CONCRETE

A. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH DIVISION 03 SPECIFICATIONS.

B. CONCRETE MIXTURES SHALL MEET THE MINIMUM REQUIREMENTS TABULATED IN THE SCHEDULE ON THIS SHEET.

C. THE GENERAL CONTRACTOR SHALL SUBMIT TO STRUCTURAL ENGINEER OF RECORD PROPOSED CONSTRUCTION JOINT LOCATIONS FOR APPROVAL. NO HORIZONTAL CONSTRUCTION JOINTS ARE PERMITTED EXCEPT THOSE SHOWN ON THE STRUCTURAL DRAWINGS. WHERE NEW CONCRETE IS TO BE POURED ONTO EXISTING CONCRETE, BONDING IS REQUIRED AS NOTED IN ACI 301.

D. THE FOLLOWING CRITERIA REGARDING PIPES AND CONDUITS EMBEDDED IN ELEVATED CONCRETE SLABS SHALL BE ADHERED TO (SEE MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR LOCATION OF SLEEVES, PIPES, CONDUIT, ACCESSORIES, ETC). THIS CRITERIA WILL BE STRICTLY ENFORCED.

1. CONDUITS, PIPES, AND SLEEVES OF ANY MATERIAL NOT HARMFUL TO CONCRETE SHALL BE PERMITTED TO BE EMBEDDED IN CONCRETE WITH THE APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD.
2. CONDUITS AND PIPES OF ALUMINUM SHALL NOT BE EMBEDDED IN STRUCTURAL CONCRETE.
3. CONDUITS, PIPES, AND SLEEVES PASSING THROUGH A SLAB SHALL NOT SIGNIFICANTLY IMPAIR THE STRENGTH OF THE CONSTRUCTION.
4. CONDUITS AND PIPES SHALL NOT BE LARGER IN OUTSIDE DIAMETER THAN 1/3 THE OVERALL THICKNESS OF THE SLAB, WALL, OR BEAM IN WHICH THEY ARE EMBEDDED.
5. CONDUITS AND PIPES SHALL NOT BE SPACED CLOSER THAN 3 DIAMETERS OR WIDTHS ON CENTER. CONCRETE COVER FOR PIPES, CONDUITS AND FITTINGS SHALL NOT BE LESS THAN 1 1/2" FOR CONCRETE EXPOSED TO EARTH OR WEATHER, NOR 3/4" FOR CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR IN CONTACT WITH GROUND.
6. CONDUITS AND PIPES SHALL BE PLACED BETWEEN TOP AND BOTTOM SLAB REINFORCEMENT. CONDUITS AND PIPES SHALL BE PLACED IN THE MIDDLE THIRD OF THE SLAB OR WALL THICKNESS UNLESS NOTED OTHERWISE.
7. CONDUITS AND PIPES SHALL BE SO FABRICATED AND INSTALLED THAT CUTTING, BENDING, OR DISPLACEMENT OF REINFORCEMENT FROM ITS PROPER LOCATION WILL NOT BE REQUIRED.
8. CONDUITS AND PIPES, WITH FITTINGS, EMBEDDED WITHIN A COLUMN SHALL NOT DISPLACE MORE THAN 4 PERCENT OF THE AREA OF CROSS SECTION NOTED ON DRAWINGS OR AS REQUIRED BY FIRE PROTECTION.
9. PIPES AND FITTINGS SHALL BE DESIGNED TO RESIST EFFECTS OF MATERIAL, PRESSURE AND TEMPERATURE TO WHICH THEY WILL BE SUBJECTED.
10. REINFORCEMENT WITH AN AREA NOT LESS THAN 0.002 TIMES THE AREA OF CONCRETE SECTION SHALL BE PROVIDED NORMAL TO PIPING. THIS REINFORCEMENT SHALL BE IN ADDITION TO REINFORCEMENT NOTED ON DRAWINGS.
11. REFER TO ACI 318, SECTION 6.3 FOR ADDITIONAL REQUIREMENTS FOR CONDUITS AND PIPES EMBEDDED IN CONCRETE.

E. SEE ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION DRAWINGS FOR DRIPS, CHAMFERS, REGLETS, SLOTS, SLEEVES, RUSTICATIONS, INSERTS ANCHORS AND OTHER EMBEDDED ITEMS NOT NOTED ON STRUCTURAL DRAWINGS. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND PLACING ALL EMBEDDED ITEMS SHOWN ON DRAWINGS & ADDITIONAL ITEMS NOTED IN THIS NOTE, AS REQUIRED BY OTHER TRADES. UNLESS SHOWN ON STRUCTURAL DRAWINGS, NO OPENINGS LARGER THAN 12"x12" SHALL BE PLACED IN SLABS OR WALLS. FOR OPENINGS NOT SHOWN ON STRUCTURAL DRAWINGS, APPROVALS MUST BE OBTAINED FROM THE ARCHITECT/STRUCTURAL ENGINEER OF RECORD PRIOR TO FABRICATION OF STEEL AND PLACEMENT OF CONCRETE. SHOW ALL OPENINGS AND SLEEVES ON THE SHOP DRAWINGS.

F. CORING OF SLABS AND USE OF DRILLED ANCHORS IS NOT PERMITTED WITHOUT WRITTEN APPROVAL FROM THE STRUCTURAL ENGINEER OF RECORD. IF APPROVED, COORDINATE ANCHOR LOCATIONS SO THAT NO CONTACT IS MADE WITH ANY REINFORCING OR PT TENDONS.

G. POWDER ACTUATED FASTENERS (OR POWDER DRIVEN FASTENERS) SHALL BE ANCHORED IN CONCRETE WITH MINIMUM FASTENER SPACING OF 3" AND MINIMUM EDGE DISTANCE OF 2". FASTENERS SHALL NOT EXCEED 5/8" EMBEDMENT UNLESS APPROVED BY STRUCTURAL ENGINEER OF RECORD.

H. WHERE POLYSTYRENE RIGID INSULATION IS INDICATED AS A FILL MATERIAL BELOW CONCRETE SLABS, INSULATION SHALL CONFORM TO ASTM C-578 WITH MINIMUM COMPRESSIVE RESISTANCE OF 40 PSI AND MINIMUM DENSITY OF 1.8 PCF. INSULATION SHALL ALSO COMPLY WITH ADDITIONAL DIVISION 07 SPECIFICATION REQUIREMENTS WHERE IT IS INTENDED TO PERFORM AS AN INSULATION MATERIAL.

I. STEEL HEADED SHEAR REINFORCEMENT & STUD RAIL ASSEMBLIES SHALL CONFORM TO ASTM A1044.

SLAB-ON-GROUND

A. CONCRETE SLAB CONTROL JOINTS SHALL BE CUT INTO THE SLABS AT A DEPTH OF 1/3 TIMES THE THICKNESS OF THE SLAB FOR FIBER REINFORCED SLABS, 1/4 TIMES THE THICKNESS OF THE SLAB FOR ALL OTHER SLABS USING CONVENTIONAL WET-CUT SAW, AND 1/5 TIMES THE THICKNESS OF THE SLAB FOR ALL OTHER SLABS USING EARLY-ENTRY DRY-CUT SAW. SLAB SHALL BE SAWCUT WITHIN 4 HOURS OF CONCRETE PLACEMENT USING EARLY-ENTRY DRY-CUT SAW OR WITHIN 12 HOURS USING WET-CUT SAW. MAXIMUM SPACING OF INTERIOR SLAB CONTROL JOINTS, UNLESS NOTED OTHERWISE, SHALL BE PER THE TYPICAL CONTROL JOINT KEY PLAN, OR AS SHOWN ON THE CONSTRUCTION DRAWINGS.

B. SLAB CONSTRUCTION JOINTS SHALL BE USED IN PLACE OF CONTROL JOINTS WHERE NEEDED TO INTERRUPT A CONTINUOUS POUR.

C. PLACEMENT OF WELDED WIRE REINFORCEMENT IN SLAB, WHERE SPECIFIED, SHALL BE AT A CONSISTENT DEPTH OF 1 1/2" FROM T/SLAB. WELDED WIRE REINFORCEMENT SHALL BE PROPERLY CHAIRED ABOVE GRADE.

D. REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING DOCUMENTS FOR SLAB FINISHES, SLAB DEPRESSIONS, THICKENED SLABS (IN ADDITION TO THICKENED SLABS NOTED ON STRUCTURAL DRAWINGS), ELEVATIONS, AND ENCASED OR EMBEDDED ITEMS.

E. PLUMBING AND ELECTRICAL CONDUITS SHALL BE PLACED BELOW THE SLAB AND NOT WITHIN THE SLAB. VERTICAL PENETRATIONS ARE ALLOWED.

F. COLUMN BOX-OUTS SHALL BE USED TO ISOLATE AN ADEQUATE AREA AROUND COLUMN BASE PLATES TO PROVIDE FOR COLUMN PLACEMENT AND LEVELING. BOX-OUTS SHALL BE CLEAN AND FREE OF DEBRIS TO TOP OF FOOTING PRIOR TO FILLING WITH CONCRETE.

REINFORCING STEEL

A. REINFORCING STEEL AND ACCESSORIES WORK SHALL BE IN ACCORDANCE WITH DIVISION 03 SPECIFICATIONS.

B. REINFORCEMENT SHALL BE SPLICED ONLY AT LOCATIONS SHOWN OR NOTED IN THE STRUCTURAL DOCUMENTS, EXCEPT REINFORCEMENT MARKED "CONTINUOUS" CAN BE SPLICED AT LOCATIONS DETERMINED BY THE GENERAL CONTRACTOR. SPLICES AT OTHER LOCATIONS SHALL BE APPROVED IN WRITING BY THE STRUCTURAL ENGINEER OF RECORD.

C. LONGITUDINAL REINFORCING BARS IN FOOTINGS SHALL BE PLACED CONTINUOUS AT CORNERS AND INTERSECTIONS.

D. FOR EVERY VERTICAL OR HORIZONTAL BAR DISCONTINUED BY AN OPENING, ONE BAR (MIN. OF 2 BARS) SHALL BE ADDED AT SIDE OF OPENING (HALF TO EACH SIDE - TYPICAL).

E. PROVIDE DOWELS FROM FOUNDATIONS, THE SAME SIZE AND NUMBER AS THE VERTICAL WALL OR COLUMN REINFORCING, UNLESS NOTED OTHERWISE.

CLASS B TENSION LAP SPLICE LENGTHS (ACI 318)

F'c = 3000 PSI				
BAR SIZE	TOP BARS (SEE NOTE 3)		OTHER BARS	
	CASE 1	CASE 2	CASE 1	CASE 2
#3	28	42	21	32
#4	37	56	28	43
#5	46	69	36	53
#6	56	83	43	64
#7	81	131	62	93
#8	93	139	71	107
#9	104	157	80	120
#10	118	176	90	136
#11	131	196	100	151

F'c = 4000 PSI				
BAR SIZE	TOP BARS (SEE NOTE 3)		OTHER BARS	
	CASE 1	CASE 2	CASE 1	CASE 2
#3	24	36	18	28
#4	32	48	25	37
#5	40	60	31	46
#6	48	72	37	55
#7	70	105	54	81
#8	80	120	62	92
#9	90	136	70	104
#10	102	153	78	117
#11	113	170	87	130

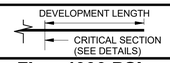
NOTES

1. TABULATED VALUES ARE BASED ON MINIMUM YIELD STRENGTH OF 60 KSI. LENGTHS ARE IN INCHES.
2. CASE 1 AND CASE 2 DEPEND ON THE TYPE OF STRUCTURAL MEMBER, CONCRETE COVER, AND BAR SPACING AND ARE DEFINED AS FOLLOWS:

BEAMS & COLUMNS	CASE 1	CLEAR SPACING ≥ 2.0 BAR DIA
	CASE 2	CLEAR SPACING < 2.0 BAR DIA
ALL OTHERS	CASE 1	CONCRETE COVER ≥ 1.0 BAR DIA AND CLEAR SPACING ≥ 2.0 BAR DIA
	CASE 2	CONCRETE COVER < 1.0 BAR DIA OR CLEAR SPACING < 2.0 BAR DIA

3. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12 INCHES OF FRESH CONCRETE PLACED BELOW THE DEVELOPMENT OR SPLICE.
4. REBAR IS ASSUMED TO BE UNCOATED (NO EPOXY COATING). INCREASE LAP SPLICE AND DEVELOPMENT LENGTHS SHOWN BY 1.3 FOR TOP, AND 1.5 FOR OTHER EPOXY COATED BARS.
5. FOR LIGHTWEIGHT CONCRETE, MULTIPLY TABULATED VALUES BY 1.3.
6. LAP SPLICE LENGTHS SHALL BE AS SHOWN IN THE TABLE ABOVE, UNLESS NOTED OTHERWISE.
7. WHERE BARS OF DIFFERENT SIZES ARE LAP SPLICED, THE LAP SPLICE LENGTH SHALL BE THE LARGER OF THE TENSION DEVELOPMENT LENGTH OF THE LARGER BAR AND THE TENSION LAP SPLICE LENGTH OF THE SMALLER BAR.

TENSION DEVELOPMENT LENGTHS (ACI 318)



F'c = 3000 PSI				
BAR SIZE	TOP BARS (SEE NOTE 3)		OTHER BARS	
	CASE 1	CASE 2	CASE 1	CASE 2
#3	21	32	16	25
#4	28	43	22	33
#5	36	53	27	41
#6	43	64	33	49
#7	62	93	48	72
#8	71	107	55	82
#9	80	120	62	93
#10	90	136	70	104
#11	100	151	77	116

F'c = 4000 PSI				
BAR SIZE	TOP BARS (SEE NOTE 3)		OTHER BARS	
	CASE 1	CASE 2	CASE 1	CASE 2
#3	18	28	14	21
#4	25	37	19	28
#5	31	46	24	36
#6	37	55	28	43
#7	54	81	42	62
#8	62	92	47	71
#9	70	104	54	80
#10	78	117	60	90
#11	87	130	67	100

CAST-IN-PLACE CONCRETE CLEAR COVER SCHEDULE

	CONCRETE COVER
CONCRETE CAST AGAINST AND PERMANENTLY IN CONTACT WITH GROUND	3 IN
CONCRETE IN CONTACT WITH GROUND OR WEATHER:	
#6 THROUGH #18 BARS	2 IN
#5 BAR, W31 OR D31 WIRE, AND SMALLER	1 1/2 IN
CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:	
SLABS, WALLS, JOISTS:	
#14 AND #18 BARS	1 1/2 IN
#11 BAR AND SMALLER	3/4 IN
BEAMS, COLUMNS:	
PRIMARY REINFORCEMENT, TIES, STIRRUPS, SPIRALS	1 1/2 IN

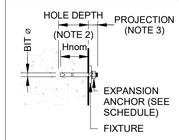
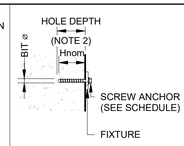
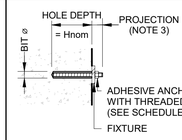
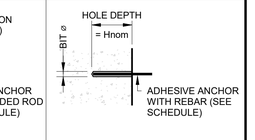
POST-INSTALLED ANCHORS - SPECIFIED PRODUCTS BY APPLICATION

	ANCHOR TYPE		CONCRETE
MECHANICAL	EXPANSION ANCHORS/ EXPANSION BOLTS		HILTI KWIK BOLT TZ2 SIMPSON STRONG-BOLT 2 DEWALT POWER-STUD+ SD2
MECHANICAL	SCREW ANCHORS		HILTI HUS-EZ SIMPSON TITEN HD DEWALT SCREW-BOLT+
MECHANICAL	LIGHT DUTY SCREW ANCHORS		HILTI KWIK-CON II+ SIMPSON TITEN 2 DEWALT ULTRACON+
ADHESIVE	ADHESIVE ANCHORS (EPOXY ANCHORS) WITH A36 ALL-THREAD ROD		HILTI HIT-HY200V3 OR RE500V3 SIMPSON SET-3G DEWALT PURE110+
ADHESIVE	ADHESIVE ANCHORS (EPOXY ANCHORS) WITH REBAR		HILTI HIT-HY200V3 OR RE500V3 SIMPSON SET-3G DEWALT PURE110+

ANCHOR PRODUCT NOTES:

1. POST-INSTALLED ANCHORS SHALL ONLY BE USED WHERE SPECIFIED ON THE CONSTRUCTION DOCUMENTS. THE GENERAL CONTRACTOR SHALL OBTAIN APPROVAL FROM THE STRUCTURAL ENGINEER OF RECORD PRIOR TO USING POST INSTALLED ANCHORS FOR MISSING OR MISPLACED CAST-IN-PLACE ANCHORS. CARE SHALL BE GIVEN TO AVOID CONFLICTS WITH EXISTING REINFORCING. HOLES SHALL BE DRILLED AND CLEANED PER THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS.
2. SUBSTITUTION REQUESTS, FOR PRODUCTS OTHER THAN THOSE SPECIFIED, SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER OF RECORD WITH CALCULATIONS THAT ARE PREPARED AND SEALED BY A REGISTERED DESIGN PROFESSIONAL IN THE STATE IN WHICH THE PROJECT IS LOCATED SHOWING THAT THE SUBSTITUTED PRODUCT WILL ACHIEVE AN EQUIVALENT CAPACITY USING THE APPROPRIATE DESIGN PROCEDURE REQUIRED BY THE REFERENCED BUILDING CODE.
3. ALTERNATE PRODUCTS SUBMITTED TO THE STRUCTURAL ENGINEER OF RECORD FOR APPROVAL SHALL HAVE A VALID RESEARCH REPORT, ALSO KNOWN AS EVALUATION REPORT, INDICATING COMPLIANCE WITH APPROPRIATE ACCEPTANCE CRITERIA REQUIRED BY THE BUILDING CODE FOR THE INTENDED LOAD TYPE AND USE (E.G. WIND, SEISMIC, SUSTAINED TENSION, ETC). RESEARCH REPORTS SHALL BE ISSUED BY A SOURCE APPROVED BY THE AUTHORITY HAVING JURISDICTION.

POST-INSTALLED ANCHORS - INSTALLATION REQUIREMENTS

	MECHANICAL ANCHORS		ADHESIVE ANCHORS	
				
	HOLE DEPTH (NOTE 2) Hnom; PROJECTION (NOTE 3); BIT ⌀; EXPANSION ANCHOR (SEE SCHEDULE); FIXTURE	HOLE DEPTH (NOTE 2) Hnom; BIT ⌀; SCREW ANCHOR (SEE SCHEDULE); FIXTURE	HOLE DEPTH = Hnom; PROJECTION (NOTE 3); BIT ⌀; ADHESIVE ANCHOR WITH THREADED ROD (SEE SCHEDULE); FIXTURE	HOLE DEPTH = Hnom; BIT ⌀; ADHESIVE ANCHOR WITH REBAR (SEE SCHEDULE)
BIT ⌀	PER MFR	PER MFR	PER MFR	PER MFR
FIXTURE HOLE ⌀ (UNO)	AISC STD	ANCHOR ⌀ + 3/16"	AISC STD	N/A

ANCHOR INSTALLATION NOTES:

1. SPECIAL INSPECTIONS SHALL BE PERFORMED FOR POST-INSTALLED ANCHORS IN ACCORDANCE WITH THE ANCHOR MPII AND/OR EVALUATION REPORT, UNLESS MORE SPECIFIC REQUIREMENTS ARE SPECIFIED IN THE CONSTRUCTION DOCUMENTS.
2. POST-INSTALLED ANCHORS ARE SPECIFIED BY THE NOMINAL EMBEDMENT (Hnom) INDICATED IN MANUFACTURER'S LITERATURE. INCREASE THE HOLE DEPTH AS REQUIRED BY THE MANUFACTURER PRINTED INSTALLATION INSTRUCTIONS FOR THE SPECIFIED ANCHOR SIZE AND EMBEDMENT.
3. TOTAL ANCHOR LENGTH SHALL BE COORDINATED TO PROVIDE ADEQUATE PROJECTION LENGTH FOR FIXTURE THICKNESS, WASHER(S) AS REQUIRED, AND FULL ENGAGEMENT OF NUT.
4. COORDINATE OTHER REQUIREMENTS WITH MANUFACTURER PRINTED INSTALLATION INSTRUCTIONS INCLUDING, BUT NOT LIMITED TO, TEMPERATURE, HOLE DRILLING/CLEANING/PREPARATION, & INSTALLATION TORQUE.

5. ADDITIONAL NOTES FOR ADHESIVE ANCHORS

A. ADHESIVE ANCHOR DESIGN TEMPERATURE RANGE IS 110°F (LONG TERM) AND 130°F (SHORT TERM).

B. IN ADDITION TO THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS, THE FOLLOWING GUIDELINES SHALL BE FOLLOWED FOR INSTALLATION OF ADHESIVE ANCHORS:

a. ADHESIVE ANCHORS SHALL BE INSTALLED IN CONCRETE HAVING A MINIMUM AGE OF 21 DAYS AT TIME OF ANCHOR INSTALLATION.
b. ADHESIVE ANCHORS SHALL BE INSTALLED IN DRY CONCRETE, AND DURING DRY CONDITIONS.
c. ADHESIVE ANCHORS SHALL BE INSTALLED IN HOLES PREDRILLED WITH A CARBIDE TIPPED DRILL BIT.
d. ADHESIVE ANCHORS SHALL BE INSTALLED WITHIN THE TEMPERATURE RANGE SPECIFIED IN THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS, BUT NOT OUTSIDE OF THE DESIGN TEMPERATURE RANGE.
e. LOADS SHALL NOT BE APPLIED TO ADHESIVE ANCHORS UNTIL THE FULL CURING TIME ASSOCIATED WITH THE INSTALLATION TEMPERATURE HAS ELAPSED.

C. INSTALLATION OF ADHESIVE ANCHORS SHALL BE PERFORMED BY CERTIFIED PERSONNEL. CERTIFICATION SHALL INCLUDE WRITTEN AND PERFORMANCE TESTS IN ACCORDANCE WITH THE ACI/CRSI ADHESIVE ANCHOR INSTALLER CERTIFICATION PROGRAM, OR EQUIVALENT.

D. WHEN ANCHORING TO CONCRETE MASONRY WITH VOIDS, THE APPROPRIATE SCREEN TUBE SHALL BE USED AS RECOMMENDED BY THE ADHESIVE MANUFACTURER.

CONCRETE MIXTURES

APPLICATION	EXPOSURE	F'c (AT 28-DAYS UNO)	MAXIMUM W/C	MAXIMUM (CI-) CONTENT	AIR CONTENT	NOMINAL MAXIMUM AGGREGATE SIZE (NOTE 3)	MAXIMUM CONCRETE WEIGHT
FOOTINGS	F0 S0 W0 C0	3000 PSI	SEE NOTE 1	1	SEE NOTE 2	1"	150 PCF
INTERIOR SLAB-ON-GRADE	F0 S0 W0 C0	3000 PSI	SEE NOTE 1	1	SEE NOTE 2	1"	150 PCF
NORMAL WEIGHT ELEVATED SLAB ON STEEL DECK	F0 S0 W0 C0	4000 PSI	SEE NOTE 1	1	3% MAX	3/4"	150 PCF

NOTES:

1. WHERE NO MAXIMUM WATER CEMENT RATIO IS NOTED FOR DURABILITY, PROPORTIONING OF WATER/CEMENT RATIO SHALL BE AS REQUIRED FOR SPECIFIED CONCRETE MIX DESIGN.
2. WHERE AIR ENTRAINMENT IS NOT REQUIRED BY DESIGN, THE CONTRACTOR, INSTALLER, AND SUPPLIER MAY CHOOSE TO INCLUDE AIR ENTRAINMENT TO IMPROVE PLACEMENT AND FINISHING CHARACTERISTICS. AIR ENTRAINMENT IS NOT PERMITTED IN NORMAL WEIGHT CONCRETE TO RECEIVE A HARD TROWEL FINISH AND ENTRAPPED AIR SHALL NOT EXCEED 3%. SLABS SHALL BE PROPERLY FINISHED TO AVOID SURFACE IMPERFECTIONS, SUCH AS BLISTERING OR DELAMINATION.
3. COARSE AGGREGATE SHALL BE ASTM C 33, GRADED. SELECT GRADING CLASS PER TYPE OF CONSTRUCTION OR LOCATION USED, AND IN RELATION TO SPECIFIC WEATHERING REGION. AGGREGATE SHALL BE FROM A SINGLE SOURCE. #67 GRADING SHALL BE USED FOR CONCRETE WITH 3/4 INCH MAXIMUM; #57 GRADING SHALL BE USED FOR CONCRETE WITH 1 INCH MAXIMUM.
4. FINE AGGREGATE FOR INTERIOR SLAB-ON-GRADE SHALL CONSIST OF A MINIMUM 70% NATURAL SAND.
5. COMPLY WITH ACI 318-19 TABLE 19.3.2.1 FOR CEMENTITIOUS MATERIAL TYPES FOR SULFATE RESISTANCE.

BROWN AND CALDWELL
900 HAMMOND DRIVE, SUITE 500
ATLANTA, GA 30328

wendel

THIS DRAWING IS NOT VALID FOR CONSTRUCTION PURPOSES UNLESS IT BEARS THE SEAL AND SIGNATURE OF A DULY REGISTERED PROFESSIONAL

CONSTRUCTION DOCUMENTS

NCWSA NEWTON COUNTY WATER & SEWERAGE AUTHORITY

NCWSA OFFICE ADDITION

REVISIONS

REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

DESIGNED: Designer
DRAWN: Author
CHECKED: Checker
CHECKED:
APPROVED: Approver

FILENAME

BC PROJECT NUMBER 616202
CLIENT PROJECT NUMBER

CONCRETE GENERAL NOTES & SCHEDULES

DRAWING NUMBER
S003

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