

STRUCTURAL NOTES

1. GENERAL

- A. THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL VERIFY ALL GRADES, DIMENSIONS AND CONDITIONS AT THE JOB SITE PRIOR TO COMMENCING WORK. IF DISCREPANCIES EXIST, CONTRACTOR SHALL NOTIFY IN WRITING ANY ERRORS, INCONSISTENCIES, OR OMISSIONS ON THE DRAWINGS TO THE ENGINEER FOR CLARIFICATION, PRIOR TO FABRICATION & INSTALLATION OF ANY STRUCTURAL MEMBERS.
- B. THE CONTRACTOR IS RESPONSIBLE AND SHALL COMPLY WITH THE REQUIREMENTS OF THE 2023 FLORIDA BUILDING CODE AND ALL LOCAL, STATE AND FEDERAL LAWS.
- C. THE CONTRACTOR STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL BE IN PLACE, BUT NOT LIMITED TO, BRACING, SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. INSPECTION VISITS TO THE SITE BY THE STRUCTURAL ENGINEER SHALL NOT INCLUDE INSPECTION OF THE ABOVE ITEMS.
- D. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR UPDATING HIS CONSTRUCTION DOCUMENTS WITH ANY REVISED DRAWINGS AND SPECIFICATIONS, OR CLARIFICATION SKETCHES ISSUED DURING THE COURSE OF CONSTRUCTION.
- E. THE CONTRACTOR SHALL ADEQUATELY PROTECT HIS WORK, ADJACENT PROPERTY AND THE PUBLIC, AND BE RESPONSIBLE FOR DAMAGE OR INJURY DUE TO HIS ACT OR NEGLECT.
- F. NO STRUCTURAL MEMBER SHALL BE CUT, NOTCHED OR OTHERWISE REDUCED IN SIZE OR STRENGTH WITHOUT PRIOR APPROVAL IN WRITING FROM THE STRUCTURAL ENGINEER. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL COSTS INCURRED.
- G. CONTRACTOR SHALL COORDINATE STRUCTURAL AND OTHER DRAWINGS WHICH ARE PART OF THE CONTRACT DOCUMENTS FOR ANCHORED, EMBEDDED OR SUPPORTED ITEMS WHICH MAY AFFECT THE STRUCTURAL DRAWINGS.
- H. THESE DRAWINGS ARE INTENDED TO SHOW THE GENERAL ARRANGEMENT, DESIGN AND EXTENT OF THE WORK AND ARE PARTLY DIAGRAMMATIC. THESE DRAWINGS ARE NOT INTENDED TO BE SCALED OR TO SERVE AS SHOP DRAWINGS OR PORTIONS THEREOF.
- I. ALL DETAILS AND SECTIONS SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL BE CONSTRUED TO APPLY TO ANY SIMILAR SITUATION ELSEWHERE ON THE PROJECT. EXCEPT WHERE A DIFFERENT DETAIL IS SHOWN.
- J. DEFICIENT WORK SHALL BE REPLACED OR REPAIRED, AS DETERMINED BY THE ENGINEER, AT NO COST TO THE OWNER, INCLUDING ENGINEERING COSTS INCURRED.
- K. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL SAFETY PRECAUTIONS AND REGULATIONS DURING THE DURATION OF THE PROJECT WORK. THE STRUCTURAL ENGINEER WILL NOT ADVISE ON NOR ISSUE DIRECTION AS TO SAFETY PRECAUTIONS.
- L. ALL STRUCTURAL ELEMENTS OF THE PROJECT HAVE BEEN DESIGNED BY THE STRUCTURAL ENGINEER TO RESIST THE CODE-REQUIRED DESIGN LATERAL LOADS THAT COULD BE APPLIED IN THE FINAL COMPLETED STRUCTURE ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL REQUIRED BRACING DURING CONSTRUCTION TO MAINTAIN THE STABILITY & SAFETY OF ALL STRUCTURAL ELEMENTS DURING THE CONSTRUCTION PROCESS UNTIL THE LATERAL-LOAD RESISTING OR STABILITY-PROVIDING SYSTEM IS COMPLETELY INSTALLED AND THE STRUCTURE IS COMPLETELY TIED TOGETHER.
- M. CONSTRUCTION MATERIALS SHALL BE SPREAD OUT WHEN PLACED ON FLOOR OR ROOF. LOAD SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT. PROVIDE ADEQUATE SHORING AND/OR BRACING WHERE STRUCTURE HAS NOT ACHIEVED DESIGN STRENGTH.
- N. THESE NOTES SHALL BE USED IN CONJUNCTION WITH THE SPECIFICATIONS ISSUED BY THE ARCHITECT. DISCREPANCIES SHALL BE BROUGHT TO ATTENTION TO THE ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE WORK.
- O. ANY MATERIALS OF PRODUCTS SUBMITTED FOR APPROVAL THAT ARE DIFFERENT FROM THOSE SPECIFIED IN THE STRUCTURAL PLANS WILL BE REVIEWED AND APPROVED ONLY IF THE FOLLOWING CRITERIA ARE SATISFIED:
1. A COST SAVINGS TO THE OWNER IS DOCUMENTED & SUBMITTED WITH THE REQUEST.
 2. THE MATERIAL OR PRODUCT HAS BEEN APPROVED BY THE FLORIDA BUILDING CODE AND THE PRODUCT APPROVAL REPORT IS SUBMITTED WITH THE REQUEST.
- P. WHEN PERFORMING WORK BELOW GRADE, CARE SHALL BE TAKEN TO AVOID DAMAGING ANY EXISTING UTILITIES. ALL UNKNOWN UTILITIES DISCOVERED DURING CONSTRUCTION SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER. ANY DAMAGE TO EXISTING UTILITIES SHALL BE REPORTED TO ALL AFFECTED PARTIES, INCLUDING THE ARCHITECT/ENGINEER.
- Q. THE CONTRACTOR SHALL USE EXTREME CAUTION IN THE DEMOLITION OF EXISTING STRUCTURES. SUCH DEMOLITION SHALL BE PERFORMED IN SUCH A MANNER AS TO MAINTAIN THE STRUCTURAL INTEGRITY OF ALL EXISTING STRUCTURES TO REMAIN. PROVIDE TEMPORARY SHORING WHERE REQUIRED.
- R. THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FULLY AWARE OF THE EXISTING CONDITIONS & EXTENT OF WORK REQUIRED TO COMPLETE THE PROJECT PRIOR TO THE START OF WORK.
- S. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL NECESSARY WORK PERMITS AND APPROVALS REQUIRED BY THE LOCAL AGENCY HAVING JURISDICTION TO PERFORM THE WORK INDICATED.

2. CONCRETE

- CONCRETE DESIGN AND REINFORCEMENT SHALL BE IN ACCORDANCE WITH "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" (ACI 318-19) AND "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" (ACI 301). PRODUCTION OF CONCRETE, DELIVERY, PLACING AND CURING TO BE IN ACCORDANCE WITH HOT WEATHER CONCRETE" (ACI 305).
- B. ALL CONCRETE SHALL BE NORMAL WEIGHT CONCRETE (145 PCF) & ACHIEVE A 28-DAY COMPRESSIVE STRENGTH (F_c) OF 3000 PSI, THE DESIGN MIX SHALL HAVE A MAXIMUM WATER-CEMENT RATIO OF 0.50 BY WEIGHT, & A MINIMUM OF 5 BAGS OF CEMENT IN EA. CUBIC YARD OF CONCRETE. SUBMIT PROPOSED MIX DESIGN FOR REVIEW PRIOR TO FIELD POURING. MIX SHALL BE IDENTIFIED BY MIX NUMBER OR OTHER POSITIVE IDENTIFICATION.
- C. ALL CEMENT SHALL CONFORM TO ASTM C150, TYPE 1. MAXIMUM AGGREGATE SIZE SHALL BE 1½" FOR FOOTINGS & ¾" FOR WALLS, BEAM & SLABS CONFORMING TO ASTM C33.
- D. FOR ALL CONCRETE TO BE PLACED IN SLABS (INCLUDING SLABS ON GRADE) AND WALL PANELS, THE SLUMP SHALL NOT EXCEED 4" (±1"). NO WAIVERS OF THIS REQUIREMENT SHALL BE CONSIDERED. SLUMP FOR PUMPED CONCRETE SHALL NOT EXCEED 7(±1").
- E. PLACING OF CONCRETE IN ALL REINFORCED COLUMNS AND WALLS SHALL BE IN EQUAL LIFTS NOT EXCEEDING 7'-6" IN HEIGHT. ALL DOWELS FOR COLUMNS AND WALLS SHALL BE SECURED IN POSITION PRIOR TO CONCRETING.
- F. ALL CONCRETE STRUCTURAL COMPONENTS SHALL HAVE ITS STRENGTH TESTED IN ACCORDANCE WITH ASTM STANDARDS & ACI 318-19. MINIMUM FOUR TEST CYLINDERS MUST BE TAKEN EVERY 50 CUBIC YARDS OR LESS OF CONCRETE PRIOR TO POURING. TESTS SHALL BE MADE FOR 7 DAYS, TWO AT 28 DAYS & ONE HELD IN RESERVE. CONTRACTOR SHALL PROVIDE THE STRUCTURAL ENGINEER'S OFFICE COPIES OF THE CONCRETE TEST RESULTS FOR REVIEW, AS WELL AS COPIES OF THE CONCRETE MIX DESIGN TO BE APPROVED PRIOR TO USE.
- G. MINIMUM CONCRETE COVER TO REINFORCING STEEL SHALL BE IN ACCORDANCE WITH ACI 318-19 AND SHALL BE AS FOLLOWS:
- | ELEMENT: | BOTTOM: | TOP: | SIDES: |
|----------------------------|----------|----------|----------|
| FOUNDATION..... | 3"..... | 2"..... | 2"..... |
| BEAMS..... | 1½"..... | 1½"..... | 1½"..... |
| COLUMNS/WALLS..... | 1½"..... | 1½"..... | 1½"..... |
| SLAB ON GRADE..... | 2"..... | 1"..... | 1"..... |
| INTERIOR STRUCT. SLAB..... | ¾"..... | ¾"..... | 1"..... |
| EXTERIOR STRUCT. SLAB..... | 1½"..... | 1½"..... | 1"..... |
- H. SLAB OPENING SHALL BE MADE BY BLOCKING OUT PRIOR TO PLACING CONCRETE OR BY CORE DRILLING, NO CHIPPING OF ANY TYPE WILL BE PERMITTED. THE LOCATION OF ALL OPENINGS SHALL BE COORDINATED WITH THE PLUMBING, ELECTRICAL & MECHANICAL PLANS.
- I. PROVIDE SLEEVES FOR PLUMBING AND ELECTRICAL OPENINGS IN CONCRETE BEFORE PLACING. DO NOT CUT ANY REINFORCING WHICH MAY CONFLICT. NOTIFY THE STRUCTURAL ENGINEER IN ADVANCE OF CONDITIONS NOT SHOWN ON THE DRAWINGS.
- J. CONCRETE ON EXPOSED BALCONIES, SLABS, BEAMS AND STAIRS SHALL HAVE THE TOP SURFACE COATED WITH "ALKYL-ALKOXY SILANE SEALER" OR ENGINEER-APPROVED EQUAL.
- K. THE CONTRACTOR SHALL EVACUATE ALL WATER FROM WITHIN FORMWORK BEFORE PLACEMENT OF ANY CONCRETE. AFTER DEWATERING AND BEFORE PLACING CONCRETE, RINSE THE REINFORCING STEEL CLEAN AND FREE OF ALL DELETERIOUS MATERIAL.
- L. THE MAXIMUM TIME ALLOWED FROM THE TIME THE MIXING WATER IS ADDED UNTIL IT IS DEPOSITED IN ITS FINAL POSITION SHALL NOT EXCEED 1½ HOURS. IF FOR ANY REASON THERE IS A LONGER DELAY, THE CONCRETE MUST BE DISCARDED.

3. MASONRY

- A. ALL MASONRY CONSTRUCTION TO BE IN ACCORDANCE WITH "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES AND SPECIFICATIONS FOR MASONRY STRUCTURES AND COMMENTARIES" (TMS 402-16), AND THE 2023 EDITION OF THE FLORIDA BUILDING CODE. ALL MASONRY WALLS TO BE CONSTRUCTED TO UNITS CONFORMING TO ASTM C-90-14 AND REINFORCED WITH #9 GAGE HORIZONTAL REINFORCING LOCATED AT 16" O.C. LADDER TYPE. ALL MASONRY TO BE LAID IN TYPE "M" MORTAR (2500 PSI) WITH FULL BED AND BED JOINTS.
- B. BLOCK CELLS AT WALL ENDS, CORNERS, INTERSECTIONS AND ADJACENT TO ALL OPENINGS SHALL BE FILLED WITH GROUT AND REINFORCED WITH MINIMUM ONE #5 VERTICAL REINFORCING BAR. DOWELS SHALL BE USED TO PROVIDE CONTINUITY INTO THE STRUCTURE.
- C. MASONRY NET AREA COMPRESSIVE STRENGTH (f_m) SHALL BE 1500 PSI AND THE NET AREA COMPRESSIVE STRENGTH OF THE MASONRY UNITS SHALL BE 1850 PSI, PER TMS 402-16.
- D. ALL REINFORCED MASONRY CONSTRUCTION SHALL BE IN ACCORDANCE WITH APPLICABLE PROVISIONS OF CONCRETE REINFORCEMENT, CAST-IN-PLACE CONCRETE AND CONCRETE MASONRY. VERTICAL REINFORCING SHALL ANCHOR INTO SUPPORTING CONCRETE MEMBERS A CLASS "B" LAP LENGTH PLUS 3" OR FULL DEPTH, PLUS A STANDARD HOOK. ALL VERTICAL CELLS WITH REINFORCING SHALL BE FILLED WITH MORTAR GROUT CONSISTING OF 3000 PSI CONCRETE WITH #8 COARSE AGGREGATE. WHERE HEIGHT OF MASONRY WALL EXCEEDS 4'-0", USE HIGH-LIFT GROUTING TECHNIQUE WHICH REQUIRES A CLEAN-OUT OPENING AT THE BOTTOM OF ALL CELLS AND PLACING THE GROUT IN MAXIMUM 4'-0" LIFTS WITH A 30 TO 60 MINUTE DELAY BETWEEN LIFTS. GROUT SHALL CONFORM TO ASTM C476-19. SLUMP SHALL BE BETWEEN 8" AND 10".
- E. MORTAR SHALL COMPLY WITH ASTM C-270-14, TYPE "M", WITH A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF 2500 PSI.
- F. HORIZONTAL REINFORCEMENT SHALL BE DUR-O-WALL STANDARD (9 GA.), ASTM CLASS B-2, HOT DIPPED GALVANIZED OR APPROVED EQUAL.
- G. VERTICAL REINFORCEMENT SHALL CONFORM TO ASTM A615/A615M-20, GRADE 60. ALL REINFORCED CELLS WITH 3000 PSI CONCRETE OR GROUT. SEE PLAN FOR SIZE AND SPACING OF VERTICAL REINFORCEMENT.
- H. THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF MASONRY WALLS DURING CONSTRUCTION. ALL NECESSARY PRECAUTIONS MUST BE TAKEN TO PREVENT INJURY TO PERSONS RESULTING FROM MASONRY WALL FAILURE.

4. STRUCTURAL STEEL

- A. ALL STRUCTURAL STEEL SHALL CONFORM TO THE FIFTEENTH EDITION OF THE ALLOWABLE STRESS DESIGN (ASD) "MANUAL OF STEEL CONSTRUCTION" OF THE AISC, PUBLISHED IN 2017.
- B. UNLESS OTHERWISE NOTED, ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE FOLLOWING ASTM SPECIFICATIONS:

MEMBER	ASTM	MIN. STRENGTH
STRUCTURAL TUBING (HSS)	A500 (GRADE B)	46 KSI
STEEL PIPE	A53 (GRADE B)	35 KSI
W SHAPES	A992	50 KSI
OTHER ROLLED PLATES/SHAPES	A36	36 KSI
CONNECTION BOLTS	A325	92 KSI
ANCHOR BOLTS	F1554	58 KSI

- HEADED STUDS SHALL BE NELSON GRANULAR FLUX-FILLED HEADED ANCHOR STUDS AND SHALL BE MADE FROM C-1015 COILED ROLLED STEEL AND SHALL CONFORM TO ASTM SPECIFICATION A-108, GRADES 1015-1020 WITH MINIMUM TENSILE STRENGTH OF 60 KSI.
- D. UNLESS OTHERWISE NOTED, ALL CONNECTIONS SHALL BE SHEAR TYPE CONNECTIONS AND DESIGNED BY THE FABRICATOR FOR THE FACTORED SHEAR FORCES INDICATED ON PLAN IN ACCORDANCE WITH THE ASTM SPECIFICATIONS FOR ALLOWABLE DESIGN. ALL BOLTS SHALL BE SHEAR/BEARING TYPE BOLTS AND BE "SNUG-TIGHT".
- E. ALL WELDING SHALL BE IN ACCORDANCE WITH AWS D11 USING E70-XX ELECTRODES. (SMAW) UNLESS OTHERWISE NOTED, PROVIDE CONTINUOUS MINIMUM SIZED FILLET WELDS AS PER AS REQUIRED. ALL FILLER MATERIAL SHALL HAVE A MINIMUM YIELD STRENGTH OF 58 KSI. A WELDING TO BE PERFORMED BY CERTIFIED WELDERS AS REQUIRED BY AWS & 2023 FLORIDA BUILDING CODE. SLAG SHALL BE REMOVED FROM ALL WELDS FOR INSPECTION.
- F. 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.
- G. ALL STRUCTURAL STEEL PERMANENTLY EXPOSED TO VIEW SHALL BE SHOP PAINTED WITH ONE COAT OF SSPC 15-68, RED OR GRAY OXIDE-TYPE PAINT.
- H. COLUMNS, ANCHOR BOLTS, BASE PLATES, ETC. HAVE BEEN DESIGNED FOR THE FINAL COMPLETED CONDITION AND HAVE NOT BEEN INVESTIGATED FOR POTENTIAL LOADINGS ENCOUNTERED DURING STEEL ERECTION AND CONSTRUCTION. ANY INVESTIGATION OF THE COLUMNS, ANCHOR BOLTS, BASE PLATES, ETC. FOR ADEQUACY DURING THE STEEL ERECTION AND CONSTRUCTION PROCESS IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- I. STEEL FABRICATORS SHALL BE AN AISI CERTIFIED SHOP FOR CATEGORY I STEEL STRUCTURES AND MAINTAIN DETAILED QUALITY CONTROL PROCEDURES AS REQUIRED TO SATISFY THE SPECIAL INSPECTION REQUIREMENTS OF THE 2023 FBC.
- J. ALL STRUCTURAL STEEL PERMANENTLY EXPOSED TO WEATHER, SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153-16 AND A123/A123M-13. PROVIDE GALVANIZED BOLTS FOR STEEL PERMANENTLY EXPOSED TO WEATHER. GALVANIZING SHALL BE DONE BY BOLT MANUFACTURER.
- K. FIELD CUTTING OF STRUCTURAL STEEL IS NOT PERMITTED EXCEPT WHERE AUTHORIZED BY THE ENGINEER OF RECORD IN WRITING. CUTTING OR ENLARGEMENT OF BOLT HOLES WITH TORCHES IS STRICTLY PROHIBITED.
- L. CONTRACTOR TO OBTAIN ALL FIELD MEASUREMENTS REQUIRED FOR PROPER FABRICATION AND INSTALLATION OF WORK PRIOR TO DETAILING. PRECISE MEASUREMENTS ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- M. FOR FIREPROOFING REQUIREMENTS AND ASSEMBLIES REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS.
- N. A REGISTERED PROFESSIONAL ENGINEER SHALL INSPECT THE WELDING AND BOLTING OF STRUCTURAL STEEL FRAMINGS AS PER SECTION 2214.3.4 OF THE 2023 FLORIDA BUILDING CODE.
- O. GROUT FOR COLUMN BASE PLATES AND PRESET BEARING PLATES SHALL BE NON-SHRINK, NON-METALLIC GROUT WITH A COMPRESSIVE STRENGTH OF AT LEAST 5,000 PSI IN 28 DAYS.

5. REINFORCING STEEL

- TO BE NEW BUILT STEEL CONFORMING TO THE LATEST ASTM A615 GRADE 60 SPECIFICATIONS, FABRICATED IN ACCORDANCE WITH MANUAL OF STANDARD PRACTICE OF THE CRSI & PLACED IN ACCORDANCE WITH ACI 315 & ACI MANUAL OF STANDARD PRACTICE.
- B. COLUMN REINFORCEMENT: DOWELS TO BE SAME SIZE AND NUMBER AS VERTICALS ABOVE. LAP 36 BAR DIAMETER OR MINIMUM OF 18" U.O.N. PROVIDE STANDARD HOOKS FOR ALL VERTICAL REINFORCEMENT AT NON-CONTINUOUS COLUMNS.
- C. ALL REINFORCING STEEL SHALL BE TIED DOWN AND INDEPENDENTLY SUPPORTED ON CHAIRS AND SUPPORT BARS. REINFORCEMENT SHALL BE FREE OF MUD OIL OR OTHER NONMETALLIC COATINGS THAT ADVERSELY AFFECT BONDING CAPACITY.
- D. ALL REINFORCING STEEL SHALL BE TIED DOWN AND INDEPENDENTLY SUPPORTED ON CHAIRS AND SUPPORT BARS. REINFORCEMENT SHALL BE FREE OF MUD OIL OR OTHER NONMETALLIC COATINGS THAT ADVERSELY AFFECT BONDING CAPACITY.
- E. WELDED WIRE FABRIC (W.W.F.) SHALL CONFORM TO ASTM A-185. MINIMUM LAP OF W.W.F. SHALL BE 6 IN. OR ONE FULL MESH, WHICHEVER IS GREATER.
- F. ALL REINFORCING BARS MARKED "CONTINUOUS" SHALL BE LAPPED 36 BAR DIA. AT SPLICES AND CORNERS UNLESS OTHERWISE NOTED. LAP CONTINUOUS TOP BARS AT CENTER BETWEEN SUPPORTS AS REQUIRED. TERMINATE CONTINUOUS BARS AT NON-CONTINUOUS ENDS WITH STANDARD HOOKS. U.O.N.
- G. ALL WALLS AND COLUMNS SHALL BE DOWELED INTO FOOTINGS, WALLS, BEAMS, OR SLABS WITH BARS OF THE SAME SIZE AND SPACING AS THE BARS ABOVE. USE A (30) BAR DIAMETER LAP EXCEPT WHERE SPECIFICALLY INDICATED.
- H. FOR EXTERIOR SLABS SUCH AS BALCONIES, THAT ARE EXPOSED TO WEATHER, TOP REINFORCING SHALL BE EPOXY COATED IN ACCORDANCE WITH THE STANDARD SPECIFICATION FOR EPOXY COATED REINFORCING STEEL BARS, ASTM A775. MINIMUM COVER FOR THESE BARS SHALL BE 1 1/2". (CONCRETE WATER CEMENT RATIO SHALL NOT EXCEED 0.40 BY WEIGHT AND ALSO A SURFACE PENETRANT OF EPOXY SILANE CLASSIFICATION OR APPROVED EQUAL SHALL BE APPLIED AFTER PROPER SURFACE PREPARATION AT THE ABOVE MENTIONED AREAS). AS AN ALTERNATE TO EPOXY-COATING THE GENERAL CONTRACTOR MAY SUBMIT FOR APPROVAL BY THE ARCHITECT/ENGINEER A CONCRETE MIX DESIGN CONTAINING AN APPROVED CORROSION INHIBITOR ADMIXTURE IN CONFORMANCE TO ASTM C494 TYPE C.
- I. ALL REINFORCEMENT SHALL BE BENT COLD, UNLESS OTHERWISE PERMITTED BY THE PROFESSIONAL ENGINEER IN WRITING. ALL TIES SHALL HAVE A 135 DEGREE HOOKS.
- J. ALL NEW REINFORCING STEEL THAT WILL BE WELDED SHALL MEET THE REQUIREMENTS OF ASTM A706 GRADE 60 DEFORMED BARS.

6. FOUNDATION:

- A. FOUNDATIONS ARE DESIGNED TO BEAR ON LIMEROCK FILL WITH AN ALLOWABLE BEARING CAPACITY OF 2000 PSF IN ACCORDANCE WITH THE PROVISIONS OF THE 2023 FLORIDA BUILDING CODE.
- B. SHOULD ANY DISCREPANCIES BE FOUND WITH THE RECOMMENDATIONS AND FINDING OF SUCH REPORT, DURING SITE PREPARATION AND/OR FOUNDATION EXCAVATIONS, ALL WORK SHALL IMMEDIATELY STOP AND THE ARCHITECT AND ENGINEER OF RECORDS SHALL BE NOTIFIED OF SUCH DISCREPANCIES BEFORE ANY FURTHER WORK IS TO CONTINUE.
- C. UPON EXCAVATION, BACKFILLING AND COMPACTION, THE SOIL SHALL BE TREATED FOR SUBTERRANEAN TERMITE PREVENTION AS REQUIRED BY THE FBC SECTION 1816.
- D. CONTRACTOR SHALL PROVIDE FOR DEWATERING OF EXCAVATION FROM EITHER SURFACE WATER, GROUND WATER OR SEEPAGE.
- E. ALL EXCAVATIONS SHALL BE PROPERLY BRACED AND/OR SHORED TO COMPLY WITH FLORIDA STATUTE SECTION 553.60 AND 2023 FBC REQUIREMENTS.
- F. CONTRACTOR SHALL EXCAVATE FOOTINGS TO THE REQUIRED DEPTH, INSIDE THE BOTTOM OF THE EXCAVATIONS FOR SOIL SUITABILITY AND STABLE UNSATURATED MATERIAL SUCH AS ORGANIC SOIL OR SOFT CLAYS IS ENCOUNTERED IT MUST BE REMOVED AND REPLACED WITH SUITABLE STRUCTURAL FILL OR GRADED AGGREGATES AND RE-COMPACTED.
- G. ALL STRUCTURAL FILL SHOULD BE PLACED IN 8 TO 12 INCH LIFTS AND COMPACTED TO A MINIMUM OF 95% OF THE MATERIALS MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D1557) AND BE FREE OF ORGANICS, ROOTS OR OTHER DELETERIOUS MATERIALS.
- H. THE CONCRETE FOR EACH ISOLATED FOOTING SHALL BE PLACED IN ONE CONTINUOUS POUR. THE CONCRETE FOR WALL FOOTINGS SHALL BE PLACED IN ONE CONTINUOUS POUR OR PROVIDE CONSTRUCTION JOINT REINFORCEMENT AT DIFFERENT AND/OR INTERRUPTED POURS, PER DETAILS SHOWN ON THESE DRAWINGS.

7. STRUCTURAL DESIGN CRITERIA:

- A. THIS STRUCTURE HAS BEEN DESIGNED TO COMPLY WITH THE LOAD REQUIREMENTS OF THE 2023 FLORIDA BUILDING CODE (EIGHTH EDITION) AND OTHER REFERENCED CODES & SPECIFICATIONS.
- B. THE STRUCTURE IS DESIGNED FOR THE FOLLOWING LOADING:

	SUPER IMPOSED	LIVE
	DEAD LOADS	LOADS
ROOF	25 PSF	30 PSF
SECOND FLR.....	35 PSF	40 PSF
GROUND FLR.....	35 PSF	40 PSF
PORCH.....	15 PSF	60 PSF
STAIRS	15 PSF	40 PSF
TERRACE	15 PSF	60 PSF
BALCONY	15 PSF	60 PS

- C. WIND LOADS ARE BASED ON ASCE 7-22 & 2023 FBC REQUIREMENTS, 3 SECOND SUSTAINED WIND GUSTS OF 175 MPH AT HURRICANE OCEAN LINE, EXPOSURE "C" & IMPORTANCE FACTOR OF 1.0, INTERNAL PRESSURE COEFFICIENTS (GCPI)=±0.18, WIND DIRECTIONALITY FACTOR, Kd =0.85 & CATEGORY II BLDG. CLASSIFICATION.

THIS STRUCTURE HAS BEEN DESIGNED AS "ENCLOSED" & REQUIRES IMPACT RESISTANT GLASS OR SHUTTERS TO COMPLY WITH FBC SECTIONS 1609.1.2 & 1626.

8. SHOP DRAWINGS

- A. SUBMIT SHOP DRAWINGS FOR A/E REVIEW & APPROVAL BEFORE STARTING FABRICATION. ALL SHOP DRAWINGS SHALL BE APPROVED BY DRAWING DEPARTMENT PRIOR TO ANY INSTALLATION OR FABRICATION OF SUCH ELEMENTS.
- B. NO SHOP DRAWINGS SHALL SUBMITTED FOR A/E REVIEW UNTIL AFTER THEY HAVE BEEN REVIEWED AND NOTED FOR CONSTRUCTION METHOD, DIMENSIONING AND OTHER TRADE REQUIREMENTS BY THE CONTRACTOR AND STAMPED WITH THE CONTRACTOR'S APPROVAL. SEAL, ENGINEER ASSUMES NO RESPONSIBILITY FOR DIMENSIONS, QUANTITIES, ERRORS OR OMISSIONS AS A RESULT OF CHECKING AND REVIEWING ANY SHOP DRAWINGS.
- C. ALL CHANGES AND ADDITIONS MADE ON RE-SUBMITTALS MUST BE CLEARLY FLAGGED AND NOTED. SHOP DRAWING REVIEW IS LIMITED TO A MAXIMUM OF 2 REVIEWS, THEREAFTER; ADD'L FEES SHALL BE PAID BY OWNER/CONTRACTOR TO ENGINEER FOR ADD'L REVIEWS.
- D. THE REVIEW OF ALL STRUCTURAL SUBMITTALS BY THE STRUCTURAL ENGINEER OF RECORD SHALL BE TO INSURE THAT HIS INTENT HAS BEEN UNDERSTOOD AND THAT THE SPECIFIED CRITERIA HAS BEEN USED. A COPY OF ALL SHOP DRAWING SUBMITTALS WILL BE RETAINED BY THE ENGINEER.
- E. THE CONTRACTOR SHALL SUPPLY THE ENGINEER OF RECORD A MINIMUM OF THREE (3) COPIES OF SHOP DRAWINGS AND CALCULATIONS.
- F. SHOP DRAWINGS SUBMITTALS TO STRUCTURAL ENGINEER SHALL INCLUDE, BUT NOT LIMITED TO THE FOLLOWING:
- CONCRETE TEST REPORT FOR CAST-IN-PLACE CONCRETE.
 - MASONRY TEST REPORT AND CUT-SHEETS FROM SUPPLIER.
 - REINFORCING STEEL SHOP DRAWINGS
 - PRE-FABRICATED ROOF TRUSSES SHOP DRAWINGS AND CALCULATIONS.
 - STRUCTURAL STEEL SHOP DRAWINGS
 - PRE-CAST CONCRETE JOISTS SHOP DRAWINGS AND CALCULATIONS.
 - BRACING AND SHORING SHOP DRAWINGS AND CALCULATIONS.
 - RAILINGS/SAFEGUARDS SHOP DRAWINGS AND CALCULATIONS.

9. CONC. SLAB-ON-GRADE

- A. SLAB SHALL BE PLACED ON CLEAN, SAND OR ROCK, FREE OF DEBRIS OR OTHER DELETERIOUS MATERIALS, NON ORGANIC, GRANULAR SLOD, COMPACTED TO 95% MODIFIED PROCTOR DENSITY AT OPTIMUM MOISTURE CONTENT, IN LIFTS, NOT EXCEEDING 12" IN DEPTH, AS PER ASTM D1557 REQUIREMENTS AND 2023 FBC SECTIONS 1804.5 & 1804.6.
- B. THE MAXIMUM SIZE OF ROCK WITHIN 12" INCHES BELOW THE FLOOR SLAB IN COMPACTED FILL SHALL BE 3 INCHES IN DIAMETER.
- C. CONCRETE SLAB SHALL BE PLACED ON VAPOR BARRIER/ RETARDER CONFORMING TO ASTM E-96 & ACI 302.1 REQUIREMENTS. VAPOR BARRIER SHALL BE CONTINUOUS FREE OF HOLES. ALL LAPS AND HOLES (IF ANY) IN THE MEMBRANE SHALL BE PROPERLY SEALED.
- D. FILL MATERIAL SHALL BE THOROUGHLY MOISTENED IMMEDIATELY BEFORE POURING CONCRETE.
- E. REINFORCING IN SLABS SHALL BE 6x6-W1.4xW1.4 W.W.F., U.O.N., CONFORMING TO ASTM A185 AND SLAB SHALL BE GALVANIZED AND SUPPORTED ON 2"x2"x2" CONC. BLOCKS AT A GRID OF 3'-0" x 3'-0".

ALL CONCRETE SLAB EDGES SHALL BE PLACED ON 1/2" MIN. EXPANSION MATERIAL AGAINST MASONRY WALL.

NOTES

[illegible]

	1980	1985	1990	1995	2000	2005	2010	2015	2020
Population	76.5	80.5	84.5	88.5	92.5	96.5	100.0	103.5	107.0
GDP per capita	1,000	1,200	1,400	1,600	1,800	2,000	2,200	2,400	2,600
Life expectancy at birth	65	68	71	74	77	80	83	86	89
Urban population (%)	35	40	45	50	55	60	65	70	75
Employment rate (%)	55	58	61	64	67	70	73	76	79
Unemployment rate (%)	15	12	10	8	7	6	5	4	3
Government expenditure as % of GDP	18	20	22	24	26	28	30	32	34
Private consumption as % of GDP	55	58	61	64	67	70	73	76	79
Investment as % of GDP	15	16	17	18	19	20	21	22	23
Exports as % of GDP	10	12	14	16	18	20	22	24	26
Imports as % of GDP	12	14	16	18	20	22	24	26	28
Trade balance as % of GDP	-2	-2	-2	-2	-2	-2	-2	-2	-2
Current account balance as % of GDP	-5	-4	-3	-2	-1	0	1	2	3
Foreign direct investment as % of GDP	2	3	4	5	6	7	8	9	10
Official development assistance as % of GDP	1	1	1	1	1	1	1	1	1
Net international reserves as % of GDP	5	6	7	8	9	10	11	12	13
Public debt as % of GDP	10	12	14	16	18	20	22	24	26
Private debt as % of GDP	5	6	7	8	9	10	11	12	13
Total debt as % of GDP	15	18	21	24	27	30	33	36	39
Government revenue as % of GDP	25	27	29	31	33	35	37	39	41
Government expenditure as % of GDP	18	20	22	24	26	28	30	32	34
Primary deficit as % of GDP	-7	-7	-7	-7	-7	-7	-7	-7	-7
Interest payments on public debt as % of GDP	1	1	1	1	1	1	1	1	1
Capital expenditures as % of GDP	5	5	5	5	5	5	5	5	5
Maintenance expenditures as % of GDP	10	10	10	10	10	10	10	10	10
Research and development as % of GDP	2	2	2	2	2	2	2	2	2
Social security contributions as % of GDP	5	5	5	5	5	5	5	5	5
Pension payments as % of GDP	3	3	3	3	3	3	3	3	3
Healthcare expenditures as % of GDP	4	4	4	4	4	4	4	4	4
Educational expenditures as % of GDP	3	3	3	3	3	3	3	3	3
Transportation expenditures as % of GDP	2	2	2	2	2	2	2	2	2
Housing expenditures as % of GDP	2	2	2	2	2	2	2	2	2
Food and beverage expenditures as % of GDP	10	10	10	10	10	10	10	10	10
Clothing and footwear expenditures as % of GDP	5	5	5	5	5	5	5	5	5
Durable goods expenditures as % of GDP	10	10	10	10	10	10	10	10	10
Non-durable goods expenditures as % of GDP	10	10	10	10	10	10	10	10	10
Services expenditures as % of GDP	10	10	10	10	10	10	10	10	10
Government transfers as % of GDP	5	5	5	5	5	5	5	5	5
Private transfers as % of GDP	5	5	5	5	5	5	5	5	5
Net international reserves as % of GDP	5	6	7	8	9	10	11	12	13
Foreign direct investment as % of GDP	2	3	4	5	6	7	8	9	10
Official development assistance as % of GDP	1	1	1	1	1	1	1	1	1
Net international reserves as % of GDP	5	6	7	8	9	10	11	12	13
Foreign direct investment as % of GDP	2	3							

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PROJECT

New 2-Story Residence:
6100 W Suburban Dr. Pinecrest, FL
33156

DRAWING	
GENERAL NOTES	
SEAL	SCALE
	DRAWN
	REVIEWED NDL
	PROJ. NO. 351

SHEET NO.

Nelson de

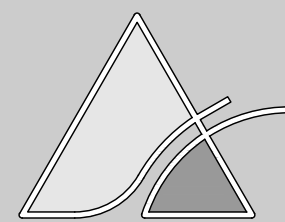
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S-18

TO THE BEST OF MY KNOWLEDGE THESE PLANS CONFORM
TO THE STRUCTURAL REQUIREMENTS OF F.B.C. 2023 LATEST
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