G E N E R A L N O T E S

3350 EXPOSED SLAB ON GRADE

EARTH SUBGRADE
GC TO FINE GRADING THE SUBGRADE UNIFORMLY FLAT USING A LASER DEVICE.

PROVIDE A MEMBRANE RATED CLASS "A" ACCORDING TO ASTM E1745 – 09 STANDARD SPECIFICATION FOR WATER VAPOR RETARDERS USED IN CONTACT WITH SOLID OR GRANULAR FILL UNDER CONCRETE SLABS THAT HAS THE FOLLOWING PROPERTIES:
- PERMEANCE: NOT MORE THAN 0.1 PERMS (GRAINS/SQ FT/HR/IN–HG) AFTER CONDITIONING TESTING ACCORDING TO SECTION 7.1 OF ASTM E154 – 08A STANDARD TEST METHODS FOR WATER VAPOR RETARDERS USED IN CONTACT WITH EARTH UNDER CONCRETE SLABS, ON WALLS, OR AS GROUND COVER.
- THICKNESS: 15 MILS.
- TENSILE STRENGTH: NOT LESS THAN 45 LBF/IN.
- PUNCTURE RESISTANCE: 2200 GRAMS.

INSTALLATION OF THE VAPOR BARRIER SHOULD COMPLY WITH ASTM E1643 – 09 STANDARD PRACTICE FOR SELECTION, DESIGN, INSTALLATION, AND INSPECTION OF WATER VAPOR RETARDERS USED IN CONTACT WITH EARTH OR GRANULAR FILL UNDER CONCRETE SLABS.

CONCRETE MIX DESIGN
IN ADDITION TO SECTION 3300 THE FOLLOWING MUST BE FOLLOWED:
- EACH MIX INGREDIENT SHOULD BE FROM THE SAME SOURCE, FROM THE SAME RESPECTIVE BATCH, AND EACH
  DELIVERED TO THE CONCRETE PRODUCER IN ONE DELIVERY.
- TYPE I PORTLAND CEMENT ACCORDING TO ASTM C150 – 09 STANDARD SPECIFICATION FOR PORTLAND CEMENT.
- A WATER–TO–CEMENT (W/C) RATIO OF 0.45.
- UNIFORMLY GRADED MIX OF NOT LESS THAN 3 AGGREGATE SIZES – FINE, INTERMEDIATE, AND LARGE – SHALL BE USED.
- THE MIX SHOULD NOT BE AIR ENTRAINED.
- INCLUSION OF ADMIXTURES, PLASTICIZERS, SLAG, FLY ASH, OR OTHER PRODUCTS REPLACING PORTIONS OF THE PORTLAND CEMENT IN THE CONCRETE MIX IS NOT RECOMMENDED. IF ANY OF THESE ARE USED, THE TOTAL VOLUME SHOULD NOT EXCEED 20 PERCENT OF THE PORTLAND CEMENT VOLUME.
- ADMIXTURES SHOULD NOT BE CALCIUM CHLORIDE BASED.
- IF AN INTEGRAL COLOR IS INCLUDED IN THE CONCRETE MIX, THE MINIMUM BATCH SIZE SHOULD BE 3 CUBIC YARDS.
- DURING BATCHING, THE INCOMING MATERIAL CONSISTENCY SHOULD BE MONITORED AND CONTROLLED.
- THE COMPRESSIVE STRENGTH SHOULD NOT BE LESS THAN 3,500 PSI.

PLACING CONCRETE

- WATER ADDED BY THE TRANSIT MIXER DRIVER SHOULD BE MONITORED AND CONTROLLED.
- DURING MIXING, TRANSPORTING, AND PLACING THE CONCRETE MIX, MONITOR AND CONTROL THE TEMPERATURE TO NOT MORE THAN 85 DEGREES F.
- THE SLUMP AT THE POINT OF DISCHARGE SHOULD BE 5 INCHES, PLUS OR MINUS $\frac{1}{2}$" .

FINISHING CONCRETE.

* AFTER PLACEMENT OF THE CONCRETE MIX, STRIKE OFF THE SURFACE USING A LASER SCREED, THEN BULL FLOAT AT 90 DEGREES TO THE SCREED PULL DIRECTION, VIB AND CONSOLIDATE, AND LEVEL TO SPECIFIED ELEVATION. A 10 FOOT CHECK ROD IS RECOMMENDED.
- WHEN PLACING CONCRETE MIX AT EDGES, USE A 36 INCH LONG METAL OR WOOD EDGED SCREED AND RUN PARALLEL WITH THE FORMWORK OR EDGE AFTER THE INITIAL SCREEDING AND BEFORE FLOATING. HAND FLOATING SHOULD BE PARALLEL TO THE EDGE AND PERFORMED IN 24 INCH INCREMENTS TO AVOID LIFTING OR DEPRESSING THE SURFACE. AVOID PULLING EXCESSIVE AMOUNTS OF THE CONCRETE MIX TO THE EDGES BY EITHER NOT USING HAND TOOLS MORE THAN 24 INCHES FROM THE EDGE, OR FLOATING IN A FAN DIRECTION.
- WHEN LITTLE OR NO BLEED WATER IS PRESENT AND CONCRETE MIX HAS SUFFICIENTLY HARDENED TO SUPPORT FINISHING EQUIPMENT WITHOUT CAUSING IMPERFECTIONS IN THE SURFACE, BEGIN MACHINE FLOATING USING PANS AND MAKE TWO PASSES.
- TO IMPROVE THE POSSIBILITY OF ACHIEVING THE SPECIFIED FLATNESS/LEVELNESS REQUIREMENTS, CHECK AND RE–STRAIGHTEN IF NECESSARY USING A 10 FOOT OR LONGER HIGHWAY STRAIGHT EDGE OR BUMP CUTTER.
- WHEN MACHINE FLOATING EDGES, USE PANS AND OVERRUN THE FORMED EDGE BY 5 INCHES. FOR BOTH WALK–BEHIND AND RIDING EQUIPMENT, MAKE THE FIRST PASS ALONG THE EDGE WITH THE LEFT SIDE, OR CUTTING SIDE, OF THE EQUIPMENT TO PULL DOWN HIGH SPOTS OF THE SURFACE. MAKE A SECOND PASS ALONG THE EDGE WITH THE RIGHT SIDE, OR FILLING SIDE, OF THE EQUIPMENT TO FILL LOW SPOTS IN THE SURFACE.
- STEEL TROWEL THE SURFACE IN THREE PASSES WITHOUT BURNING THE SURFACE OR BURNING THE AGGREGATE (PLASTIC TROWEL BLADES WILL PREVENT BURNING THE AGGREGATE).
- LIGHTLY HAND OR MACHINE TOOL EDGES CONSTRUCTION JOINTS AND EXERCISE CARE THAT EDGES ARE NOT DEPRESSED OR CHATTERED ALONG BULKHEADS, FORMED EDGES, COLUMNS, AND PIPE PENETRATIONS.
- DO NOT DUST THE FINISHED SURFACE WITH DRY PORTLAND CEMENT OR SAND TO ACCELERATE CURING AND DRYING.

CONCRETE CURING AND DRYING

EVAPORATION CONTROL AND WET CURING CONCRETE SLABS ACCORDING TO ACI 308R–01: GUIDE TO CURING CONCRETE (REAPPROVED 2008) WITHOUT THE USE OF TOPICALLY APPLIED CURING COMPOUNDS. WHILE TOPICALLY APPLIED CURING COMPOUNDS MAY ASSIST WITH CURING DURING THE FIRST FEW DAYS AFTER CONCRETE PLACEMENT, THEY RETARD CONCRETE DRYING IN THE WEEKS AND MONTHS AFTER CURING AND MAY CAUSE THE SLAB TO BE TOO WET WHEN THE TIME COMES FOR DIAMOND POLISHING OR FLOOR COVERING APPLICATION.
DENSIFIERS AND HARDENERS SHOULD NOT BE APPLIED TO CONCRETE.

FLOOR FLATNESS/LEVELNESS CRITERIA

	SPECIFIED OVERALL VALUE	MINIMUM LOCAL VALUE
FF FLOOR FLATNESS	50	35
FL FLOOR LEVELNESS	30	20

THE FLOOR FLATNESS AND LEVELNESS SHOULD BE TESTED WITHIN 8 HOURS AFTER COMPLETION OF THE FINAL TROWELING OPERATION ACCORDING TO ASTM E1155 – 96(2008) STANDARD TEST METHOD FOR DETERMINING FF FLOOR FLATNESS AND FL FLOOR LEVELNESS NUMBERS BY AN INDEPENDENT TESTING AGENCY EXPERIENCED WITH THE TESTING PROCEDURE AND POSSESSING THE NECESSARY EQUIPMENT.

CONTRACTION JOINTS

JOINTS BY SAW–CUTTING SLABS AS SOON AS POSSIBLE (WITHIN 24 HRS.) AFTER FINISHING USING A SAW BLADE THAT HAS A TRIANGULAR ARBOR CONFIGURATION TO REDUCE EDGE RAVELING OR DISLODGING AGGREGATES AT THE FOLLOWING SPACING TO MINIMIZE SLAB CURLING AND CRACKING. THE JOINT PATTERN SHALL BE SQUARE, OR RECTANGULAR WITH ASPECT RATIO NOT MORE THAN 2:1 AND LIMITED TO AN AREA NOT EXCEEDING 220 SQ. FEET.

03200 CONCRETE REINFORCEMENT:

WORK SHALL BE IN ACCORD WITH ACI 301–16, SP–66(94), ACI 318–19, CRSI "MANUAL OF STANDARD PRACTICE" 2001, CRSI "PLACING REINFORCING BARS" 2005, WWR–500 "MANUAL OF STANDARD PRACTICE", 2006. BARS SHALL CONFORM TO ASTM SPECIFICATION A615(S1), GRADE 60. EXCEPT (1) THE MAXIMUM YIELD STRENGTH SHALL BE 78,000 PSI AND (2) THE TENSILE SHALL NOT BE LESS THAN 1.25 THE ACTUAL YIELD STRENGTH. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185. WELDED BAR MATS SHALL CONFORM TO ASTM A497. SEE TYPICAL DETAILS FOR SPLICE REQUIREMENTS. WELDING SHALL BE IN ACCORD WITH AWS D1.4–92 AND PERFORMED ONLY UNDER DIRECT SUPERVISION OF OWNER'S REPRESENTATIVE.

SLEEVE ALL PIPES THRU SLAB INDIVIDUALLY, UNLESS APPROVED BY GFCE. WHERE PIPES OR DUCTS PENETRATE SLABS, A MAXIMUM OF TWO BARS EACH WAY MAY BE CUT, PROVIDED THEY ARE REPLACED BY SPLICE BARS ALONGSIDE OF OPENING WITH AN EQUIVALENT AREA TO THE CUT BARS, AND EXTENDING AT LEAST A 48 BARS DIAMETER LAP. PLACE ALL OPENINGS LARGER THAN 6" NOT SHOWN ON STRUCTURAL DRAWINGS AND ALL CONDUITS IN SLABS IN ACCORDANCE WITH ACI– 318–08 CHAPTER 6.3 AND SUBMIT SHOP DRAWING SHOWING SIZE AND LOCATION FOR SEOR'S REVIEW. PROVIDE MINIMUM OF 1#5 x 6' EACH WAY PLACED DIAGONALLY AT MID–DEPTH OF SLAB AROUND ALL OPENINGS LARGER THAN 12", U.N.O ON DRAWINGS. PROVIDE CONSTRUCTION JOINTS IN ACCORDANCE WITH ACI 318–19 AND SUBMIT SHOP DRAWING SHOWING LOCATIONS AND SEQUENCE AND DIRECTION OF POUR FOR REVIEW. PROVIDE KEYWAYS AND DOWELS AS SHOWN ON DETAILS IN ALL CONSTRUCTION JOINTS.

USE ACI 318-19 FOR MODIFICATION FACTORS FOR DIFFERENT CONDITIONS TO THOSE BELOW			
STRAIGHT DEVELOPMENT		**HOOK** DEVELOPMENT	
EPOXY FACTOR	1	LIGHTWEIGHT FACTOR	1
CONFINING REINF. FACTOR	1	EPOXY FACTOR	1
REINFORCEMENT GRADE FACTOR	1	CONFINING REINF. FACTOR	1.6
SIZE FACTOR	1	LOCATION FACTOR	1.25
CASTING POSITION FACTOR	1	CONCRETE STRENGTH FACTOR	CHANGE SW f'c
As,req/As,actual	1	Fy	60 KSI

DIAM (in)	3000 PSI	DEVELOPMENT (in)		LAP SPLICE (in)		90 DEGREE HOOK (in)		
		TENSION	COMPRESSION	CLASS B	COMPRESSION	EMBEDMENT	LEG LENGTH	BEND DIAM.
0.375	#3	25	9	32	12	8	6	2.25
0.5	#4	33	11	43	15	12	8	3
0.625	#5	42	14	54	19	16	10	3.75
0.75	#6	50	17	65	23	21	12	4.5
0.875	#7	72	20	94	27	27	14	5.25
1	#8	83	22	107	30	32	15	6
1.125	#9	93	25	121	34	39	17	6.75

DIAM (in)	4000 PSI	DEVELOPMENT (in)		LAP SPLICE (in)		90 DEGREE HOOK (in)		
		TENSION	COMPRESSION	CLASS B	COMPRESSION	EMBEDMENT	LEG LENGTH	BEND DIAM.
0.375	#3	22	8	28	12	7	6	2.25
0.5	#4	29	10	38	15	11	8	3
0.625	#5	36	12	47	19	15	10	3.75
0.75	#6	43	15	56	23	20	12	4.5
0.875	#7	63	17	81	27	25	14	5.25
1	#8	72	19	93	30	30	15	6
1.125	#9	81	22	105	34	36	17	6.75

DIAM (in)	5000 PSI	DEVELOPMENT (in)		LAP SPLICE (in)		90 DEGREE HOOK (in)		
		TENSION	COMPRESSION	CLASS B	COMPRESSION	EMBEDMENT	LEG LENGTH	BEND DIAM.
0.375	#3	20	8	25	12	7	6	2.25
0.5	#4	26	9	34	15	11	8	3
0.625	#5	32	12	42	19	15	9	3.75
0.75	#6	39	14	50	23	19	11	4.5
0.875	#7	56	16	73	27	24	13	5.25
1	#8	64	18	83	30	29	15	6
1.125	#9	72	21	94	34	35	17	6.75

NOTES:

1. BAR SPLICES NOTED ARE FOR A BAR SPACING OF 4 BAR DIAMETERS OR GREATER.
2. MECHANICAL SPLICES SHALL BE USED WHEN REINFORCING EXCEEDS 4%.
3. ALL HORIZONTAL BARS IN BEAMS, WALLS AND FOUNDATION WALLS SHALL BE BENT AT LEAST 2' 0" BEYOND CORNERS U.N.O..
4. DOWELS SHALL BE SAME SIZE AND NUMBER AS WALL OR COLUMN VERTICAL REINFORCEMENT EMBEDDED AT LEAST 36 ø INTO FOOTING PLUS STANDARD HOOK AND SPLICED PER CHARTS ABOVE (U.N.O.).
5. ALL REINFORCING REBARS MUST BE ACCURATELY PLACED, RIGIDLY SUPPORTED AND FIRMLY TIED IN PLACE WITH SUPPORT BARS AND SPACERS IN ACCORDANCE WITH THE REQUIREMENTS OF CRSI AND ACI. LAP BOTTOM STEEL OVER SUPPORTS AND TOP STEEL AT MIDSPAN UNLESS OTHERWISE SPECIFIED. HOOK DISCONTINUOUS ENDS OF ALL TOP BARS AND ALL BARS IN WALLS. UNLESS OTHERWISE NOTED.
6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR IN CAST IN PLACE CONCRETE.

	MINIMUM COVER, IN.
A) CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3
B) CONCRETE EXPOSED TO WEATHER:	
NO.6 THROUGH NO. 18 BARS	2
NO.6, W31 OR D31 WIRE, AND SMALLER	1 1/2
C) CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:	
SLABS, WALLS, AND JOISTS:	
NO. 14 AND NO.18 BARS	1 1/2
NO. 11 AND SMALLER	3/4
BEAMS, COLUMNS: PRIMARY REINFORCEMENT, TIES, STIRRUPS, SPIRALS	1 1/2

7. CONTRACTOR SHALL INCLUDE IN BID 2% OF TOTAL REINFORCING STEEL WEIGHT OF ADDITIONAL REINFORCING STEEL TO BE PLACED AND LOCATED AT THE ENGINEER'S DISCRETION DURING CONSTRUCTION.

03600 GROUT:

GROUTING IS CLASSIFIED AS "PRECISION GROUTING" FOR SUPPORT OF OPERATING MACHINE BASES, EQUIPMENT SUBJECT TO THERMAL MOVEMENT, AND BASE PLATES, BEARING PLATES, AND EXPANSION BEARINGS EXCEEDING 8" IN LEAST DIMENSION. ALL OTHER GROUTING MAY BE "ORDINARY GROUTING". METALLIC AGGREGATE GROUT MAY BE USED ONLY IN INTERIOR APPLICATIONS NOT EXPOSED TO VIEW IN FINISHED BUILDING AREAS. USE ORDINARY CEMENT GROUT ONLY WHERE SPECIFICALLY NOTED AS "CEMENT GROUT" ON DETAILS. USE NON–SHRINK GROUT FOR ALL OTHER LOCATIONS. PRECISION GROUT SHALL CONFORM TO CRD–C621–80 WHEN MIXED TO FLUID CONSISTENCY OF 22 TO 25 SECONDS (FLOW CONE METHOD, CRD–C611–80). REQUIRED 28 DAY STRENGTHS SHALL BE AS FOLLOWS:

CEMENT GROUT _ _ _ _ _ _ _ _ _ 1800 PSI
NON–SHRINK GROUT _ _ _ _ _ _ _ _ 5000 PSI
PRECISION GROUT _ _ _ _ _ _ _ _ 6500 PSI

03300 CAST–IN–PLACE CONCRETE:

TO BE MIXED AND PLACED IN ACCORDANCE WITH ACI 301–05, ACI 318, AND FBC .
ALL REINFORCED CONCRETE TO HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTHS AS FOLLOWS:

ALL STRUCTURAL ELEMENTS F'C = 4000 PSI UNLESS NOTED OTHERWISE
SLAB ON GRADE: = 3000 PSI
FOUNDATIONS: = 4000 PSI

ALL REINFORCING STEEL SHALL BE ACCURATELY PLACED AND SUPPORTED BY GALVANIZED METAL OR PLASTIC CHAIRS, SPACERS OR HANGERS. PROVIDE THE FOLLOWING MINIMUM CLEAR CONCRETE COVERAGE:

USE REGULAR WEIGHT CONCRETE FOR ALL STRUCTURAL MEMBERS. DO NOT USE CALCIUM CHLORIDE IN ANY CONCRETE. UNLESS OTHERWISE SPECIFIED ON DOCUMENTS PROVIDE A 4" SLUMP WITH A TOLERANCE OF 1". FOR WALLS AND MEMBERS WITH 8" OR LESS IN THICKNESS, A 5" SLUMP .+/_ 1" SHALL BE PROVIDED. NO CONCRETE TEST WILL BE ACCEPTED IF CONCRETE IS TAMPERED WITH IN ANY WAY AFTER SAID TEST IS PERFORMED. REPEAT TEST IF WATER IS ADDED AFTER INITIAL SAMPLING. IF CONCRETE IS PUMPED, SLUMP MAY BE INCREASED TO 6" AT THE TRUCK, PROVIDED THE SLUMP SPECIFIED ABOVE IS MAINTAINED AT THE DISCHARGE END. USE A MINIMUM 4 INCH PUMP. TAKE CONCRETE SAMPLES FOR SLUMP AT THE TRUCK AND AT THE DISCHARGE END FOR CYLINDER TESTING.

SLABS–ON–GRADE HAVE BEEN DESIGNED IN ACCORDANCE WITH THE DESIGN OF SLABS ON GRADE" ACI 360. FLOOR SLABS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE "GUIDE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION", ACI 302.1, "CONCRETE FLOORS ON GROUND", PORTLAND CEMENT ASSOCIATION, & ACI 318.

CEMENT SHALL CONFORM TO ASTM C150, TYPE II. AGGREGATE PER ASTM C33. LIGHTWEIGHT AGGREGATE PER ASTM C330. DO NOT TAMP SLABS (USE ROLLER BUG, VIBRATING SCREED OR BULL FLOAT ONLY). PROVIDE AIR–ENTRAINING ADMIXTURE AT ALL EXPOSED CONCRETE AT A RATE ADEQUATE TO PROVIDE 5.0% AIR AT POINT OF PLACEMENT, TESTED IN ACCORDANCE WITH ASTM C233.

CONCRETE CONTAINING SUPERPLASTICIZING ADMIXTURE SHALL HAVE FIELD–VERIFIED 3" MAXIMUM SLUMP PRIOR TO ADDING ADMIXTURE AND 8" MAXIMUM SLUMP AT PLACEMENT. MIX DESIGNS SHALL BE DESIGNED BY THE CONCRETE PRODUCTION FACILITY IN ACCORDANCE WITH ACI 301 AND APPROVED BY THE STRUCTURAL ENGINEER PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONSIDER THE USE OF SUPERPLASTICIZER WHERE CONGESTION OF REBAR IS LIKELY TO CAUSE ROCK POCKETS OR VOIDS. THE CEMENT FOR THE MIX SHALL BE TYPE II. THE RATE OF PLACING SUCH CONCRETE SHALL BE REDUCED OR THE FORM STRENGTH SHALL BE INCREASED TO SAFELY RESIST INCREASED PRESSURE AGAINST THE FORMS. DO NOT USE WITH COLORED CONCRETE.

FIBER MESH REINFORCEMENT IN SLABS ON GRADE (IF USED) SHALL CONFORM TO ASTM C 1116, TYPE III, SYNTHETIC FIBERS OF 100 PERCENT VIRGIN POLYPROPYLENE FIBRILLATED FIBERS CONTAINING NO REPROCESSED OLEFIN MATERIALS; 70 KSI. PROVIDE MINIMUM OF 1.5 POUNDS OF FIBERS PER CUBIC YARD OF CONCRETE USED.

NO CONSTRUCTION JOINTS OTHER THAN THOSE SHOWN ON THE DRAWINGS SHALL BE INSTALLED WITHOUT APPROVAL OF THE ENGINEER. PROVIDE 3/4" CHAMFER AT ALL CORNERS, U.N.O.

CONCRETE SHALL NOT BE DROPPED MORE THAN FIVE FEET VERTICALLY WITHOUT USE OF TREMIES.

CONCRETE FOOTINGS AND PADS MAY BE POURED AGAINST NEAT EXCAVATIONS PROVIDED THE REQUIRED CONCRETE COVERAGE FOR REINFORCING IS MAINTAINED. CONCRETE WALLS AND COLUMNS SHALL BE DOWELED FROM SUPPORTS WITH BARS OF THE SAME SIZE AND SPACING. SEE "REINFORCING STEEL" FOR LAP REQUIREMENTS.

OPENINGS, POCKETS, BLOCKOUTS, ETC. SHALL NOT BE PLACED IN CONCRETE SLABS, DECKS, BEAMS, JOISTS, COLUMNS, WALLS ETC. UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS. NOTIFY THE STRUCTURAL ENGINEER WHEN DRAWINGS PREPARED BY OTHERS SHOW OPENINGS, POCKETS, BLOCKOUTS, ETC. THAT ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS. DO NOT PROCEED UNTIL DIRECTED BY THE ENGINEER IN WRITING.

PROVIDE 1/2" PREFORMED JOINT FILLER WHERE EXTERIOR SLABS ABUT VERTICAL SURFACES, TYPICAL U.N.O. COORDINATE WITH ARCHITECT.

MECHANICALLY VIBRATE ALL CONCRETE WHEN PLACED, EXCEPT THAT SLABS ON GRADE NEED BE VIBRATED ONLY AROUND EMBEDDED ITEMS AND UNDERFLOOR DUCTS, ETC. CAST CLOSURE POUR AROUND COLUMNS AFTER COLUMN DEAD LOAD IS APPLIED.

CONCRETE WHICH HAS CONTAINED WATER FOR MORE THAN 90 MINUTES (60 MINUTES IF AIR TEMPERATURE EXCEEDS 85°) SHALL NOT BE USED. RETEMPERING OF CONCRETE AFTER INITIAL SET HAS OCCURRED IS NOT PERMITTED.

CURE EXPOSED CONCRETE FOR A MINIMUM OF 7 DAYS IN ACCORDANCE WITH ACI 308, ACI 360 AND ACI 302.1 PROCEDURES IN ORDER TO PREVENT SHRINKAGE CRACKING. CURE WITH CURING AND SEALING COMPOUND, MOIST CURING, MOISTURE–RETAINING COVER CURING, OR COMBINATIONS THEREOF. IF CURING COMPOUND IS USED, APPLY AT A RATE SPECIFIED BY THE MANUFACTURER, BUT NOT LESS THAN I GALLON PER 200 SQUARE FEET OF SURFACE AREA.

CONCRETE COMPRESSIVE STRENGTH AND SLUMP SHALL BE TESTED PER ASTM C31, C39 AND C172 AND IN ACCORDANCE WITH IBC SECTION 1905. FOR EACH CLASS OF CONCRETE USED PROVIDE 4 CYLINDERS PER TEST FOR EACH DAY'S CONCRETE PLACEMENT NOR LESS THAN ONE TEST FOR EACH 50 CUBIC YARDS OF CONCRETE, NOR LESS THAN ONCE FOR EACH 5,000 SQUARE FEET OF SURFACE AREA FOR SLABS OR WALLS (NOTE: ALL CONCRETE EXCEPT CURBS AND SIDEWALKS SHALL BE TESTED). TEST ONE CYLINDER AT 7 DAYS AND TWO AT 28 DAYS, WITH ONE HELD. TESTING SHALL BE DONE BY A QUALIFIED TESTING LABORATORY.

ALL HOT WEATHER CONCRETING SHALL MEET THE REQUIREMENTS OF ACI 305; AND ACI 306 FOR COLD WEATHER CONCRETING.

AT MOISTURE SENSITIVE FLOORINGS, TO HELP RESIST BELOW–SLAB MOISTURE ENTERING THE SLAB, THE CONCRETE MIX SHALL HAVE A MAXIMUM 0.45 WATER TO CEMENT RATIO AND SHALL INCLUDE A WATER–REPELLENT ADMIXTURE (SUCH AS RHEOMIX 235 BY MASTER BUILDERS, DARAPEL BY GRACE PRODUCTS OR EQUIVALENT; WITH DOSAGE PER MANUFACTURER). DISCLAIMER: THE STRUCTURAL ENGINEER IS NOT AN EXPERT IN THE FIELD OF MOISTURE RETARDENT SLABS AND SYSTEMS THAT RELATE TO PREVENTING BELOW–SLAB MOISTURE PENETRATING THE SLAB AND IS THEREBY NOT RESPONSIBLE FOR ANY POSSIBLE MOISTURE THAT MAY PENETRATE THE SLAB (THE STRUCTURAL ENGINEER DOES NOT GUARANTEE THE WATER REPELLING ADMIXTURE WILL PREVENT ALL OR ANY BELOW–SLAB MOISTURE FROM ENTERING THE SLAB.

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CASA AT 63RD AVENUE

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GENERAL NOTES

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