

CONCRETE:

- 1. CODE: AMERICAN CONCRETE INSTITUTE (ACI) 318
2. CONCRETE SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI
3. ALL CONCRETE SHALL HAVE A DENSITY OF 145 PCF UNLESS NOTED OTHERWISE.
4. CONCRETE SHALL BE ENTRAINED AS REQUIRED TO CONFORM TO DURABILITY REQUIREMENTS OF ACI 318.
5. CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGNS FOR ALL UNIQUE CONCRETE APPLICATIONS FOR REVIEW WELL IN ADVANCE OF CONCRETE PLACEMENT. MIX DESIGN TEST DATA SHALL COMPLY WITH ACI 318 AND SHALL INCLUDE (AT A MINIMUM) AVERAGE 28-DAY STRENGTH, NUMBER OF SAMPLES, AND STANDARD DEVIATION (IF APPLICABLE). TEST RESULTS SHALL NOT BE MORE THAN 24 MONTHS OLD AT TIME OF SUBMITTAL.
6. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A1064. CAST WIRE AT THE ELEVATION SPECIFIED, DO NOT PULL THE WIRE INTO POSITION. LAP FABRIC 6" MINIMUM SIDES AND ENDS.
7. ALL REINFORCING SHALL BE DETAILED, FABRICATED AND PLACED IN ACCORDANCE WITH THE LATEST ADDITION OF THE ACI DETAILING MANUAL.
8. ALL MIXING, TRANSPORTING, PLACING AND CURING OF CONCRETE SHALL BE DONE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE AMERICAN CONCRETE INSTITUTE. SITE MIXING CONCRETE (INCLUDING ADDING WATER ON SITE) IS PROHIBITED.
9. REINFORCEMENT LAP SPLICES SHALL BE IN ACCORDANCE WITH ACI 318 (CLASS "B" WHERE APPLICABLE), UNLESS NOTED OTHERWISE. ALL CONTINUOUS REINFORCEMENT SHALL BE SPLICED AS REQUIRED.
10. HORIZONTAL WALL REINFORCEMENT SHALL BE CONTINUOUS AND SHALL HAVE 90-DEGREE BENDS AND EXTENSIONS AT CORNERS AND INTERSECTIONS, AS SHOWN ON TYPICAL BAR PLACING DETAILS.
11. PROVIDE STANDARD BAR CHAIRS WITH PROTECTIVE TIPS FOR ALL REINFORCEMENT.
12. SUBMIT REINFORCING PLACEMENT AND DETAIL (SHOP) DRAWINGS FOR REVIEW. NO REINFORCING BARS SHALL BE INSTALLED UNTIL THE SHOP DRAWINGS HAVE BEEN REVIEWED AND RETURNED.
13. PRODUCTS AND MATERIALS:
A. TYPE III PORTLAND CEMENT SHALL CONFORM TO ASTM-C150.
B. AGGREGATES SHALL CONFORM TO ASTM C-33.
C. REINFORCING BARS SHALL CONFORM TO ASTM A615 (GRADE 60).
D. FORMING SHALL BE OF WOOD, STEEL, OR FIBERGLASS OF SATISFACTORY QUALITY AND CONDITION.
E. NO ADMIXTURES SHALL BE ADDED TO THE CONCRETE UNLESS APPROVED BY THE ENGINEER.
14. ALL REINFORCING SHALL BE SUPPORTED IN FORMS SPACED WITH NECESSARY ACCESSORIES AND SHALL BE SECURELY WIRED TOGETHER IN ACCORDANCE WITH LATEST ADDITION OF THE CRSI "MANUAL OF STANDARD PRACTICE".
15. MINIMUM CONCRETE COVER (UNLESS NOTED OTHERWISE) SHALL BE:
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH..... 3 INCHES
CONCRETE EXPOSED TO EARTH OR WEATHER:
#6 BARS AND LARGER..... 2 INCHES
#5 BARS AND SMALLER..... 1-1/2 INCHES
CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
BEAMS AND COLUMNS..... 1-1/2 INCHES
SLABS, WALLS, AND JOISTS..... 3/4 INCHES
16. SCHEDULED OR DETAILED REINFORCING STEEL SHALL NOT BE TACK WELDED FOR ANY REASON. WELDED REINFORCING STEEL SPLICES ARE NOT PERMITTED WITHOUT ENGINEER'S APPROVAL. WHERE WELDING IS APPROVED, IT SHALL CONFORM TO AWS D1.4 STRUCTURAL WELDING CODE - REINFORCING STEEL.
17. SLAB-ON-GRADE SHALL BE SAW CUT IMMEDIATELY AFTER CONCRETE HARDENS. THE CONTRACTOR SHALL SUBMIT LAYOUT AND CONSTRUCTION SCHEDULE ("SOFT CUT" @ INTERNATIONAL OR SIM.)
18. CONTROL JOINTS IN SLABS ON GROUND SHALL BE LOCATED AT 12'-0" MAXIMUM SPACING AND SHALL CREATE SECTIONS OF SLAB WITH A MAXIMUM ASPECT RATIO OF 1.5:1. CONTROL JOINTS SHALL BE SAWN AND SHALL BE A MINIMUM OF 1/4 OF THE SLAB THICKNESS DEEP IF CUT WITH A CONVENTIONAL SAW, OR 1" DEEP IF CUT WITH AN EARLY-ENTRY DRY-CUT SAW. THE CONTROL JOINTS SHALL BE SAWN AS SOON AS THE SAW BLADE CAN CUT THE CONCRETE WITHOUT DISPLACING THE AGGREGATE. CUT EVERY OTHER MESH WIRE AT THE CONTROL JOINT LOCATION PRIOR TO PLACING CONCRETE.
19. SAWN CONTROL JOINTS SHALL BE PLACED AS SOON AS CONCRETE IS ABLE TO BE SAWN WITHOUT PULLING AGGREGATE FROM FLOOR. SLABS SHALL NOT BE LEFT OVERNIGHT, OR ANY REASONABLE AMOUNT OF TIME, WITHOUT SAWING JOINTS. WEATHER IS CRITICAL TO THE SCHEDULE OF SAWN JOINTS. IF LARGE AREAS OF SLAB ARE POURED AT ONE TIME, SEVERAL SAWS MAY BE REQUIRED SO THAT JOINTS ARE PLACED IN TIME TO PREVENT SHRINKAGE CRACKING. PROPER JOINTING OF THE SLAB IS CRITICAL. REFER TO THE ACI MANUAL OF CONCRETE PRACTICE FOR PROPER JOINTING TECHNIQUES.
20. THE FLATNESS AND LEVELNESS OF THE SLAB-ON-GRADE SHALL BE:
UNLESS NOTED OTHERWISE..... F(F) 30; F(L) 20
UNDER THIN RESILIENT FLOORING AND THINSET TILE..... F(F) 35; F(L) 25
WAREHOUSE FLOORS..... F(F) 45; F(L) 35
POLISHED CONCRETE FLOORS..... F(F) 50; F(L) 25
MEASURE ACCORDING TO ASTM E-1155 WITHIN 48 HOURS OF SLAB INSTALLATION. REPORT COMPOSITE OVERALL AND LOCAL VALUES FOR EACH MEASURED SECTION. CORRECT THE SLAB SURFACE IF COMPOSITE OVERALL VALUE IS LESS THAN SPECIFIED AND IF LOCAL VALUE IS LESS THAN 2/3 OF SPECIFIED OR LESS THAN F(F) 13; F(L) 10.
21. WHERE FOOTINGS, WALLS, OR OTHER STRUCTURAL ELEMENTS INTERSECT, CORNER OR TEE, PROVIDE CORNER BARS WITH REQUIRED LAP LENGTHS TO PROVIDE CONTINUITY OF HORIZONTAL STEEL REINFORCING, UNLESS NOTED OTHERWISE.
22. BASE PLATES, ANCHOR BOLTS, SUPPORT ANGLES, ETC. BELOW GRADE SHALL BE COVERED WITH A MINIMUM OF 4" OF CONCRETE.
23. PROVIDE A MINIMUM OF 3" COVER FOR ANCHOR BOLTS AND LOCATE HORIZONTAL REINFORCEMENT TO THE OUTSIDE FOR ANCHOR BOLT CONTAINMENT, UNLESS NOTED OTHERWISE.
24. WHERE DOWELS, BOLTS OR INSERTS ARE CALLED OUT TO BE ANCHORED TO CAST IN PLACE OR PRECAST CONCRETE ELEMENTS USING ADHESIVE ANCHORS, USE AN ANCHORAGE SYSTEM EQUAL TO "HITLTI" HIT HY-200 FOLLOWING ALL MANUFACTURER'S RECOMMENDATIONS. ALTERNATE ANCHORAGE SYSTEMS MAY BE USED WITH ENGINEER'S PRIOR APPROVAL.
25. PROVIDE TEMPORARY SHORING AND BRACING OF ALL STRUCTURAL AND MISCELLANEOUS ELEMENTS UNTIL CONCRETE HAS OBTAINED 80% OF DESIGN STRENGTH AND ALL PERMANENT BRACING ELEMENTS ARE INSTALLED.
26. PLACEMENT OF CONCRETE, COLD WEATHER AND HOT WEATHER PRECAUTIONS, MATERIAL AND PROPORTIONING REQUIREMENTS, REBAR COVER AND DETAILING SHALL CONFORM TO THE REQUIREMENTS OF THE ACI 318.
27. PROVIDE #4 @ 12" CENTERS TEMPERATURE BARS AT RIGHT ANGLES TO MAIN BARS FOR ALL SOLID SLABS ABOVE GRADE, UNLESS NOTED OTHERWISE.
28. THERE SHALL BE NO HORIZONTAL CONSTRUCTION JOINTS IN ABOVE-GRADE CONCRETE POURS. ALL CONSTRUCTION JOINTS SHALL BE MADE IN THE CENTER OF SPANS WITH VERTICAL BULKHEADS. WHEN A BEAM INTERSECTS A GIRDER AT THIS POINT, THE JOINTS OF THE GIRDERS SHALL BE OFFSET A DISTANCE EQUAL TO TWICE THE WIDTH OF THE BEAM. THE LOCATION OF CONSTRUCTION JOINTS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER-OF-RECORD. ADDITIONAL REINFORCING AT CONSTRUCTION JOINTS SHALL BE SPECIFIED BY THE ENGINEER-OF-RECORD.
29. ALL CONDUIT, SLEEVES AND PIPES EMBEDDED IN CONCRETE SHALL CONFORM TO SECTION 6.3 OF ACI 318 AND THE FOLLOWING:
A. CONCRETE BEAMS, SLAB RIBS AND JOIST WIDTHS SHOWN ON THE DRAWINGS ARE THE MINIMUM ALLOWABLE WIDTHS.
B. BEAMS, SLAB RIBS, AND JOISTS HAVING PIPES OR SLEEVES PASSING THROUGH THEM WHICH ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE INCREASED IN WIDTH IMMEDIATELY ADJACENT TO THE SLEEVE OR PIPE TO OBTAIN THE SAME CROSS-SECTIONAL AREA OF CONCRETE SHOWN FOR THE MEMBER.
C. SLEEVES AND PIPES SHALL BE PLACED SO THAT REINFORCING STEEL CAN BE PLACED WITH THE SPECIFIED COVER AND CLEAR DISTANCE BETWEEN BARS.
D. THE CONCRETE COVERING OF PIPES AND SLEEVES SHALL NOT BE LESS THAN 1". CLEAR DISTANCE BETWEEN SUCH PIPES AND SLEEVES SHALL NOT BE LESS THAN 1-1/2".
E. CONDUITS AND PIPES PLACED IN SLABS AND TOPPING OVER SLAB RIBS OR JOISTS SHALL NOT BE LARGER IN OUTSIDE DIAMETER THAN ONE-THIRD THE THICKNESS OF THE SLAB OR TOPPING, NOT MORE THAN 1-1/4" ROUND OUTER DIAMETER CONDUIT, OR THE EQUIVALENT AREA IN SMALLER CONDUIT, SHALL BE PLACED IN ANY 6" WIDE JOIST OR SLAB RIB. IF IT IS NECESSARY TO USE LARGER CONDUIT OR PIPES, THE SLAB OR TOPPING SHALL BE THICKENED. THE JOIST OR SLAB RIB SHALL BE WIDENED AND REINFORCING SHALL BE ADDED TO SUPPORT THE ADDITIONAL WEIGHT OF THE CONCRETE.
F. CONDUITS OR PIPES PASSING THROUGH JOISTS, SLAB RIBS OR BEAMS, PARALLEL TO THE MEMBER SHALL BE NOT LARGER THAN 1-1/4" OUTER DIAMETER AND SHALL BE PLACED 2" CLEAR OF THE REINFORCING AT TOP, BOTTOM AND SIDES. CONDUITS OR PIPES PASSING THROUGH JOISTS, SLAB RIBS OR BEAMS PERPENDICULAR TO THE MEMBER SHALL NOT BE LARGER THAN 2" OUTER DIAMETER, AND SHALL BE PLACED AT MID-HEIGHT OF THE MEMBER.
G. CONDUITS AND PIPES SHALL NOT BE PLACED IN COLUMNS.
30. PROVIDE CONTROL/CONSTRUCTION JOINTS IN CONCRETE WALLS AT A MAXIMUM SPACING OF TWICE THE HEIGHT OF THE WALL ABOVE THE TOP OF FOOTING. MAXIMUM JOINT SPACING SHALL NOT EXCEED 24'-0". CONTROL JOINTS SHALL HAVE A 3/4" DEEP BY 1-1/2" WIDE TAPERED REVEAL AT EACH SIDE OF THE WALL. AT CONTROL JOINTS, EVERY OTHER HORIZONTAL BAR SHALL BE CUT BACK 1-1/2" FROM THE CONTROL JOINT. CONSTRUCTION JOINTS SHALL BE FORMED SIMILARLY TO CONTROL JOINTS. AT CONSTRUCTION JOINTS, ALL HORIZONTAL STEEL SHALL BE DISCONTINUOUS AND A DOWEL BAR OF SIZE AND SPACING TO MATCH THE HORIZONTAL REINFORCING SHALL BE EMBEDDED A MINIMUM OF 40 BAR DIAMETERS AT EACH SIDE OF THE CONSTRUCTION JOINT. SEE ARCHITECTURAL DRAWINGS FOR ARCHITECTURAL JOINT TREATMENT.

STRUCTURAL STEEL:

- 1. CODE: THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, ANSIAISC 360.
2. STEEL SHALL CONFORM TO THE FOLLOWING GRADES:
WIDE FLANGE SHAPES..... ASTM A992 (Fy=50ksi)
ALL CHANNELS, ANGLES, PLATES, ETC. (UNO)..... A36 (Fy=36ksi)
STRUCTURAL TUBES..... A500, GRADE B (Fy=46ksi)
ANCHOR BOLTS..... F1554, GRADE 36 (Fy=36ksi)
STEEL PIPE..... A53 (Fy=35ksi)
BOLTS..... A325
WELDING ELECTRODES..... E70xx
HARDENED STEEL WASHERS..... F436
3. THE STEEL STRUCTURE IS A NON-SELF-SUPPORTING STEEL FRAME AND IS DEPENDENT UPON DIAPHRAGM ACTION OF THE METAL ROOF DECK AND ATTACHMENT TO THE SHEAR WALLS & BRACED/MOMENT FRAMES FOR STABILITY AND FOR RESISTANCE TO WIND AND SEISMIC FORCES. PROVIDE ALL TEMPORARY SUPPORTS REQUIRED FOR STABILITY AND FOR RESISTANCE TO WIND AND SEISMIC FORCES UNTIL THESE ELEMENTS ARE COMPLETE AND ARE CAPABLE OF PROVIDING THIS SUPPORT. THE CONTRACTOR SHALL PROVIDE, AT NO ADDITIONAL COST, ALL ADDITIONAL STEEL CONNECTIONS, GUYING, ETC. REQUIRED FOR ERECTION.
4. THE STEEL STRUCTURE IS A NON-SELF-SUPPORTING STEEL FRAME AND IS DEPENDENT UPON DIAPHRAGM ACTION OF THE METAL ROOF DECK AND ATTACHMENT TO THE SHEAR WALLS & BRACED/MOMENT FRAMES FOR STABILITY AND FOR RESISTANCE TO WIND AND SEISMIC FORCES UNTIL THESE ELEMENTS ARE COMPLETE AND ARE CAPABLE OF PROVIDING THIS SUPPORT. THE CONTRACTOR SHALL PROVIDE, AT NO ADDITIONAL COST, ALL ADDITIONAL STEEL CONNECTIONS, GUYING, ETC. REQUIRED FOR ERECTION.
5. OBTAIN ALL FIELD MEASUREMENTS REQUIRED FOR PROPER FABRICATION AND INSTALLATION OF WORK PRIOR TO DETAILING. PRECISE MEASUREMENTS ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
6. THE FABRICATOR IS RESPONSIBLE FOR THE DESIGN OF ALL CONNECTIONS SHOWN ON THE STRUCTURAL DRAWINGS. CONNECTIONS SHOWN ARE SCHEMATIC AND ARE ONLY INTENDED TO SHOW THE RELATIONSHIP OF MEMBERS CONNECTED. CONNECTION DETAILS INDICATED ON THE DRAWINGS SHALL BE INCORPORATED INTO FABRICATOR'S CONNECTION DESIGN.
7. DESIGN CONNECTIONS AND FINAL CONFIGURATION OF MEMBER REINFORCEMENT AT CONNECTIONS IN ACCORDANCE WITH ANSIAISC CODE OF STANDARD PRACTICE BY FABRICATOR'S QUALIFIED PROFESSIONAL ENGINEER LICENSED IN THE PROJECT STATE. THIS INCLUDES BUT IS NOT LIMITED TO: BRACE END CONNECTIONS; MOMENT-RESISTING CONNECTIONS; MODIFIED BEAM SEAT CONNECTIONS; AND MEMBER SPLICE CONNECTIONS. WHERE A PROJECT HAS BEEN COMPLETELY DETAILED BY THE ENGINEER-OF-RECORD, THIS REQUIREMENT MAY BE WAIVED.
8. THE FABRICATOR SHALL BE RESPONSIBLE FOR ALL ERRORS OF DETAILING ON THE SHOP DRAWINGS, ERRORS IN FABRICATION, AND FOR THE CORRECT FITTING OF STRUCTURAL STEEL MEMBERS.
9. SPLICING OF STEEL MEMBERS UNLESS SHOWN ON THE DRAWINGS IS PROHIBITED WITHOUT WRITTEN APPROVAL OF THE ARCHITECT.
10. NO HOLES SHALL BE CUT IN ANY STEEL ELEMENT UNLESS THEY ARE DETAILED ON THE DRAWINGS.
11. UNLESS OTHERWISE SHOWN ON THE DRAWINGS, THE SIZE OF WELDS SHALL NOT BE SMALLER THAN 1/4".
12. ALL BOLTED JOINTS SHALL BE SNUG TIGHT UNLESS NOTED OTHERWISE IN CONTRACT DOCUMENTS. FOR PRETENSION OR SLIP-CRITICAL JOINTS, THE METHOD OF INSTALLATION SHALL BE TURN-OF-NUT WITH MATCH MARKING, TWIST-OFF-TYPE TENSION CONTROL BOLT ASSEMBLIES (ASTM F3125, GRADE F1852), OR DIRECT TENSION INDICATORS (ASTM F959).
13. CONTRACTOR TO PROVIDE DECK SUPPORT ANGLES AS REQUIRED (L4x4x1/4, UNLESS NOTED OTHERWISE). CONTINUOUS ANGLES AT THE ROOF PERIMETER SHALL BE SPLICED SUCH THAT THE FULL TENSION FORCE THAT CAN BE DEVELOPED BY THE ANGLE WILL BE TRANSFERRED THROUGHOUT THE SPLICE.
14. PROVIDE STIFFENERS TO BEAR UNDER ALL LOAD CONCENTRATIONS ON SUPPORTING MEMBERS, ON ALL MEMBERS DRAWING OVER COLUMNS, AT BEAM COLUMN JOINTS (AS REQUIRED BY THE AISC SPECIFICATIONS) AND WHERE SHOWN ON THE DRAWINGS.
15. COLUMN BASEPLATES SHALL BE PACKED SOLID WITH READY TO USE NON-SHRINK, NON-METALLIC GROUT THAT DEVELOPS A 2-DAY COMPRESSIVE STRENGTH OF 2,000 PSI, 7-DAY OF 5000 PSI, AND A 28 DAY OF 7,000 PSI. TROWEL GROUDED SURFACES SMOOTH, SPLAYING NEATLY TO 45 DEGREES.
16. ALL EXPOSED STEEL AT PROJECT COMPLETION SHALL AT MINIMUM HAVE ALL BACKER RODS REMOVED, WELDS GRINDED SMOOTH, AND ALL BLEMISHES CORRECTED WITH PAINT OR OTHER MEANS.
17. ALL TUBES REQUIRE AN END PLATE AT EACH END WITH A THICKNESS EQUAL TO OR GREATER THAN THE TUBE'S WALL THICKNESS UNLESS NOTED OTHERWISE.
STEEL DECK:
1. STEEL DECK SHALL COMPLY WITH THE REQUIREMENTS OF THE STEEL DECK INSTITUTE SPECIFICATIONS AND COMMENTARY, CURRENT EDITION.
2. THE STEEL DECK WORK SHALL CONSIST OF FURNISHING EVERYTHING (LABOR, MATERIALS, ACCESSORIES, EQUIPMENT, ETC.) NECESSARY AND INCIDENTAL TO THE EXECUTION AND COMPLETION OF ALL STEEL DECK WORK AS INDICATED AND SPECIFIED ON THE DRAWINGS.
3. SUBMIT PLACEMENT AND DETAILED ("SHOP") DRAWINGS FOR REVIEW. NO STEEL DECK SHALL BE INSTALLED UNTIL THE SHOP DRAWINGS HAVE BEEN REVIEWED AND RETURNED.
4. STEEL DECK UNITS SHALL BE OF SUFFICIENT LENGTH TO ACCOMMODATE THREE SPAN INSTALLATION. DECK SPLICES SHALL BE OVER SUPPORTS. WHERE TWO SPAN UNITS OF STEEL DECK ARE USED, THEY SHALL BE SHORED AT THEIR MIDPOINTS. ONE-SPAN UNITS ARE NOT ALLOWED UNLESS NOTED OTHERWISE.
5. STEEL DECK SHALL BE OF THE CONFIGURATION, DEPTH AND MINIMUM GAUGE SHOWN ON THE DRAWINGS. ATTACHMENT TO THE SUPPORTING STRUCTURE SHALL BE AS SHOWN ON THE DRAWINGS, AS A MINIMUM.
6. ALL STEEL SHALL BE GALVANIZED. SEE ARCHITECTURAL DRAWINGS FOR TOP & BOTTOM PAINT REQUIREMENTS. DO NOT GALVANIZE OR PAINT STEEL DECK TO RECEIVE FIRE-RESISTANT COATING.
7. DO NOT HANG OR SUPPORT ANY LOADS FROM THE STEEL DECK.

POST-INSTALLED ANCHORS:

- 1. POST-INSTALLED ANCHORS SHALL ONLY BE INSTALLED WHERE SPECIFIED ON THE CONTRACT DRAWINGS. POST-INSTALLED ANCHORS SHALL NOT BE USED FOR MISSING OR MIS-PLACED CAST-IN-PLACE ANCHORS WITHOUT PERMISSION FROM THE ENGINEER-OF-RECORD.
2. TESTING, SCANNING, AND LOCATING OF EXISTING REINFORCEMENT IS REQUIRED PRIOR TO INSTALLATION OF POST-INSTALLED ANCHORS TO AVOID INTERFERENCE AND/OR DAMAGE TO IN-PLACE REINFORCEMENT.
3. SUBSTITUTION REQUESTS FOR SPECIFIED POST-INSTALLED ANCHORS SHALL BE ACCOMPANIED BY ADEQUATE CALCULATIONS BY AN ENGINEER LICENSED IN THE PROJECT STATE THAT THE REQUESTED ANCHOR MEETS OR EXCEEDS THAT OF WHAT IS SPECIFIED.
4. MECHANICAL ANCHORS SHALL BE TESTED AND ASSESSED IN ACCORDANCE WITH THE MOST RECENT EDITION OF ACI 355.2 QUALIFICATION OF POST INSTALLED MECHANICAL ANCHORS IN CONCRETE AND COMMENTARY.
5. ADHESIVE ANCHOR SYSTEMS SHALL BE TESTED AND ASSESSED IN ACCORDANCE WITH THE MOST RECENT EDITION OF ACI 355.4 QUALIFICATION OF POST-INSTALLED ADHESIVE ANCHORS IN CONCRETE (355.4) AND COMMENTARY. BULKMIXED (E.G., BUCKET-MIXED) ADHESIVES ARE NOT PERMITTED.
6. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (fc) OF 2,500 PSI AT THE TIME OF ADHESIVE ANCHOR INSTALLATION.
7. CONCRETE AT TIME OF ADHESIVE ANCHOR INSTALLATION SHALL HAVE A MINIMUM AGE OF 21 DAYS. FOR INSTALLATION OF ADHESIVE ANCHORS IN CONCRETE HAVING AN AGE LESS THAN 21 DAYS, TESTS SHALL BE CONDUCTED TO VERIFY THE PERFORMANCE OF THE PRODUCT IN ACCORDANCE WITH ACI 355.4.
8. THE CONCRETE TEMPERATURE AT THE TIME OF ADHESIVE ANCHOR INSTALLATION SHALL BE AT LEAST 50°F UNLESS TESTING HAS BEEN CONDUCTED IN ACCORDANCE WITH RECOGNIZED CRITERIA TO VERIFY PERFORMANCE IN CONCRETE AT LOWER TEMPERATURES.
9. ADHESIVE ANCHORS SHALL BE SUPPLIED AS AN ENTIRE SYSTEM. THE SYSTEM SHALL INCLUDE, BUT IS NOT LIMITED TO, MANUFACTURERS PRINTED INSTALLATION INSTRUCTIONS (MPII) AS SUPPLIED WITH THE ADHESIVE, ADHESIVE CARTRIDGE, MIXING NOZZLE, EXTENSION TUBE, DISPENSER, AND ALL REQUIRED EQUIPMENT FOR PROPERLY CLEANING THE DRILLED HOLE.
10. ALL-THREADED ROD (EYEBOLTS, THREADED STUDS, INTERNAL THREADED PARTS) TO BE USED IN ADHESIVE ANCHOR ASSEMBLIES SHALL CONFORM TO ASTM A36, F1554 OR OTHER APPROVED ANCHOR ASSEMBLY TYPES. (STAINLESS STEEL ANCHOR RODS SHALL BE AISI TYPE 304 OR TYPE 316.) THREADS SHALL BE UNC COARSE THREADS UNLESS NOTED OTHERWISE. COMPATIBLE NUTS AND WASHERS SHALL BE FURNISHED WITH THE ALL-THREADED ROD AND CONSIDERED PART OF THE ASSEMBLY. WITH HOT-DIPPED GALVANIZED RODS, USE OVERSIZED TAPPED, HOT-DIPPED GALVANIZED NUTS.
11. NUTS, WASHERS, AND OTHER HARDWARE USED WITH AN ALL-THREADED BAR ADHESIVE ANCHOR SYSTEM OR WITH A MECHANICAL EXPANSION ANCHOR SHALL HAVE A MATERIAL OR AN ALLOY DESIGNATION THAT IS COMPATIBLE WITH THE ANCHOR ROD/ALLOY. GALVANIZED ASSEMBLIES SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C. ELECTROPLATE GALVANIZING IS NOT ACCEPTABLE. DISSIMILAR METAL ASSEMBLIES SHALL BE SEPARATED BY NYLON, EPDM, OR OTHER APPROVED NON-METALLIC WASHERS.
12. REINFORCING BARS TO BE USED IN ADHESIVE ANCHOR ASSEMBLIES OR AS POST-INSTALLED REINFORCING SHALL CONFORM TO ASTM A615, A706, A995, OR A1035
13. THE EMBEDMENT DEPTH SPECIFIED SHALL BE DEFINED AS THE DEPTH FROM THE BASE MATERIAL TO THE DEEPEST PART OF THE ANCHOR AFTER THE ANCHOR HAS BEEN FULLY INSTALLED.
14. ADHESIVE CARTRIDGES SHALL BE STORED UNDER CONDITIONS IN COMPLIANCE WITH MANUFACTURER RECOMMENDATIONS REGARDING TEMPERATURE, EXPOSURE TO SUNLIGHT, ETC. AND EVIDENCE OF COMPLIANCE SHALL BE MADE AVAILABLE UPON REQUEST. THE USE OF EXPIRED ADHESIVE, AS INDICATED BY THE EXPIRATION DATE ON THE CARTRIDGE, IS PROHIBITED.
15. ADHESIVE ANCHORS SHALL BE INSTALLED BY QUALIFIED PERSONNEL TRAINED TO INSTALL ADHESIVE ANCHORS IN ACCORDANCE WITH THE SPECIFICATIONS (ALT. CONTRACT DOCUMENTS), BOTH POST-INSTALLED EXPANSION AND ADHESIVE ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS (MPII).
16. ADHESIVE ANCHORS WITH DIAMETER GREATER THAN 3/8" INSTALLED IN ORIENTATIONS FROM HORIZONTAL TO VERTICAL SHALL EMPLOY A PISTON PLUG FOR THE ADHESIVE INJECTION.
17. INSTALLATION OF ADHESIVE ANCHORS IN ORIENTATIONS FROM HORIZONTAL TO VERTICAL TO SUPPORT SUSTAINED TENSION LOADS SHALL BE PERFORMED BY PERSONNEL CERTIFIED BY THE ACI ADHESIVE ANCHOR INSTALLER CERTIFICATION PROGRAM OR EQUIVALENT.
18. THE CONTRACTOR SHALL PROVIDE ALL EQUIPMENT REQUIRED TO INSTALL THE EXPANSION AND/OR ADHESIVE ANCHOR INCLUDING, BUT NOT LIMITED TO, DRILLS, SETTING TOOLS, CLEAN-OUT BRUSHES, BLOWOUT BULBS, OIL-FREE COMPRESSED AIR, VACUUMS, WRENCHES, ETC.
19. UNLESS OTHERWISE SPECIFIED, ANCHORS SHALL BE INSTALLED IN HOLES DRILLED WITH A ROTARY IMPACT HAMMER DRILL OR, WHERE NOT OTHERWISE PROSCRIBED, A ROCK DRILL. WHERE SPECIFIED AND WHERE PERMITTED BY THE MPII, HOLES MAY BE DRILLED WITH A DIAMOND CORE DRILL. IN ALL CASES, THE BIT DIAMETER SHALL BE IN ACCORDANCE WITH THE MPII.
20. ANCHOR HOLES SHALL BE THOROUGHLY CLEANED IN ACCORDANCE WITH THE PROCEDURES SPECIFIED IN THE MPII PRIOR TO ADHESIVE INJECTION.
21. DRILLED AND CLEANED ANCHOR HOLES SHALL BE PROTECTED FROM CONTAMINATION AND WATER (E.G. RAIN) UNTIL THE ADHESIVE IS INSTALLED.
22. A DRILLED ANCHOR HOLE SHALL BE RE-CLEANED JUST PRIOR TO ADHESIVE INJECTION IF, IN THE OPINION OF THE ENGINEER, INSPECTOR, OR OWNER'S REPRESENTATIVE, THE HOLE HAS BECOME CONTAMINATED AFTER INITIAL CLEANING.
23. ADHESIVE SHALL BE INJECTED IN ACCORDANCE WITH THE MPII USING EQUIPMENT AND PROCEDURES AS SPECIFIED THEREIN FOR THE SPECIFIC CONDITIONS ASSOCIATED WITH THE INJECTION. THIS SHOULD BE CLEARLY SPECIFIED IN THE MPII. IF NOT, ANOTHER PRODUCT SHOULD BE SPECIFIED.
24. ANCHOR ELEMENTS TO BE INSTALLED IN THE ADHESIVE SHALL BE CLEAN, OIL-FREE, AND FREE OF LOOSE RUST, PAINT, OR OTHER COATINGS. THREADS ON THE PROJECTING PORTION OF THE ANCHOR ELEMENT SHALL BE PROTECTED FROM ADHESIVE CONTAMINATION.
25. INSTALLED ADHESIVE ANCHORS SHALL BE SECURELY FIXED IN-PLACE TO PREVENT DISPLACEMENT WHILE THE ADHESIVE CURES. UNLESS SHOWN OTHERWISE ON THE DRAWINGS, ANCHORS SHALL BE INSTALLED PERPENDICULAR TO THE CONCRETE SURFACE. ANCHORS DISPLACED BEFORE FULL ADHESIVE CURE SHALL BE CONSIDERED DAMAGED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
26. POST-INSTALLED REINFORCING BARS OR ALL-THREADED BARS SHALL NOT BE BENT AFTER BEING INSTALLED.

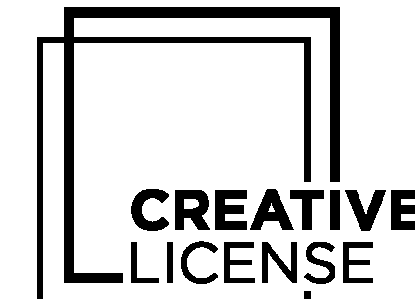


Table with 3 columns: #, DATE, TITLE

PROJECT NUMBER: 00-000

1167 PACE ST. - PHASE I
1167 PACE ST, COVINGTON, GA

GENERAL NOTES

S002

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