STRUCTURAL GENERAL NOTES

MISCELLANEOUS

2. THE STRUCTURAL SYSTEM IS UNSTABLE UNTIL ALL CONNECTIONS HAVE BEEN MADE AND ALL CONCRETE HAS REACHED ITS MINIMUM DESIGN STRENGTH, AS SHOWN IN THE STRUCTURAL DOCUMENTS.

3. CONTRACTOR IS RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION TO ENSURE THE SAFETY OF THE BUILDING UNTIL STRUCTURAL SYSTEM IS COMPLETED. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF WHATEVER TEMPORARY BRACING, SHORING, GUYS OR TIE DOWNS THAT MAY BE NECESSARY. SUCH MATERIAL SHALL BE REMOVED AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AFTER COMPLETION OF THE PROJECT.

4. CONTRACTOR TO SUPPORT, BRACE AND SECURE EXISTING STRUCTURE AS REQUIRED. CONTRACTOR IS SOLELY RESPONSIBLE FOR THE SAFETY OF THE BUILDING DURING CONSTRUCTION.

5. APPLICABLE BUILDING CODE: 2010 FLORIDA BUILDING CODE

6. GRAVITY DESIGN LOADS:

AREA	LIVE LOAD	COLLATERAL DEAD LOAD
ROOFS	20 PSF	5 PSF

7. WIND DESIGN CRITERIA:

	METAL BLDG.
BASIC WIND SPEED (VULT.) =	148 MPH (3 SECOND GUST)
NOMINAL WIND SPEED (Vasd) =	115 MPH
RISK CATEGORY =	II
EXPOSURE =	C
ENCLOSED BUILDING INTERNAL PRESSURE COEFFICIENT, GCpi=	+/- 0.18
COMPONENTS AND CLADDING WIND PRESSURES =	SEE TABLES ON S0.2
WIND BORNE DEBRIS REGION	YES

8. ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE REFERENCED BUILDING CODE.

9. COORDINATE ALL DIMENSIONS AND ELEVATIONS WITH THE ARCHITECTURAL DRAWINGS. DO NOT SCALE DRAWINGS.

10. CONTACT ENGINEER WITH ANY QUESTIONS OR DISCREPANCIES FOUND ON DRAWINGS.

12. SUBMIT SHOP DRAWINGS AS REQUIRED HEREIN. ALLOW FOR TWO WEEKS REVIEW TIME AFTER RECEIPT OF SUBMITTALS BY THIS FIRM. ALL SUBMITTALS SHALL BE CHECKED AND SIGNED BY THE GENERAL CONTRACTOR AND SIGNED AND SEALED BY THE DELEGATED ENGINEER, WHERE SPECIFIED HEREIN.

13. SUBMIT ONE PRINT AND ONE REPRODUCIBLE OF ALL SHOP DRAWINGS.

14. CONTRACTOR SHALL NOT BE RELIEVED FROM RESPONSIBILITY FOR ERRORS OR OMISSIONS IN SHOP DRAWINGS OR MIX DESIGNS BY THE ENGINEER'S REVIEW THEREOF.

15. ANY CHANGES TO THE STRUCTURE SHALL HAVE BEEN REVIEWED AND APPROVED IN WRITING BY THE ENGINEER PRIOR TO COMMENCING WORK ON ITEMS AFFECTED.

16. CONTRACTOR SHALL NOTIFY THIS OFFICE WHEN THE STRUCTURAL SYSTEM IS SUBSTANTIALLY COMPLETED, AND BEFORE SHEATHING, CEILINGS, OR ROOFING IS INSTALLED.

SITE WORK

1. A SUBSURFACE INVESTIGATION HAS BEEN COMPLETED AT THE PROJECT SITE BY TIERRA, INC. SOIL BORING LOGS AND SITE PREPARATION PROCEDURES ARE INCLUDED IN THE PROJECT SOILS REPORT 6511-11-006 DATED 2/1/11 WHICH IS AN INTEGRAL PART OF THESE CONTRACT DOCUMENTS.

2. ALL SITE WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE PROJECT SOILS REPORT. SEE SOILS REPORT FOR BUILDING PAD & COMPACTION GROUTING REQUIREMENTS.

3. DESIGN SOIL BEARING PRESSURE = 2500 PSF.

4. A QUALIFIED TESTING LABORATORY SHALL BE RETAINED TO PERFORM THE FOLLOWING MINIMUM TESTS. REFER TO SOILS REPORT FOR ANY ADDITIONAL TESTING.
a) ONE DENSITY TEST FOR EACH 2,000 SQUARE FEET OF COMPACTED SUBGRADE AND COMPACTED FILL.
b) ONE DENSITY TEST AT EACH COLUMN FOOTING.
c) ONE DENSITY TEST PER 50 FEET OF WALL FOOTING.

5. ONE COPY OF ALL TEST REPORTS SHALL BE SENT DIRECTLY TO OWNER, ARCHITECT, STRUCTURAL ENGINEER, AND GENERAL CONTRACTOR.

6. THE SIDES OF FOOTINGS MAY BE EARTH FORMED IF THE EXCAVATION CAN BE KEPT VERTICAL, CLEAN, AND STABLE, OTHERWISE, PLYWOOD FORMS MUST BE USED. IF EARTH SIDE FORMS ARE TO BE USED, INCREASE FOOTING DIMENSIONS BY 2".

CAST IN PLACE CONCRETE

1. ALL CAST IN PLACE CONCRETE WORK INCLUDES REINFORCING STEEL AND RELATED WORK SHOWN INCLUDING FORMWORK, SETTING ANCHOR BOLTS, PLATES, FRAMES, DOWELS FOR MASONRY OR OTHER ITEMS EMBEDDED IN CONCRETE.

2. APPLICABLE STANDARDS

ACI NUMBER	TITLE
117	STANDARD SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION
226	GROUND GRANULATED BLAST FURNACE SLAG
301	STANDARD SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS
302	GUIDE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION
304	GUIDE FOR MEASURING MIXING, TRANSPORTING AND PLACING CONCRETE
304.2 R91	PLACING CONCRETE BY PUMPING METHODS.
305R	HOT WEATHER CONCRETING
306R	COLD WEATHER CONCRETING
308	STANDARD PRACTICE FOR CURING CONCRETE
309R	GUIDE FOR CONSOLIDATION OF CONCRETE
315	MANUAL OF STANDARD PRACTICE FOR DETAILING CONCRETE STRUCTURES
318	BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE
347	RECOMMENDED PRACTICE FOR CONCRETE FORMWORK

CRSI NUMBER	TITLE
63	RECOMMENDED PRACTICE FOR PLACING REINFORCING BARS

3. CONCRETE MATERIALS
a) PORTLAND CEMENT: ASTM C 150, TYPE I
b) AGGREGATES: NORMAL WEIGHT CONCRETE, COARSE AND FINE, ASTM C33
c) AIR-ENTRAINING: ASTM C260
d) WATER REDUCING: ASTM C494, TYPE A
e) WATER: FRESH, CLEAN AND POTABLE
f) NO ACCELERATORS, RETARDERS OR ADMIXTURES CONTAINING CHLORIDES WILL BE PERMITTED
g) FLY-ASH: ASTM C618, CLASS F, 20% MAXIMUM BY WEIGHT. DO NOT USE FOR EXPOSED SLABS OR ARCHITECTURAL CONCRETE.
h) SUPER PLASTICIZER: ASTM C494, TYPE F OR G, WHERE AUTHORIZED BY THE ENGINEER.
i) GROUND GRANULATED BLAST FURNACE SLAG CEMENT: ASTM C989, 50% MAXIMUM BY WEIGHT.
j) MAXIMUM AGGREGATE SIZE: FOOTINGS = #57, OTHERS #67

4. REINFORCING MATERIALS
a) DEFORMED BARS: ASTM A615, GRADE 60
b) SMOOTH DOWELS: ASTM A615, PLAIN BARS, MINIMUM YIELD STRENGTH OF 60,000 PSI.
c) WELDED WIRE FABRIC: ASTM A185, PLAIN WIRE FABRIC IN FLAT SHEETS ONLY.
d) ACCESSORIES TO CONFORM TO ACI 315.
e) WHERE CONCRETE SURFACES ARE EXPOSED, MAKE THOSE PORTIONS OF ALL ACCESSORIES IN CONTACT WITH THE CONCRETE SURFACE OR WITHIN 1/2 INCH THEREOF, OF PLASTIC OR STAINLESS STEEL.

5. PROVIDE THE FOLLOWING MINIMUM CONCRETE STRENGTHS AT 28 DAYS:
a) FOOTINGS, SLAB-ON-GRADE = 3000 PSI

6. CONCRETE MUST BE BATCHED, MIXED AND TRANSPORTED IN ACCORDANCE WITH THE SPECIFICATIONS FOR READY MIXED CONCRETE ASTM C94.

7. REQUIRED SLUMP = 4 PLUS OR MINUS ONE INCH.

8. CONCRETE MUST BE PLACED WITHIN 90 MINUTES OF BATCH TIME.

9. DO NOT ADD WATER AT THE JOB SITE WITHOUT APPROVAL OF THE PROJECT SUPERINTENDENT. DO NOT EXCEED THE SLUMP LIMITATION. USE ONLY COLD WATER FROM THE TRUCK TANK. ANY ADDED WATER MUST BE INDICATED ON THE DELIVERY TICKET PLUS THE NAME OF THE PERSON AUTHORIZING.

10. LAP SPLICE ALL BARS 30 DIAMETERS MINIMUM UNLESS OTHERWISE SHOWN OR NOTED.

11. PROVIDE CORNER BARS AT ALL WALL FOOTING, WALL AND BEAM CORNERS. SIZE AND NUMBER TO MATCH HORIZONTAL BARS.

12. ALL REINFORCEMENT SHALL BE FASTENED AND SECURED TOGETHER TO PREVENT DISPLACEMENT BY CONSTRUCTION LOADS OR THE PLACING OF CONCRETE.

13. REINFORCING BAR COVER
a) FOOTINGS 3"

c) SLABS 3/4" (INTERIOR) 1 1/2" (EXTERIOR)

14. WHERE BAR LENGTHS ARE GIVEN ON THE DRAWINGS, LENGTH OF HOOK, IF REQUIRED, IS NOT INCLUDED.

15. SELECT PROPORTIONS IN ACCORDANCE WITH ACI 301 TO PROVIDE CONCRETE CAPABLE OF BEING PLACED WITHOUT EXCESSIVE SEGREGATION AND WITH ACCEPTABLE FINISHING PROPERTIES, DURABILITY, SURFACE HARDENERS, APPEARANCE, AND STRENGTH REQUIREMENTS REQUIRED BY THESE SPECIFICATIONS.

16. CHAIR WELDED WIRE FABRIC REINFORCING AT 3'0" ON CENTER MAXIMUM.

17. MAXIMUM WATER TO CEMENT RATIO WHEN NO BACK-UP DATA IS AVAILABLE:

b) 3000 PSI, 28 DAY COMPRESSIVE STRENGTH; W/C RATIO, 0.58 MAXIMUM (NON AIR ENTRAINED), 0.47 MAXIMUM (AIR ENTRAINED).

18. DATA TO BE SUBMITTED:
a) INTENDED USAGE AND LOCATION FOR EACH TYPE
b) MIX DESIGN FOR EACH TYPE
c) CEMENT CONTENT IN POUNDS-PER-CUBIC YARD
d) COARSE AND FINE AGGREGATE IN POUNDS/CUBIC YARD
e) WATER CEMENT RATIO BY WEIGHT
f) CEMENT TYPE AND MANUFACTURER
g) SLUMP RANGE
h) AIR CONTENT
i) ADMIXTURE TYPE AND MANUFACTURER
j) PERCENT ADMIXTURE BY WEIGHT
k) STRENGTH TEST DATA REQUIRED TO ESTABLISH MIX DESIGN.
l) COMPLETE DETAIL AND PLACING SHOP DRAWINGS FOR ALL REINFORCING STEEL INCLUDING ACCESSORIES THAT HAVE BEEN REVIEWED AND STAMPED BY THE GENERAL CONTRACTOR. INCLUDE ALL REQUIRED DIMENSIONS AND ELEVATIONS (IE. TOP OF CONCRETE).

21. CONSTRUCTION JOINTS NOT SHOWN ON THE DRAWINGS MUST BE MADE AND LOCATED TO LEAST IMPAIR THE STRENGTH OF THE STRUCTURE.

b) LOCATION OF ANY CONSTRUCTION JOINT NOT SHOWN IS SUBJECT TO REVIEW AND ACCEPTANCE BY ENGINEER.

22. INTERNAL VIBRATION, PROPERLY APPLIED IS THE REQUIRED METHOD OF CONSOLIDATING PLASTIC CONCRETE.

24. CONTRACTOR SHALL VERIFY LOCATIONS OF ALL OPENINGS, SLEEVES, AND SLAB RECESSES AS REQUIRED BY OTHER TRADES BEFORE CONCRETE IS PLACED. NO SLEEVE, OPENINGS, OR INSERT MAY BE PLACED IN BEAMS, JOISTS, OR COLUMN UNLESS APPROVED BY THE ENGINEER.

25. CONTRACTOR SHALL VERIFY EMBEDDED ITEMS INCLUDING, BUT NOT LIMITED TO, ANCHOR BOLTS, BOLT CLUSTERS, WELD PLATES, ETC., BEFORE PLACING CONCRETE. NOTIFY ENGINEER OF ANY CONFLICTS WITH REBAR.

26. SEE ARCHITECTURAL DRAWINGS FOR REQUIRED CONCRETE FINISHES.

27. SLOPE ALL WALKWAYS TO DRAIN AWAY FROM THE BUILDING.

28. ALL SLABS-ON-GRADE SHALL BE **6"** MINIMUM THICKNESS.
a) REINFORCED WITH 6X6, **W2.9 X W2.9 W.W.F.**
b) PLACED ON 10 MIL POLYETHYLENE VAPOR RETARDER. LAP 6" AND TAPE ALL JOINTS.
c) SAW CUT CONTROL JOINTS @ LESS THAN OR EQUAL TO **12'-6"** EACH WAY.
d) PROVIDE HOUSEKEEPING PADS AS REQUIRED.
e) SEE DRAWINGS FOR ANY ADDITIONAL CONDITIONS.

29. TESTING
a) A QUALIFIED TESTING LAB SHALL BE RETAINED TO PERFORM QUALITY CONTROL WORK AND ON SITE TESTING.
b) AIR TEST: ASTM C231
c) SLUMP TEST: ASTM 143
d) MOLD AND CURE TEST CYLINDERS (ASTM C31) AND TEST CYLINDERS FOR STRENGTH (ASTM C39). TAKE ONE TEST: FOUR CYLINDERS FOR EACH DAYS POUR OF 50 CUBIC YARDS, OR FRACTION THEREOF. TEST ONE CYLINDER AT 7 DAYS, TWO AT 28 DAYS AND ONE HOLD.
e) ONE COPY OF ALL TEST REPORTS SHALL BE SENT DIRECTLY TO THE OWNER, ENGINEER, ARCHITECT AND GENERAL CONTRACTOR.

30. CONTRACTOR SHALL PROVIDE FLATNESS AND LEVELNESS IN CONCRETE SLABS PER ACI 302.1R, FIG. 8.15.1.1 MINIMUM REQUIRED "F" NUMBERS FOR TYPE OF SLAB USE. REFER TO ACI 117 FOR FLOOR TOLERANCES.

31. REPAIR ANY CRACKS OR DEFECTIVE AREAS THAT WILL RESTORE THE AFFECTED SURFACE OR AREAS TO THEIR FULL DESIGN STRENGTH AND APPEARANCE. CONTACT THE STRUCTURAL ENGINEER FOR ADVICE AND EVALUATION.

32. ACCEPTANCE OF THE STRUCTURE WILL BE MADE IN CONFORMANCE WITH ACI 301.

PRECAST CONCRETE U-LINTELS AND SILLS

1. UNITS SHALL BE FABRICATED BY A FIRM ENGAGED IN THE MANUFACTURING OF PRECAST AND PRE-STRESSED CONCRETE U-LINTELS AND SILLS FOR A MINIMUM OF 5 YEARS. FABRICATOR SHALL HAVE A QUALITY ASSURANCE PROGRAM THAT COMPLIES WITH THE PROCEDURES OF MANUAL 116 BY THE PRECAST/PRE-STRESSED CONCRETE INSTITUTE PCI).

2. PLANT RECORDS OF PRODUCTION AND QUALITY CONTROL SHALL BE KEPT IN ACCORDANCE WITH PCI RECOMMENDATIONS AND MADE AVAILABLE UPON REQUEST FOR THE ARCHITECT/ENGINEER.

3. CODES AND STANDARDS:
a) AMERICAN SOCIETY FOR TESTING AND MATERIALS(ASTM)
1) C33 - SPECIFICATION FOR CONCRETE AGGREGATES
2) C150 - SPECIFICATION FOR PORTLAND CEMENT
b) PRECAST/PRE-STRESSED CONCRETE INSTITUTE (PCI) STANDARDS: MANUAL FOR QUALITY CONTROL FOR PRECAST AND PRE-STRESSED CONCRETE MNL-116.
c) AMERICAN CONCRETE INSTITUTE: BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318)
d) AMERICAN CONCRETE INSTITUTE: BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES ACI 530)

4. CONCRETE MATERIALS:
a) PORTLAND CEMENT: ASTM C150 TYPE I OR III, GRAY COLOR
b) AGGREGATES: ASTM C33
c) WATER: POTABLE
d) ADMIXTURES: SHALL NOT CONTAIN CALCIUM CHLORIDE OR CHLORIDE IONS

5. REINFORCING
a) DEFORMED REINFORCEMENT: ASTM A615 GRADE 40 OF 60.
b) PRE-STRESSING STRAND: ASTM A416 270 KSI LL.

6. ALL U-LINTEL UNITS 14 FEET IN OVERALL LENGTH AND SHORTER SHALL BE MADE OF CONCRETE WITH A MINIMUM STRENGTH OF 3500 PSI AT 28 DAYS.

7. ALL U-LINTEL UNITS EXCEEDING 14 FEET IN OVERALL LENGTH SHALL BE MADE OF CONCRETE WITH A MINIMUM STRENGTH OF 6000 PSI AT 28 DAYS AND SHALL BE PRE-STRESSED CONCRETE.

8. ALL SILL UNITS SHALL BE MADE OF CONCRETE WITH A MINIMUM STRENGTH OF 3000 PSI AT 28 DAYS.

9 ALL UNITS SHALL BE SAND BLOCK FINISH EXCEPT PRE-STRESSED, 6" WIDE, AND 12" WIDE U-LINTELS SHALL BE SMOOTH FORM FINISHED.

10. SUBMITTALS

a) PROVIDE MANUFACTURER'S CATALOG ENGINEERING DATA.
b) MANUFACTURER SHALL RATE U-LINTEL UNITS FOR GRAVITY, UPLIFT, AND LATERAL LOADS IN UNITS OF POUNDS PER LINEAR FOOT.

11. ALL WINDOW SILLS TO BE ONE CONTINUOUS PIECE PRECAST.

MASONRY

1. HOLLOW LOAD BEARING UNITS SHALL CONFORM TO ASTM C90, NORMAL WEIGHT, TYPE II. MINIMUM NET COMPRESSIVE UNIT STRENGTH = 2000 PSI. (NET AREA COMPRESSIVE MASONRY STRENGTH f'm = 1500 PSI).

2. MORTAR SHALL BE TYPE M OR S AND CONFORM TO ASTM C270 PROPORTION OR PROPERTY SPECIFICATION) WITH A MINIMUM AVERAGE COMPRESSIVE STRENGTH AT 28 DAYS OF 2500 PSI (TYPE M) AND 1800 PSI (TYPE S).

3. COARSE GROUT SHALL CONFORM TO ASTM C476:
a) 2500 PSI AT 28 DAYS.
b) 1/4" MAXIMUM AGGREGATE.
c) 8" TO 11" SLUMP.

4. CODES AND STANDARDS:
a) SPECIFICATIONS FOR MASONRY STRUCTURES - ACI 530.1/ASCE 6/TMS 602 IS INCLUDED BY REFERENCE IN ITS ENTIRETY.
b) BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES: ACI 530/ASCE 5 99/TMS 402.

5. A REINFORCED MASONRY BOND BEAM SHALL BE PROVIDED IN ALL WALLS SHOWN ON THE STRUCTURAL DRAWINGS.
USE GALVANIZED MESH TYPE CELL CAPS. PROVIDE CORNER BARS AT ALL BEAM CORNERS TO MATCH HORIZONTAL BARS.

DRAWING SHEET INDEX

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STRUCTURAL SPECIFICATIONS

SHEET NO.
S0.1