

X. POST-INSTALLED ANCHORS AND DOWELS

A. EXPANSION ANCHORS SHALL BE ONE OF THE FOLLOWING:

1. CONCRETE:
 - a. KWIK BOLT TZ, HILTI INC.
 - b. STRONG-BOLT 2, SIMPSON STRONG-TIE
2. GROUTED MASONRY
 - a. KWIK BOLT 3, HILTI INC.
 - b. WEDGE-ALL, SIMPSON STRONG-TIE

B. ADHESIVE ANCHORS SHALL BE ONE OF THE FOLLOWING:

1. CONCRETE:
 - a. HIT-RE 500-SD, HILTI INC.
 - b. SET-XP, SIMPSON STRONG-TIE
2. GROUTED MASONRY
 - a. HIT-HY 150 MAX, HILTI INC.
 - b. SET, 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 IOC 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.

XI. REINFORCED MASONRY NOTES

A. ALL MASONRY CONSTRUCTION SHALL COMPLY WITH ACI 530/ASCE 5/ TMS 402 "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES".

B. LAP VERTICAL BARS 48 DIAMETERS WITH WIRE TIES.

C. GROUT ALL CELLS CONTAINING VERTICAL REINFORCEMENT IN 4'-0" LIFTS MAXIMUM. DO NOT BEGIN PLACEMENT OF GROUT UNTIL ALIGNMENT OF CELLS ARE INSPECTED AND APPROVED.

D. FILL ALL CELLS BELOW FINISHED GRADE.

E. TYPICAL JOINT REINFORCEMENT:
PROVIDE #5 HORIZONTAL REINFORCEMENT IN WALLS AT 48" O.C. VERTICALLY (MAX.) UNLESS NOTED OTHERWISE. LAP JOINT REINFORCEMENT 18" MINIMUM.

F. JOINT REINFORCEMENT AT CONTROL JOINTS:
PROVIDE HORIZONTAL JOINT REINFORCEMENT AT 32" O.C. ACROSS VERTICAL JOINTS IN WALLS. PROVIDE HORIZONTAL JOINT REINFORCEMENT AT 16" O.C. ACROSS VERTICAL CONTROL JOINTS IN BOND BEAMS.

G. TOP AND BOTTOM REINFORCEMENT IN BOND BEAMS SHALL BE CONTINUOUS ACROSS CONTROL JOINTS.

H. PROVIDE VERTICAL CONTROL JOINTS AT 24'-0" O.C. MAXIMUM LOCATED BOTH BEAM CONTROL JOINTS AT CENTERLINE OF COLUMNS. SEE DRAWING SO.2.

I. PROVIDE 1-#5 BAR VERTICAL MINIMUM AT ALL CORNERS, INTERSECTIONS AND EACH SIDE OF CONTROL JOINTS.

J. PROVIDE 2-#5 BARS VERTICAL AT 24" O.C. AT END WALLS.

K. PROVIDE 2-#5 BAR VERTICAL MINIMUM EACH SIDE OF OPENING 4'-0" WIDE OR LESS PROVIDE 2-#5 BARS VERTICAL MINIMUM 8" O.C. ON EACH SIDE OF OPENING GREATER THAN 4'-0".

L. ALL REINFORCED HOLLOW UNIT MASONRY SHALL BE BUILT TO PRESERVE THE UNOBSTRUCTED VERTICAL CONTINUITY OF THE CELLS TO BE FILLED. WALLS AND CROSS WEBS FORMING SUCH CELLS TO BE FILLED SHALL BE FULL-BEDDED IN MORTAR TO PREVENT LEAKAGE OF GROUT. ALL HEAD

(OR END) JOINTS SHALL BE SOLIDLY FILLED WITH MORTAR FOR A DISTANCE IN FROM THE FACE OF THE WALL OR UNIT NOT LESS THAN THE THICKNESS OF THE LONGITUDINAL FACE SHELLS. BOND SHALL BE PROVIDED BY LAPPING UNITS IN SUCCESSIVE VERTICAL COURSES OR BY EQUIVALENT MECHANICAL ANCHORAGE.

M. VERTICAL CELLS TO BE FILLED SHALL HAVE VERTICAL ALIGNMENT SUFFICIENT TO MAINTAIN A CLEAR, UNOBSTRUCTED, CONTINUOUS, VERTICAL CELL MEASURING NOT LESS THAN 3" AND HAVING A CLEAR AREA OF 10 SQUARE INCHES.

N. VERTICAL REINFORCEMENT SHALL BE HELD IN POSITION AT TOP AND BOTTOM AND AT INTERVALS NOT EXCEEDING 10 FEET.

O. WHEN THE GROUTING IS STOPPED FOR ONE HOUR OR LONGER, HORIZONTAL CONSTRUCTION JOINTS SHALL BE FORMED BY STOPPING THE POUR OF GROUT NOT LESS THAN 1/2" BELOW THE TOP OF THE UPPERMOST UNIT GROUTED.

P. WHERE UNTELS BEAR ON MASONRY WALLS, THEY SHALL BEAR ON WITH A BOND BEAM COURSE OR CORES GROUTED SOLID. ALL UNTELS SHALL HAVE AT LEAST 8" BEARING AT EACH END UNLESS NOTED OTHERWISE.

Q. ALL MASONRY SHALL BE AS FOLLOWS:
CONCRETE MASONRY UNIT (CMU) C90, f'm = 1500 PSI
FACE SHELL BEDDING NCMA-TEK 141A
NET AREA ASSUMED; An C270 TYPE M OR S BELOW GRADE, TYPE N ABOVE GRADE
MORTAR C476 2000 PSI
GROUT

XII. STRUCTURAL STEEL GENERAL NOTES

1. ALL STRUCTURAL STEEL WORK SHALL CONFORM TO 360 "SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS" OF THE A.I.S.C.

2. FABRICATORS AND ERECTORS SHALL BE MEMBERS OF THE A.I.S.C. OR CERTIFIED FOR CATEGORY I, A.I.S.C. QUALITY CERTIFICATION PROGRAM OR HAVE HAD AT LEAST 10 YEARS EXPERIENCE IN FABRICATION AND ERECTION OF SIMILAR STEEL STRUCTURES.

3. SHOP DRAWINGS FOR ALL STRUCTURAL STEEL SHALL BE SUBMITTED AND APPROVED PRIOR TO ANY FABRICATION.

4. STEEL FRAMING CONNECTIONS SHALL BE BOLTED OR WELDED. BOLTS SHALL BE A MINIMUM OF 3/4" DIAMETER ASTM A325 BOLTS UNLESS NOTED OTHERWISE. ALL BOLTED CONNECTIONS SHALL BE "SNUG TIGHT" UNLESS NOTED OTHERWISE. TC BOLTS MAY BE USED. ALL CONNECTIONS SHALL HAVE A MINIMUM OF 2 BOLTS U.N.O.

5. THE CONTACT SURFACES WITHIN SLIP CRITICAL JOINTS SHALL BE FREE FROM OIL, PAINT, LACQUER OR GALVANIZING.

6. ROOF DECKING SHALL BE INSTALLED IN ACCORDANCE WITH THE STEEL DECK INSTITUTE AND MANUFACTURER'S RECOMMENDATIONS. DECKING SHALL BE PLACED IN A THREE-SPAN CONTINUOUS CONDITION. SINGLE OR DOUBLE SPAN CONDITIONS REQUIRE PRIOR APPROVAL BY THE STRUCTURAL ENGINEER.

7. BEAMS SHALL BE FABRICATED AND ERECTED WITH NATURAL CAMBER UP.

8. ALL WELDS SHALL CONFORM TO AWS D1.1, "STRUCTURAL WELDING CODE". ALL GROOVE WELDS SHOWN ON CONTRACT DOCUMENTS SHALL BE FULL PENETRATION UNLESS NOTED OTHERWISE. WELDING SHALL BE DONE WITH E-70XX ELECTRODES UNLESS NOTED OTHERWISE.

9. STRUCTURAL STEEL EMBEDDING IN CONCRETE SHALL NOT BE PAINTED.

10. GROUT USED IN GROUT BEDS UNDER COLUMN BASE PLATES SHALL BE CEMENT BASED, NON-SHRINK GROUT. THE GROUT SHALL EXHIBIT NO SHRINKAGE IN ACCORDANCE WITH ASTM C827-82, "TEST METHOD FOR EARLY VOLUME CHANGE OF CEMENTITIOUS MIXTURES" AND SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 5000 PSI WHICH TESTED IN ACCORDANCE WITH ASTM C-109-80, "TEST METHOD FOR COMPRESSIVE STRENGTH OF HYDRAULIC CEMENT MORTARS".

11. SHOP OR FIELD SPLICES NOT SHOWN ON THE CONTRACT DOCUMENTS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR APPROVAL.

12. STRUCTURAL STEEL FRAMING SHALL BE ERECTED TRUE AND PLUMB IN ACCORDANCE WITH A.I.S.C. CODE OF STANDARD PRACTICE. ANY FRAMING EXCEEDING TOLERANCES OF THE CODE OF STANDARD PRACTICE SHALL BE CORRECTED AS DIRECTED BY THE STRUCTURAL ENGINEER.

13. THE STRUCTURAL STEEL ERECTOR SHALL PROVIDE TEMPORARY BRACING OF THE STRUCTURAL STEEL FRAME WORK AGAINST LATERAL LOADS SUCH AS WIND. THE BRACING SHALL REMAIN IN PLACE UNTIL THE FINAL SYSTEM FOR RESISTING LATERAL LOADS IS IN PLACE AND EFFECTIVE AS APPROVED BY THE STRUCTURAL ENGINEER.

14. UNLESS OTHERWISE SHOWN, ALL BEAM CONNECTIONS SHALL BE STANDARD FRAMED OR SPREAD CONNECTIONS UNLESS OTHER REVISIONS ARE INDICATED ON THE PLANS. CONNECTIONS SHALL DEVELOP AT LEAST ONE-HALF OF THE TOTAL UNIFORM LOAD CAPACITY TABULATED IN TABLES OF THE MANUAL FOR THE GIVEN SHAPE AND SPAN OF THE BEAM IN QUESTION. AND 4/5, HOWEVER, SHALL THE LENGTH OF THE FRAMED CONNECTIONS BE LESS THAN ONE-HALF OF THE "T" DISTANCE OF THE BEAM WEB.

15. GUSSET PLATES SHALL BE 3/8" THICK MINIMUM.

16. WHERE PRACTICAL, UNLESS SHOWN DIFFERENTLY ON DRAWINGS, ALL BRACING CONNECTIONS SHALL BE DESIGNED AND DETAILED SO THAT ALL FORCE COMPONENTS CAN BE DELIVERED DIRECTLY TO THE CENTERLINE OF INTERSECTION MEMBERS. WHERE THIS IS NOT DONE, CONNECTIONS SHALL BE DESIGNED TO ACCOUNT FOR RESULTING ECCENTRICITIES.

17. TRUSSES TO BE ALL WELDED CONSTRUCTION, UNLESS NOTED OTHERWISE. WHERE BOLTS ARE USED, BOTTOM CHORDS SHALL BE DETAILED TO PRODUCE NO REDUCTION OF GROSS SECTION DUE TO SLOT HOLES.

18. (- OR T) INDICATES TENSION IN MEMBERS.
(+ OR C) INDICATES COMPRESSION IN MEMBERS.

19. ALL TRUSSES, BOTTOM CHORD BRACING, SWAY FRAMES, X-BRACING, LACE AND SIMILAR TYPE MEMBERS SHALL EITHER DEVELOP THE FORCE INDICATED ON THE DRAWINGS OR ONE-HALF THE ALLOWABLE TENSION FORCE IN THE MEMBER, WHICHEVER IS LARGER.

20. BAR JOISTS SHALL BE FABRICATED AND ERECTED, BRACED WITH RIGID BRIDGING AND ANCHORED TO THE SUPPORTING MEMBERS IN STRICT ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE STEEL JOIST INSTITUTE LATEST EDITION.

21. PROVIDE JOISTS AS SHOWN ON PLANS. EXTEND BOTTOM CHORD OF JOISTS AT COLUMNS.

22. JOISTS AND JOIST GRIDERS SHALL BE DESIGNED FOR LOADS INDICATED ON PLANS.

23. JOIST AND GIRDER FABRICATOR SHALL SUBMIT SIGNED AND SEALED CALCULATIONS BY A REGISTERED ENGINEER SHOWING ALL LOADS AND SPECIAL CONDITIONS TOGETHER WITH SHOP DRAWINGS PRIOR TO ERECTION OF JOISTS AND GRIDERS.

24. JOISTS AND GRIDERS SHALL BE DESIGNED FOR UPLIFT AS INDICATED ON PLANS. BOTTOM CHORD BRACES AND UPLIFT BRIDGING SHALL BE DESIGNED AND FURNISHED BY THE JOIST GIRDER MANUFACTURER.

25. ALL JOIST GRIDERS SHALL HAVE BOTTOM CHORD BRACES AT MID SPANS TYPICALLY.

26. ALL SAG RODS ARE 5/8" SMOOTH WITH THREADED ENDS.

27. STRUCTURAL STEEL SUPPORTS FOR STOREFRONTS, CURTAIN WALLS AND SKYLIGHTS SHALL BE AS SHOWN ON ARCHITECTURAL OR STRUCTURAL DRAWINGS. ANY ADDITIONAL REINFORCEMENT AND CONNECTIONS REQUIRED FOR THE SYSTEM SHALL BE PROVIDED AND INSTALLED BY THE MANUFACTURER.

28. ALL STRUCTURAL STEEL, MISCELLANEOUS STEEL AND STEEL JOISTS U.N.O. SHALL BE GIVEN ONE SHOP COAT AND ONE FIELD TOUCH UP PAINT, GRAY COLOR.

29. ROD BRACE CLEVIS PIN HOLE DIAMETER = PIN DIAMETER + 1/16" PIN DIAMETER = ROD DIAMETER.

30. ROD BRACE CLEVIS GRIP = GUSSET PLATE THICKNESS B+ 1/4".

31. ROD BRACE TURNBUCKLE MUST BE WELL CLEAR OF SLOT IN GIRT.

32. ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED AND ALL VENT HOLES SHALL BE PLUG OR SEAL WELDED PRIOR TO ERECTION.

33. SPRINKLER HEAVY LINE LOADS (I.E. ANY SPRINKLER OR SIMILAR MAINS OVER 3" DIA.) FORM CENTER OF SUPPORT MEMBER (JOISTS, JOIST GRIDERS OR WF BEAMS) UTILIZING CENTER BEAM CLAMP OF TRAPEZOID SYSTEM FROM CENTER OF MEMBER. SIDE MOUNTED CLAMPS, I.E. C-CLAMP OR ECCENTRIC BEAM CLAMP, WILL NOT BE ACCEPTED. ECCENTRIC LOAD ON JOIST IS UNACCEPTABLE. SIDE MOUNTED CLAMPS SHALL NOT SUPPORT ANY LOAD OVER 100 LBS. WHEN SUPPORTING MEMBER IS A JOIST OF JOIST GIRDER. (REFER "PIPE MAIN SUPPORT DETAIL" ON TYPICAL DESIGN DETAILS DRAWING.)

34. ALL STEEL MATERIALS SHALL BE AS FOLLOWS:

- WIDE FLANGE STEEL A572 OR A992 (50 KSI)
- CHANNELS, ANGLES & PLATES A36 (36 KSI)
- RECTANGULAR STRUCTURAL TUBING A500 GRADE B (46 KSI)
- STANDARD PIPE A53 GRADE B
- HIGH STRENGTH BOLTS A325N, A325TC
- ANCHOR RODS A36, A308 OR F1554 GRADE 8
- SAG RODS A36
- STEEL JOISTS & JOIST GRIDERS S.I.I.
- METAL ROOF DECK 1 1/2", [GALV. G60/PAINTE] TYPE B, 28 GA.
- METAL FLOOR DECK 9/16", [GALV. G60/PAINTE] 28 GA.
- WELDING ELECTRODES E70XX
- STEEL GRATING 1/4"x3/16" MB GRATING, GALV. STEEL, NAAMM
- RAISED-PATTERN FLOOR PLATE

XIII. SPECIAL INSPECTIONS

A. SPECIAL INSPECTIONS SHALL BE PERFORMED IN ACCORDANCE WITH CHAPTER 17 OF THE 2012 INTERNATIONAL BUILDING CODE, 2012 EDITION, WITH GEORGIA AMENDMENTS, AND BY A SPECIAL INSPECTOR HIRED BY THE OWNER TO PERFORM THE SPECIAL INSPECTIONS LISTED BELOW.

B. THE CONTRACTOR SHALL COORDINATE WITH AND NOTIFY THE SPECIAL INSPECTOR OF ALL TESTS.

C. THE SPECIAL INSPECTOR SHALL BE RESPONSIBLE TO VERIFY THAT THE ITEMS DETAILED IN THE CONSTRUCTION DOCUMENTS WERE BUILT ACCORDINGLY AND SHALL PREPARE, SIGN, AND FURNISH INSPECTION REPORTS TO THE REGISTERED DESIGN PROFESSIONAL IN CHARGE (RDPIRC) AND THE ARCHITECT FOR ALL TIME SPENT AT THE SITE.

D. THE INSPECTOR SHALL BRING DISCREPANCIES TO THE IMMEDIATE ATTENTION OF THE GENERAL CONTRACTOR AND RDPIRC FOR CORRECTION. IF THE DISCREPANCIES ARE NOT CORRECTED, THE SPECIAL INSPECTOR IS TO PREPARE, SIGN AND SUBMIT A NOTICE OF NON-COMPLIANCE (NNC) TO THE RDPIRC WITH A COPY DIRECTLY TO THE BUILDING OFFICIAL, THE GENERAL CONTRACTOR AND OWNER.

E. THERE SPECIAL INSPECTIONS ARE IN ADDITION TO THE OTHER INSPECTIONS LISTED IN THESE STRUCTURAL NOTES OR PROJECT SPECIFICATIONS.

F. WHERE STRUCTURAL LOAD-BEARING MEMBERS AND ASSEMBLIES ARE SHOP FABRICATED, THE SPECIAL INSPECTOR SHALL VERIFY THAT THE FABRICATOR MAINTAINS DETAILED FABRICATION AND QUALITY CONTROL PROCEDURES THAT PROVIDE A BASIS FOR INSPECTION CONTROL AND WORKMANSHIP AND THE FABRICATOR'S ABILITY TO CONFORM TO THE CONSTRUCTION DOCUMENTS AND REFERENCED STANDARDS, UNLESS THE FABRICATOR IS REGISTERED AND APPROVED TO PERFORM SUCH WORK WITHOUT SPECIAL INSPECTION.

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REVISION #	DATE	REMARKS

ISSUE DATE	ISSUED TO	ISSUED FOR
10-02-2014	COUNTY	PERMITS

PROJECT ADDRESS:
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LAYOUT:
GENERAL NOTES

PAPER SIZE: 24X36 (ARCH D)

SCALE: AS NOTED

SHEET NUMBER:

S002