

GENERAL NOTES

00200 BUILDING CODES:

THE GOVERNING CODES FOR THIS PROJECT ARE:

–2020 FLORIDA BUILDING CODE, 7TH EDITION.
–ASCE 7-16
–ACI 318-14 / –ACI 530-16 / –ACI 530.1-13
–AISC 9th EDITION
–ANSI B18.6.1-81(2016)
–ANSI/AWC NDS-2018
–AWS E2.1-2014 / AWS D1.1-2020
–TMS 402-2022 / TMS 602-2022
–WRI/CRSI-81

TO THE BEST OF MY KNOWLEDGE, THE STRUCTURAL PLANS, AND SPECIFICATIONS COMPLY WITH THE APPLICABLE REQUIREMENTS OF THE GOVERNING CODES.

00500 STRUCTURAL LOADING:

THE STRUCTURE HAS BEEN DESIGNED IN ACCORD WITH THE BUILDING CODE AND/OR ARE RESTRICTIVE REQUIREMENTS FOR LOADS AS GIVEN BELOW UNLESS SPECIFIC AREAS OF THE DRAWINGS SPECIFICALLY CALL FOR DIFFERENT LOADING CRITERIA. REFER TO DRAWINGS FOR LOAD SCHEDULE.

DESIGN LOADS:

ROOF LIVE LOAD = FLAT: 30 PSF / SLOPED: 20 PSF
TRUSSES ROOF DEAD LOAD = SLOPED: 25 PSF
CONCRETE ROOF ADDITIONAL DEAD LOAD = FLAT: 20 PSF
STAIRS LIVE LOAD = 40 PSF
FLOOR LIVE LOAD = 40 PSF
FLOOR ADDITIONAL DEAD LOAD = 45 PSF

WIND:

ULTIMATE WIND SPEED = 175 MPH ; EXPOSURE "C";
BUILDING RISK CATEGORY = II ; Kd=0.85
INTERNAL PRESSURE COEFFICIENT, GCP = ± 0.18 (ENCLOSED BUILDING PER ASCE 7, SECTION 6)

01051 DRAWING DIMENSIONS AND COORDINATION:

DIMENSIONAL INFORMATION, PRICING, ALL DETAILS AND CONSTRUCTION SHALL BE BASED ON THE ENTIRE SET OF CONTRACT DOCUMENTS. COORDINATE THE REQUIREMENTS OF ALL PROFESSIONALS. USE INFORMATION FROM APPROVED SHOP DRAWINGS TO SUPPLEMENT CONTRACT DOCUMENTS WHERE NECESSARY. REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO PROCEEDING. IF A CONFLICT EXISTS, THE MORE STRINGENT GOVERNS.

THE CONTRACTOR MUST USE STRUCTURAL DRAWINGS IN CONJUNCTION WITH ARCHITECTURAL, CIVIL, PLUMBING, MECHANICAL AND ELECTRICAL DRAWINGS TO COORDINATE LOCATION OF DERESSED SLABS, SLOPES, DRAIN, IS, OUTLETS, RECESSES, OPENINGS, REGISTS, BOLT SETTINGS, SLEEVES, DIMENSIONS, ETC. (DRAWINGS NOT TO BE SCALED). DISCREPANCIES BETWEEN INFORMATION PRESENTED WITHIN PROJECT SPECIFICATIONS AND WITHIN STRUCTURAL NOTES ON PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BY THE CONTRACTOR PRIOR TO PRESENTING HIS OR HER BID. IF SUCH A DISCREPANCY IS DISCOVERED SUBSEQUENT TO BIDDING, THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING THE OPTION SUBSEQUENTLY SELECTED BY THE ENGINEER. AT NO ADDITIONAL COST, THE CONTRACTORS SHALL BE RESPONSIBLE FOR FINAL VERIFICATION OF ALL DIMENSIONS, ELEVATIONS, CLEARANCES, ETC. OF THE FRAMING SHOWN ON THE STRUCTURAL DRAWINGS AGAINST INFORMATION PROVIDED BY MANUFACTURERS OF SELECTED MECHANICAL EQUIPMENT PRIOR TO PROCEEDING WITH ANY RELATED PORTION OF WORK. ITEMS REQUIRING SUCH REVIEW SHALL INCLUDE ELEVATORS (ELEVATOR PITS, BEAMS ABOVE ELEVATORS DOORS, ETC.) ESCALATORS, DUCTS, COOLING TOWERS, ETC. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ANY REMEDIAL WORK AND FOR ITS IMPACT ON THE WORK SCHEDULE RESULTING FROM FAILURE TO PROVIDE EARLY NOTIFICATION OF SUCH CONFLICTS TO THE DESIGN TEAM. POTENTIAL CONFLICTS, ERRORS OR OMISSIONS PRESENT WITHIN THE DRAWINGS (WHETHER WITHIN STRUCTURAL DRAWINGS OR BETWEEN STRUCTURAL, ARCHITECTURAL AND M/E/P DRAWINGS) SHALL BE IDENTIFIED BY THE CONTRACTOR DURING HIS/HER EARLY REVIEW OF THE PROJECT DOCUMENTS. SUCH CONFLICTS, ERRORS OR OMISSIONS SHALL BE COMMUNICATED TO THE ARCHITECT IN WRITING PRIOR TO COMMENCEMENT OF WORK. IN THE EVENT OF FAILURE TO PROVIDE SUCH A NOTICE AND SUFFICIENT TIME FOR A RESPONSE, THE CONTRACTOR SHALL BECOME RESPONSIBLE FOR COST OF ALL WORK OR REMEDIAL WORK RESULTING FROM SUCH CONFLICTS, ERRORS OR OMISSION, AS WELL AS FOR ITS IMPACT ON THE PROJECT SCHEDULE. (CONTRACTOR AGREES THAT HE/HIS/HER OWNER, ARCHITECT, ENGINEER, AND/OR ANY OF THEIR EMPLOYEES OR AGENTS' HARMLESS FROM ANY AND ALL DAMAGE AND CLAIMS WHICH MAY ARISE BY A REASON OF ANY NEGLIGENCE ON THE PART OF THE CONTRACTOR, OR ANY OF HIS SUBCONTRACTORS, OR ANY MATERIAL AND EQUIPMENT SUPPLIERS, AND/OR ANY OF THEIR EMPLOYEES OR AGENTS, IN THE PERFORMANCE OF THIS CONTRACT. IN CASE ANY ACTION IS BROUGHT AGAINST THE OWNER, OR ARCHITECT, OR ENGINEER, OR ANY OF THEIR EMPLOYEES OR AGENTS, CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR DEFENSE THEREOF, TO THE FULL SATISFACTION OF THE LATTER PARTY.

WHERE CRITICAL DIMENSIONS CANNOT BE DETERMINED FROM THE PLANS, OR WHERE NEW WORK ADJOINS EXISTING CONSTRUCTION, OR WHERE ONE MATERIAL ADJOINS A PREVIOUSLY PLACED MATERIAL WITH A MORE RESTRICTIVE TOLERANCE, THAN THE IN-PLACE MATERIAL, CONTRACTOR ACTION IS REQUIRED. MEASUREMENTS AS REQUIRED TO COMPLETE SHOP DRAWINGS AND INSTALLATION. REPORT ANY DISCREPANCIES EXCEEDING 3/8" BETWEEN FIELD MEASURED DIMENSIONS AND SCALED DRAWING DIMENSIONS TO ARCHITECT BEFORE PROCEEDING WITH WORK. DO NOT SCALE DRAWINGS; USE DIMENSIONS.

NOT ALL OPENINGS OR EQUIPMENT ARE SHOWN ON THE STRUCTURAL DRAWINGS, AND IT IS THE GENERAL CONTRACTORS RESPONSIBILITY TO COORDINATE WITH THE SUBCONTRACTORS AND EQUIPMENT SUPPLIERS/MANUFACTURERS. EQUIPMENT BEING SUPPORTED BY OR SUSPENDED FROM THE STRUCTURE SHALL BE COORDINATED WITH THE MANUFACTURER OF ANY PRE-ENGINEERED FRAMING OR COMPONENTS. ALL OPENINGS SHALL BE PROPERLY REINFORCED AS APPROVED BY THE ENGINEER.

FOR CLARITY, ALL ROOF, WALL AND/OR FLOOR OPENINGS MAY NOT BE SHOWN ON STRUCTURAL DRAWINGS. FOR EXACT SIZE, NUMBER AND LOCATION OF OPENINGS, SEE ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS. FOR FRAMING AT OPENINGS, SEE TYPICAL STRUCTURAL DETAILS. VERIFY ALL SIZES, WEIGHTS AND LOCATION OF MECHANICAL AND ELECTRICAL EQUIPMENT, DUCTS, ETC. WITH MECHANICAL AND ELECTRICAL ENGINEERS THROUGH ARCHITECT.

WHERE A LINE OF STRUCTURE, OPENING LOCATION, OR DIMENSION IS CRITICAL AND BASED ON THE REQUIREMENTS OF ANOTHER TRADE OR SUBCONTRACTOR, THAT SUBCONTRACTOR SHALL SUBMIT A SHOP DRAWING WITH THE REQUIRED DIMENSIONAL INFORMATION UPON WHICH THE CONTRACTOR SHALL BASE THE LAYOUT AND CONSTRUCTION. THIS PROCEDURE IS MANDATORY FOR CURTAIN WALL SYSTEMS, ARCHITECTURAL PRECAST SYSTEMS, AND ALL MECHANICAL AND ELECTRICAL OPENINGS.

THE ENGINEER WILL CLOUD OR OTHERWISE INDICATE REVISIONS TO THESE DOCUMENTS ONLY AFTER THEY HAVE BEEN REVIEWED FOR CONSTRUCTION OR FINAL PRICING. CHANGES PRIOR TO THAT DATE WILL NOT BE CLOUDED. CHANGES AND/OR REVISIONS AFTER THE CONSTRUCTION OR FINAL PRICING ISSUE WILL BE CLOUDED IN AN ATTEMPT TO BRING TO THE CONTRACTOR'S ATTENTION ANY MAJOR ITEMS. HOWEVER, IT SHALL BE SOLELY THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE PRICING AND CONSTRUCTION OF ALL REQUIREMENTS OF THESE DOCUMENTS, INCLUDING REVISIONS (FLAGGED OR UN-FLAGGED) WITH ALL OF HIS SUPPLIERS AND SUBCONTRACTORS. REVISIONS ARE IDENTIFIED BY A REVISION NUMBER WITHIN A TRIANGLE. ALL REVISIONS ISSUED ON A SINGLE DATE WILL BE IDENTIFIED BY THE SAME NUMBER.

CONSTRUCTION TO COMPLY WITH REQUIREMENTS OF THE GOVERNING BUILDING CODE, AND ALL OTHER APPLICABLE FEDERAL, STATE, AND LOCAL CODES, STANDARDS, REGULATIONS AND LAWS.

DETAILS LABELED AS "TYPICAL DETAILS" ON DRAWINGS AND DETAIL SHEETS, APPLY TO ALL SITUATIONS THAT ARE SIMILAR OR SAME AS THOSE SPECIFICALLY DETAILED. SUCH DETAILS APPLY WHETHER OR NOT THEY ARE KEYED AT EACH LOCATION ON PLAN DRAWINGS. QUESTIONS REGARDING APPLICABILITY OF DETAILS SHALL BE RESOLVED BY THE ARCHITECT OR ENGINEER.

CONSTRUCTION DOCUMENTS MUST GET APPROVAL FROM PERMITTING AGENCIES, THUS IT IS UNDERSTOOD THIS SET OF STRUCTURAL DRAWINGS IS NOT ON FINAL FORM UNTIL IT BEARS THE BUILDING DEPARTMENT PLANS REVIEW PROCESS STAMP AND SIGNATURE OF APPROVAL.

01100 SCOPE OF SERVICE:

THE STRUCTURAL ENGINEER OF RECORD HAS DESIGNED AND IS RESPONSIBLE FOR ONLY THE SPECIFIC STRUCTURAL COMPONENTS SHOWN IN THIS SET OF STRUCTURAL CONSTRUCTION DOCUMENTS. IF A SPECIALTY ENGINEER, AS DEFINED BY THE DEPARTMENT OF PROFESSIONAL REGULATION, IS REQUIRED, HIS SERVICES MUST COMPLY WITH THE SCOPE OF SERVICES AS OUTLINED IN THE PROJECT CONSTRUCTION DOCUMENTS.

CONTRACTOR TO NOTE THAT THE STRUCTURE WAS DESIGNED TO BE SELF-SUPPORTING AND STABLE FOLLOWING INSTALLATION OF ALL COMPONENTS AS INDICATED ON THE DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE METHOD AND SEQUENCE OF ERECTION PROCEDURES (INCLUDING IMPLEMENTATION OF TEMPORARY SHORING, BRACING, ETC.) AND TO ENSURE SAFETY THROUGH THE PERIOD OF CONSTRUCTION

OWNER BUILDER AND/OR GENERAL CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS, LICENSES AND CERTIFICATIONS AND PAY ALL FEES CONNECTED HEREWTH. OWNER BUILDER AND/OR CONTRACTOR TO GUARD AGAINST ANY AND ALL POSSIBLE HAZARDOUS CONDITIONS, WHICH MAY OCCUR AS A RESULT OF SURVEYING, EXCAVATION, MOVILIZATION OR CONSTRUCTION. OWNER BUILDER AND/OR CONTRACTOR SHALL NOT PERMIT UNAUTHORIZED PERSONS INSIDE THE CONSTRUCTION AREA. OWNER BUILDER AND/OR CONTRACTOR TO INSTALL ALL NECESSARY BARRIERS AND ALL OSHA REQUIRED PROTECTION IN AND AROUND CONSTRUCTION AREA TO PROTECT PUBLIC AND EMPLOYEES. OWNER BUILDER AND/OR CONTRACTOR IS RESPONSIBLE FOR ENCROACHMENTS INTO PUBLIC OR PRIVATE PROPERTY, MADE DURING THE EXECUTION OF THIS WORK AND FOR ANY VIOLATIONS OF RIGHT OF WAYS AND EASEMENTS. IN ALL CASES OWNER BUILDER AND/OR GENERAL CONTRACTOR MUST CONSULT A SURVEYOR AND NOTIFY THE ARCHITECT IN WRITING OF ANY CONFLICT.

01400 STRUCTURAL FRAME INSPECTION:

OWNER TO EMPLOY A REGISTERED INSPECTOR TO PERFORM THE DUTIES REQUIRED BY THE LOCAL BUILDING CODE. THE INSPECTOR SHALL PROVIDE A STATEMENT OF INSPECTION AS REQUIRED BY GOVERNING CODES, WHICH CERTIFIES THAT THE STRUCTURE AND ENVELOPE COMPONENTS ARE IN COMPLIANCE WITH THE APPROVED PERMIT DOCUMENTS.

01800 SHOP DRAWINGS & STRUCTURAL SUBMITTALS:

SUBMIT TO THE STRUCTURAL ENGINEER FOUR ORIGINALS ONLY AFTER THEY HAVE BEEN REVIEWED BY THE CONTRACTOR. IF ADDITIONAL COPIES OF ANY MATERIAL ARE REQUIRED, PLEASE PROVIDE SUCH. HOWEVER, ONLY THREE COPIES WILL BE MARKED BY THE STRUCTURAL ENGINEER.

UNDER NO CIRCUMSTANCES WILL THE USE OF STRUCTURAL DRAWINGS PREPARED BY OF CONSULTING ENGINEERS INC. BE PERMITTED FOR SHOP DRAWING OR BACKGROUND USE. THIS INCLUDES BOTH PHOTOGRAPHIC AND ELECTRONIC REPRODUCTION. SHOP DRAWINGS SHALL BE PREPARED ENTIRELY BY THE VENDOR OR SUBCONTRACTOR GENERATING SUCH SUBMITTAL.

THE USE OF ANY DRAWING PREPARED BY OF CONSULTING ENGINEERS INC. AS BACKGROUND INDICATES ACCEPTANCE OF TERMS AND CONDITIONS BY OF CONSULTING ENGINEERS INC. FOR THEIR USE, AND STIPULATED COMPENSATION MUST BE DELIVERED TO OF CONSULTING ENGINEERS INC. PRIOR TO SUBMITTAL OF SHOP DRAWINGS. OTHERWISE, SHOP DRAWINGS WILL BE RETURNED NON REVIEWED.

REVIEW OF SHOP DRAWINGS IS NOT CONDUCTED FOR DETERMINING THE ACCURACY AND COMPLETENESS OF DETAILS QUANTITIES OR FOR SUBSTANTIATING FABRICATION INSTALLATION INSTRUCTION OR PERFORMANCE OF EQUIPMENT OF SYSTEM, ALL OF WHICH SHALL REMAIN THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

REVIEW OF SHOP DRAWINGS DOES NOT CONSTITUTE APPROVAL OF SAFETY PRECAUTIONS, CONSTRUCTION MEANS, METHODS, SEQUENCES OR PROCEDURES, NOR DOES IT INDICATE APPROVAL OF ASSUMES OF ANY OF THE ITEM IS A COMPONENT. COORDINATION OF ALL TRADES SHALL REMAIN THE SOLE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR MUST REVIEW ALL QUANTITIES AND DIMENSIONS. ALLOW ADEQUATE TIME FOR TRANSIT/AND PROCESSING BEFORE FABRICATION. OF CONSULTING ENGINEERS WILL REVIEW AN AVERAGE SUBMITTAL WITHIN 15 CALENDARS DAYS OF RECEIPT DRAWINGS RECEIVED AFTER 3:00 PM WILL BE STAMPED AS RECEIVED THE FOLLOWING DAY. REVIEW OF SHOP DRAWINGS IS LIMITED TO TWO REVIEWS PER SUBMITTAL WITHIN THE SCOPE OF BASIC SERVICES, THAT IS ONE INITIAL REVIEW AND ONE ADDITIONAL REVIEW ONCE MARKED ITEMS HAVE BEEN CORRECTED. REVIEW OF ADDITIONAL SUBMITTALS WILL BE CONSIDERED ADDITIONAL SERVICES, FOR WHICH THE CONTRACTOR MAY BE HELD RESPONSIBLE, THOSE ADDITIONAL SERVICES FEES WILL BE IN ACCORDANCE WITH THE TERMS OF THE ARCHITECT-ENGINEER AGREEMENT FOR THIS PROJECT. GCE WILL MARK ONLY THREE SETS OF DRAWINGS REGARDLESS OF HOW MANY COPIES HAD BEEN SUBMITTED, ONLY AFTER DRAWINGS BEAR EVIDENCE OF BEEN REVIEWED AND APPROVED BY THE CONTRACTOR. SHOP DRAWINGS SUBMITTED TO GCE WITHOUT CONTRACTORS APPROVAL WILL BE RETURNED UNREVIEWED.

SPECIALTY OR DELEGATED ENGINEERING SHOP DRAWINGS:

BY DEFINITION A DELEGATED ENGINEER IS A FLORIDA REGISTERED PROFESSIONAL ENGINEER, NOT THE STRUCTURE ENGINEER OF RECORD, WHO SPECIALIZES IN AND WHO UNDERTAKES THE DESIGN OF STRUCTURAL COMPONENTS OR STRUCTURAL SYSTEMS INCLUDED IN A SPECIFIC SUBMITTAL PREPARED FOR THIS PROJECT. THE DELEGATED OR SPECIALTY ENGINEER SHALL BE AN EMPLOYEE OR OFFICER OF A FABRICATOR, AN EMPLOYEE OR OFFICER OF AN ENTITY SUPPLYING COMPONENTS TO A FABRICATOR, OR AN INDEPENDENT CONSULTANT RETAINED BY THE FABRICATOR OR HIS SUPPLIER.

SUBMITTALS AND RE-SUBMITTAL FOR CUSTOM DESIGNED, MANUFACTURED OR FABRICATED LOAD-CARRYING MEMBERS, COMPONENTS OR ITEMS, SUBJECT TO FORCES OR STRESSES AND THEIR CONNECTIONS OR ANCHORAGE REQUIRE A DELEGATED OR SPECIALTY ENGINEER.

APPROVED EQUAL OPTIONS ARE FOR THE CONTRACTOR'S CONVENIENCE AND ARE SUBJECT TO APPROVAL BY THE ARCHITECT. IF AN OPTION IS CHOSEN, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CHANGES AND COSTS NECESSARY AND FOR COORDINATION OF ALL DETAILS AS REQUIRED TO INCORPORATE THE OPTION INTO THE WORK.

ALL PRE-ENGINEERED/PREFABRICATED ITEMS AND MATERIALS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURERS REQUIREMENTS AND ALTERATIONS ARE ALLOWED ONLY IN WRITING.

THE FOLLOWING SYSTEMS AND COMPONENTS REQUIRE FABRICATION, AND ERECTION DRAWINGS ALLOW WITH SIGNED AND SEALED CALCULATIONS BY A DELEGATED ENGINEER:

–ALUMINUM OR LIGHT GAGE STEEL EXTERIOR WALL SYSTEMS.

–GLAZING AND STORE FRONT SYSTEMS, INCLUDING MULLIONS AND CONNECTIONS.

–POST-TENSIONING CONCRETE AND STEEL MEMBERS.

–PREFABRICATED WOOD TRUSSES.

–PRECAST CONCRETE COMPONENTS: WALLS, COLUMNS, JOISTS.

–CONCRETE TILT-UP WALLS AND COMPONENTS.

–SHORING AND RE-SHORING DRAWINGS.

ALL SUBMITTALS SHALL CLEARLY IDENTIFY THE SPECIFIC PROJECT AND APPLICABLE CODES, AS WELL AS THE DESIGN CRITERIA WHICH SHOULD NOT BE IN CONFLICT WITH THOSE SPECIFIED ON THE CONTRACT DOCUMENTS, THE APPLICABLE BUILDING CODE NOR THE SPECIFICATIONS.

IN CASE OF CONFLICT REQUEST FOR CLARIFICATION MUST BE SUBMITTED IN WRITING TO A/E, OR THE MOST STRINGENT CRITERIA MUST BE USED. SUBMITTAL MUST SHOW ALL DETAILS, PLANS AND NECESSARY INFORMATION FOR THE PROPER FABRICATION AND INSTALLATION OF SYSTEM OR COMPONENTS. CALCULATIONS AND DRAWINGS MUST CLEARLY IDENTIFY SPECIFIC PRODUCTS UTILIZED SINCE GENERIC PRODUCTS WILL NOT BE ACCEPTED.

CATALOG INFORMATION ON STANDARD PRODUCTS DOES NOT REQUIRE THE SEAL OF A DELEGATED ENGINEER.

ALL SHOP DRAWINGS AND CALCULATIONS MUST BEAR THE IMPRESSED SEAL, DATE AND SIGNATURE OF THE DELEGATED OR SPECIALTY ENGINEER. IN CASE THAT COMPUTER PRINT-OUTS ARE SUBMITTED THOSE MUST BE ACCOMPANIED WITH DESCRIPTIVE INFORMATION AS OF THE INPUT AND OUTPUT FOR THEIR PROPER EVALUATION. SUCH DESCRIPTION OF COMPUTER PRINT-OUTS MUST BE SIGNED AND SEALED AS WELL WITH A NOTE INDICATING FULL ACCEPTANCE AND LIABILITY OVER THE RESULTS OF SAID COMPUTER PROGRAM. REVIEW BY GCE/SE OR OF SUBMITTALS IS LIMITED TO VERIFYING THAT THE SPECIFIC STRUCTURAL SUBMITTAL HAVE BEEN FURNISHED; THAT THE STRUCTURAL SUBMITTAL HAVE BEEN SIGNED AND SEALED BY THE DELEGATED ENGINEER; THAT THE SPECIFIED CRITERIA, AND DESIGN INTENT HAVE BEEN FOLLOWED AND UNDERSTOOD BY THE DELEGATED ENGINEER, AND THAT THE CONFIGURATION SET FORTH IN THE STRUCTURAL SUBMITTAL IS CONSISTENT WITH THE CONTRACT DOCUMENTS.

NO DETAILED CHECK OF DIMENSIONS OR QUANTITIES WILL BE MADE SINCE THIS IS TO BE PERFORMED BY THE GENERAL CONTRACTOR.

SUBMITTALS NOT MEETING THE ABOVE CRITERIA WILL BE RETURNED NON REVIEWED.

02200 EARTHWORK:

CONTRACTOR SHALL DEWATER SITE AS NECESSARY, SO THAT ALL CONCRETE CAN BE PLACED IN THE DRY. ALL BACK FILL SHALL BE ACCOMPLISHED USING MATERIAL CONSISTING OF CRUSHED STONE AND/OR MATERIAL APPROVED BY THE GEOTECHNICAL ENGINEER. THE BACK FILL SHALL BE COMPACTED TO 98% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D-1557. NO BACK FILL MATERIAL SHALL BE PLACED AGAINST WALLS WHICH DO NOT HAVE PERMANENT FLOORS AT THE TOP AND BOTTOM WITHOUT EXCEED 20 PERCENT OF THE PORTLAND CEMENT VOLUME TO AVOID FAN DIRECTION. PORTLAND CEMENT BRACING IN ACCORD WITH GEOTECHNICAL ENGINEER RECOMMENDATIONS TO MAINTAIN EXISTING FOOTINGS, UTILITIES, AND OTHER IMPROVEMENTS IN A SAFE CONDITION

02011 FOUNDATIONS:

FOUNDATIONS HAS BEEN DESIGNED FOR A SOIL VALUE OF 2000 PSF. ENGINEER OF RECORD HAS ASSUMED THE SOIL CONDITIONS OF THE UPPER LEVEL OF THE SITE AND THE MEDIUM GRAINED SAND WITH LIMMROCK FRAGMENTS, ROOTS AND ORGANICS TO A DEPTH OF APPROXIMATE 10 TO 14 INCHES, BELOW THAT LAYER WE OBSERVED LIMMROCK AND SAND WITH WHAT APPEARS TO BE A MEDIUM TO DENSE COMPACTION. THE CONTRACTOR SHALL BEAR ON UNDISTURBED NATURAL LIMMROCK OR COMPACTED FILL PER SECTION 02210 IN THESE NOTES. THE SEOR OR THE ARCHITECT WILL SUBMIT A LETTER AFTER THE GROUND HAS BEEN BROKEN TO CONFIRM THAT SOILS CONDITIONS ARE SIMILAR TO THOSE UPON WHICH THE DESIGN WAS BASED.

02210 STRUCTURAL FILL:

FOUNDATIONS PLACED ON COMPACTED LIMMROCK STRUCTURAL FILL HAVE BEEN DESIGNED FOR A BEARING OF 3000 PSF. FILL TO BE COMPACTED TO 98% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D-1557.

PREPARE PAD AND PLACE FILL IN STRICT COMPLIANCE WITH GEOTECHNICAL REPORT, BUT LAYERS OF 6" THICK MAXIMUM AND UNDER THE DIRECT SUPERVISION OF A GEOTECHNICAL ENGINEER.

SOIL COMPACTION AND FILL PLACEMENT SHALL BE CONTROLLED AND MONITORED BY CERTIFIED TESTING AGENCY. TAKE A MINIMUM OF 2 FIELD DENSITY TESTS (ASTM D-1556 OR ASTM D-2922) FOR EACH LAYER OF FILL. THE TESTING AGENCY SHALL RANDOMLY SELECT TEST LOCATIONS. EACH LAYER OF FILL MUST BE COMPACTED BEFORE PLACEMENT OF THE NEXT LAYER OF FILL. THE FILL MUST BE A UNIFORM USE FILL CONTAINING NOT MORE THAN 10% PASSING #200 SIEVE AND MAXIMUM 1 INCH.

BOTTOM OF EXCAVATIONS MUST BE COMPACTED WITH A WALK-BEHIND VIBRATORY SLED OR ROLLER HAVING A MINIMUM STATIC WEIGHT OF 240# WITH CENTRIFUGAL FORCE OF 300 LBS. AND A MAXIMUM STATIC WEIGHT OF 1000 LBS WITH A CENTRIFUGAL FORCE OF 5000 LBS. COMPACT UNTIL SOIL 1 FT BELOW COMPACTION SURFACE REACHES A DRY DENSITY OF 95% OF MAXIMUM AS DETERMINED BY A MODIFIED PROCTOR (ASTM D-1557).

–ONE DENSITY TEST (ASTM D-1556 OR ASTM D-2922) FOR EACH SPREAD FOOTING.
–ONE FOR EACH 25 FEET OF CONTINUOUS FOOTING.
–ONE FOR EVERY 1000 SQ. FT. PER LAYER OF FILL (BUT A MINIMUM OF 2).
SOIL COMPACTION MUST BE FIELD CONTROLLED AND MONITORED BY A CERTIFIED TESTING AGENCY OR GEOTECHNICAL ENGINEER OF RECORD. DENSITY TEST REPORTS MUST BE AT THE SITE PRIOR TO RECONSTRUCTION OF FOOTING. FOOTING EXCAVATION OR AFTER EXCAVATION HAD BEEN COMPLETED, RE-COMPACTION AS DESCRIBED ABOVE MUST BE DONE.

02240 EXCAVATION:

STRIP TOP SOIL (MINIMUM 6 INCHES) AT LEAST FIVE FEET PAST EXTERIOR BUILDING LINES. ALL DELETERIOUS MATERIAL MUST BE COMPLETELY REMOVED, INCLUDING EXISTING FOUNDATIONS OF DEMOLISHED BUILDINGS. DO NOT EXCAVATE FOR ANY PURPOSE WITHIN ONE FOOT OF THE RADIUS OF REPOSE OF ANY SOIL BEARING FOOTING OR FOUNDATION. UNLESS SUCH FOOTING OR FOUNDATION IS FIRST PROPERLY UNDERPINNED OR OTHERWISE PROTECTED AGAINST SETTLEMENT. GENERAL CONTRACTOR IS RESPONSIBLE FOR THE DISPOSAL OF ALL ACCUMULATED WATER FROM EXCAVATION AND DEWATERING OPERATION IN SUCH A MANNER AS TO ENSURE PROPER CONCRETE PLACEMENT AND PREVENT DAMAGE TO STRUCTURAL ELEMENTS. THE GENERAL CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING, PILE PILING, AND PROTECTION TO ADJACENT PROPERTIES, STRUCTURES, STREET, UTILITIES IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL BUILDING DEPARTMENT AND ALL OSHA REGULATIONS.

03100 CONCRETE FORMWORK:

CONTRACTOR SHALL DESIGN AND ERECT FORMWORK IN STRICT COMPLIANCE WITH ACI 347-04. SEE TYPICAL DETAIL. THE CAMBER REQUIREMENTS CONTRACTOR SHALL COORDINATE ALL OPENINGS AS REQUIRED FOR OTHER TRADES. OPENINGS WELDED WIRE FABRIC SHOWN ON THE STRUCTURAL DRAWINGS ARE TO IDENTIFY DESIGN INTENT ONLY. THE SPECIFIC DIMENSIONS AND LOCATIONS SHALL BE FURNISHED OR CONFIRMED BY THE TRADE REQUIRING THE OPENING. PROVIDE CHAMBERS AT ALL CORNERS IN CONCRETE MEMBERS EXPOSED TO VIEW. FORMWORK TO REMAIN IN PLACE UNTIL CONCRETE HAS ATTAINED ENOUGH STRENGTH TO SUPPORT ALL DEAD LOADS PLUS A MINIMUM OF 50 PSF OF ADDITIONAL CONSTRUCTION LOAD. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

03110 SHORING & RESHORING:

CONTRACTOR MUST PROVIDE SHORING AND RESHORING DRAWINGS PREPARED BY A DELEGATED ENGINEER AND CONFORMING TO THE REQUIREMENTS OF SECTION 3100

"CONCRETE FORMWORK". DESIGN FORMS AND SHORES FOR HORIZONTAL CONCRETE MEMBERS FOR NOT LESS THAN DEAD LOAD PLUS 50 PSF CONSTRUCTION LOAD AND FOR THE CUMULATIVE LOADS OF SUPPORTED FLOORS. DESIGN WOOD SHORES WITH A MINIMUM SAFETY FACTOR OF 3, AND METAL SHORES WITH A MINIMUM SAFETY FACTOR OF 2. THE MAXIMUM SUPERIMPOSED CONSTRUCTION LOAD APPLIED TO FLOORS SUPPORTING SHORES OR RESHORES SHALL NOT EXCEED 75% OF THE LIVE LOAD SPECIFIED FOR SLABS AND JOISTS AND 60% OF THE LIVE LOAD SPECIFIED FOR BEAMS. NO CONSTRUCTION LOAD SHALL BE APPLIED TO ANY MEMBER UNTIL THE CONCRETE IS A MINIMUM OF 14 DAYS OLD AND THE 7 DAYS STRENGTH IS 70% OF THE SPECIFIED 28 DAYS STRENGTH. REMOVAL OF FORMWORK IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. REMOVE FORMS IN SUCH A MANNER AS TO INSURE JOB SAFETY AND TO PREVENT DAMAGE TO AND GREED DEFLECTION OF THE STRUCTURE. FOLLOW THE MINIMAL GUIDELINES FOR REMOVAL OF HORIZONTAL FORMS IDENTIFIED BELOW:
–SLABS WITH SPANS LESS THAN 5'-0", FORMS MAY BE REMOVED 24 HOURS AFTER COMPLETING CONCRETE POUR, PROVIDED IS AT LEAST 70% OF SPECIFIED 28 DAY DESIGN STRENGTH. RESHORING NECESSARY.
–DO NOT REMOVE SHORING UNTIL CONCRETE HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 2800 PSI AS A MINIMUM, SHORING AND RESHORING SHALL REMAIN IN PLACE AS FOLLOWS:

–BEAMS: SHORES: 7 DAYS RESHORES: 14 DAYS
–JOISTS: SHORES: 72 HRS RESHORES: 14 DAYS
–CANTILEVER SLAB: SHORES: 7 DAYS RESHORES: 14 DAYS
–CANTILEVER BEAM: SHORES: 7 DAYS RESHORES: 14 DAYS.

THE SHORING AND RESHORING MUST BE INSPECTED BY THE DELEGATED ENGINEER OR HIS AUTHORIZED REPRESENTATIVE PRIOR TO EACH CONCRETE POUR AND SUBMIT A WRITTEN SIGN OFF TO THE ARCHITECT. TO THE THRESHOLD OR SPECIAL INSPECTOR AND TO THE CONTRACTOR STATING THAT THE WORK IS IN GENERAL COMPLIANCE WITH HIS/HER SHORING RESHORING DRAWINGS.

THE FIELD REPORTS MUST BE SUBMITTED TO THE ARCHITECT, THE BUILDING OFFICIAL, AND TO GCE ON A Bi-WEEKLY BASIS. THE REPORTS MUST CLEARLY INDICATE ANY ITEMS REQUIRING CORRECTIONS, ACCEPTED DEVIATION FROM SHORING DRAWINGS, ANY SKETCHES SUBMITTED TO CORRECT DEFICIENCIES, AND AREAS ACCEPTED AND RELEASED FOR CONCRETE POURS. NO GENERIC LETTER WILL BE ACCEPTED. THIS REPORT MUST CLEARLY INDICATE NAME AND LOCATION OF PROJECT, DATE AND TIME AS WELL AS WORKING CONDITION DURING INSPECTION INCLUDING WEATHER AND TEMPERATURE.

3350 EXPOSED SLAB ON GRADE

EARTH SUBGRADE

GO 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 (GRAMS/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.
• INCLUSION OF ADMIXTURES, PLASTICIZERS, SLAG, FLY ASH, OR OTHER PRODUCTS
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 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 AVOID LIFTING OR DEPRESSING THE SURFACE.
- THE SLUMP AT THE POINT OF DISCHARGE SHOULD BE 5 INCHES, PLUS OR MINUS 1".

FINISHING CONCRETE

- AFTER PLACEMENT OF THE CONCRETE MIX, STRIKE OFF THE SURFACE USING A LASER SORED, THEN BULL FLOAT AT 90 DEGREES TO THE SOREED PLUG DIRECTION, VIB AND CONSOLIDATE, AND LEVEL TO SPECIFIED ELEVATION. A 10 FOOT CHECK ROD IS RECOMMENDED.
- WHEN FINANCING 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 EDGES AND PERFORMED WITHIN 24 HOURS OF PLACEMENT 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 FROM THE FAN DIRECTION.
- WHEN LITTLE OR NO BLEED WATER IS PRESENT AND CONCRETE MIX HAS SUFFICIENTLY HARDENED TO SUPPORT FINISHING EQUIPMENT WITHOUT CAUSING IMPRESSIONS 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 WOOD 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 DISTURB 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 TOPICAL APPLIED CURING COMPOUNDS. WHILE TYPICALLY 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 PLACEMENT. THE GENERAL CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL CURING PROCEDURES INCLUDING LAGGING, SHORING, PILE PILING, AND PROTECTION TO ADJACENT PROPERTIES, DENSIIFIERS AND HARDENERS SHOULD NOT BE APPLIED TO CONCRETE.

FLOOR FLATNESS/LEVELNESS CRITERIA

FF FLOOR FLATNESS SPECIFIED OVERALL VALUE MINIMUM LOCAL VALUE
FL FLOOR LEVELNESS 50 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 301-05, SP-66(94), ACI 318-08, 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 SPICE REQUIREMENTS. TOTAL STEEL AT LAP SPACES SHALL NOT EXCEED 8%. THEREFORE, MEMBERS WITH REINFORCING RATIO NOT EXCEEDING 4% MAY HAVE ALL BARS LAPPED. 5.3% MAY HAVE 1/2 BARS LAPPED, AND 6.0% MAY HAVE 1/3 BARS LAPPED. MECHANICAL CONNECTORS SHALL BE IN ACCORD WITH ACI 439-3R-83. 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 GCE. WHERE PIPES OR DUCTS PENETRATE SLABS, A MAXIMUM OF TWO BARS EACH WAY MAY BE CUT, PROVIDED THEY ARE REPLACED BY SPICE BARS ALONGSIDE OF OPENING WITH AN EQUIVALENT AREA TO THE CUT BARS, AND EXTENDING AT LEAST 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 318-08 CHAPTER 6.4 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.

Tension Development and Splice Lengths for f 'c=3,000 psi and fy=60 ksi		Development		Class "B" Splice		Standard 90 deg. Hook	
Bar	Top Bar	Other Bar	Top Bar	Other Bar	Embed.	Leg	Bend Dia.

Bar	Top Bar	Other Bar	Top Bar	Other Bar	Embed.	Leg	Bend Dia.
Size	(in.)	(in.)	(in.)	(in.)	(in.)	Length	(in.)
#3	22	17	28	22	6	6	2-1/4
#4	29	22	37	29	8	8	3
#5	36	28	47	36	10	10	3-3/4
#6	43	33	56	43	12	12	4-1/2
#7	63	48	81	63	14	14	5-1/4
#8	72	55	93	72	16	16	6
#9	81	62	105	81	18	19	9-1/2