION. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT OR ENGINEER IN WRITING BEFORE PROCEEDING WITH ANY WORK.

CONCRETE

1. CONCRETE ELEMENTS TO HAVE THE FOLLOWING STRENGTHS:

| | |
|----------------------------|----------|
| A. FOOTINGS | 3000 PSI |
| B. GROUND FLOOR SLAB | 3000 PSI |
| C. COLUMNS AND TIE COLUMNS | 3000 PSI |
| D. TIE BEAMS & BOND BEAMS | 3000 PSI |
| E. MASONRY GROUT | 3000 PSI |

ALL OTHER CONCRETE TO BE 3000 PSI UNLESS NOTED OTHERWISE.

2. ALL CONCRETE SHALL BE READY MIX, HAVE A MINIMUM COMPRESSIVE STRENGTH OF:

- A. 3000 PSI @ 28 DAYS AND HAVE A MINIMUM OF 517 LBS. OF CEMENT PER CUBIC YARD.
- B. 4000 PSI @ 28 DAYS AND HAVE A MINIMUM OF 587 LBS. OF CEMENT PER CUBIC YARD.

3. ALL CONCRETE WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE ACI BUILDING CODE (ACI 318) AND THE SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 301).

CONCRETE (CONT'D)

4. SUBMIT ALL REINFORCING STEEL SHOP DRAWINGS FOR APPROVAL PRIOR TO ANY FABRICATION.
5. CONCRETE COVER FOR REINFORCING STEEL SHALL BE AS REQUIRED BY THE ACI SPECIFICATIONS (SEE NOTE 10 BELOW).
6. WELDED WIRE FABRIC SHALL COMPLY WITH ASTM A 185, UNLESS OTHERWISE SPECIFIED. PLACE FABRIC 2" CLEAR FROM TOP OF THE SLAB IN SLAB ON GRADE EACH WAY.
7. REQUIREMENTS:
- A. ALL REINFORCING STEEL SHALL BE MANUFACTURED FROM HIGH STRENGTH BILLET STEEL CONFORMING TO ASTM DESIGNATION A 615 GRADE 60.
- B. WWF SHALL COMPLY WITH ASTM A 185.
8. LAP ALL BARS MINIMUM 36 DIAMETERS UNLESS OTHERWISE NOTED ON DRAWINGS. LAP ALL WWF A MINIMUM OF 6 INCHES (UNLESS OTHERWISE NOTED).
9. REINFORCING BARS:
- A. AT CORNERS OF CONCRETE WALLS, TIE BEAMS AND CONTINUOUS WALL FOOTINGS, PROVIDE 1-#5 X 2'-0" X 2'-0" BENT BAR FOR EACH HORIZONTAL BAR SCHEDULED AT EACH FACE.
- B. WHERE COLUMNS ARE AN INTEGRAL PART OF CONCRETE WALLS, WALL REINFORCEMENT SHALL BE CONTINUOUS THRU THE COLUMNS.
- C. ALL HOOKS SHOWN IN REINFORCEMENT SHALL BE CRSI RECOMMENDED HOOKS UNLESS OTHERWISE NOTED.
- D. CONTRACTOR SHALL INCLUDE IN HIS BASE BID THE COST OF 10,000 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 ARCHITECT'S AGENT OR BY THE OWNER'S CONSTRUCTION SUPERVISOR. THE PRICE OF THE UNUSED EXTRA STOCK SHALL BE CREDITED TO THE OWNER'S ACCOUNT.
10. MINIMUM CONCRETE COVERAGE FOR REINFORCING BARS:

| STRUCTURAL ELEMENT | MIN. CLEAR COVER (inches) |
|---|---------------------------|
| FOOTINGS, (CAST AGAINST & PERMENTLY EXPOSED TO THE EARTH) | 3 |
| FOOTINGS AND WALLS (CAST-IN-FORMS PERMENTLY EXPOSED TO THE EARTH) | 2 |
| SLABS ON GRADE | 2 |
| BEAMS (TO STIRRUPS) | 1 1/2 |
| PEDESTALS (TO TIES) | 2 |
| COLUMNS (TO TIES) ABOVE GRADE | 1 1/2 |
| SLABS ABOVE GRADE | 3/4 |
| SLABS EXPOSED TO WEATHER | 1 1/2 |

11. CONCRETE LINTELS:

- A. PROVIDE PRE-CAST CONCRETE LINTELS BY CAST-CRETE (OR EQUAL) AT ALL WINDOWS AND DOORS LOCATED WITHIN MASONRY OPENINGS (U.N.O.). SEE CAST-CRETE TABLES SHEET S-0.1
- B. LINTELS TO HAVE 8" MINIMUM BEARING AT EACH END.

PRECAST / PRESTRESSED CONCRETE

1. PRECAST / PRESTRESSED CONCRETE JOISTS SHALL BE DESIGNED TO SUPPORT SLAB WEIGHT PLUS UNIFORM DEAD AND LIVE LOADS SHOWN IN GENERAL NOTES PLUS CMU WALL WEIGHTS WHERE APPLICABLE, AT THE SPACINGS DESCRIBED ON PLANS.
2. PRESTRESSED MEMBERS SHALL BE DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF ACI 318-99, CHAPTER 18. PRESTRESS LOSS CALCULATIONS SHALL BE IN ACCORDANCE WITH THE PCI DESIGN HANDBOOK, 5th EDITIONS, SECTIONS 4.7. DESIGN CALCULATIONS, SEALED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF FLORIDA, SHALL BE SUBMITTED FOR REVIEW.
3. ALL PRECAST ELEMENTS SHALL HAVE PROPORTIONS AND REINFORCING COVER CONSISTENT WITH A 3-HOUR FIRE RATING FOR A RESTRAINED SYSTEM.
4. PRECAST JOISTS SHALL BE DESIGNED TO LIMIT LIVE LOAD DEFLECTIONS TO NO MORE THAN SPAN/360 EXCEPT FOR JOISTS SUPPORTING CMU WALLS, WHICH SHALL LIMIT LIVE LOAD DEFLECTION TO SPAN/480.
5. LONG-TERM DEFLECTIONS SHALL BE DETERMINED IN ACCORDANCE WITH ACI 318-99, SECTIONS 9.5 AND 9.5.4. LIMIT LONG-TERM DEFLECTIONS TO SPAN/480.
6. ALL PRECAST MEMBERS SHALL HAVE POSITIVE CAMBER AT ERECTIONS, AND SHALL BE DESIGNED TO HAVE NO MORE THAT SPAN/1000 NEGATIVE CAMBER AFTER SLAB PLACEMENT.
7. MINIMUM 28-DAY CONCRETE STRENGTH FOR PRECAST SHALL BE 5000 PSI.
8. COORDINATED ATTACHMENT OF ANY ITEM TO PRECAST JOISTS OR SOFFITS. DO NOT USE EXPANSION ANCHORS OR ANY OTHER FASTENER THAT PENETRATES THE CONCRETE SURFACE WITHOUT WRITTEN AUTHORIZATION FROM BOTH THE PRECAST SUPPLIER AND THE ENGINEER-OF-RECORD.

REINFORCED MASONRY

1. MASONRY UNITS SHALL BE ASTM C 90 GRADE N ALL CMU SHALL BE LAID IN A FULL BED OF MORTAR IN RUNNING BOND (U.N.O.).
2. FOLLOWING ARE THE BLOCK STRENGTHS REQUIRED:
- A. ASTM C 90 - 2,000 PSI ON NET AREA OF INDIVIDUAL UNITS
3. ALL MORTAR SHALL BE TYPE S (OR TYPE M) IN ACCORDANCE WITH ASTM SPECIFICATION C270 WITH A MINIMUM COMPRESSIVE STRENGTH OF 1,800 PSI AT 28 DAYS. (2500 WITH TYPE M) FROM FIELD OBTAINED TEST CUBES. (MIN. OF TWO)
4. GROUT SHALL BE A HIGH SLUMP MIX HAVING A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI FROM FIELD OBTAINED TEST CUBES. (MIN. OF TWO)
5. ALL CONCRETE MASONRY BEARING AND SHEAR WALLS SHALL BE INSPECTED BY A QUALIFIED ENGINEER AND CONSTRUCTED IN ACCORDANCE WITH THE "BUILDING CODE REQUIREMENT FOR MASONRY STRUCTURES" (ACI 530) AND "SPECIFICATIONS FOR MASONRY STRUCTURES" (ACI 530.1).
6. PROVIDE HOT DIPPED GALVANIZED LADDER TYPE HORIZONTAL JOINT REINFORCEMENT (9 GA.) AT EVERY OTHER COURSE IN ALL MASONRY WALLS. PROVIDE DOVE TAIL SLOT ANCHORS AT CONCRETE COLUMNS.

DESIGN LOAD SCHEDULE

(ALL LOADS SHOWN ARE IN POUNDS PER SQ. FT.)

| COMPONENT | AREA | INTERIOR | GROUND FLOOR | PITCHED ROOFS | | | |
|-----------------------|------|----------|--------------|---------------|--|--|--|
| | | | | | | | |
| PARTITION LOAD | | 15 | - | | | | |
| FLOOR LIVE LOAD | | 40 | - | | | | |
| ROOF LIVE LOAD | | - | 20 | | | | |
| FLOOR SLAB & FINISHES | | 56 | - | | | | |
| CEILING + MECH. LOADS | | - | 10 | | | | |
| ROOF SYSTEM | | - | 15 | | | | |
| | | | | | | | |
| | | | | | | | |
| TOTAL DEAD LOAD | | 71 | 25 | | | | |
| TOTAL LIVE LOAD | | 40 | 20 | | | | |
| TOTAL LOAD | | 111 | 45 | | | | |

COMPONENT AND CLADDING WIND LOAD SCHEDULE

| COMPONENTS & CLADDING | ROOF WIND LOADS - PITCHED ROOFS | | | | | | | | | | | |
|-----------------------|---------------------------------|---------|---------|------------|---------|---------|---------|------------|---------|---------|---------|------------|
| | ROOF AREA (TRIBUTARY) | | | | | | | | | | | |
| | 1 | | | | 2 | | | | 3 | | | |
| | 10 S.F. | 20 S.F. | 50 S.F. | ≥ 100 S.F. | 10 S.F. | 20 S.F. | 50 S.F. | ≥ 100 S.F. | 10 S.F. | 20 S.F. | 50 S.F. | ≥ 100 S.F. |
| PRESSURE (PSF) | 34.47 | 33.63 | 32.36 | 31.39 | 34.47 | 33.63 | 32.36 | 34.39 | 34.47 | 33.63 | 32.36 | 31.39 |
| SUCTION (PSF) | -37.55 | -35.87 | -33.32 | -31.39 | -43.95 | -42.28 | -39.73 | -37.80 | -43.95 | -42.28 | -39.73 | -37.80 |

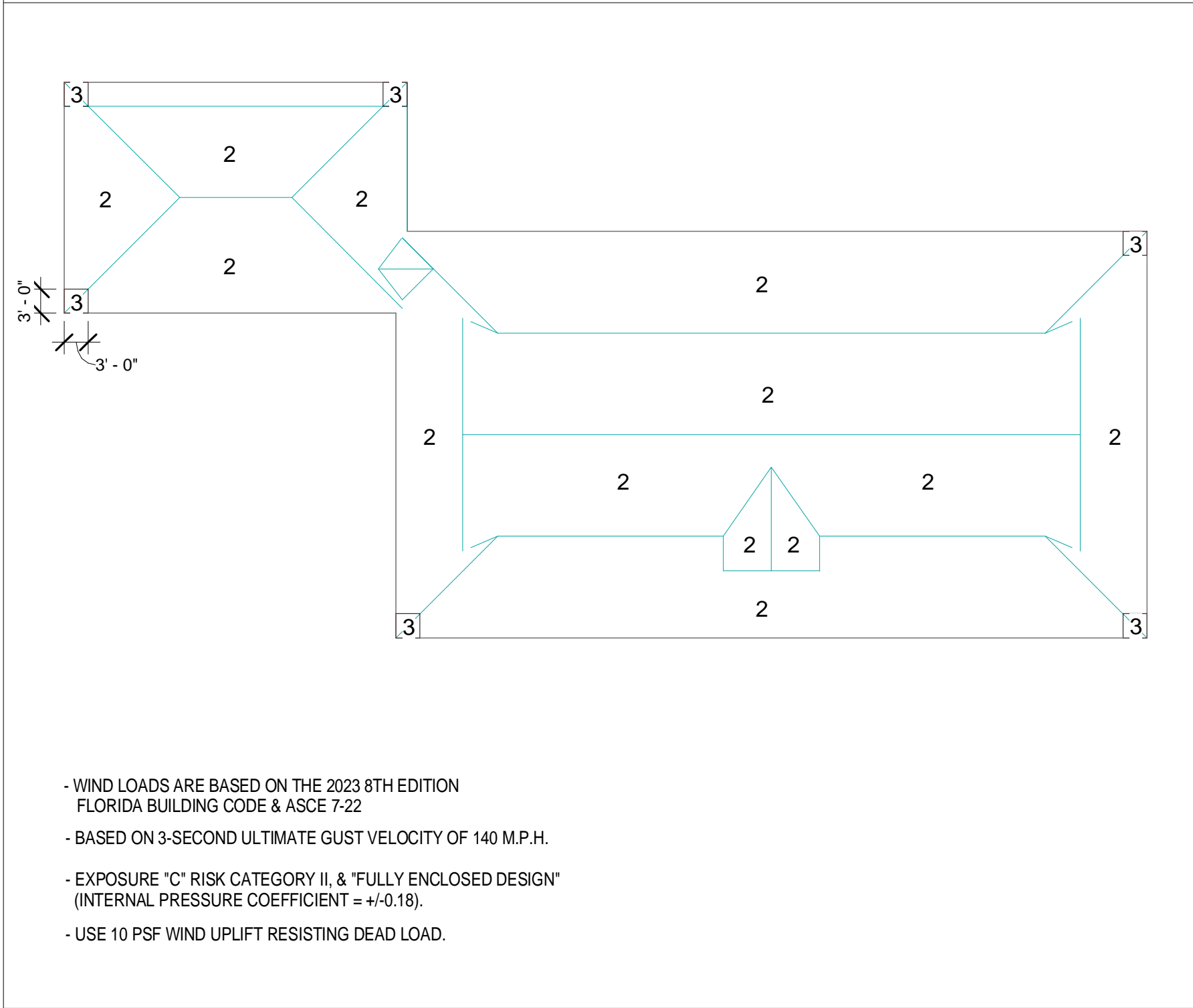
CORNER DISTANCE, A= 3.00 FEET

COMPONENT AND CLADDING WIND LOAD SCHEDULE

| COMPONENTS & CLADDING | WALL WIND LOADS | | | | | | | | | | | |
|-----------------------|-----------------------|---------|---------|------------|------------|---------|---------|---------|------------|------------|--|--|
| | WALL AREA (TRIBUTARY) | | | | | | | | | | | |
| | 4 | | | | | | 5 | | | | | |
| | 10 S.F. | 20 S.F. | 50 S.F. | ≥ 100 S.F. | ≥ 500 S.F. | 10 S.F. | 20 S.F. | 50 S.F. | > 100 S.F. | > 500 S.F. | | |
| PRESSURE (PSF) | 37.57 | 36.10 | 33.84 | 32.14 | ----- | 37.57 | 36.10 | 33.84 | 32.14 | ----- | | |
| SUCTION (PSF) | -40.78 | -39.30 | -37.50 | -35.34 | ----- | -50.17 | -47.21 | -42.71 | -39.29 | ----- | | |

CORNER DISTANCE, A= 3.00 FEET

WIND ZONES ROOF



- WIND LOADS ARE BASED ON THE 2023 8TH EDITION FLORIDA BUILDING CODE & ASCE 7-22
- BASED ON 3-SECOND ULTIMATE GUST VELOCITY OF 140 M.P.H.
- EXPOSURE "C" RISK CATEGORY II, & "FULLY ENCLOSED DESIGN" (INTERNAL PRESSURE COEFFICIENT = +/-0.18).
- USE 10 PSF WIND UPLIFT RESISTING DEAD LOAD.

WINDZONE DIAGRAM
SCALE = N.T.S.

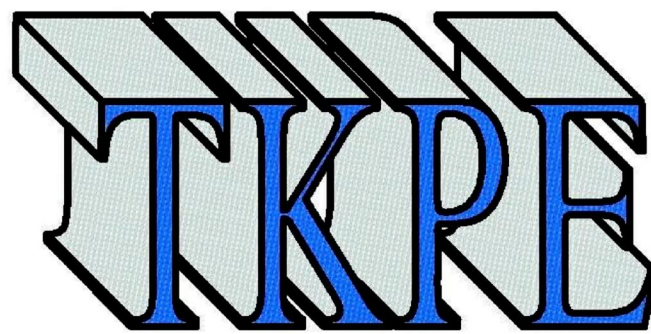
ROOF DESIGN LOAD

| | |
|---------------------|--------|
| * DEAD LOADS | |
| ROOF | |
| ROOF SYSTEM = | 15 PSF |
| CEILING = | 10 PSF |
| TOTAL DEAD LOAD = | 25 PSF |

*** LIVE LOAD = 20 PSF**

ABBREVIATIONS:

- ADDL - ADD - ADDITIONAL
L - ANGLE
AB, ABOLT - ANCHOR BOLT
LG - LONG
ARCH - ARCHITECTURAL
@ - AT
BLDG - BUILDING
BLK - BLOCK
BM - BEAM
BOTT. B - BOTTOM. BOTTOM BAR
BRNG - BEARING
C-J - CONTROL JOINT
CL - CLEAR
COL - COLUMN
CONC. - CONCRETE
CONN. - CONNECTION
C.M.U. - CONCRETE MASONRY UNIT
CONST. - CONSTRUCTION
CONT. - CONTINUOUS
CONTR. - CONTRACTOR
D - DEEP
DB - DROP BEAM
DSN - DESIGN
DET, DTL - DETAIL
DIA. - DIAMETER
DIAG. - DIAGRAM
DIM. - DIMENSION
DWG. - DRAWING
DWL - DOWEL
EA - EACH
EF - EACH FACE
EW. - EACH WAY
ELEV, EL - ELEVATION
E.T.F. - ELEVATION TOP OF FOOTING
ETC. - ETCETERA
EQ - EQUAL
EXIST, EXT'G - EXISTING
EXP. - EXPANSION
EXP. JT, EJ - EXPANSION JOINT
EXT. - EXTERIOR
- F/ - FACE OF
FB - FLUSH BEAM
FIN. FL - FINISH FLOOR
FFE - FINISH FLOOR ELEVATION
FL - FUR - FLOOR
FTG. - FOOTING
FT. - FEET / FOOT
FLG - FLANGE
GA - GAGE
GALV. - GALVANIZED
H - HEAD
HK - HOOK
HLT. HIGH LEG TRACK
HR. - HOUR
HORIZ - HORIZONTAL
INFO. - INFORMATION
INT. - INTERIOR
JST. - JOIST
JT - JOINT
K-FT KIP - FEET
K/FT - KIPS PER FOOT
K - KIPS
LLO - LONG LEG OUT
LLV - LONG LEG VERTICAL
LLH - LONG LEG HORIZONTAL
LOCN' - LOCATION
M - MOMENT
MFG, MFR - MANUFACTURER
MECH - MECHANICAL
MPH - MILE PER HOUR
MATL - MATERIAL
MAX. - MAXIMUM
MIN. - MINIMUM
T/SLAB - TOP OF SLAB
T/FTG - TOP OF FOOTING
TYPICAL
NO. - NUMBER
N.T.S. - NOT TO SCALE
O/C, O.C. - ON CENTER
OPNG. - OPENING
O.H. - OPPOSITE HAND
- P - PAN
P.A.F. - POWDER ACTUATED
FASTENER
PL - PLATE
PT. - POST TENSIONED
PTS - POINTS
PHSE - PENTHOUSE
P.S.F. - POUNDS PER SQUARE FOOT
P.S.I. - POUNDS PER SQUARE INCH
REF. - REFERENCE
REV. - REVISION
REINF. - REINFORCING
REQ'D - REQUIRED
RE-BAR - REINFORCING BAR
SCHD, SCHED. - SCHEDULE
STRUCT. - STRUCTURAL
S.ECT. - SECTION
S.L.V. - SHORT LEG VERTICAL
S.L.H. - SHORT LEG HORIZONTAL
S.L.O. - SHORT LEG OUT
SIM. - SIMILAR
S.O.G. - SLAB ON GRADE
SPECS - SPECIFICATIONS
STD - STANDARD
STIRR - STIRRUPS
STL, STL - STEEL
STRUCT. - STRUCTURAL
T - TOP BAR
THK - THICK
THRU - THROUGH
T/S, T/STL - TOP OF STEEL
T/B - TOP OF BEAM
T/CONC. - TOP OF CONCRETE
MTL - METAL
MISC. - MISCELLANEOUS
N.G. - NOT IN CONTRACT
NO. - NUMBER
N.T.S. - NOT TO SCALE
O/C, O.C. - ON CENTER
OPNG. - OPENING
VERT - VERTICAL



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Proposed Residence

Structural Notes 1

| | |
|----------------|--------------|
| Project number | 24-045 |
| Date | 12/25/2024 |
| Drawn by | A.O. |
| Checked by | T.K. |
| S100 | |
| Scale | As indicated |