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

THE RIGHT TO STOP WORK AT ANY TIME.

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.

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

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

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

CONCRETE TO RECEIVE BUSH-HAMMERED FINISH = 5000 PSI LEAN CONCRETE FILL = 3000 PSI

ACI 302 CLASS 6 = 4500 PSI

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 ROOF 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):

0, 20, 12, 1 2, 10, 112, 10).	
VIND PRESSURE	30
NET UPLIFT:	
ON ALL ROOF JOISTS AND ROOF TRUSSES	25
ON METAL DECK IN THE FIELD AREA	30
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 CONTINUOUS STRIP FOOTINGS PILE NOTES:

1500 PILE TYPE = 16"ø AUGER CAST PILE ALLOWABLE LOAD CAPACITY = 110 TONS = 45'-0" (MIN.)LENGTH OF PILES

PARAMETERS USED IN THE DESIGN OF THE PRINCIPAL FORCE—RESISTING STRUCTURAL SYSTEM					
SNOW:	GROUND SNOW LOAD (Pg) = FLAT ROOF SNOW LOAD (Pf) = SNOW EXPOSURE FACTOR (Ce) = SNOW LOAD IMPORTANCE FACTOR (Is) = THERMAL FACTOR (Ct) =	15 PSF 16.5 PSF 0.9 1.1 1.0			
WIND:	BASIC WIND SPEED = WIND IMPORTANCE FACTOR (Iw) = WIND EXPOSURE = INTERNAL PRESSURE COEFFICIENT = DESIGN WIND PRESSURE FOR COMPONENTS AND CLADDING =	90 MPH 1.15 B (±)0.18 25.0 PSF			
SEISMIC: SITE	SEISMIC IMPORTANCE FACTOR (Ie) = OCCUPANCY CATEGORY = MAPPED SPECTRAL RESPONSE ACCELERATION AT SHORT PERIODS (SS) = MAPPED SPECTRAL RESPONSE ACCELERATION AT ONE SEC PERIOD (S1) = CLASSIFICATION BASED ON GEO-TECH REPORT = DESIGN SPECTRAL RESPONSE ACCELERATION AT SHORT PERIODS (SDS) = DESIGN SPECTRAL RESPONSE ACCELERATION AT ONE SEC PERIOD (SD1) = SEISMIC DESIGN CATEGORY = BASIC SEISMIC FORCE RESISTING SYSTEM =	1.25 III 0.248 (G) 0.103 (G) D 0.265 (G) 0.164 (G) C MOMENT RESI FRAME SYSTE AND ORDINAR STEEL MOMEN FRAMES.			
	DESIGN BASE SHEAR = SEISMIC RESPONSE COEFF. (Cs) = RESPONSE MODIFICATION FACTOR (R) = ANALYSIS PROCEDURE = ZIP CODE = LATITUDE = LONGITUDE =	414.43 KIPS 0.0429 3.5 ELFP 40208 38.219 N			

SI	PECIAL INSF	ECTION:	S ARE R	EQUIRED AS FOLLOWS (PER KBC)	:
		REQUIR ES	ED NO	DESCRIPTION OF INSPECTION OR TEST TO BE PERFORMED	COMPLY WITH REQUIREMENTS O
1	704.2	Χ		INSPECTION OF FABRICATORS:	ART. 1704.2.1
1	704.2	Χ		A. STRUCTURAL STEEL FABRICATION SHOP	ART. 1704.2.1
1	704.2	Χ		B. STEEL JOIST FABRICATION	ART. 1704.2.1
	704.2 704.2	X	X	SHOP C. METAL DECK ROLLING MILL D. LIGHT GAGE STEEL TRUSS	ART. 1704.2.1 ART. 1704.2.1
1	704.2		X	FABRICATION SHOP E. LIGHT GAGE STEEL FRAMING FABRICATION SHOP	ART. 1704.2.1
	704.3	Χ		STEEL CONSTRUCTION	TABLE 1704.3
	704.4	Χ		CONCRETE CONSTRUCTION	TABLE 1704.4
1	704.5		X	MASONRY CONSTRUCTION (NON ESSENTIAL FACILITIES)	TABLE 1704.5.2 (LEVEL 1)
1	704.5	X		MASONRY CONSTRUCTION (ESSENTIAL FACILITIES)	TABLE 1704.5.3 (LEVEL 2)
1	704.6		X	HIGH-LOAD DIAPHRAGMS AND SHEAR WALLS	ART. 1704.6.1
1	704.7	Χ		SOILS/SITE PREPARATION	ART. 1704.7
1	704.8	Χ		PILE FOUNDATIONS	ART. 1704.8
1	704.9	Χ		PIER FOUNDATIONS	ART. 1704.9
1	704.10	Χ		SPRAYED FIRE-RESISTANT MATERIALS	ART. 1704.10
1	704.11	Χ		MASTIC AND INTUMESCENT FIRE—RESISTANT COATINGS	ART. 1704.11
1	705	Χ		SEISMIC RESISTANCE	ART. 1705.3
1	705	Χ		WIND RESISTANCE	ART. 1705.4
1	707	Χ		SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE	ART. 1707
1	707	Χ		A. SPECIAL INSPECTION FOR SEISMIC RESISTANCE	ART. 1707.1
1	707	Χ		B. STRUCTURAL STEEL	ART. 1707.2
1	707		Χ	D. COLD-FORMED STEEL FRAMING	ART. 1707.4
	707 707	X	Χ	E. PIER FOUNDATIONS F. STORAGE RACKS & ACCESS FLOORS	ART. 1707.5 ART. 1707.6
	707 707	Χ	X	G. ARCHITECTURAL COMPONENTS H. MECHANICAL & ELECTRICAL COMPONENTS	ART. 1707.7 ART. 1707.8
1	707		Χ	I. DESIGNATED SEISMIC SYSTEM VERIFICATIONS	ART. 1707.9
1	707		Χ	J. SEISMIC ISOLATION SYSTEM	ART. 1707.10
1	708	Χ		STRUCTURAL TESTING FOR SEISMIC RESISTANCE	ART. 1708
	708	Χ		A. MASONRY CONSTRUCTION	ART. 1708.1
	708		Χ	A.1 EMPIRICALLY DESIGNED NON-ESSENTIAL FACILITY	ART. 1708.1.1
1	708	Χ		A.2 EMPIRICALLY DESIGNED ESSENTIAL FACILITY	ART. 1708.1.2
1	708		Χ	A.3 ENGINEERED MASONRY IN NON-ESSENTIAL FACILITY	ART. 1708.1.2
1	708		Χ	A.4 ENGINEERED MASONRY IN ESSENTIAL FACILITY	ART. 1708.1.4
1	708	Χ		B. TESTING FOR SEISMIC RESISTANCE	ART. 1708.2
1	708	Χ		C. REINFORCING & PRESTRESSING STEEL	ART. 1708.3
	708 708	X		D. STRUCTURAL STEEL E. MECHANICAL & ELECTRICAL EQUIPMENT	ART. 1708.4 ART. 1708.5
1	708		Χ	F. SEISMICALLY ISOLATED STRUCTURES	ART. 1708.6
1	709		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

INSTITUTE, PUBLICATION No. 31.

11. THIS BUILDING WAS DESIGNED IN ACCORDANCE WITH: "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY". ACI 318-08, ALTERNATE DESIGN METHOD.

ACI 530-08/ASCE 5-08/TMS 402-08. "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS", AISC, 2005, ALLOWABLE STRESS DESIGN.

"BUILDING CODE REQUIREMENTS AND SPECIFICATION FOR MASONRY STRUCTURES",

"SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS", AISC. 2004. "STANDARD SPECIFICATIONS FOR OPEN WEB STEEL JOISTS, K-SERIES", SJI, 2005. "SPECIFICATIONS AND COMMENTARY FOR STEEL ROOF DECK". STEEL DECK

"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:

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.

CALCULATIONS:

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 ENGINEER'S DISCRETION.

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

13. SUBMITTAL PROCEDURES: A. GENERAL

NOT BE RESPONSIBLE.

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: http://www.rangaswamy.com/submittalstandards.htm 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

. 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 WITH THE WORK.

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

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.

INFORMATION

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.

2.1 FOUNDATION NOTES

1. SOILS RECOMMENDATIONS ARE GIVEN IN THE GEOTECHNICAL REPORT PREPARED BY AMEC EARTH & ENVIRONMENTAL INC AND DATED MAY 05, 2011

2. PRIOR TO CONSTRUCTION OF ANY PERMANENT STRUCTURE, ALL TOPSOIL AND ORGANIC MATERIAL, OR FROZEN, WET, SOFT, LOOSE, OR UNDESIRABLE SOIL SHALL BE REMOVED.

3. ALL ENGINEERED FILL SUPPORTING FOOTINGS, FLOOR SLABS OR MECHANICAL EQUIPMENT SLABS SHALL BE COMPACTED TO AT LEAST 98 PERCENT STANDARD PROCTOR MAXIMUM DRY DENSITY. (MOISTURE CONTENT: OPTIMUM TO OPTIMUM + 3%). (ASTM D698).

4. FILL MATERIAL SHALL BE PLACED IN LOOSE LAYERS NOT TO EXCEED 8 INCHES & THEN MECHANICALLY COMPACTED TO AT LEAST THE SPECIFIED PERCENTAGE OF THE MAXIMUM DRY DENSITY. COMPACTION OF ANY FILL BY THE WATER FLOODING METHOD IS UNACCEPTABLE.

5. FOOTINGS SHALL BEAR ON FIRM UNDISTURBED MATERIAL OR ON ENGINEERED FILL MATERIAL DESCRIBED HEREIN AND AS IN THE GEOTECHNICAL EXPLORATION REPORT FOR THIS PROJECT. WHEN IN CONFLICT. GEOTECHNICAL EXPLORATION REPORT SHALL CONTROL. ANY UNSUITABLE MATERIAL SHALL BE REMOVED FROM THE FOOTING EXCAVATIONS AND SPOT REINFORCED. ALL FOOTING EXCAVATIONS SHALL BE INSPECTED BY AN INDEPENDENT TESTING LABORATORY BEFORE CONCRETE IS POURED. THE ADEQUACY OF THE SOIL SHALL BE DETERMINED BY PROBING, TAKING HAND AUGER SAMPLES OR BY USE OF A SOIL PENETROMETER.

6. SOILS EXPOSED IN THE BASES OF ALL SATISFACTORY FOUNDATION EXCAVATIONS SHALL BE PROTECTED AGAINST ANY DETRIMENTAL CHANGE IN CONDITION SUCH AS FROM DISTURBANCE, RAIN OR FREEZING. SURFACE RUNOFF SHALL NOT BE ALLOWED TO ENTER THE EXCAVATION.

7. FOUNDATION CONCRETE SHALL BE POURED THE SAME DAY EXCAVATIONS ARE OPENED. IF THIS IS IMPOSSIBLE, STEPS SHALL BE TAKEN TO ADEQUATELY PROTECT THE OPEN EXCAVATIONS.

8. THE UNDERSIDE OF ALL FOOTINGS SUBJECTED TO OUTSIDE WEATHER CONDITIONS SHALL BE LOCATED AT LEAST 2'-6" BELOW FINAL EXTERIOR GRADE AT ANY GIVEN POINT FOR FROST PROTECTION, UNLESS OTHERWISE INDICATED.

9. ADEQUATE DRAINAGE SHALL BE PROVIDED AT THE SITE TO MINIMIZE ANY INCREASE IN MOISTURE CONTENT OF THE FOUNDATION SOILS.

10. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING EXISTING FOOTING AND STRUCTURE ELEVATIONS AND LOCATIONS BEFORE COMMENCING EXCAVATION AND/OR UNDERPINNING AND BRACING OPERATIONS ADJACENT THERETO. 11. UNLESS ALTERNATE METHOD OF CONSTRUCTION IS EXPLICITLY PROVIDED IN THE PLANS, THE SIDES OF ALL FOOTINGS AND FOUNDATION SYSTEMS SHALL BE FORMED TO THE EXACT DIMENSIONS SHOWN ON THE PLANS. POURING CONCRETE IN TRENCHES, USING SIDES OF EARTH AS FORMS, WILL NOT BE PERMITTED

POURED CONCRETE WILL BE AT THE EXPENSE OF THE CONTRACTOR. 12. ALL REINFORCING BARS, INCLUDING ANCHOR BOLTS, SHALL EITHER BE SEPARATED BY A DISTANCE OF ONE INCH MINIMUM OR SECURELY WIRED TOGETHER. REINFORCING BARS SHALL BE SUPPORTED ON CHAIRS SPECIFICALLY DESIGNED FOR SUCH PURPOSE. SHOP DRAWINGS OR CUT SHEETS OF SUCH CHAIRS SHALL BE SUBMITTED WITH THE REINFORCING STEEL PLACEMENT SHOP

UNLESS NOTED OTHERWISE. REMOVAL AND OFF-SITE DISPOSAL OF IMPROPERLY

13. ALL REINFORCEMENT, INCLUDING DOWELS, SHALL BE TIED IN PLACE BEFORE PLACING CONCRETE. CONTRACTOR SHALL FURNISH ADDITIONAL REINFORCING BARS AS NECESSARY, WHETHER SHOWN IN PLANS OR NOT, TO TIE ALL REINFORCEMENTS IN PLACE AND TO FORM CAGES TO WITHSTAND FORCES DUE TO PLACING AND CONSOLIDATION. INSERTING DOWELS INTO THE PLASTIC CONCRETE IS FORBIDDEN AND THE ENTIRE FOOTING THUS PLACED WILL BE ORDERED TO BE REMOVED AND DISPOSED OF OFF SITE.

14. TOP TWELVE INCHES OF THE SUB-GRADE BELOW THE GRANULAR DRAINAGE MEDIA UNDER THE SLAB ON GRADE, IF DETERMINED ON-SITE TO BE HIGHLY PLASTIC, SHALL BE OVER EXCAVATED AND REPLACED WITH LOW PLASTIC SOILS HAVING LOW SWELL POTENTIAL SALVAGED WITHIN THE SITE OR IMPORTED FROM OFF SITE. ALTERNATELY, THE TOP TWELVE INCHES OF THE PLASTIC CLAY MAY BE STABILIZED, AT THE OPTION OF THE CONTRACTOR, WITH LIME ADMIXTURE. THE LIME STABILIZATION SHALL BE STRICTLY FOLLOWED AS OUTLINED HERE

A. SCARIFY THE UPPER 12" OF SOIL THAT WILL BE BELOW THE DRAINAGE MEDIA WITH A DISC OR TILLER EQUIPMENT.

B. SPREAD QUICK OR HYDRATED LIME ON THE SCARIFIED AREA AT THE RATE OF 4% TO 6% BY WEIGHT OF THE DRY SOIL (4 TO 6 POUNDS PER SQUARE FOOT OF SUB-GRADE AREA). C. THOROUGHLY MIX AND PULVERIZE THE SOIL AND LIME IN PLACE WITH ROTARY TILLING OR DISC EQUIPMENT.

D. CURE THE SOIL-LIME MIXTURE FOR A MINIMUM OF 48 HOURS. E. COMPACT THE SOIL-LIME MIXTURE TO 95% OF THE STANDARD PROCTOR

MAXIMUM DRY DENSITY (ASTM D698) WITH SUITABLE COMPACTOR. GENERAL CONTRACTOR SHALL PROVIDE THE ABOVE MENTIONED TREATMENTS AS AN ALLOWANCE ITEM ALONG WITH THE BASE BID. PROVIDE UNIT PRICING PER SQUARE FOOT OF TREATMENT/CONSTRUCTION.

15. THE SUB-GRADE TO SUPPORT THE SLAB ON GRADE WITHIN THE BUILDING ENVELOPE SHALL BE PROOF-ROLLED TO DETERMINE THE DEGREE OF COMPACTNESS AND ASCERTAIN THAT PROPER SUB-GRADE MODULUS IS DEVELOPED FOR SUPPORTING THE SLAB. THIS TESTING SHALL BE IN ADDITION TO THE MOISTURE CONTENT AND DENSITY TESTS. THE SUB-GRADE MODULUS FOR FILL UNDER SLABS SUBJECTED TO WHEELED TRAFFIC SHALL BE 125 PCI (POUNDS PER CUBIC INCH) & ELSEWHERE SHALL BE A MINIMUM OF 100 PCI.

16. A THIN LAYER OF GRADED, GRANULAR, COMPACTIBLE MATERIAL SHALL BE USED, AT THE TOP OF DRAINAGE MEDIA (OR SUB-GRADE IF DRAINAGE MEDIA IS NOT SPECIFIED) WITHIN THE BUILDING ENVELOPE, AS FINE GRADING MATERIAL TO BETTER CONTROL THE THICKNESS OF THE CONCRETE AND TO MINIMIZE THE FRICTION BETWEEN THE BASE MATERIAL AND THE BOTTOM OF THE SLAB.

17. MINIMUM THICKNESS OF THE DRAINAGE MEDIA UNDER ALL SLABS WITHIN THE BUILDING ENVELOPE SHALL BE 4" UNLESS NOTED OTHERWISE. THE THICKNESS OF DRAINAGE MEDIA UNDER ALL SLABS SUBJECTED TO WHEELED TRAFFIC SHALL BE 8" AND THE THICKNESS UNDER THE SLABS SUPPORTING STORAGE RACKS SHALL BE 6". DRAINAGE MEDIA IS DEFINED WITHIN THE TYPICAL DETAILS. 18. PROVIDE POLYETHYLENE FILM OF NOT LESS THAN 15 MIL THICKNESS UNDER ALL

SLABS WITHIN THE BUILDING ENVELOPE AS A VAPOR BARRIER. VAPOR BARRIER

INDUSTRIES, LLC OR APPROVED EQUIVALENT, MEETING ASTM E 1745 CLASS A

PERFORMANCE REQUIREMENTS; AND WITH A WYTR LESS THAN 0.004 PER ASTM F

1249. INSTALLATION, INCLUDING ACCESSORIES, SHALL BE AS RECOMMENDED BY

SHALL BE "STEGO WRAP VAPOR BARRIER" AS MANUFACTURED BY STEGO

3.1 CONCRETE NOTES

1. 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" (+1") FOR ALL OTHER C.I.P. CONCRETE -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

#14 AND #18 BARS

CLASS 1 THRU 6 SLABS ON GRADE OR METAL DECK: T/4 (2" MAX.): T = SLAB THICKNESS IN INCHESSLAB THICKENINGS SAME AS BOTTOM COVER FOR FOUNDATIONS (3")

3/4 IN.

1 1/2 IN.

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

#11 BARS AND SMALLER 3/4 IN. 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:

BEAMS AND PIERS:

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

ELEMENTS THE CONCRETE POURING SEQUENCE IS TO BE CONTINUOUS. WITHOUT

THE FORMATION OF COLD JOINTS. SEE THE DRAWINGS AND/OR SPECIFICATIONS

PROPER FORM LINERS AND/OR TEXTURING DEVICES. AT BUSH-HAMMERED

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

EACH SIDE OF THE OPENING. HOLES LARGER THAN 12 INCHES IN ANY

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

INTERRUPTED REINFORCEMENT, DISTRIBUTING ONE-HALF OF THIS REINFORCEMENT

DIRECTION SHALL HAVE $1-\#5 \times 5'-0$ " DIAGONAL BAR IN EACH FACE AT EACH

AS FOLLOWS: REINFORCEMENT THICKNESS OF WALL LAYERS LOCATION 3.00" TO 8.00" MIDDLE #4 AT 12" E.W. 8.01" TO 16.00" 16.01" TO 20.00" FACES

AT 12" C/C FOR FULL LENGTH OF THE BEAM, UNLESS SPECIFIED OTHERWISE. 16. ALL REINFORCED CONCRETE PIERS SHALL HAVE MINIMUM #4

TIES AT 12" C/C FULL HEIGHT, UNLESS SPECIFIED OTHERWISE. 17. REINFORCEMENT IN WALLS SHALL BE CONTINUOUS. HORIZONTAL BAR LAP SPLICES SHALL BE STAGGERED.

18. ALL OPENINGS THROUGH WALLS, SLABS OR OTHER STRUCTURAL ELEMENTS

15. ALL REINFORCED CONCRETE BEAMS SHALL HAVE A MINIMUM #4 STIRRUPS

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. 19. 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 LAF

SPLICES, 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 <u>PROHIBITED</u>. 23. ALL LAP SPLICES SHALL BE CLASS 'B' LAPS IN ACCORDANCE WITH THE

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

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

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.

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:

4 CORRIDORS

ACI MINIMUM CONCRETE MAXIMUM FLATNESS LEVELNESS CLASS THICKNESS STRENGTH SLUMP (INCHES) (PSI) (INCHES) (Ff) (FI) 1 OFFICES & GENERAL NOT LISTED ELSEWHERE 4.000 3500.00 5.000 25.000 20.000 2 CLASSROOMS 4.000 3500.00 5.000 20.000 15.000 3 GYMNASIUMS, MULTI-PURPOSE 4.000 3500.00 5.000 25.000 20.000 CAFETERIA 4.000 3500.00 5.000 25.000 20.000

5 INSTITUTIONAL & COMMERCIAL 5.000 4000.00 5.000 35.000 25.000 AREAS 6 DRIVEWAYS & GARAGE FLOORS 4 5.000 4000.00 5.000 35.000 25.000

7 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

FIBERS SHALL BE MANUFACTURED IN AN ISO 9001:2000 CERTIFIED FACILITY AND SHALL ONLY BE ADDED TO THE CONCRETE MIX AT THE BATCH PLANT. 4. UNLESS NOTED OTHERWISE, ALL ELEVATED CONCRETE SLABS OVER METAL DECK SHALL BE 6 1/4" THICK FROM BOTTOM OF DECK. CUT CONTROL JOINTS OVER

TWENTY-FOUR POUNDS PER CUBIC YARD OF CONCRETE. FIBERS SHALL COMPLY

3. 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

WITH ASTM C1116, TYPES 1 & 3 COMBINED AND ASTM A820, TYPE 1. THE

AND ALONG BEAMS/WALLS THAT SUPPORT JOISTS AND/OR METAL DECKING.

5. 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.

6. 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.

7. PROVIDE ADDITIONAL BAR REINFORCEMENT IN SLABS AT ALL RE-ENTRANT CORNERS, ACUTELY ANGLED SLAB BOUNDARIES AND PENETRATIONS, AS SHOWN IN THE TYPICAL DETAILS. 8. 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 9. 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

REBARS PRIOR TO, OR AFTER, THE SLAB POUR, AT THE CONTRACTOR'S OPTION. 10. THE JOINTS OF THE SLABS SUBJECTED TO WHEELED TRAFFIC SHALL BE CAULKED AND SEALED WITH SEMI-RIGID FROXY COMPOUND, SIKADUR 51 SI CONTROL JOINT SYSTEM AS MANUFACTURED BY SIKA CORPORATION OF LYNDHURST, N.J. OR OTHER EQUIVALENT PRODUCTS APPROVED BY THE ARCHITECT ARE ACCEPTABLE FOR USE.

STAGGERS. ALIGN JOINTS WITH REENTRANT CORNERS WHEREVER POSSIBLE. SLAB

REBAR MUST BE DISCONTINUOUS WHEN CROSSING UNDER SLAB JOINTS; CUT

11. CONSTRUCT THE SLAB AFTER THE BUILDING IS ENCLOSED AND THE ROOF IS WATERTIGHT. PROTECT THE SLAB TO RECEIVE COVERING FROM OTHER EXTERNAL WATER SOURCES INCLUDING BUT NOT LIMITED TO RAINWATER, RUNOFF FROM ADJACENT SLOPES, LANDSCAPING WATER, WATER FROM CURING, WET GRINDING SAWING AND CLEANING. CONTRACTOR SHALL NOTE THAT THIS IS ONLY A RECOMMENDATION AND SHALL BE AWARE THAT ALTERING THIS RECOMMENDATION MAY INCREASE THE AMOUNT OF TIME REQUIRED FOR THE SLAB TO BE APPROVED FOR FLOOR COVERINGS.

3.3 SLABS TO RECEIVE MOISTURE-

1. THE CONTRACTOR SHALL RETAIN THE SERVICES OF AN INDEPENDENT TESTING ABORATORY 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. IF SURFACE MOISTURE TESTS ARE SPECIFIED BY THE FCM. PERFORM TESTS AS PER ASTM F710. "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

B. PLACE A 10'-0" x 10'-0" MAT USING THE SELECTED ADHESIVE AND FLOOR COVERING IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. C. PERFORM A VISUAL AND PHYSICAL INSPECTION AFTER ONE WEEK TO ASSESS

READING INDICATED BY TESTING.

THE ACCEPTABILITY.

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