

I. COORDINATION

A. THE CONTRACTOR SHALL COMPARE THE ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND OTHER SERIES DRAWINGS AND REPORT ANY DISCREPANCIES BETWEEN EACH SET OF DRAWINGS AND WITHIN EACH SET OF DRAWINGS PRIOR TO FABRICATION AND INSTALLATION OF ANY STRUCTURAL MEMBERS.

B. ONLY LARGER SLEEVE OPENINGS AND FRAMED OPENINGS IN STRUCTURAL FRAMING COMPONENT MEMBERS ARE INDICATED ON THE STRUCTURAL DRAWINGS. HOWEVER, ALL SLEEVES, PERTS AND OPENINGS, INCLUDING FRAMES AND/OR SLEEVES SHALL BE PROVIDED FOR PASSAGE. PROVISION AND/OR INCORPORATION OF THE WORK OF THE CONTRACT, INCLUDING BUT NOT LIMITED TO MECHANICAL, ELECTRICAL AND PLUMBING WORK. THIS WORK SHALL INCLUDE THE COORDINATION OF SIZES, ALIGNMENT, DIMENSIONS, POSITION, LOCATIONS, ELEVATIONS AND GRADES AS REQUIRED TO SERVE THE INTENDED PURPOSE. OPENINGS NOT INDICATED ON THE STRUCTURAL DRAWINGS, BUT REQUIRED AS NOTED ABOVE, SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.

C. REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR FLOOR ELEVATIONS, SLOPES, DRAINS AND LOCATION OF DEPRESSED AND ELEVATED FLOOR AREAS.

D. COMPATIBILITY OF THE STRUCTURE AND PROVISIONS FOR BUILDING EQUIPMENT SUPPORTED ON OR FROM STRUCTURAL COMPONENTS SHALL BE VERIFIED AS TO SIZE, DIMENSIONS, CLEARANCES, ACCESSIBILITY, WEIGHTS AND DRAWINGS WITH THE EQUIPMENT FOR WHICH THE STRUCTURE HAS BEEN DESIGNED PRIOR TO SUBMISSION OF SHOP DRAWINGS AND DATA FOR EACH PIECE OF EQUIPMENT AND FOR STRUCTURAL COMPONENTS. DIFFERENCES SHALL BE NOTED ON THE SUBMITTALS.

E. SHOP DRAWINGS SHALL BE PREPARED FOR ALL STRUCTURAL ITEMS AND SUBMITTED FOR REVIEW BY THE ENGINEER. STRUCTURAL DRAWINGS SHALL NOT BE REPRODUCED AND USED AS SHOP DRAWINGS. ALL ITEMS DEVIATING FROM THE STRUCTURAL DRAWINGS OR FROM PREVIOUSLY SUBMITTED SHOP DRAWINGS SHALL BE CLOUDED.

F. THE DETAILS DESIGNATED AS "TYPICAL DETAILS" APPLY GENERALLY TO THE STRUCTURAL DRAWINGS IN ALL AREAS WHERE CONDITIONS ARE SIMILAR TO THOSE DESCRIBED IN THE DETAILS.

G. ALL STRUCTURAL ELEMENTS OF THE PROJECT HAVE BEEN DESIGNED BY THE ENGINEER TO RESIST THE REQUIRED CODE VERTICAL AND LATERAL FORCES THAT COULD OCCUR IN THE FINAL COMPLETED STRUCTURE ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL REQUIRED BRACING DURING CONSTRUCTION TO MAINTAIN THE STABILITY AND SAFETY OF ALL STRUCTURAL ELEMENTS DURING THE CONSTRUCTION PROCESS UNTIL THE LATERAL LOAD RESISTING OR STABILIZING SYSTEM IS COMPLETELY INSTALLED AND THE STRUCTURE IS COMPLETELY TIED TOGETHER. TEMPORARY SUPPORTS SHALL NOT RESULT IN THE OVERSTRESS OR DAMAGE OF THE ELEMENTS TO BE BRACED NOR ANY ELEMENTS USED AS BRACE SUPPORTS.

H. THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE, AND EXCEPT WHERE SPECIFICALLY SHOWN, DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR AND THEIR SUBCONTRACTORS SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, PROCEDURES, TECHNIQUES, SEQUENCES AND SAFETY MEASURES INCLUDING, BUT NOT LIMITED TO, ADHERENCE TO ALL OSHA GUIDELINES. THE ENGINEER SHALL NOT HAVE CONTROL OF, AND SHALL NOT BE RESPONSIBLE FOR, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTORS, OR ANY OTHER PERSON PERFORMING ANY OF THE WORK, OR FOR THE FAILURE OF ANY OF THESE PERSONS TO CARRY OUT THE WORK IN ACCORDANCE WITH THE STRUCTURAL CONTRACT DOCUMENTS.

I. WHERE CONFLICT EXISTS AMONG THE VARIOUS PARTS OF THE STRUCTURAL CONTRACT DOCUMENTS, STRUCTURAL DRAWINGS, GENERAL NOTES, AND SPECIFICATIONS, THE STRICTEST REQUIREMENTS, AS INDICATED BY THE ENGINEER, SHALL GOVERN.

J. PERIODIC SITE OBSERVATION BY FIELD REPRESENTATIVES IS SOLELY FOR THE PURPOSE OF DETERMINING IF THE WORK IS PROCEEDING IN ACCORDANCE WITH THE STRUCTURAL CONTRACT DOCUMENTS. THIS LIMITED SITE OBSERVATION IS NOT INTENDED TO BE A CHECK OF THE QUALITY OR QUANTITY OF THE WORK, BUT RATHER A PERIODIC CHECK IN AN EFFORT TO INFORM THE OWNER AGAINST DEFECTS AND DEFICIENCIES IN THE WORK OF THE CONTRACTOR.

II. SUBSTITUTIONS

A. ALL REQUESTS FOR SUBSTITUTIONS OF MATERIALS OR DETAILS SHOWN IN THE STRUCTURAL CONTRACT DOCUMENTS SHALL BE SUBMITTED FOR APPROVAL DURING THE BIDDING PERIOD.

B. ONCE BIDS ARE ACCEPTED, PROPOSED SUBSTITUTIONS WILL BE CONSIDERED ONLY WHEN THEY ARE OFFICIALLY SUBMITTED WITH AN IDENTIFIED SAVINGS OR DURATION TO BE DEDUCTED FROM THE CONTRACT AND/OR SCHEDULE IMPACT. SUBMITTALS NOT SATISFYING THE ABOVE CRITERIA WILL NOT BE CONSIDERED.

III. CODES

A. THE GENERAL BUILDING CODE USED AS THE BASIS FOR THE STRUCTURAL DESIGN IS AS FOLLOWS:  
1. INTERNATIONAL BUILDING CODE, 2012 EDITION, WITH GEORGIA AMENDMENTS (2014)(2015)(2017).

B. STRUCTURAL STEEL: SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS, AISC 360 AND SEISMIC PROVISIONS FOR STRUCTURAL STEEL BUILDINGS, INCLUDING SUPPLEMENT NO. 1 DATED 2005, AISC 341

C. STRUCTURAL CONCRETE: BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, AMERICAN CONCRETE INSTITUTE, ACI 318, AS REFERENCED BY THE GENERAL BUILDING CODE.

D. CONCRETE MASONRY: BUILDING CODE REQUIREMENTS FOR CONCRETE MASONRY STRUCTURES, AMERICAN CONCRETE INSTITUTE, ACI 530, AS REFERENCED BY THE GENERAL BUILDING CODE.

E. WOOD FRAMING: NATIONAL DESIGN SPECIFICATIONS FOR WOOD CONSTRUCTION WITH SUPPLEMENT, NATIONAL FOREST AND PAPER PRODUCTS ASSOCIATION, AS REFERENCED BY THE GENERAL BUILDING CODE.

IV. DESIGN LOADS

A. DEAD LOADS

1. FLOOR DEAD LOAD 20 PSF  
2. ROOF DEAD LOAD 20 PSF  
3. CANOPY 20 PSF

B. LIVE LOADS

1. FLOOR 40 PSF  
2. ROOF, UNREDUCED 20 PSF  
3. CANOPY 20 PSF

C. LIVE LOAD REDUCTION

1. ROOF LIVE LOADS HAVE NOT BEEN REDUCED

D. WIND LOADS

1. WIND LATERAL LOAD ON STRUCTURAL FRAME IS TO BE DETERMINED BY CODE 7-10 USING THE FOLLOWING:

a. ULTIMATE WIND SPEED 115 MPH  
b. MINIMAL WIND SPEED 90 MPH  
c. RISK CATEGORY II  
d. EXPOSURE CATEGORY C  
e. ENCLOSURE CATEGORY ENCLOSED BUILDING  
f. INTERNAL PRESSURE +/-0.18

2. COMPONENTS AND CLADDING WIND PRESSURES:

Table with columns: SURFACE (PSF), ZONE, AREA. Rows include EXTERIOR WALL, ROOF, INTERIOR WALL, INTERIOR AND EDGE, INTERIOR, EDGE, INTERIOR AND EDGE, INTERIOR, EDGE, INTERIOR, EDGE, INTERIOR, CORNERS, INTERIOR, CORNERS.

-PRESSURES FOR TRIBUTARY AREAS IN BETWEEN THE LISTED VALUES MAY BE LINEARLY INTERPOLATED.

-NEGATIVE VALUE SIGNIFIES PRESSURE ACTING AWAY FROM THE SURFACE (SUCTION). -EDGE AND CORNER ZONE DISTANCES SHALL BE DETERMINED IN ACCORDANCE WITH REFERENCED STANDARD.

-PRESSURES ON PARAPETS SHALL BE DETERMINED BY COMBINING POSITIVE AND NEGATIVE WALL PRESSURES OR WALL AND ROOF PRESSURES LISTED ABOVE IN ACCORDANCE WITH THE REFERENCED STANDARD.

\* PRESSURES ARE FOR GROSS UPLIFT CONDITIONS. REFER TO ROOF PLAN(S) FOR NET UPLIFT VALUES FOR DESIGN OF JOISTS, JOIST GIRDERS, AND BRIDGING.

E. SEISMIC LOADS

1. THE STRUCTURE AND STRUCTURAL COMPONENTS OF THE BUILDING HAVE BEEN DESIGNED IN ACCORDANCE WITH GENERAL BUILDING CODE WITH THE FOLLOWING CRITERIA:

- a. OCCUPANCY CATEGORY II
b. SEISMIC IMPORTANCE FACTOR, IE 1.0
c. SITE CLASS V
d. MAPPED SPECTRAL RESPONSE ACCELERATIONS
e. SPECTRAL RESPONSE COEFFICIENTS
f. SEISMIC DESIGN CATEGORY C
g. BASIC SEISMIC-FORCE-RESISTING SYSTEM STEEL ORDINARY CONCENTRICALLY BRACED FRAMES
h. DESIGN BASE SHEAR V 0.057 EFFECTIVE SEISMIC WEIGHT
i. SEISMIC RESPONSE COEFFICIENT(S), Cs 0.057
j. RESPONSE MODIFICATION FACTOR(S), R 3.25
k. ANALYSIS PROCEDURE USED EQUIVALENT LATERAL-FORCE ANALYSIS

F. RESTROOM ACCESSORIES, SUCH AS GRAB BARS, TUB AND SHOWER SEATS, FASTENERS, AND MOUNTING DEVICES, SHALL BE DESIGNED TO RESIST A CONCENTRATED LOAD OF 250 LBF AT ANY LOCATION AND IN ANY DIRECTION.

G. STAIR RAILS: THE HANDRAILS AND SUPPORTING STRUCTURE SHALL BE CAPABLE OF WITHSTANDING A 200 POUND LOAD APPLIED IN ANY DIRECTION AT ANY POINT ON THE RAIL.

H. BALCONY RAILINGS AND GUARDRAILS: THE BALCONY RAILINGS AND GUARDRAILS SHALL BE DESIGNED FOR 50 LBS/FT. LOAD APPLIED HORIZONTALLY AT RIGHT ANGLES TO THE TOP RAIL OR A 200 LBS. CONCENTRATED LOAD APPLIED IN ANY DIRECTION AT ANY POINT ALONG THE TOP RAIL, WHICHEVER IS GREATER. THE RAILING SHALL HAVE ATTACHMENT DEVICES TO ADEQUATELY ANCHOR TO THE SUPPORTING STRUCTURE FOR THE LOADING INDICATED. INTERMEDIATE RAILS AND PANELS FILLERS SHALL BE DESIGNED TO WITHSTAND A HORIZONTALLY APPLIED NORMAL LOAD OF 50 LBS. ON AN AREA NOT TO EXCEED 12" X 12" INCLUDING OPENINGS AND SPACES BETWEEN RAILS AND LOCATED SO AS TO PRODUCE THE MAXIMUM LOAD EFFECT. RESULTING REACTIONS DUE TO THESE LOADS NEED NOT BE COMBINED WITH THE DESIGN LOADS FOR HANDRAILS OR GUARDRAILS.

I. CONCENTRATED LOAD FOR STAIR TREADS AND LADDER RUNGS: THE INDIVIDUAL STAIR TREADS AND LADDER RUNGS SHALL BE DESIGNED TO SUPPORT A 300 POUND CONCENTRATED LOAD PLACED IN A POSITION WHICH WOULD CAUSE MAXIMUM STRESS.

J. LOAD COMBINATIONS

- 1. STRENGTH DESIGN
a. 1.4D
b. 1.2D+1.6L+0.5(Lr OR S OR R)
c. 1.2D+1.6(Lr OR S OR R)+0.5(L OR 0.5W)
d. 1.2D+1.0W+1.0L+0.5(Lr OR S OR R)
e. 1.2D+1.0E+L+0.2S
f. 0.9D+1.0W
g. 0.9D+1.0E
2. ALLOWABLE STRESS DESIGN:
a. D
b. D+L
c. D+Lr OR S OR R
d. D+0.75L+0.75(Lr OR S OR R)
e. D+(0.6W OR 0.7E)
f. D+0.75L+0.75(0.6W)+0.75(Lr OR S OR R)
g. D+0.75L+0.75(0.7E)+0.75S
h. 0.9D+0.6W
i. 0.6D+0.7E

V. SUBMITTALS

A. SHOP DRAWINGS SHALL BE PROVIDED FOR ALL STRUCTURAL ITEMS AND SUBMITTED FOR REVIEW BY THE ENGINEER. STRUCTURAL DRAWINGS SHALL NOT BE REPRODUCED AND USED AS SHOP DRAWINGS. ALL ITEMS DEVIATING FROM THE STRUCTURAL DRAWINGS OR FROM PREVIOUSLY SUBMITTED SHOP DRAWINGS SHALL BE CLOUDED.

B. CONTRACTOR SHALL REVIEW SHOP DRAWINGS FOR COMPLIANCE WITH THE STRUCTURAL DRAWINGS AND SHALL CERTIFY THAT THEY HAVE DONE SO BY A STAMP NOTING THAT THE DRAWINGS HAVE BEEN "APPROVED" AND WHICH BEARS THE SIGNATURE (OR INITIALS) OF AN AUTHORIZED REPRESENTATIVE OF THE CONTRACTOR AND THE DATE. SUBMITTALS WHICH DO NOT REFLECT THE CONTRACTOR'S APPROVAL, SIGNATURE AND DATE WILL BE RETURNED WITHOUT REVIEW.

C. CONTRACTOR SHALL BE RESPONSIBLE FOR DELAYS CAUSED BY REJECTION OF INADEQUATE SHOP DRAWINGS.

D. WHERE REVIEW AND RETURN OF SHOP DRAWINGS IS REQUIRED OR REQUESTED, THE ENGINEER WILL REVIEW EACH SUBMITTAL AND, WHERE POSSIBLE, RETURN WITHIN 2 WEEKS OF RECEIPT.

E. CORRECTIONS OR COMMENTS ON SHOP DRAWINGS OR MANUFACTURER'S DATA SHEETS DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE PLANS AND SPECIFICATIONS. ENGINEER'S REVIEW IS FOR GENERAL CONFORMANCE WITH THE REQUIREMENTS OF THE STRUCTURAL DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRECTING ALL QUANTITIES AND DIMENSIONS, SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION, AND COORDINATING THE WORK WITH THAT OF ALL OTHER CONTRACTORS.

F. REFER TO INDIVIDUAL SECTIONS FOR SPECIFIC SUBMITTAL REQUIREMENTS.

G. CONTRACTOR SHALL SUBMIT ONE REPRODUCIBLE COPY AND THREE MAXIMUM COPIES. ENGINEER WILL REVIEW, COMMENT AND RETAIN ONE COPY OF EACH SUBMITTAL AND TRANSFER COMMENTS ONTO THE REMAINING COPIES FOR DISTRIBUTION TO THE ARCHITECT, OWNER, AND CONTRACTOR. ADDITIONAL COPIES SUBMITTED WILL NOT HAVE COMMENTS TRANSFERRED TO THEM. ALTERNATIVELY, SUBMITTALS MAY BE SUBMITTED ELECTRONICALLY. CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING AND DISTRIBUTING ENGINEER'S COMMENTS TO THEIR SUBCONTRACTORS.

VI. SOIL
A. ALL EXCAVATION, FILL, GRATING AND FOUNDATION REQUIREMENTS SHALL REFER TO THE GEOTECHNICAL REPORT
B. THE GEOTECHNICAL ENGINEER SHALL BE RETAINED TO PROVIDE ON-SITE INSPECTIONS FOR ALL EXCAVATION, GRATING AND FOUNDATION WORK.
C. THE SOIL BEARING CAPACITY FOR FOUNDATION SHALL BE 2000 PSF.

VII. CAST-IN-PLACE CONCRETE

A. CLASSES OF CONCRETE

ALL CONCRETE SHALL CONFORM TO THE REQUIREMENTS AS SPECIFIED IN THE TABLE BELOW, UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS.

CONCRETE MIX SCHEDULE:

Table with columns: TYPES OF PORTLAND CEMENT, STRENGTH PSI, AGG. TYPE, AGG. SIZE INCHES, SLUMP INCHES, NOTES. Rows include IA, IIA, IIA.

a. "NWT" REFERS TO NORMAL CONCRETE HAVING AIR DRY UNIT WEIGHT OF APPROXIMATELY 145 PCF (ASTM 33 AGGREGATE).
b. WHERE W/C RATIO IS NOT INDICATED IN THE CONCRETE MIX SCHEDULE, IT SHALL BE AS NECESSARY TO MEET STRENGTH REQUIREMENTS.
c. "STRENGTH" IS REQUIRED COMPRESSIVE CYLINDER STRENGTH AT AN AGE OF 28 DAYS.

B. A MAXIMUM OF 20% OF THE CEMENTATION MATERIALS USED IN MIX DESIGNS MAY BE REPLACED WITH CLASS C OR F FLY ASH.

C. FLY ASH SHALL NOT BE USED IN ARCHITECTURALLY EXPOSED CONCRETE.

D. PROVIDE 5 PERCENT PLUS OR MINUS 1/2 PERCENT OF ENTRAINED AIR IN CONCRETE PERMANENTLY EXPOSED TO THE WEATHER AND ELSEWHERE AT THE CONTRACTOR'S OPTION.

E. HORIZONTAL CONSTRUCTION JOINTS IN CONCRETE PLACEMENTS SHALL BE PERMITTED ONLY WHERE INDICATED ON THE STRUCTURAL DRAWINGS. ALL VERTICAL CONSTRUCTION JOINTS SHALL BE MADE IN THE CENTER OF SPANS IN ACCORDANCE WITH THE TYPICAL DETAILS. CONTRACTOR SHALL SUBMIT PROPOSED LOCATIONS FOR CONSTRUCTION JOINTS NOT SHOWN ON THE STRUCTURAL DRAWINGS FOR REVIEW BY THE ARCHITECT AND ENGINEER. ADDITIONAL CONSTRUCTION JOINTS MAY REQUIRE ADDITIONAL REINFORCING AS SPECIFIED BY THE ENGINEER WHICH SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

F. EMBEDDED CONDUITS, PIPES, AND SLEEVES SHALL MEET THE REQUIREMENTS OF SECTION 6.3, INCLUDING THE FOLLOWING:

- 1. CONDUITS AND PIPES EMBEDDED WITHIN A SLAB, WALL, OR BEAM (OTHER THAN THOSE PASSING THROUGH) SHALL NOT BE LARGER IN OUTSIDE DIMENSION THAN 1/3 THE OVERALL THICKNESS OF THE SLAB, WALL OR BEAM IN WHICH THEY ARE EMBEDDED.
2. CONDUITS, PIPES AND SLEEVES SHALL NOT BE SPACED CLOSER THAN THREE DIAMETERS OR WIDTHS ON CENTER.

G. CONCRETE PLACEMENTS SHALL NOT EXCEED 10,000 SQUARE FEET OR 100 LINEAR FEET ON EACH SIDE WITHOUT PRIOR APPROVAL BY THE ARCHITECT FOR EACH PLACEMENT.

H. GRADE BEAMS IN CONTACT WITH EARTH SHALL BE FORMED ON BOTH SIDES UNLESS NOTED OTHERWISE IN DETAILS.

VIII. CONCRETE REINFORCING

A. CONCRETE REINFORCEMENT OF THE PROJECT SHALL CONFORM TO THE FOLLOWING:

- 1. REINFORCING STEEL SHALL BE NEW BILLET STEEL IN ACCORDANCE WITH ASTM A615, GRADE 60, UNLESS NOTED OTHERWISE IN THE STRUCTURAL DRAWINGS OR THESE NOTES.
2. WELDED WIRE REINFORCEMENT WELDED SMOOTH WIRE REINFORCEMENT, ASTM A185, YIELD STRENGTH 70,000 PSI WHERE NOTED ON THE STRUCTURAL DRAWINGS. WELDED DEFORMED WIRE REINFORCEMENT, ASTM A497, YIELD STRENGTH 70,000 PSI WHERE NOTED ON THE STRUCTURAL DRAWINGS. WELDED WIRE REINFORCEMENT TO BE PROVIDED IN FLAT SHEETS.
3. FIBER REINFORCEMENT POLYPROPYLENE FIBRILLATED FIBER SPECIFICALLY MANUFACTURED FOR USE IN CONCRETE REINFORCEMENT AND ADDED TO CONCRETE MIX ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND RECOMMENDED DOSAGES SHALL BE USED IN COMPOSITE SLABS OR AS OTHERWISE NOTED ON THE STRUCTURAL DRAWINGS.

B. DETAILING OF REINFORCING STEEL SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE 315 DETAILING MANUAL AND ALL HOOKS AND BENDS IN REINFORCING BARS SHALL CONFORM TO ACI DETAILING STANDARDS, UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS.

C. WELDED WIRE REINFORCEMENT SHALL BE CONTINUOUS ACROSS THE ENTIRE CONCRETE SURFACE AND NOT INTERRUPTED BY BEAMS OR GIRDERS AND PROPERLY LAPPED ONE CROSS WIRE SPACING PLUS 2".

D. REINFORCEMENT IN TOPPING SLABS SHALL BE WELDED SMOOTH WIRE REINFORCEMENT MINIMUM 6 X 6 W2.1 X W2.1 IN ALL TOPPING SLABS UNLESS SPECIFIED OTHERWISE ON THE STRUCTURAL DRAWINGS.

E. IN UNSCHEDULED GRADE BEAMS, WALLS, AND SLABS, DETAIL REINFORCING AS FOLLOWS:

- 1. CLASS A LAP BEAM TOP REINFORCING BARS AT MID SPAN
2. CLASS A LAP BEAM BOTTOM REINFORCING BARS AT THE SUPPORTS
3. PROVIDE CLASS B LAP AT OTHER LOCATION PENDING ENGINEER'S APPROVAL
4. PROVIDE STANDARD HOOKS IN TOP BARS AT CANTILEVER AND DISCONTINUOUS ENDS OF BEAMS, WALLS AND SLABS
5. PROVIDE CORNER BARS FOR ALL HORIZONTAL BARS AT THE INSIDE AND OUTSIDE FACES OF INTERSECTING BEAMS OR WALLS. CORNER BARS ARE NOT REQUIRED IF HORIZONTAL BARS ARE HOOKED.
6. PROVIDE 2-#5 X 4'-0" DIAGONAL BARS AT ALL SLAB RE-ENTRANT CORNERS PLACED UNDER THE TOP MAT OF STEEL.

F. WELDING OF REINFORCING STEEL WILL NOT BE PERMITTED UNLESS SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWINGS.

G. HEAT SHALL NOT BE USED IN THE FABRICATION OR INSTALLATION OF REINFORCEMENT.

H. REINFORCING STEEL CLEAR COVER SHALL BE AS FOLLOWS:

Table with columns: REINFORCING STEEL CLEAR COVER, COVER (INCHES). Rows include 1. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH: 3"; 2. CONCRETE EXPOSED TO EARTH OR WEATHER: #6 BARS THROUGH #18 BARS: 2", #5 BARS OR SMALLER: 1 1/2"; 3. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH EARTH: SLABS AND WALLS: #14 BARS THROUGH #18 BARS: 1 1/2", #11 BARS AND SMALLER: 3/4", COLUMNS: 1 1/2".

I. PROVIDE 2 TONS OF ADDITIONAL REINFORCING STEEL (SIZES AS DIRECTED BY THE ARCHITECT) TO BE USED IN THE FIELD AS DIRECTED BY THE ARCHITECT. LABOR FOR PLACING STEEL SHALL BE INCLUDED. ANY UNUSED PORTION OF THE QUANTITY SHALL BE CREDITED TO THE OWNER AT THE RATE OF \$2000 PER TON.

Table: \* Ld TENSION DEVELOPMENT LENGTH-CLASS A (GRADE 60 BARS - NORMAL WEIGHT CONCRETE). Columns: BAR SIZE, fc = 3000 psi, fc = 4000 psi, fc = 5000 psi. Rows: #3, #4, #5, #6, #7.

Table: BASIC TENSION LAP SPICES - CLASS B (GRADE 60 BARS - NORMAL WEIGHT CONCRETE). Columns: BAR SIZE, TOP BARS, OTHER BARS. Rows: #3, #4, #5, #6.

X. PRE-INSTALLED ANCHORS AND DOWELS

EXPANSION ANCHORS SHALL BE ONE OF THE FOLLOWING:

- 1. CONCRETE: a. KWIK BOLT TZ, HILTI INC. b. STRONG-BOLT 2, SIMPSON STRONG-TIE

B. ADHESIVE ANCHORS SHALL BE ONE OF THE FOLLOWING:

- 1. CONCRETE: a. HIT-RE 500V3, HILTI INC. b. SET-XP, SIMPSON STRONG-TIE

C. ADHESIVE DOWELING

- 1. ADHESIVE DOWELING SYSTEM SHALL BE ONE OF THE FOLLOWING PRODUCTS: a. HILTI "HIT RE 500-SD" EPOXY b. SIMPSON "SET-XP"
2. INSTALL DOWELS IN STRICT ACCORDANCE WITH THE ADHESIVE MANUFACTURER'S INSTRUCTIONS.
3. CLEAN OUT HOLES WITH COMPRESSED AIR AFTER DRILLING HOLES.
4. UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS, EMBEDMENT DEPTH SHALL BE AS REQUIRED TO DEVELOP FULL YIELD STRENGTH OF THE EMBEDDED DOWELS.
5. PRIOR TO DRILLING HOLES FOR DOWELS, LOCATE EXISTING REINFORCING STEEL WITH A PACHOMETER (R-METER) OR BY DRILLING 1/4" DIAMETER PILOT HOLES. RELOCATE BOLT HOLES AS REQUIRED TO AVOID EXISTING REINFORCEMENT.

D. ANCHORS AND DOWELS OF THE SIZE AND EMBEDMENT SHOWN ON THE DRAWINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, THE MANUFACTURER'S RECOMMENDATIONS, AND THE MANUFACTURER'S CURRENT ICC-ES REPORT FOR THE ANCHOR. IF CONFLICTS EXIST BETWEEN THESE REFERENCED DOCUMENTS, THE MOST STRINGENT REQUIREMENTS SHALL GOVERN.

E. THE CONTRACTOR SHALL LOCATE ALL EXISTING REINFORCING STEEL AND OTHER EMBEDDED ITEMS CONTAINED IN THE CONCRETE USING NON-DESTRUCTIVE METHODS AND SHALL POSITION ANCHOR LOCATIONS TO AVOID CONFLICTS WITH EXISTING EMBEDDED ITEMS. ANCHOR LOCATIONS CAN BE ADJUSTED BY A MAXIMUM OF 1 1/2" FROM DETAILED LOCATIONS TO AVOID CONFLICTS, UNLESS NOTED OTHERWISE. SUBMIT AN AS-BUILT OF ANCHOR LOCATIONS TO ENGINEER.

F. BASED ON FIELD VERIFIED LOCATIONS OF REINFORCING STEEL AND EMBEDDED ITEMS, THE CONTRACTOR SHALL CREATE TEMPLATES FOR EACH ANCHOR GROUP. SUBMIT TEMPLATE DIMENSIONS FOR REVIEW PRIOR TO FABRICATION OF CONNECTION PLATES.

G. HOLES FOR ANCHORS AND DOWELS SHALL BE DRILLED IN A CONTINUOUS OPERATION USING THE BIT TYPE AND SIZE RECOMMENDED BY THE ANCHOR MANUFACTURER. HOLES SHALL BE DRILLED PERPENDICULAR TO THE CONCRETE SURFACE AND SHALL NOT BE ENLARGED OR REDIRECTED AT ANY POINT ALONG ITS LENGTH. ALL DEBRIS SHALL BE BLOWN OUT OF THE HOLES WITH COMPRESSED AIR AFTER DRILLING.

H. ALL ABANDONED HOLES SHALL BE FILLED WITH NONSHRINK GROUT.

I. HOLES IN CONNECTION PLATES SHALL BE NO MORE THAN 1/16" LARGER THAN THE ANCHOR DIAMETER. IF LARGER HOLES ARE REQUIRED FOR ERECTION PURPOSES, CONTRACTOR SHALL NOTIFY ENGINEER SUCH THAT A PLATE WASHER SIZE CAN BE PROVIDED.

J. INSTALLATION OF ANCHORS AND DOWELS SHALL BE CONTINUOUSLY INSPECTED BY THE TESTING AGENCY TO ENSURE THAT HOLES ARE OF SPECIFIED SIZE, AND THAT BOLTS ARE PROPERLY INSTALLED INCLUDING APPLICATION OF MINIMUM INSTALLATION TORQUES.

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GENERAL DESIGN NOTES

Table with columns: PERMIT ISSUE, DESCRIPTION, DT, BY, REV, DATE.

JOB NO. 1710037

DRAWN: TB

CHECKED: DT

SCALE: AS NOTED

S001
DRAWING NO.