2. CONTRACT DOCUMENTS TAKE PRECEDENCE OVER THE SHOP DRAWINGS UNDER ANY OF THE FOLLOWING CONDITIONS:

a.) THE SHOP DRAWINGS ARE SUBMITTED IN "PIECE MEAL" BASIS, IN SEVERAL INSTALLMENTS, TO EXPEDITE CONSTRUCTION ON A "FAST TRACK" DELIVERY

b.) IF SHOP DRAWINGS ARE RELEASED WITH "NO EXCEPTIONS TAKEN" <u>NOT</u>

c.) WHEN SHOP DRAWINGS HAVE MARKINGS AND DIRECTIONS TO COMPLY WITH CONTRACT DOCUMENTS. B. CONSTRUCTION DEFICIENCIES:

 REMEDIAL DESIGNS WILL BE NECESSARY TO CORRECT ANY DEVIATIONS FROM THE CONTRACT DOCUMENTS DUE TO FIELD, FABRICATION AND/OR SUPPLY ERRORS, ALTERNATE DESIGNS, OR FIELD PROBLEMS AND SHALL BE PERFORMED BY A STRUCTURAL ENGINEER LICENSED IN KENTUCKY AND HAVING HIS/HER PRACTICE LOCATED IN KENTUCKY. THE STRUCTURAL ENGINEER SHALL HAVE PROFESSIONAL LIABILITY INSURANCE COVERAGE FOR ERRORS AND OMISSIONS TO A LIMIT OF \$1,000,000.00. SUBMIT CERTIFICATE OF INSURANCE WITH ARCHITECT AS CERTIFICATE HOLDER ALONG WITH THE CALCULATIONS AND DETAILS FOR ARCHITECT'S RECORD. THE REQUIREMENTS OF GENERAL PROVISION SECTION 1.4, SUBMITTALS, APPLY AND THE SUBMITTAL SHALL INCLUDE SKETCHES THAT ILLUSTRATE THE LOCATIONS, EXTENTS AND DETAILS OF THE DEFICIENCY. RAI IS NOT REQUIRED TO OFFER REMEDIES BUT RESERVES THE RIGHT TO REVIEW, ACCEPT AND/OR REJECT THE PROPOSALS BEFORE THE WORK IS PUT IN HAND.

C. FIELD DIRECTIVES & RESPONSES TO "REQUESTS FOR INFORMATION": THE STRUCTURAL ENGINEER RESERVES THE RIGHT TO ISSUE, AT VARIOUS STAGES OF CONSTRUCTION, DIRECTIVES AND SKETCHES TO FURTHER CLARIFY THE INTENT OF THE CONTRACT DOCUMENTS. IN ADDITION, THE STRUCTURAL ENGINEER MAY PROVIDE RESPONSES TO "REQUESTS FOR INFORMATION" INITIATED BY THE CONTRACTOR. IF THE CONTRACTOR FINDS THAT SUCH DIRECTIVES AND RESPONSES ARE CARDINAL CHANGES TO THE CONTRACT DOCUMENTS, HE/SHE MUST OBTAIN A CHANGE ORDER FROM THE ARCHITECT/ENGINEER, WITHIN FIFTEEN DAYS OF THE RECEIPT OF THE DIRECTIVE OR RESPONSE AND BEFORE PROCEEDING WITH THE WORK. CONTRACTOR SHALL NOT PROCEED WITH ANY PORTION OF THE CONSTRUCTION AFFECTED BY THE DIRECTIVE OR RESPONSE WITHOUT A CHANGE ORDER AND SUCH ACT SHALL BE DEEMED TO BE WITHIN THE SCOPE OF THE CONTRACT DOCUMENTS. NO CHANGE IN THE CONTRACT SUM WILL BE MADE WITHOUT AN APPROVED CHANGE ORDER AND NO CHANGE ORDER WILL BE ISSUED AFTER THE WORK IS IN PLACE.

THE GENERAL PROVISIONS CONTAINS HERE IN APPLICABLE TO ALL DRAWINGS STARTING WITH SHEETS "SXXXX TO SYYYY"

# 1.2 ADMINISTRATIVE

1. THE STRUCTURAL ENGINEER NEITHER SUPERVISES NOR CONTROLS THE CONSTRUCTION AND HAS NOT RETAINED THE RIGHTS TO SUPERVISE OR CONTROL THE WORK DESCRIBED IN THESE DOCUMENTS.

2. THE STRUCTURAL ENGINEER HAS NOT BEEN RETAINED TO & WILL NOT PARTICIPATE IN THE ON-GOING DAY TO DAY ACTIVITIES AT THE CONSTRUCTION SITE.

3. THE STRUCTURAL ENGINEER IS NOT RESPONSIBLE FOR ON-SITE SAFETY AND WILL

NOT BE RESPONSIBLE FOR SUPERVISING GENERAL OR SUB-CONTRACTORS. 4. THE STRUCTURAL ENGINEER HAS NEITHER ANY AUTHORITY TO ISSUE ORDERS NOR

5. THE SPECIAL INSPECTION REQUIREMENTS, AND THE EXECUTION OF THE REQUIREMENTS BY THE SPECIAL INSPECTION TEAM, DOES NOT IN ANY WAY. OR AT ANY TIME. RELIEVE THE GENERAL OR PRIME CONTRACTOR OF THE ULTIMATE RESPONSIBILITY FOR COMPLETION OF ALL STRUCTURAL ASPECTS OF WORK TO THE SATISFACTION OF THE SPECIAL-INSPECTOR-OF-RECORD.

# 1.3 DESIGN NOTES

1. CONCRETE: MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS (f'c) -CAST IN PLACE CONCRETE (C.I.P.) = 4000 PSI (U.N.O.)

SLAB ON GRADE CONCRETE (S.O.G): SEE NOTES 3.2.1 & 3.2.2. ACI 302 CLASSES 1 AND 2 = 3500 PSI ACI 302 CLASSES 4 AND 5 = 4000 PSI ACI 302 CLASS 6 = 4500 PSI

THE RIGHT TO STOP WORK AT ANY TIME.

SLAB ON METAL DECK = 4000 PSI PRECAST CONCRETE = 5000 PSI CONCRETE TO RECEIVE BUSH-HAMMERED FINISH = 5000 PSI LEAN CONCRETE FILL = 3000 PSI ALL ELEVATED FLOOR CONCRETE PLACED OVER METAL DECK SHALL BE LIGHT WEIGHT WEIGHING NO MORE THAN 110 PCF AT EQUILIBRIUM.

2. MASONRY NET AREA COMPRESSIVE STRENGTH OF UNREINFORCED MASONRY, f'm = 1500 PSI-SEE SECTION 4.1 FOR GROUT AND MORTAR REQUIREMENTS.

3. CONCRETE REINFORCING STEEL: ASTM A615, GRADE 60.

4. STRUCTURAL STEEL: ROLLED SHAPES AND PLATES W - SHAPES: ASTM A-992 ALL OTHER SHAPES: ASTM A-36 ROLLED PIPES - ASTM-A500, GRADE B RECTANGULAR AND SQUARE TUBING - ASTM A-500, GRADE B

5. BOLTS: 3/4 INCH DIAMETER ASTM F1852 (A325TC), TYPE 1, TENSION CONTROL BOLTING SYSTEM, TWIST-OFF SPLINE TYPE, UNLESS NOTED OTHERWISE.

6. ANCHOR BOLTS: ASTM A307 OR ASTM A36, MINIMUM. SIZE AND LOCATION PER THE VENDOR'S CERTIFIED DRAWINGS. ADHESIVE SET ANCHOR BOLTS, WHEN DEEMED ACCEPTABLE BY THE ENGINEER, SHALL BE THE HILTI "HIT" SYSTEM USING THE RE 500 SD CARTRIDGE IN CONJUNCTION WITH THE HILTI "HAS-E" ANCHOR RODS OF THE SPECIFIED DIAMETER, LENGTH AND EMBEDMENT. MANUFACTURERS' INSTRUCTIONS AND RECOMMENDATIONS SHALL BE STRICTLY ADHERED TO.

7. CLOSED CELL NEOPRENE PADS: ASTM D1056 (S.A.E. SPEC SCE-42), DUROMETER OF 52 (+/-7), TENSILE STRENGTH 100 PSI, ELONGATION 150% MINIMUM, AS DISTRIBUTED BY LAMATEK, INC. OR APPROVED EQUIVALENT.

# 8. DESIGN LOADS (PSF):

( )			
	DEAD	SUPER-IMPOSED DEAD	LIVE
ROOFS (U.N.O.): MECHANICAL ROOF AREAS : GYMNASIUM/MAC GYM/	26.0	60.0	20.0
FITNESS RÓOF AREAS	46.0	_	20.0
: ALL OTHER ROOF AREAS	29.0	_	20.0
GYMNASIUM FLOORS	74.0	19.0	100.0
AEROBICS FLOORS	56.0	86.0	100.0
JOGGING TRACK FLOORS	56.0	20.0	100.0
MECHANICAL/STORAGE FLOORS	56.0	40.0	125.0
STORAGE DEPRESSED FLOORS	56.0	88.0	125.0
CORRIDOR FLOORS	56.0	40.0	100.0
RACQUETBALL COURT FLOORS	56.0	42.0	100.0

THE ABOVE TABULATED LOADS ARE THE BASIS FOR DESIGN AND INCLUDE ALLOWANCES FOR SUPERIMPOSED LOADS, WHERE NOT SPECIFICALLY LISTED. THE MAGNITUDE, LOCATION AND DESIGN REQUIREMENTS FOR SPECIFIC CONCENTRATED AND LOCALIZED SUPERIMPOSED LOADS, IN ADDITION TO THE BASIC ALLOWANCES, ARE REFERENCED IN THE PLANS.

SPECIAL DESIGN LOADS (PSF): (LOAD CONDITIONS TO BE INCLUDED IN COMPONENT DESIGNS BY SPECIALTY ENGINEERS):

WIND PRESSURE NET UPLIFT: ON ALL ROOF JOISTS AND ROOF TRUSSES 25 ON METAL DECK IN THE FIELD AREA ON METAL DECK AT EAVES & CORNERS INCREASE FIELD REQUIREMENT IN PROPORTION TO KBC PRESCRIBED INCREASES.

SNOW (NON-SIMULTANEOUS w/LL) SOIL BEARING PRESSURES (PSF): SPREAD FOOTINGS 1500 CONTINUOUS STRIP FOOTINGS

PILE NOTES: PILE TYPE ALLOWABLE LOAD CAPACITY LENGTH OF PILES

1500 = 16"ø AUGER CAST PILE = 110 TONS = 45'-0" (MIN.)

PARAMETERS USED IN THE DESIGN OF THE PRINCIPAL FORCE-RESISTING STRUCTURAL SYSTEM				
FLAT ROOF SNOW LOAD (Pf)	=			
SNOW EXPOSURE FACTOR (Ce) SNOW LOAD IMPORTANCE FACTOR (Is) THERMAL FACTOR (Ct)		0.9 1.1 1.0		
WIND:				
BASIC WIND SPEED WIND IMPORTANCE FACTOR (IW)		90 MPH 1.15		
WIND EXPOSURÉ INTERNAL PRESSURE COEFFICIENT	=	B (±)0.18		
DESIGN WIND PRESSURE FOR		,		
COMPONENTS AND CLADDING	=	25.0 PSF		
SEISMIC:				
SEISMIC IMPORTANCE FACTOR (Ie) OCCUPANCY CATEGORY		1.25 Ⅲ		
MAPPED SPECTRAL RESPONSE ACCELERATION AT SHORT PERIODS (SS)	=	0.248 (G)		
MAPPED SPECTRAL RESPONSE ACCELERATION AT ONE SEC PERIOD (S1)		0.103 (G)		
SITE CLASSIFICATION BASED ON GEO-TECH REPORT DESIGN SPECTRAL RESPONSE ACCELERATION		D D		
AT SHORT PERIODS (SDS)	=	0.265 (G)		
DESIGN SPECTRAL RESPONSE ACCELERATION AT ONE SEC PERIOD (SD1)		0.164 (G)		
SEISMIC DESIGN CATEGORY BASIC SEISMIC FORCE RESISTING SYSTEM		C MOMENT RESISTI FRAME SYSTEMS AND ORDINARY STEEL MOMENT FRAMES.		
ANALYSIS PROCEDURÉ ZIP CODE	= = =			
LATITUDE	=	38.219 N		

SPECIAL INSPECTIONS ARE REQUIRED AS FOLLOWS (PER KBC):

LONGITUDE =  $\begin{bmatrix} -85.761 \text{ W} \end{bmatrix}$ 

SPECIAL	INSPECTIONS ARE	REQUIRED AS FULLOWS (PER KBC)	:
KBC SECTION	REQUIRED YES NO	DESCRIPTION OF INSPECTION OR TEST TO BE PERFORMED	COMPLY WITH REQUIREMENTS OF
1704.2	Χ	INSPECTION OF FABRICATORS:	ART. 1704.2.1
1704.2	Χ	A. STRUCTURAL STEEL	ART. 1704.2.1
1704.2	Χ	FABRICATION SHOP B. STEEL JOIST FABRICATION	ART. 1704.2.1
1704.2 1704.2	X X	SHOP C. METAL DECK ROLLING MILL D. LIGHT GAGE STEEL TRUSS FABRICATION SHOP	ART. 1704.2.1 ART. 1704.2.1
1704.2	X	E. LIGHT GAGE STEEL FRAMING FABRICATION SHOP	ART. 1704.2.1
1704.3	Χ	STEEL CONSTRUCTION	TABLE 1704.3
1704.4	X	CONCRETE CONSTRUCTION	TABLE 1704.4
1704.5	X	MASONRY CONSTRUCTION (NON ESSENTIAL FACILITIES)	TABLE 1704.5.2 (LEVEL 1)
1704.5	X	MASONRY CONSTRUCTION (ESSENTIAL FACILITIES)	TABLE 1704.5.3 (LEVEL 2)
1704.6	X	HIGH—LOAD DIAPHRAGMS AND SHEAR WALLS	ART. 1704.6.1
1704.7	Χ	SOILS/SITE PREPARATION	ART. 1704.7
1704.8	Χ	PILE FOUNDATIONS	ART. 1704.8
1704.9	X	PIER FOUNDATIONS	ART. 1704.9
1704.10	X	SPRAYED FIRE—RESISTANT MATERIALS	ART. 1704.10
1704.11	Χ	MASTIC AND INTUMESCENT FIRE-RESISTANT COATINGS	ART. 1704.11
1705	Χ	SEISMIC RESISTANCE	ART. 1705.3
1705	Χ	WIND RESISTANCE	ART. 1705.4
1707	X	SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE	ART. 1707
1707	Χ	A. SPECIAL INSPECTION FOR SEISMIC RESISTANCE	ART. 1707.1
1707	Χ	B. STRUCTURAL STEEL	ART. 1707.2
1707	X	D. COLD-FORMED STEEL FRAMING	ART. 1707.4
1707 1707	X	E. PIER FOUNDATIONS F. STORAGE RACKS & ACCESS FLOORS	ART. 1707.5 ART. 1707.6
1707 1707	X	G. ARCHITECTURAL COMPONENTS H. MECHANICAL & ELECTRICAL	ART. 1707.7 ART. 1707.8
1707	Χ	COMPONENTS  I. DESIGNATED SEISMIC SYSTEM	ART. 1707.9
1707	Χ	VERIFICATIONS  J. SEISMIC ISOLATION SYSTEM	ART. 1707.10
1708	X	STRUCTURAL TESTING FOR SEISMIC RESISTANCE	ART. 1708
1708	Χ	A. MASONRY CONSTRUCTION	ART. 1708.1
1708	X	A.1 EMPIRICALLY DESIGNED NON-ESSENTIAL FACILITY	ART. 1708.1.1
1708	Χ	A.2 EMPIRICALLY DESIGNED ESSENTIAL FACILITY	ART. 1708.1.2
1708	X	A.3 ENGINEERED MASONRY IN NON-ESSENTIAL FACILITY	ART. 1708.1.2
1708	X	A.4 ENGINEERED MASONRY IN ESSENTIAL FACILITY	ART. 1708.1.4
1708	Χ	B. TESTING FOR SEISMIC RESISTANCE	ART. 1708.2
1708	Χ	C. REINFORCING & PRESTRESSING STEEL	ART. 1708.3
1708 1708	X X	D. STRUCTURAL STEEL E. MECHANICAL & ELECTRICAL EQUIPMENT	ART. 1708.4 ART. 1708.5
1708	Χ	F. SEISMICALLY ISOLATED STRUCTURES	ART. 1708.6
1709	Χ	STRUCTURAL OBSERVATIONS	ART. 1709

INSPECTION OF FABRICATION SHOPS SHALL BE WAIVED BASED UPON THE FOLLOWING STRUCTURAL STEEL - ACTIVE CERTIFICATION WITH THE AMERICAN INSTITUTE OF

STEEL CONSTRUCTION (A.I.S.C.) STEEL JOIST - ACTIVE MEMBER COMPANY WITH THE STEEL JOIST INSTITUTE (S.J.I.) METAL DECK - ACTIVE MEMBER COMPANY WITH THE STEEL DECK INSTITUTE (S.D.I.) LIGHT GAGE STEEL FRAMING — FULL VOTING MEMBER WITH THE STEEL STUD MANUFACTURER'S ASSOCIATION (S.S.M.A.)

ALL COSTS ASSOCIATED WITH ANY NECESSARY FAB SHOP INSPECTIONS SHALL BE THE RESPONSIBILITY OF THE FABRICATION SHOP AND PAID DIRECTLY TO THE PROJECT'S SPECIAL INSPECTION FIRM.

10. PROVISION FOR FUTURE EXPANSION: NONE

11. THIS BUILDING WAS DESIGNED IN ACCORDANCE WITH:

"BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY" ACI 318-08, ALTERNATE DESIGN METHOD.

Building code requirements and specification for masonry structures, ACI 530-08/ASCE 5-08/TMS 402-08. "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS", AISC, 2005, ALLOWABLE

"SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS",

"STANDARD SPECIFICATIONS FOR OPEN WEB STEEL JOISTS, K-SERIES". SJI. 2005. "STANDARD SPECIFICATIONS FOR LONG-SPAN STEEL JOISTS, LH-SERIES AND DEEP LONG-SPAN STEEL JOISTS, DLH-SERIES", SJI, 2005. "SPECIFICATIONS AND COMMENTARY FOR STEEL ROOF DECK", STEEL DECK

INSTITUTE, PUBLICATION No. 31. "SPECIFICATIONS AND COMMENTARIES FOR NON-COMPOSITE STEEL FORM DECK", STEEL DECK INSTITUTE, PUBLICATION No. 31. "DIAPHRAGM DESIGN MANUAL", STEEL DECK INSTITUTE (DDM03).

# 1.4 SUBMITTALS

1. ANY REFERENCE TO SHOP DRAWINGS IN THE CONTRACT DOCUMENTS MEANS SHOP & ERECTION DRAWINGS. SHOP DRAWINGS ARE TO BE PREPARED BY THE CONTRACTOR, FOR THE SOLE PURPOSE OF DEMONSTRATING HIS/HER DEPTH OF UNDERSTANDING OF THE PROJECT REQUIREMENTS, RESOLVING THE COMPLEXITIES TO BE ANTICIPATED DURING THE EXECUTION, PLANNING THE EXECUTION AND WORKING OUT THOSE SPECIFIC AND FINITE DETAILS REQUIRED TO CARRY OUT CONSTRUCTION. HENCE, BOTH SHOP AS WELL AS ERECTION DRAWINGS SHALL BE PREPARED BY THE MATERIAL SUPPLIER IN DETAIL. NEITHER DESIGN DRAWINGS NOR PARTS THEREOF SHALL BE USED AS SHOP DRAWINGS. SUBSTITUTION OF DESIGN DRAWINGS FOR SHOP & ERECTION DRAWINGS IS IN VIOLATION OF ONE OR MORE OF THE STATUTES AND IS FORBIDDEN HEREIN AND THE SUBMITTAL WILL BE REJECTED.

2. SHOP DRAWINGS SHALL BE EXPLICIT. SUFFICIENT INFORMATION AND DETAILS SHALL BE SHOWN TO ENSURE THAT FABRICATORS, INSTALLERS AND ERECTORS ARE NOT REQUIRED TO INTERPRET REQUIREMENTS. THE SHOP DRAWINGS SHALL FULLY REPRESENT WHAT IS TO BE INSTALLED IN THE PROJECT. LABOR SAVING WORDS SUCH AS "TYP". "VERIFY IN FIELD". "N-PLACES" SHOULD BE AVOIDED AND SUBMITTALS MAY BE RETURNED FOR EXPLICIT REPRESENTATIONS.

3. WHERE THE CONTRACTOR IS REQUIRED TO PROVIDE ENGINEERING DESIGN. THE SHOP DRAWINGS AND CALCULATIONS SUBMITTED ARE TO BE IN ACCORDANCE WITH THE FOLLOWING STAMPING AND SIGNING PROVISIONS. THE ITEMS SUBMITTED SHALL BE DESIGNED BY A STRUCTURAL ENGINEER REGISTERED IN THE STATE IN WHICH THE PROJECT IS LOCATED AND THE SHOP DRAWINGS SHALL BE STAMPED BY THE ENGINEER IN CHARGE OF DESIGN. THE STAMPING AND SIGNING SHALL CONFORM TO THE FOLLOWING:

A. EACH SHEET OF A SET SHALL BEAR THE STAMP, SIGNATURE AND

THE DATE SIGNED. THE SIGNATURE SHALL BE ACROSS THE STAMP. B. THE SHEET 1 OR TITLE PAGE SHALL BE WET SIGNED IN A DIFFERENT COLORED INK THAN THE MEDIA AND CONTAIN THE DATES OF SIGNATURE AND EXPIRATION DATE OF REGISTRATION IN ADDITION TO THE

REQUIREMENTS STATED IN ITEM A. CALCULATIONS:

DRAWINGS:

A. EACH SHEET OF A SET SHALL BEAR THE STAMP. SIGNATURE AND THE DATE SIGNED. THE SIGNATURE SHALL BE ACROSS THE STAMP.

B. THE SHEET 1 OR TITLE PAGE SHALL BE WET SIGNED IN A DIFFERENT COLORED INK THAN THE MEDIA AND CONTAIN THE DATES OF SIGNATURE AND EXPIRATION DATE OF REGISTRATION IN ADDITION TO THE REQUIREMENTS STATED IN ITEM A.

STAMPING WHOLE OR PORTIONS OF DESIGN DRAWINGS, & THEIR USE AS SHOP DRAWINGS. IS IN VIOLATION OF CODE OF PROFESSIONAL PRACTICE AND CONDUCT ADOPTED BY THE KENTUCKY STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS & LAND SURVEYORS &, AS PER KRS 322.180(4), THE REGISTRATION OF THE REGISTRANT MAY BE REVOKED OR SUSPENDED.

4. SUBMITTALS SHALL BE COMBINED TO INCLUDE ALL MATERIALS OR COMPONENTS NECESSARY TO COORDINATE & CONSTRUCT PARTICULAR ELEMENTS OF THE WORK. LARGE PROJECTS, HOWEVER, MAY BE SUBMITTED IN BUILDING AREA

5. SHOP DRAWINGS FOR FABRICATION, BENDING & PLACEMENT OF CONCRETE OR MASONRY REINFORCEMENT SHALL COMPLY WITH LATEST EDITION OF ACI-315 "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES." SHOW BAR SCHEDULES, STIRRUP AND BAR SPACING, BAR LOCATION, INCLUDING ALL CMU DOWELS ON A PLAN SHEET, DIAGRAM OF BENT BARS. ARRANGEMENT OF BARS, CLEARANCES, BOLSTERS & OTHER ACCESSORIES, CONCRETE COVER AND CONTROL AND CONSTRUCTION JOINTS.

6. IF CUT SHEETS OR CATALOGUES ARE SUBMITTED FOR REVIEW, THE SPECIFIC PRODUCT DETAILS THAT WILL BE USED IN THIS PROJECT SHALL BE MARKED.

7. ALL SUBMITTALS SHALL HAVE BEEN FULLY REVIEWED & COORDINATED BY THE GENERAL CONTRACTOR BEFORE SUBMISSION TO THE STRUCTURAL ENGINEER FOR COMPLETE COMPLIANCE WITH THE REQUIREMENTS OF THE DESIGN DRAWINGS, GENERAL PROVISIONS & SPECIFICATIONS. FAILURE OF THE GENERAL CONTRACTOR TO COMPLY SHALL BE REASON FOR REJECTION OF THE SUBMITTAL. THE CONTRACTORS REVIEWS SHALL ALSO DETERMINE THAT THE SUBMITTALS ARE ACCEPTABLE IN TERMS OF THE MEANS, METHODS, TECHNIQUES, SEQUENCES AND OPERATIONS OF CONSTRUCTION, SAFETY PRECAUTIONS AND PROGRAMS INCIDENTAL THERETO, ALL OF WHICH ARE THE CONTRACTOR'S RESPONSIBILITIES. LABEL ALL SUBMITTALS WITH THE SPECIFICATION REFERENCE NUMBER UNDER WHICH THEY ARE TO BE REVIEWED AND PROVIDE SPACE FOR REVIEW STAMPS.

8. THE CONTRACTOR SHALL CALL ATTENTION TO ANY SHOP DRAWING SUBMITTAL, AND ANY SPECIFIC PART THEREOF, THAT VARIES FROM WHAT THE PROJECT DOCUMENTS CALL FOR. THE JUSTIFICATION FOR SUCH VARIANCES SHALL BE CLEARLY STATED, AS SHALL ANY RESULTING COST SAVINGS TO BE PASSED ON TO THE OWNER, THE ENGINEER'S COSTS IN REVIEWING THE ITEMS AT VARIANCE IN ANY SUCH SUBMITTAL WILL BE BILLED TO THE CONTRACTOR, AT THE

9. RESUBMITTALS SHALL CLEARLY INDICATE THOSE SPECIFIC ITEMS THAT HAVE BEEN REVISED OR ADDED SINCE THE INITIAL REVIEW BY THE ENGINEER. FAILURE TO DO SO WILL BE REASON FOR REJECTION. THE ENGINEER'S COSTS IN REVIEWING SUBMITTALS OTHER THAN THE INITIAL SUBMITTAL, AND THE FIRST SUBSEQUENT RESUBMITTAL, WHEN CALLED FOR, WILL BE BILLED TO THE CONTRACTOR. THE GENERAL CONTRACTOR SHALL CLEARLY STATE THAT RESUBMITTALS COMPLY WITH THE DESIGN TEAM'S REVIEW COMMENTS.

10. ONE PAPER SEPIA AND TWO BLUE LINE COPIES OF EACH SHOP DRAWING SHALL BE SUBMITTED, UNLESS NOTED OTHERWISE IN THE SPECIFICATIONS.

11. SUBMITTALS FOR CONCRETE & GROUT MIX DESIGNS SHALL INCLUDE REQUEST FOR, AND COMPLETION OF, SUBMITTAL FORM PRESCRIBED BY THE ENGINEER. 12. NON-COMPLIANCE WITH SUBMITTAL REQUIREMENTS WILL RESULT IN A DELAY

IN THE RELEASE OF REVIEWED DOCUMENTS, FOR WHICH THE ENGINEER WILL NOT BE RESPONSIBLE. 13. SUBMITTAL PROCEDURES:

SUBMITTAL DATA IN ELECTRONIC FORMAT IS TO BE UTILIZED IN PLACE OF PAPER COPIES, WHEREVER POSSIBLE

B. ELECTRONIC SUBMITTALS SUBMIT DATA IN A DIGITAL FORMAT, EITHER AS AN E-MAIL ATTACHMENT OR PHYSICALLY DELIVERED ON FLOPPY OR CD RECORDING MEDIA. WHEREVER POSSIBLE, DRAWING FILES ARE TO BE IN A FORMAT THAT CAN BE OPENED BY AUTOCAD 2004; & TEXT FILES IN A FORMAT THAT CAN BE OPENED BY MICROSOFT EXCEL OR WORD. FILES THAT CAN ONLY BE OPENED BY ACROBAT 5.0 OR IMAGE VIEWERS ARE ACCEPTABLE BUT ARE NOT PREFFERED. RAI'S REVIEW COMMENTS, & STAMP WILL BE ADDED TO .DWG FILES, IN THEIR OWN LAYER AND IN A CLEARLY IDENTIFIABLE FONT SIZE AND COLOR. RAI'S REVIEW COMMENTS, & STAMP, WILL BE ADDED IN A CLEARLY IDENTIFIABLE FONT STYLE & COLOR TO NON- .DWG FILES, WHERE POSSIBLE, OR CREATED IN A SEPARATE MICROSOFT EXCEL OR WORD FILE. ALL REVIEWED SUBMITTALS WILL BE ELECTRONICALLY FORWARDED TO THE ARCHITECT FOR HIS/HER REVIEW AND SUBSEQUENT DISTRIBUTION. THE FORWARDED FILES WILL BE IN .PDF FORMAT AND ADDITIONALLY IN .DWG FORMAT, WHERE

C. PAPER SUBMITTALS SUBMIT DATA IN DUPLICATE. ONE COPY WILL BE USED FOR RAI'S REVIEW PROCESS & PROJECT RECORDS. REVIEW COMMENTS WILL BE TRANSCRIBED. OR ATTACHED. TO THE REMAINING COPY BEFORE FORWARDING TO THE ARCHITECT FOR HIS/HER REVIEW AND SUBSEQUENT DISTRIBUTION; AND ONE COURTESY OCE OR XEROX PROCESS BLACK-LINE COPY OF THE FORWARDED DOCUMENTS WILL ALSO BE INCLUDED. RANGASWAMY & ASSOCIATES COMMENTS WILL BE IDENTIFIED.

14. RANGASWAMY AND ASSOCIATES, INC. HAS PREPARED A "SUBMITTAL STANDARDS" GUIDE WHICH CAN BE VIEWED, PRINTED AND/OR DOWNLOADED FROM THE FOLLOWING WEB PAGE: <a href="http://www.rangaswamy.com/submittalstandards.htm">http://www.rangaswamy.com/submittalstandards.htm</a> THE "SUBMITTAL STANDARDS" GUIDE IS NOT INTENDED TO BE EXHAUSTIVE FOR ALL SUBMITTALS AND ALL MATERIALS. THE "SUBMITTAL STANDARDS" GUIDE SHALL BE FOLLOWED FOR ALL APPLICABLE SHOP DRAWINGS AND SUBMITTALS.

1. TYPICAL DETAILS SHOWN IN THESE PLANS ARE PROVIDED TO ILLUSTRATE DESIGN PHILOSOPHIES AND MINIMUM REQUIREMENTS.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACCOMMODATING SPECIFIC

FIELD CONDITIONS WHILE PROVIDING FOR THE INTENT OF THE TYPICAL DETAILS.

3. COORDINATION OF THE EXACT LOCATIONS, AND QUANTITIES, OF THE TYPICAL DETAIL CONDITIONS IN COMPARISON TO THE ACTUAL PROJECT CONDITIONS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR; AND PERFORMED AT NO ADDITIONAL COSTS TO THE OWNER OR THE OWNER'S AGENTS.

# 1.6 MISCELLANEOUS NOTES

1. LAYOUT DIMENSIONS SHOWN ON THE STRUCTURAL PLANS HAVE BEEN DERIVED FROM THE ARCHITECTS' PLANS AND INCLUDED FOR THE CONTRACTOR'S CONVENIENCE. THE CONTRACTOR IS RESPONSIBLE FOR CORRELATING AND VERIFYING THE LAYOUT DIMENSIONS ON THE STRUCTURAL PLANS WITH THE DETAILS AND DIMENSIONS SHOWN ON THE ARCHITECTURAL PLANS. IF ARCH-ITECTURAL DETAILS, FEATURES OR ROOM LAYOUTS ARE SHOWN IN THE STRUCTURAL PLANS THEY ARE TO BE CONSIDERED AS BEING INDICATED FOR CONCEPTUAL PURPOSES ONLY. DOCUMENT DISCREPANCIES, BETWEEN VARIOUS TRADES. SHALL BE BROUGHT TO THE ARCHITECT'S IMMEDIATE ATTENTION FOR FINAL

2. EACH CONTRACTOR SHALL VERIFY THE SIZE & LOCATION OF DUCT OPENINGS, GRILLES, LOUVERS, ETC. WITH THE MECHANICAL TRADES BEFORE PROCEEDING 3. IF DIMENSIONS AND DETAILS ARE NOTED WITH AN ASTERISK (\*) THEY ARE TO BE DETERMINED, BY THE CONTRACTOR, FROM THE EQUIPMENT MANUFACTURERS' CERTIFIED DRAWINGS, AND INSTALLATIONS SHALL BE BASED ON SUCH INFORMATION.

4. SEE THE SPECIFICATIONS FOR SHORING AND BRACING REQUIREMENTS. STABILITY OF EXISTING STRUCTURES DURING CONSTRUCTION IS THE CONTRACTOR'S RESPONSIBILITY. ENGAGE THE SERVICES OF A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF KENTUCKY TO PERFORM DESIGN OF TEMPORARY SUPPORTS AND PROCEDURES. SUCH ENGINEER SHALL CARRY PROFESSIONAL LIABILITY INSURANCE FOR \$1,000,000.00 MIN. AND SUBMIT CERTIFICATE OF INSURANCE FOR REVIEW BY THE ARCHITECT. SUBMITTALS, NOT ACCOMPANIED WITH CERTIFICATE OF PROFESSIONAL LIABILITY INSURANCE, WILL BE RETURNED WITHOUT FURTHER REVIEW.

# 1.7 CABINET DESIGN AND ANCHORING

1. CABINET AND CASEWORK DESIGN AND IT'S ANCHORING TO STRUCTURAL ELEMENTS SUCH AS WALLS, BEAMS, JOISTS, COLUMNS, ETC. SHALL BE IN ACCORDANCE WITH SECTION 1613, "EARTHQUAKE LOADS" OF THE INTERNATIONAL BUILDING CODE, CURRENT EDITION. SEISMIC DESIGN PARAMETERS ARE FURNISHED UNDER GENERAL PROVISION NOTES SECTION 1.3 "DESIGN NOTES" SHOWN ON THE STRUCTURAL DRAWINGS.

2. THE STORAGE VERTICAL LIVE LOADS TO BE APPLIED TO THE HORIZONTAL FLAT SURFACES OF THE CABINETS OR CASEWORK SHALL BE 20 PSF IN ADDITION TO THE VERTICAL DEAD LOADS OF THE CABINETS. FOR SIMPLICITY, ALL VERTICAL LOADS CAN BE ASSUMED TO BE APPLIED AT ONE HALF THE HORIZONTAL DEPTH OF THE CABINET.

3. THE HORIZONTAL EARTHQUAKE LOADS SHALL BE OBTAINED BY MULTIPLYING THE TOTAL VERTICAL LOAD (DEAD + LIVE) BY THE SEISMIC RESPONSE COEFFICIENT (Cs) FURNISHED UNDER GENERAL PROVISION NOTES SECTION 1.3 "DESIGN NOTES" SHOWN ON THE STRUCTURAL DRAWINGS. FOR SIMPLICITY, THE HORIZONTAL EARTHQUAKE LOAD MAY BE APPLIED AT ONE HALF THE VERTICAL HEIGHT OF THE

4. ANCHORS SHALL BE DESIGNED TO WITHSTAND THE RESOLVED COMPONENTS OF THE VERTICAL DEAD AND LIVE LOADS AS WELL AS HORIZONTAL SEISMIC LOADS ACTING SIMULTANEOUSLY ON THE ANCHOR.

5. ANCHOR DESIGN CALCULATIONS AND DETAILS SHALL BEAR THE SEAL AND SIGNATURE OF A STRUCTURAL ENGINEER LICENSED AND PRACTICING IN THE STATE OF KENTUCKY. THE STRUCTURAL ENGINEER SHALL HAVE PROFESSIONAL LIABILITY INSURANCE TO A LIMIT OF \$1,000,000.00 PER OCCURRENCE AND SUBMIT CERTIFICATE OF INSURANCE FOR ARCHITECT'S REVIEW AND FILE.

MINIMUM COMPRESSIVE STRENGTH OF CONCRETE SHALL BE AS NOTED IN THE DESIGN NOTES. UNLESS NOTED OTHERWISE, MINIMUM CEMENT PER CUBIC YARD OF CONCRETE SHALL BE 540 POUNDS FOR SLABS; 560 POUNDS FOR ALL OTHER C.I.P. CONCRETE. MAXIMUM SLUMP, AT POINT OF PLACEMENT, SHALL BE 5" (+1") FOR SLABS AND 4" ( $\pm$ 1") FOR ALL OTHER C.I.P. CONCRETE  $\cdot$ UNLESS NOTED OTHERWISE. BEFORE THE ADDITION OF WATER REDUCING ADMIXTURES. FLYASH MAY CONSTITUTE NO MORE THAN 20% OF THE TOTAL CEMENTITIOUS MATERIAL. ALL SELECTED ADMIXTURES MUST BE COMPATIBLE WITH EACH OTHER; AND MAY NOT CONTAIN ANY CHLORIDE BASED COMPONENTS. MAXIMUM SLUMP OF CONCRETE TO RECEIVE A BUSH HAMMERED FINISH SHALL BE 1 1/2" PRIOR TO THE ADDITION OF ADMIXTURES AND FLUIDIFIERS.

2. ALL MATERIALS USED IN THE CONCRETE CONSTRUCTION SHALL BE NEW. REINFORCING STEELS SHALL BE CONTINUOUS BETWEEN SPLICES. LOCATION OF ALL SPLICES SHALL BE PER PLANS OR AS APPROVED BY THE ARCHITECT. RUSTED REINFORCING STEEL AND RECYCLED MATERIALS (EXCEPT CONCRETE FORMS AS ALLOWED IN THE SPECIFICATIONS) SHALL NOT BE USED IN THE CONSTRUCTION. ALL REJECTED MATERIALS SHALL BE REPLACED AT NO ADDITIONAL COST TO THE OWNER OR HIS AGENTS.

3. REINFORCING STEEL PLACING DRAWINGS AND BAR LISTS SHALL CONFORM TO THE CURRENT EDITIONS OF THE AMERICAN CONCRETE INSTITUTE'S "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT" (ACI 315) AND "MANUAL OF ENGINEERING AND PLACING DRAWINGS FOR REINFORCED CONCRETE STRUCTURES" (ACI 315R); AND THESE PUBLICATIONS SHALL FORM PART OF THE CONTRACT DOCUMENTS. ALL BAR AND MESH SUPPORTS MUST BE CLEARLY DETAILED.

4. ALL REINFORCING STEEL DETAILS SHALL BE IN ACCORDANCE WITH THE ACI "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY" (ACI 318, CURRENT EDITION).

5. CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL AS OUTLINED HEREIN AND SHALL BE INDICATED ON THE APPLICABLE REINFORCING STEEL SHOP DRAWINGS.

UNLESS NOTED OTHERWISE:

JOISTS AND STRUCTURAL SLABS: #11 BARS AND SMALLER 3/4 IN. #14 AND #18 BARS 1 1/2 IN.

CLASS 1 THRU 6 SLABS ON GRADE OR METAL DECK: T/4 (2" MAX.): T = SLAB THICKNESS IN INCHESSAME AS BOTTOM COVER FOR FOUNDATIONS (3") SLAB THICKENINGS BEAMS, COLUMNS AND PIERS:

STIRRUPS, SPIRALS, AND TIES 1 1/2 IN. PRINCIPAL REINFORCEMENT

#11 BARS AND SMALLER 1 1/2 IN. #14 AND #18 BARS

FOUNDATIONS AND STRUCTURAL BASE SLABS: AT FORMED SURFACES & BOTTOMS BEARING ON CONCRETE WORK MAT. 2 IN AT UNFORMED SURFACES INCLUDING BOTTOMS IN CONTACT WITH SOILS. 3 IN. TOP OF FOOTINGS. OVER TOP OF PILES.

EXPOSED SURFACES:

NO REINFORCING IN AREAS EXPOSED TO EARTH, WEATHER, SEWAGE, WATER OR HIGH HUMIDITY SHALL HAVE COVER LESS THAN 2" ADDITIONAL COVER OF 3/4" SHALL BE PROVIDED WHERE REINFORCING STEEL IS PLACED ALONG SURFACES TO RECEIVE BUSH-HAMMERED FINISH.

ALL REINFORCING STEEL, INCLUDING ANCHOR BOLTS AND EMBEDDED STUDS, SHALL BE SEPARATED BY A DISTANCE OF ONE INCH MINIMUM OR SECURELY WIRED TOGETHER. 6. CONCRETE FORMING CONTRACTOR IS RESPONSIBLE FOR APPLYING THE PROPER FORM LINERS AND/OR TEXTURING DEVICES. AT BUSH-HAMMERED

ELEMENTS THE CONCRETE POURING SEQUENCE IS TO BE CONTINUOUS, WITHOUT THE FORMATION OF COLD JOINTS. SEE THE DRAWINGS AND/OR SPECIFICATIONS FOR WALL FINISH SCHEDULE. 7. HOOKS AND BENDS SHALL BE ACI STANDARD UNLESS OTHERWISE INDICATED.

8 REINFORCING STEEL IN FOOTINGS SHALL BE ASSEMBLED IN MAT GRILLES, EQUALLY SPACED AND SECURELY WIRED TOGETHER, BEFORE THE CONCRETE IS 9. PROVIDE SHEAR KEYS IN THE TOPS OF WALL FOOTINGS SUPPORTING

CONCRETE OR MASONRY WALLS; AND IN THE TOPS OF COLUMN FOOTINGS AT CONCRETE OR MASONRY COLUMNS/PIERS/PILASTERS. 10. CENTER ALL FOOTINGS UNDER WALL, PIER OR COLUMN ABOVE UNLESS OTHERWISE INDICATED.

11. PROVIDE CORNER BARS AT ALL CONCRETE WALL CORNERS AND INTERSECTIONS. CORNER BARS SHALL BE LAP SPLICED WITH THE FACE HORIZONTAL BARS AND ARE TO MATCH THE FACE HORIZONTAL BARS IN SIZE, GRADE AND SPACING, UNLESS OTHERWISE SHOWN.

12. UNLESS OTHERWISE INDICATED, CONTINUOUS WALL FOOTINGS SHALL BE TWICE THE WIDTH OF THE WALL ABOVE AND THE FOOTING THICKNESS SHALL BE EQUAL TO THE WIDTH OF THE WALL ABOVE. THE MINIMUM FOOTING THICKNESS SHALL BE ONE FOOT. PROVIDE 3-#4 CONTINUOUS BOTTOM BARS, WITH #4 AT 24" O.C. TRANSVERSE BARS, UNLESS SHOWN OTHERWISE.

13. SPREAD BARS AROUND SMALL OPENINGS AND SLEEVES IN SLABS AND WALLS WHERE POSSIBLE AND WHERE BAR SPACING WILL NOT EXCEED 1.5 TIMES THE NORMAL SPACING. DISCONTINUE BARS AT LARGE OPENINGS WHERE NECESSARY AND PROVIDE AN AREA OF REINFORCEMENT EQUAL TO THE INTERRUPTED REINFORCEMENT, DISTRIBUTING ONE—HALF OF THIS REINFORCEMENT EACH SIDE OF THE OPENING. HOLES LARGER THAN 12 INCHES IN ANY DIRECTION SHALL HAVE  $1-\#5 \times 5'-0$ " DIAGONAL BAR IN EACH FACE AT EACH CORNER, UNLESS NOTED OTHERWISE.

14. PLANS SHOW ONLY THE CRITICAL REINFORCEMENT IN WALLS FOR CLARITY. MINIMUM REINFORCEMENT IN WALLS, WHERE NOT SHOWN ON PLANS, SHALL BE AS FOLLOWS:

THICKNESS OF WALL LAYERS LOCATION <u>REINFORCEMENT</u> 3.00" TO 8.00" MIDDLE #4 AT 12" E.W. #4 AT 12" E.W. FACES #5 AT 12" E.W. 16.01" TO 20.00" **FACES** 

15. ALL REINFORCED CONCRETE COLUMNS AND PIERS SHALL HAVE MINIMUM #4 TIES AT 12" C/C FULL HEIGHT, UNLESS SPECIFIED OTHERWISE. 16. REINFORCEMENT IN WALLS SHALL BE CONTINUOUS. HORIZONTAL BAR LAP SPLICES SHALL BE STAGGERED.

17. ALL OPENINGS THROUGH WALLS, SLABS OR OTHER STRUCTURAL ELEMENTS NOT DETAILED ON THE STRUCTURAL DRAWINGS MUST BE LOCATED BY THE CONTRACTOR AND SHOWN ON THE APPLICABLE REINFORCING STEEL SHOP DRAWINGS. THE FINAL LOCATION OF ALL OPENINGS MUST BE REVIEWED BY THE CONTRACTOR BEFORE THE CONCRETE IS POURED.

18. PIER, COLUMN AND VERTICAL MASONRY REINFORCEMENT SHALL BE DOWELED TO THE FOOTING. PROVIDE DOWELS EQUAL IN SIZE, NUMBER AND GRADE TO THE VERTICAL REINFORCEMENT ABOVE, UNLESS OTHERWISE INDICATED. DOWELS SHALL BE ACI 90 DEGREE HOOKS AT THE BOTTOM LEVEL OF FOOTING, SLAB OR THICKENED SLAB REINFORCEMENT. DOWELS SHALL BE LAPPED WITH THE VERTICAL REINFORCEMENT ABOVE AND ARE TO HAVE FULL COMPRESSION LAP SPLICES, UNLESS NOTED OTHERWISE.

19. COLUMN FOOTING DOWELS ARE TO HAVE FULL COMPRESSION LAP SPLICES WITH THE COLUMN STEEL, UNLESS NOTED OTHERWISE.

20. SEE THE ARCHITECTURAL DRAWINGS AND THE SPECIFICATIONS FOR THE LOCATIONS OF SPECIAL ANCHORS, CHAMFERS, AND OTHER DETAILS NOT SHOWN ON THE STRUCTURAL DRAWINGS.

21. WELDING, INCLUDING TACK WELDING, OF REINFORCING STEEL IS PROHIBITED. WELDING OF REINFORCING STEEL WILL BE PERMITTED ONLY BY WRITTEN APPROVAL OF THE ARCHITECT.

22. NO REINFORCING STEEL SHALL BE FIELD BENT OR CUT WITHOUT THE APPROVAL OF THE ARCHITECT. FIELD CUT REINFORCING STEEL USING MECHANICAL METHODS SUCH AS REBAR SAW. TORCH CUTTING OF REINFORCING STEEL IS PROHIBITED. 23. ALL LAP SPLICES SHALL BE CLASS 'B' LAPS IN ACCORDANCE WITH THE

REQUIREMENTS OF ACI 318 - CURRENT EDITION, UNLESS OTHERWISE NOTED.

REINFORCING BAR LAP LENGTHS SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE ON THE DRAWINGS: A. UNLESS NOTED OTHERWISE, 50 BAR DIAMETERS FOR BARS SIZES UP TO

AND INCLUDING #6; 62 BAR DIAMETERS FOR BAR SIZES LARGER THAN #6 B. HORIZONTAL REBAR IN WALLS AND BARS IN TOP LAYERS OF BEAMS, SLABS,

MATS AND FOOTINGS: - 64 BAR DIAMETERS FOR BAR SIZES UP TO AND

INCLUDING #6; 80 BAR DIAMETERS FOR BAR SIZES LARGER THAN #6. AT THE CONTRACTOR'S DISCRETION, THE SHOP DRAWINGS MAY REFLECT THE MORE STRINGENT REQUIREMENTS, GIVEN IN "B" ABOVE, FOR ALL REBAR IN ORDER TO MINIMIZE POSSIBLE FRRORS ON THE SHOP DRAWINGS AND IN THE FIELD. LAP-SPLICE LOCATIONS INDICATED IN THE DRAWINGS ARE INTENDED TO INDICATE ACCEPTABLE LOCATIONS. THEY ARE NOT MANDATORY, UNLESS NOTED

OTHERWISE. AT CONTRACTOR'S OPTION, CONTINUOUS BARS MAY BE INSTALLED

24. PLANS SHOW THE ESSENTIAL REINFORCEMENT BASED UPON DESIGN. ADDITIONAL REINFORCEMENTS THAT ARE REQUIRED TO HOLD THE ESSENTIAL REINFORCEMENT IN ITS TRUE POSITION, WITHIN ALLOWABLE TOLERANCES, SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

25. ALL CONCRETE FLAT WORK, SUCH AS FLOOR SLABS, SHALL BE WET CURED FOR A MINIMUM OF SEVEN DAYS OR BY A CURING METHOD APPROVED BY THE PROJECT ARCHITECT.

26. STRIP FOOTING LONGITUDINAL BARS SHALL BE CONTINUOUS THROUGH SPREAD FOOTINGS. HORIZONTAL WALL REINFORCING STEEL SHALL BE CONTINUOUS THROUGH INTEGRAL PIERS AND COLUMNS. ALL ABUTTING CONCRETE SURFACES, SUCH AS FOOTING TO FOOTING OR WALL TO WALL, SHALL BE DOWELED TOGETHER AND HAVE SHEAR RESISTANCE KEYS UNLESS NOTED OTHERWISE ON THE DRAWINGS.

27. PROVIDE AN AMOUNT OF REINFORCING STEEL FOR CONTINGENCIES, EQUAL TO THE FOLLOWING, TO BE FABRICATED AND PLACED AS DIRECTED BY THE ARCHITECT/ENGINEER:

# #4 200 LINEAR FEET #5 200 LINEAR FEET

GENERAL CONTRACTOR SHALL MAINTAIN AN UP-TO-DATE CONTINGENCY LOG SHEET AND PROVIDE SUCH LOG SHEET TO THE ARCHITECT, AT THE ARCHITECT'S REQUESTS FOR SUCH. GENERAL CONTRACTOR SHALL ALSO ASSIGN A PER POUND UNIT PRICE VALUE FOR THE CONTINGENCY REINFORCING STEEL; AND ABIDE BY THIS PRICE FOR THE DURATION OF THE PROJECT.

FULL CREDIT FOR UNUSED QUANTITIES SHALL BE GIVEN TO THE OWNER.

# 3.2 SLAB NOTES

1. SLABS ON GRADE OR METAL DECK SHALL BE IN ACCORDANCE WITH ACI 302.1R-04 MANUAL OF CONCRETE PRACTICE "GUIDE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION". THE CONTRACTOR SHALL MAINTAIN A COPY OF THIS GUIDE AT THE FIELD OFFICE. FLOORS WITHIN THE BUILDING, AND SLABS AT LOADING DOCKS, SHALL BE PER THE FOLLOWING TABLE, UNLESS NOTED OTHERWISE:

3 CORRIDORS

ACI MINIMUM CONCRETE MAXIMUM FLATNESS LEVELNESS ITEM AREA OF CLASS THICKNESS STRENGTH SLUMP (INCHES) (PSI) (INCHES) (Ff) (FI) 1 OFFICES & GENERAL ARFAS 4.000 3500.00 5.000 25.000 20.000 ELSEWHERE

2 GYMNASIUMS PURPOSE AREAS & 4.000 3500.00 5.000 25.000 20.000

GARAGE FLOORS 4 5.000

4 LIVING AREAS RESIDENCE HALLS & 4.000 3500.00 5.000 25.000 20.000 APARTMENTS 5 DRIVEWAYS &

6 EXTERIOR WALKS 1 4.000 3500.00 5.000 20.000 15.000 2. UNLESS NOTED OTHERWISE, ALL INTERIOR AND EXTERIOR SLABS ON GRADE SHALL BE REINFORCED WITH "FIBERMESH 650" AS MANUFACTURED BY PROPEX CONCRETE SYSTEMS, OR APPROVED EQUIVALENT, AT THE DOSAGE RATE OF THREE POUNDS PER CUBIC YARD OF CONCRETE. FIBERS SHALL COMPLY WITH ASTM C1116, TYPE 3 AND SHALL BE MANUFACTURED IN AN ISO 9001:2000 CERTIFIED FACILITY. THE FIBERS SHALL ONLY BE ADDED TO THE CONCRETE MIX AT THE BATCH PLANT.

2 4.000 3500.00 5.000 25.000 20.000

4000.00 5.000 35.000 25.000

. UNLESS NOTED OTHERWISE, ALL INTERIOR SLABS OVER METAL DECKING SHALL BE REINFORCED WITH "NOVOMESH 850 BLEND" AS MANUFACTURED BY PROPEX CONCRETE SYSTEMS, OR APPROVED EQUIVALENT, AT THE DOSAGE RATE OF TWENTY-FOUR POUNDS PER CUBIC YARD OF CONCRETE. FIBERS SHALL COMPLY WITH ASTM C1116, TYPES 1 & 3 COMBINED AND ASTM A820, TYPE 1. THE FIBERS SHALL BE MANUFACTURED IN AN ISO 9001:2000 CERTIFIED FACILITY AND SHALL ONLY BE ADDED TO THE CONCRETE MIX AT THE BATCH PLANT.

SHALL BE 6 1/4" THICK FROM BOTTOM OF DECK. CUT CONTROL JOINTS OVER AND ALONG BEAMS/WALLS THAT SUPPORT JOISTS AND/OR METAL DECKING. 5. UNLESS NOTED OTHERWISE, ALL TUNNEL AND CRAWL SPACE CONCRETE SLABS OVER METAL DECK SHALL BE 7 1/4" THICK FROM BOTTOM OF DECK AND BE REINFORCED WITH AND MACRO-SYNTHETIC FIBERS. CONCRETE SHALL BE LIGHT

WEIGHT WEIGHING NO MORE THAN 110 POUNDS PER CUBIC FOOT.CUT CONTROL

4. UNLESS NOTED OTHERWISE, ALL ELEVATED CONCRETE SLABS OVER METAL DECK

JOINTS OVER AND ALONG BEAMS AND WALLS SUPPORTING JOISTS AND/OR METAL DECK. FIBERS SHALL BE AS SHOWN IN NOTE 3.2.2 DIRECTLY ABOVE. 6. UNLESS NOTED OTHERWISE, SLABS SUBJECTED TO WHEELED TRAFFIC SHALL BE 8" THICK AND REINFORCED WITH TWO LAYERS OF #4@12" O.C. (MINIMUM OF TWO LAYERS OF WWF 6 x 6-W4 x W4) EACH WAY AT TOP AND BOTTOM. THE TOP LAYER SHALL BE LOCATED 1 1/2" CLEAR FROM TOP OF THE SLAB AND THE BOTTOM LAYER SHALL BE LOCATED 2" CLEAR FROM THE BOTTOM. FIRMLY SECURE THE REINFORCEMENT IN PLACE USING SUITABLE CHAIRS AT FREQUENT

INTERVAL SO THE MATS DO NOT SAG DURING PLACING OF CONCRETE. 7. UNLESS NOTED OTHERWISE, SLABS LOADED WITH STORAGE RACKS SHALL BE 6" THICK & REINFORCED WITH ONE LAYER OF #4@12 o.c. (MINIMUM OF ONE LAYER OF WWF 6 x 6 - W4 x W4) EACH WAY AT TOP. THE LAYER SHALL BE LOCATED 1 1/2" CLEAR FROM THE TOP OF THE SLAB. FIRMLY SECURE THE REINFORCEMENT IN PLACE USING SUITABLE CHAIRS AT FREQUENT INTERVAL SO THE MAT DOES NOT SAG DURING PLACING OF CONCRETE.

8. PROVIDE ADDITIONAL BAR REINFORCEMENT IN SLABS AT ALL RE-ENTRANT CORNERS, ACUTELY ANGLED SLAB BOUNDARIES AND PENETRATIONS, AS SHOWN IN THE TYPICAL DETAILS.

9. WHERE INTERIOR WALLS ARE LIGHTLY LOADED AND ARE NOT SHOWN OR INDICATED TO BEAR ON STRIP, SPREAD, GRADE BEAM OR OTHER FOUNDATION SYSTEM THEY SHALL BE SUPPORTED ON THICKENED AREAS OF SLAB. THE SLAB SHALL BE THICKENED TO 8" (MIN.) AND EXTEND AT LEAST 8" BEYOND THE FACE OF THE WALL. THE PLANS MAY INDICATE ONLY THIS MINIMUM REQUIREMENT BUT THE LIMITS OF THICKENED AREAS SHALL BE EXTENDED AS NECESSARY. BEYOND THE MINIMUM REQUIRED, TO FACILITATE EXCAVATION, LAYOUT AND COORDINATION WITH SLAB JOINT REQUIREMENTS. KEEP THICKENED AREAS RECTANGULAR IN LAYOUT. THE TRANSITION OF THE BOTTOM SURFACE OF THE SLAB, BETWEEN THICKENED AREAS AND NON-THICKENED AREAS, SHALL BE AT A SLOPE OF 1:10, OR MORE, WHEREVER POSSIBLE. THICKENED SLAB AREAS SHALL BE REINFORCED, IN THE BOTTOM, WITH #5@12" LONGITUDINALLY (3 BARS MIN.) AND #4@24" TRANSVERSE, CENTERED ON THE WALL ABOVE. SUB-BASES AND VAPOR RETARDING MEMBRANE SHALL EXTEND BELOW ALL THICKENED AREAS.

10. SLAB ON GRADE JOINTS: SLABS ON GRADE ARE TO BE 'FLOATING' AND SEPARATED FROM FOOTINGS, WALLS AND COLUMNS ETC.. UNLESS NOTED OTHERWISE. PROVIDE ISOLATION JOINTS OF PRE-FORMED EXPANSION JOINT FILLER MATERIAL; OR BY TURNING UP THE VAPOR BARRIER IF SHOWN ON SPECIFIC DETAILS; AT PERIMETERS ADJACENT TO WALLS. PROVIDE JOINTS IN SLABS FOR THE CONTROL OF CRACKING AT 10'-0" O.C. (MAX.). SPACING MAY BE INCREASED TO 15'-0" O.C. IN LARGE SLAB AREAS INTERRUPTÉD BY THICKENED SLABS AND WITH SLUMP OF CONCRETE LESS THAN 4". CONSTRUCTION JOINTS MAY BE PLANNED TO BE COINCIDENT WITH CONTROL JOINT LOCATIONS. UNPLANNED DAY JOINTS MUST BE AT LEAST 5'-0" FROM PARALLEL CONTROL JOINTS. THE CONTRACTOR MUST CAREFULLY PRE-PLAN

JOINT LAYOUT AND COORDINATE WITH THICKENED SLAB REQUIREMENTS. LONGITUDINAL JOINTS IN THICKENED AREAS ARE TO BE AVOIDED. CONTIGUOUS SLAB POUR AREAS ARE TO HAVE CONTINUOUS JOINTS WITHOUT OFFSETS OR STAGGERS. ALIGN JOINTS WITH REENTRANT CORNERS WHEREVER POSSIBLE. SLAB REBAR MUST BE DISCONTINUOUS WHEN CROSSING UNDER SLAB JOINTS: CUT REBARS PRIOR TO, OR AFTER, THE SLAB POUR, AT THE CONTRACTOR'S OPTION.

11. THE JOINTS OF THE SLABS SUBJECTED TO WHEELED TRAFFIC SHALL BE CAULKED AND SEALED WITH SEMI-RIGID EPOXY COMPOUND. SIKADUR 51 SL CONTROL JOINT SYSTEM AS MANUFACTURED BY SIKA CORPORATION OF LYNDHURST, N.J. OR OTHER EQUIVALENT PRODUCTS APPROVED BY THE

ARCHITECT ARE ACCEPTABLE FOR USE. 12. PLANS SHOW ONLY THE CRITICAL REINFORCEMENT IN SLABS FOR CLARITY.

SHOWN ON PLANS SHALL BE AS FOLLOWS: THICKNESS OF SLAB LAYERS LOCATION REINFORCEMENT 3.00" TO 6.00" 6.01" TO 8.00" #5 AT 12" E.W. TOP AND BOT.

MINIMUM REINFORCEMENT IN ELEVATED STRUCTURAL SLABS, WHERE NOT

# 3.3 SLABS TO RECEIVE MOISTURE-SENSITIVE FLOOR COVERINGS:

8.01" TO 12.00"

THE ACCEPTABILITY.

1. THE CONTRACTOR SHALL RETAIN THE SERVICES OF AN INDEPENDENT TESTING LABORATORY TO MEASURE THE MOISTURE CONTENT OF THE SLAB. PH OF THE SURFACE TO RECEIVE FLOOR COVERING AND THE RATE OF MOISTURE EMISSION FROM THE SURFACE TO RECEIVE THE COVERING. THE CONTRACTOR SHALL REVIEW THE TEST RESULTS FROM THE LABORATORY AGAINST THE FLOOR COVERING AS WELL AS FLOOR ADHESIVE MANUFACTURER'S INSTRUCTIONS AND CARRYOUT THE INSTALLATION PROVIDED ALL REQUIREMENTS ARE MET. THE INDEPENDENT TESTING LABORATORY SHALL SEND COPIES OF THE REPORTS TO THE ARCHITECT AND THE ENGINEER FOR RECORD.

2. SURFACE MOISTURE TESTS SHALL BE CARRIED OUT PER ASTM F 710, "STANDARD PRACTICE FOR PREPARING CONCRETE FLOORS TO RECEIVE RESILIENT FLOORING". CONDUCT BOTH CALCIUM CHLORIDE AND MAT TESTS. THE MAT TESTS SHALL BE CONDUCTED AS FOLLOWS:

A. CONDUCT THREE TRIAL MAT TESTS THROUGHOUT THE AREA OF THE BUILDING TO RECEIVE COVERING, WITH ONE TEST NEAR THE MAXIMUM MOISTURE READING INDICATED BY TESTING.

B. PLACE A 10'-0" x 10'-0" MAT USING THE SELECTED ADHESIVE AND FLOOR COVERING IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

PERFORM SURFACE MOISTURE EMISSION RATE TESTS AS PER ASTM F 1869, STANDARD TEST METHOD FOR MEASURING MOISTURE VAPOR EMISSION RATE OF CONCRETE SUBFLOOR USING ANHYDROUS CALCIUM CHLORIDE". OBSERVE THE FOLLOWING DURING TESTING:

C. PERFORM A VISUAL AND PHYSICAL INSPECTION AFTER ONE WEEK TO ASSESS

A. REMOVE CURING COMPOUNDS OR FLOOR SEALERS BEFORE TESTING. B. MAINTAIN THE SAME TEMPERATURE AND HUMIDITY CONDITIONS, AS THE FINAL FLOOR COVERING WILL BE EXPOSED TO, FOR 48 HOURS PRIOR TO AND

DURING THE TEST. C. MEASURE AT LOCATIONS UNIFORMLY DISTRIBUTED AROUND THE SLAB, WITH THREE TESTS FOR UP TO 1000 SFT AND AN ADDITIONAL TEST FOR EACH ADDITIONAL 1000 SFT OF FLOOR.

4. TESTING FOR PH SHALL BE AS PER ASTM F710. "STANDARD PRACTICE FOR PREPARING CONCRETE FLOORS TO RECEIVE RESILIENT FLOORING". ALTERNATELY, FOLLOW THE FOLLOWING PROCEDURE: A. CONDUCT A PH TEST AT EVERY LOCATION AND AT EACH TIME A MOISTURE

TEST IS PERFORMED. B. PLACE SEVERAL DROPS OF DISTILLED WATER ON A CLEAN CONCRETE SURFACE FORMING A PUDDLE OF ABOUT ONE INCH DIAMETER

C. WAIT 60 (±5) SECONDS AFTER THE PUDDLE HAS FORMED.

D. DIP THE PH PAPER INTO THE WATER AND REMOVE IMMEDIATELY. E. COMPARE THE PAPER COLOR TO THAT ON THE CHART TO DETERMINE THE PH

F. REPORT THE PH READING WITH EACH MOISTURE TEST RESULT. 5. VAPOR BARRIER SHALL BE VIRGIN POLYETHYLENE SHEET (NOT MANUFACTURED FROM RECYCLED MATERIALS), NON-BIODEGRADABLE, OF MINIMUM THICKNESS 15 MIL SUCH AS "STEGO WRAP VAPOR BARRIER" MANUFACTURED BY STEGO INDUSTRIES, LLC, OR APPROVED EQUIVALENT, MEETING ASTM E 1745 CLASS A PERFORMANCE REQUIREMENTS. THE VAPOR BARRIER SHALL BE INSTALLED DIRECTLY BELOW AND AGAINST THE SLAB. THE INSTALLATION OF VAPOR BARRIER SHALL 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". CONTRACTOR SHALL USE REINFORCEMENT SUPPORTS TO PREVENT PUNCTURES DURING CONSTRUCTION AND SHALL REPAIR ALL DAMAGED AREAS BEFORE PLACING THE

6. THE SURFACE FINISH TO RECEIVE COVERINGS SHALL BE EITHER BULL FLOAT/ STRAIGHTEDGE/LIGHT BROOM FINISH OR LIGHT POWER TROWEL FINISH WITH A LIGHT BROOM TEXTURE UNLESS NOTED OTHERWISE IN ARCHITECTURAL PLANS. CONSULT WITH THE ARCHITECT FOR ACCEPTABLE CONCRETE SURFACE FINISHES.

DRYING TIME FOR THIS CONCRETE MIX SHALL BE NINETY DAYS. SILICA FUME MAY BE ADDED TO ACCELERATE THE DRYING TIME. APPROXIMATELY 10% SILICA FUME BY WEIGHT OF CEMENT MAY BE ADDED TO SHORTEN DRYING TIME BY 28 DAYS.

WATER/CEMENT RATIO NOT TO EXCEED 0.40. THE RECOMMENDED MINIMUM

7. THE ULTIMATE STRENGTH OF CONCRETE SHALL BE 4000.00 PSI WITH

8 FLOOR COVERING ADHESIVES SHALL BE SUITABLE FOR APPLICATION ON A SURFACE WITH PH VALUE BETWEEN 9 AND 10. 9. CONCRETE SURFACE REPAIRS HAVE AN ADVERSE EFFECT ON FLOORING-ADHESIVE BOND. CONSULT WITH THE COVERING/ADHESIVE MANUFACTURER'S REPRESENTATIVE FOR ACCEPTABLE PATCHING METHODS AND

# SUBSEQUENT DRYING PERIOD BEFORE APPLYING ADHESIVE. 3.4 CONCRETE TESTING

1. GENERAL: UNLESS SPECIFICALLY NOTED OTHERWISE, QUALITY ASSURANCE OF CONCRETE IN PLACE SHALL COMPLY WITH THE PROVISIONS OF ACI 301, "STANDARD SPECIFICATIONS FOR STRUCTURAL CONCRETE", CURRENT EDITION.

2. SLUMP: ASTM C143; ONE TEST AT POINT OF DISCHARGE FOR EACH POUR SESSION FOR EACH TYPE OF CONCRETE; ADDITIONAL TESTS WHEN CONCRETE CONSISTENCY SEEMS TO HAVE CHANGED. THE TESTING TECHNICIAN SHALL MONITOR THE QUALITY OF CONCRETE SUPPLIED FOR THE ENTIRE POUR TO ASSURE THAT THE CONCRETE IN-PLACE REPRESENTS THE SPECIMENS CAST. OBTAIN THE DELIVERY TICKETS FOR EACH TRUCK AND SEND COPIES TO THE ARCHITECT ALONG WITH TEST REPORTS.

ASTM C231 PRESSURE METHOD FOR NORMAL WEIGHT CONCRETE; ONE FOR EACH POUR SESSION FOR EACH TYPE OF AIR-ENTRAINED CONCRETE. 4. CONCRETE TEMPERATURE: TEST HOURLY WHEN AIR TEMPERATURE IS 40 DEGREES F (4 DEGREES C) AND BELOW; AND WHEN 80 DEGREES F (27 DEGREES C) AND ABOVE; AND

3. AIR CONTENT: ASTM C173 VOLUMETRIC METHOD FOR LIGHT WEIGHT CONCRETE;

EACH TIME A SET OF COMPRESSION TEST SPECIMENS ARE MADE.

EACH COMPRESSIVE STRENGTH TEST, UNLESS OTHERWISE DIRECTED. MOLD AND STORE CYLINDERS IN LABORATORY FOR LABORATORY CURED TEST SPECIMENS EXCEPT STORE IN FIELD IF FIELD-CURED TEST SPECIMENS ARE REQUIRED. 6. COMPRESSIVE STRENGTH TESTS: ASTM C39: ONE SET FOR EACH POUR SESSION EXCEEDING (5) CUBIC YARDS AND LESS THAN (25) CUBIC YARDS FOR EACH CLASS OF CONCRETE, MAKE ADDITIONAL SETS FOR EACH (50) CUBIC YARDS OVER AND ABOVE THE FIRST (25) CUBIC YARDS OF EACH CONCRETE CLASS PLACED IN ANY ONE SESSION; ONE SPECIMEN SHALL BE TESTED AT (7) DAYS, TWO SPECIMENS TESTED AT (28) DAYS, AND ONE SPECIMEN RETAINED IN RESERVE FOR LATER TESTING IF REQUIRED. TESTING

SEQUENCE: (5) C.Y. TO (25) C.Y. = ONE SET; (26) C.Y. TO (75) C.Y. = TWO SETS;

(76) C.Y. TO (125) C.Y. = THREE SETS; (126) C.Y. TO (175) C.Y. = FOUR SETS;

5. COMPRESSION TEST SPECIMEN: ASTM C31; ONE SET OF (4) STANDARD CYLINDERS FOR

# 3.5 CHEMICAL ANCHORS AND DRILL-AND-DOWEL REBAR

(NOTE: CHEMICALLY ANCHORED HARDWARE AND DOWELS MAY NOT BE DETAILED IN THE PLANS BUT SHOULD THEIR USE BE DEEMED NECESSARY, & APPROVED BY THE ARCHITECT OR ENGINEER, THEY SHALL BE AS FOLLOWS:) 1. HILTI HIT RE 500 SD BY HILTI CORP., OR APP'D EQUIV., SHALL BE USED FOR DOWELS AND ANCHORS INTO CONCRETE AND SHALL BE INSTALLED IN

ACCORDANCE WITH THE SELECTED PRODUCT MANUFACTURER'S RECOMMENDATIONS. 2. HILTI HIT HY 150 MAX BY HILTI CORP., OR APP'D EQUIV., SHALL BE USED FOR DOWELS AND ANCHORS INTO SOLID MASONRY WALLS AND SHALL BE INSTALLED IN ACCORDANCE WITH THE SELECTED PRODUCT MANUFACTURER'S RECOMMENDATIONS.

AND ANCHORS INTO HOLLOW MASONRY WALLS AND SHALL BE INSTALLED IN ACCORDANCE WITH THE SELECTED PRODUCT MANUFACTURER'S RECOMMENDATIONS.

3. HILTI HIT HY 20 BY HILTI CORP., OR APP'D EQUIV., SHALL BE USED FOR DOWELS

# 5.1 STRUCTURAL STEEL NOTES

1. STRUCTURAL STEEL CONSTRUCTION SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDING", CURRENT EDITION.



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