GENERAL STRUCTURAL NOTES

GENERAL

A. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO INSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF WHATEVER TEMPORARY BRACING, GUYS, OR TIE-DOWNS MAY BE NECESSARY. SUCH MATERIAL SHALL BE REMOVED AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AFTER COMPLETION OF THE PROJECT.

B. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION.

C. IF MATERIALS, QUANTITIES, STRENGTHS OR SIZES INDICATED BY THE DRAWINGS OR SPECIFICATIONS ARE NOT IN AGREEMENT WITH THESE NOTES, THE BETTER QUALITY AND/OR GREATER QUANTITY, STRENGTH OR SIZE INDICATED, SPECIFIED OR NOTED SHALL BE PROVIDED.

D. ALL DIMENSIONS AND ELEVATIONS SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE VERIFIED BY THE CONTRACTOR AND SHALL CONFORM TO THOSE SHOWN ON OTHER DRAWINGS.

E. MECHANICAL FRAMING LOADS, OPENINGS, AND STRUCTURE, IN ANY WAY RELATED TO MECHANICAL REQUIREMENTS, ARE SHOWN FOR BIDDING PURPOSES ONLY. CONTRACTOR SHALL OBTAIN APPROVAL OF MECHANICAL AND OTHER TRADES BEFORE PROCEEDING WITH SUCH PORTION OF THE WORK. EXCESS COST RELATED TO VARIATION IN MECHANICAL REQUIREMENTS TO BE BORNE BY MECHANICAL CONTRACTOR.

F. DESIGN LOADING CONDITIONS

1. DEAD LOAD: WEIGHT OF ALL STRUCTURAL AND NON-STRUCTURAL PERMANENT COMPONENTS OF THE BUILDING.
2. FLOOR LIVE LOAD: ASSEMBLY AREAS, CORRIDORS: 100 psf
3. ROOF LIVE LOADS: --- PER INTERNATIONAL BUILDING CODE (2006)
   a. MIN. LOAD USED IN DESIGN IS GREATER OF THE FOLLOWING: 30 psf, UNBALANCED LOADS, OR DRIFT LOADING
   b. GROUND SNOW LOAD P_g = 15 psf
      SNOW EXPOSURE CATEGORY; C_s= 0.9
      SNOW LOAD IMPORTANCE FACTOR; I = 1.1
      THERMAL FACTOR; C_t= 1.1
      ROOF SNOW LOAD; P_f = 16.5
4. WIND LOADS
   a. BASIC WIND SPEED; V = 90 MPH--- PER INTERNATIONAL BUILDING CODE (2006)
   b. BUILDING CATEGORY = III
   c. WIND LOAD IMPORTANCE FACTOR; I = 1.25
   d. WIND EXPOSURE CATEGORY; C = D
   e. MWFRS INTERNAL PRESSURE COEFFICIENT; GC_{pi}= ±0.18
   f. C&C DESIGN WIND PRESSURE = +15.8, -36.5
5. SEISMIC LOADS
   a. SEISMIC IMPORTANCE FACTOR; I = 1.25
   b. MAPPED SPECTRAL RESPONSE ACCELERATION; S_s = 0.385
   c. MAPPED SPECTRAL RESPONSE ACCELERATION; S_1 = 0.143
   d. SITE CLASS = D
   e. SPECTRAL RESPONSE ACCELERATION; S_{ms} = 0.574
   f. SPECTRAL RESPONSE ACCELERATION; S_{m1} = 0.319
   g. SEISMIC DESIGN CATEGORY = D
   h. FORCE RESISTING SYSTEM: LIGHT FRAMED WALLS SHEATHED w/ WOOD STRUCTURAL PANELS RATED FOR SHEAR RESISTANCE
   i. DESIGN BASE SHEAR; V = 70 K
   j. SEISMIC RESPONSE COEFFICIENT; S_{ds} = 0.383
   k. SEISMIC RESPONSE COEFFICIENT; S_{d1} = 0.212
   l. RESPONSE MODIFICATION FACTOR; R = 6.5
   m. ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE

1

G. PROVISIONS FOR FUTURE EXPANSION

1. PROVISIONS HAVE BEEN MADE FOR THE ADDITION OF A CHURCH.

FOUNDATIONS

GENERAL

A. THE CONTRACTOR MUST INTERPRET FOR HIMSELF THE CONDITIONS UNDERLINING THE SURFACE OF THE GROUND. BORING LOGS ARE INCLUDED IN THESE SPECIFICATIONS. THESE LOGS ARE THE BEST INFORMATION AVAILABLE CONCERNING THE SUBSURFACE CONDITIONS. THE OWNER AND ENGINEER ASSUME NO RESPONSIBILITY FOR VARIATIONS OR DEVIATIONS OF THE SUB-SOIL QUALITY, WATER LEVELS, ROCK ELEVATIONS, OR CONDITIONS AT LOCATIONS OTHER THAN PLACES SHOWN AT THE TIME THE INVESTIGATION WAS MADE.

B. AT PERIMETER FOOTINGS AND FOOTINGS BENEATH UNHEATED AREAS, FROST DEPTH TO BE MINIMUM 36 INCHES BELOW FINISH GRADE.

C. NOTIFY ENGINEER AND GEOTECHNICAL ENGINEER OF UNUSUAL SOIL CONDITIONS BEFORE PROCEEDING WITH WORK. THIS INCLUDES SOIL CONDITIONS IN VARIANCE WITH TEST BORINGS.

D. PROVIDE SHEETING, SHORING, AND BRACING AS REQUIRED TO PROTECT ADJACENT BUILDINGS, STREET, AND UTILITIES.

CAST-IN-PLACE CONCRETE

GENERAL

A. WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF APPLICABLE CODES AND STANDARDS OF THE FOLLOWING ORGANIZATIONS:
   1. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
   2. AMERICAN CONCRETE INSTITUTE (ACI)
   3. OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 (OSHA)
   4. CONCRETE REINFORCING STEEL INSTITUTE (CRSI)

B. SUBMIT SHOP DRAWINGS FOR ALL REINFORCING STEEL AND EMBEDDED ITEMS.

C. COLD WEATHER CONCRETING SHALL CONFORM TO ACI - 306R.

D. OPENINGS:
   1. VERIFY EXACT SIZE AND LOCATION OF OPENINGS SHOWN, WHERE APPLICABLE, WITH OWNERS REPRESENTATIVE, BEFORE PROCEEDING WITH WORK.
   2. IF ANY OPENING ON THE PLAN IS REQUIRED, SECURE APPROVAL OF THE STRUCTURAL ENGINEER BEFORE PROCEEDING.
   3. CONTRACTOR SHALL REVIEW ALL DRAWINGS FOR SIZE AND LOCATION OF EMBEDDED ITEMS, SLEEVES, SLAB DEPRESSIONS, ETC., REQUIRED BY OTHER TRADES. THESE ITEMS SHALL BE FURNISHED AND INSTALLED PRIOR TO PLACEMENT OF CONCRETE.

MATERIAL

A. FORM QUALITY AND CONSTRUCTION SHALL CONFORM TO ACI 347.

B. REINFORCEMENT: DEFORMED BARS CONFORMING TO ASTM A615 GRADE 60.

C. WELDED WIRE FABRIC PER ASTM A 185.

D. CEMENT: NORMAL PORTLAND CEMENT, ASTM C150, TYPE 1. HIGH-EARLY STRENGTH CEMENT MAY BE USED AT CONTRACTOR'S OPTION.

E. AGGREGATE: DURABLE, WELL-GRADED MINERALS CONFORMING TO ASTM C33.

F. WATER SHALL BE CLEAN, POTABLE, AND FREE FROM DELETERIOUS MATERIALS.

G. ADMIXTURES: USE PLASTICIZING MATERIALS SUCH AS "POZZOLITH" BY MASTER BUILDERS, MEETING ASTM C494 AT CONTRACTOR'S OPTION. USE AIR ENTRAINING AGENT TO MAINTAIN AIR CONTENT AT 5% FOR EXTERIOR CONCRETE.

H. CONCRETE: fc = 4,000 PSI, SLUMP 2" TO 4", MAXIMUM SIZE OF COURSE AGGREGATE = 3/4"

J. ANCHOR BOLTS: ASTM F1554 36 ksi STEEL OR AS SPECIFIED. MAXIMUM PLACEMENT TOLERANCE = 1/8".

K. GROUT SHALL BE NON-SHRINK, NON-METALLIC. CONCRETE CONTRACTOR TO PROVIDE AND INSTALL IN ACCORDANCE TO MANUFACTURER'S DIRECTIONS.

INSTALLATION

A. INSTALLATION AND REMOVAL OF FORMS SHALL CONFORM TO ACI 347 AND ACI 318 LATEST EDITION. SELF SUPPORTED SLABS SHALL HAVE A 7-DAY CURE MINIMUM AND HAVE REACHED A STRENGTH OF 3,000 psi PRIOR TO FORM REMOVAL.

B. ALL CONSTRUCTION EXCAVATIONS UNDER SLABS ON GRADE SHALL BE BACKFILLED WITH APPROVED SOIL WHICH HAS BEEN COMPACTED IN LIFTS NOT TO EXCEED 6" IN DEPTH BEFORE PLACING THE SLAB.

C. MINIMUM LAP SPLICE DISTANCE: AS SHOWN ON TABLE BELOW. LAP TOP BARS AT MID-SPAN. LAP BOTTOM BARS AT SUPPORTS.

TENSION DEVELOPMENT LENGTHS (INCHES) 1
FOR GRADE 60 UNCOATED BARS
f = 4,000 psi; NORMAL WEIGHT CONCRETE
BASED ON SECTION 12.2.2, ACI 318-02

BAR SIZE	ld PER SPACING (INCHES)	
	TOP BARS	OTHER BARS
#3	25	19
#4	32	25
#5	40	31
#6	48	37
#7	70	54
#8	80	62
#9	91	70
#10	102	79
#11	113	87

TOP BARS ARE HORIZONTAL REINFORCING BARS SO PLACED THAT MORE THAN 12" OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE DEVELOPMENT LENGTH OR SPLICE.

D. MIXING AND PLACING OF CONCRETE SHALL CONFORM TO ACI 304, 305, AND 306.

E. THOROUGHLY COMPACT, PUDDLE, AND VIBRATE CONCRETE INTO CORNERS AND AROUND REINFORCING AND EMBEDDED ITEMS. USE INTERNAL VIBRATION WHERE SIZE OF SECTION PERMITS.

F. LOCATION OF CONSTRUCTION JOINTS NOT LOCATED ON THE PLANS SHALL BE IN ACCORDANCE WITH ACI 318 - LATEST EDITION. PROVIDE KEY WAY 1-1/2" DEEP, COVERING APPROXIMATELY 1/3 OF THE AREA OF THE CONSTRUCTION JOINT.

G. FLOOR AND SLAB CONSTRUCTION SHALL CONFORM TO ACI 302.

H. SAWCUT CONTROL JOINTS IN CONCRETE SLABS ON GRADE SHALL BE 1/8" WIDE AND 1/4 OF SLAB THICKNESS IN DEPTH. CUTTING OPERATIONS SHALL BE FROM 4 TO 12 HOURS AFTER PLACING CONCRETE, LATE ENOUGH TO PREVENT RAVELING OF THE CUT EDGES AND EARLY ENOUGH TO PREVENT CRACKING AHEAD OF THE SAW BLADE. WHEN THE AIR TEMPERATURE IS LESS THAN 50 DEGREES, SAW CUT 12 HOURS AFTER PLACING CONCRETE. MAXIMUM SPACING OF JOINTS SHALL BE 14'-0" UNLESS SHOWN OTHERWISE ON DRAWINGS.

J. DEPRESSIONS ON FLOOR BETWEEN HIGH SPOTS SHALL NOT BE GREATER THAN A 1/4" BELOW A 10' LONG STRAIGHT EDGE.

K. PROVIDE 3/4" CHAMFER ON EXPOSED CORNERS.

L. FOOTINGS, COLUMNS, WALLS:
   1. DOWELS IN FOOTINGS TO MATCH VERTICAL COLUMN OR WALL REINFORCING, UNLESS NOTED OTHERWISE.
   2. PROVIDE CORNER BARS AT WALL AND FOOTING CORNERS TO MATCH HORIZONTAL REINFORCING. MINIMUM LENGTH OF EACH LEG - 45 BAR DIAMETERS.
   3. PROVIDE 2 - #5 BARS AROUND ALL WALL OPENINGS, EXTENDING TWO FEET BEYOND OPENING IN EVERY DIRECTION. OPENING IN WALLS NOT EXCEEDING 12"x12" MAY BE SLEEVES AS REQUIRED BY WORKING THE REINFORCING STEEL AROUND THEM.

M. CONCRETE COVER: UNLESS NOTED OTHERWISE, DETAIL REINFORCING TO PROVIDE MINIMUM CONCRETE COVER AS FOLLOWS:

1. CONCRETE CAST AGAINST, AND PERMANENTLY EXPOSED TO, EARTH.	3 IN.
2. CONCRETE EXPOSED TO EARTH OR WEATHER	
#5 BARS AND SMALLER	1-1/2 IN.
OTHERS	2 IN.
3. CONCRETE NOT EXPOSED TO EARTH OR WEATHER, BEAM AND COLUMN BARS INCLUDING TIES, STIRRUPS AND SPIRALS	1-1/2 IN.
4. SLAB, WALL, AND JOIST BARS	
#11 BARS AND	3/4 IN.
OTHERS	1-1/2 IN.

N. CONCRETE SHALL BE DISCHARGED AT THE SITE WITHIN 1-1/2 HOURS AFTER WATER HAS BEEN ADDED TO THE CEMENT AND AGGREGATES. ADDITION OF WATER TO THE MIX AT THE PROJECT SITE WILL NOT BE ALLOWED. ALL WATER MUST BE ADDED AT THE BATCH PLANT.

P. WELDING OF REINFORCING STEEL IS NOT PERMITTED, UNLESS SPECIFICALLY NOTED ON DRAWINGS.

STRUCTURAL STEEL

GENERAL

A. ALL MATERIAL AND WORK SHALL CONFORM TO THE "AISC" MANUAL OF STEEL CONSTRUCTION ALLOWABLE STRESS DESIGN (ASD) LATEST EDITIION, AND "AISC" CODE OF STANDARD PRACTICE, LATEST EDITION.

B. SUBMIT DETAILED FABRICATION AND ERECTION DRAWINGS FOR ALL WORK.

C. MATERIALS SHALL CONFORM TO "AISC" MILL TOLERANCES.

D. STEEL PIECES SHALL BE MARKED AS NUMBERED ON THE SHOP DRAWINGS.

E. DO NOT PAINT STEEL OR ANCHOR BOLTS WHICH WILL BE ENCASED IN CONCRETE OR MASONRY.

F. STEEL SUPPORTING OR CONNECTING TO MECHANICAL AND OTHER EQUIPMENT AND ROOF OPENINGS AS SHOWN ON MECHANICAL, AND/OR STRUCTURAL DRAWINGS, SHALL BE COORDINATED WITH OWNER'S REPRESENTATIVE ON SITE.

STRUCTURAL STEEL MATERIALS

A. WIDE FLANGE AND WT SECTIONS: ASTM A992, GRADE 50, U.N.O. ALL OTHER SHAPES AND PLATES: ASTM A36

B. SQUARE AND RECTANGULAR TUBING: ASTM A500, FY=46 KSI. STRUCTURAL ROUND PIPE: ASTM A501 OR A53, GRADE B.

C. BOLTS FOR STRUCTURAL STEEL CONNECTIONS: 3/4" DIAMETER, ASTM A325, REGULAR HIGH STRENGTH BOLTS WITH HARDENED WASHERS. ALL HIGH STRENGTH BOLTS SHALL BE TORQUED PER ASTM A325, U.N.O.

D. BOLTS FOR NON-STRUCTURAL CONNECTIONS: ASTM A307, 1/2" DIAMETER MINIMUM.

E. WELDING ELECTRODES: E70XX WITH LOW-HYDROGEN COVERINGS, U.N.O.

CONNECTIONS

A. DESIGN IN ACCORDANCE WITH "AISC" STANDARDS. CONNECTION DESIGN SHALL BE BY STEEL FABRICATOR U.N.O.

B. CONNECTIONS SHALL HAVE A MINIMUM OF 2 BOLTS U.N.O.

C. WELDS AND WELDING SHALL CONFORM TO "AWS" STANDARDS AND THE AWS STRUCTURAL WELDING CODE, AWS D1.1.

D. JOINTS SHALL CONFORM TO "AWS'S" PRE QUALIFIED JOINTS AND PROCEDURES.

E. ALL FIELD WELDS TO BE 1/4" ALL AROUND U.N.O.

F. PRIOR TO WELDING, CLEAN EXISTING SURFACES DOWN TO BASE METAL.

G. WELDING PERMITTED ONLY AS NOTED ON THE DRAWINGS. COORDINATE WELDING AND REQUIRED PERMITS WITH OWNER'S REPRESENTATIVE.

H. ALL OPEN ENDS OF TUBE SECTIONS SHALL BE SUPPLIED WITH A 1/4" SEAL WELDED END PLATE.

J. ALL CONNECTIONS SHALL BE DESIGNED FOR A SHEAR VALUE OF 10,000 LBS OR THE REACTION SHEAR WHEN THE BEAM IS SUBJECT TO A UNIFORM LOAD SUCH THAT THE BEAM BENDING STRESSES REACH 33,000 PSI, WHICHEVER IS GREATER. MEMBERS WITH END REACTIONS THAT EXCEED THESE REQUIREMENTS DUE TO THE PRESENCE OF OTHER BEAMS, COLUMNS, ETC. SHALL BE DESIGNED FOR THE REACTIONS INDICATED THUSLY (45K).

K. SOME FLOOR AND ROOF FRAMING MEMBERS ARE DESIGNED TO CARRY AXIAL LOADS AND ARE INDICATED THUSLY (60K±) ON THE PLANS OR ELEVATIONS. CONNECTIONS FOR THESE MEMBERS SHALL BE FOR THE COMBINATION FOR THE AXIAL LOAD AND THE SHEAR REACTION REQUIRED BY THE STRUCTURAL STEEL SPECIFICATION, NOTE "J".

L. ALL BRACING CONNECTIONS SHALL BE DESIGNED FOR THE AXIAL DESIGN LOAD INDICATED THUSLY (60K±) ON THE PLANS OR ELEVATIONS. OTHERWISE SEE NOTE "B" ABOVE.

SUFRACE PREPARATION / PAINTING

A. SURFACES SHALL BE CLEANED IN ACCORDANCE WITH SSPC SP-6, COMMERCIAL BLAST CLEANING.

B. ALL SURFACES SHALL BE FREE OF GREASE, OIL, DIRT, LOOSE MILL SCALE, WELD FLUX AND OTHER DELETERIOUS MATERIALS.

C. PAINT SYSTEM:
   1. EXPOSED TO EXTERIOR: TNEMEC: TNEME-ZINC 90-97
   2. EXPOSED TO INTERIOR OR CONCEALED EXTERIOR: TNEMEC: RUST INHIBITIVE PRIMER OR APPROVED EQUAL.

MASONRY

MATERIALS

A. CONCRETE BLOCK
   1. NORMAL WEIGHT TYPE I MOISTURE CONTROLLED BLOCK SHALL BE USED FOR MASONRY WALLS (ASTM C90). fm = 1500 PSI. ALL MASONRY UNITS SHALL BE TAKEN FROM THE SAME PRODUCTION LOT.

B. MORTAR
   1. STANDARD: ASTM C270
   2. TYPES M OR S SHALL BE USED UNLESS SPECIFICALLY PERMITTED OTHERWISE.
   3. ALL MORTAR SHALL INCLUDE A MOLD-RESISTANT / WATER RESISTANT ADDITIVE SUCH AS "DRY BLOCK" OR AN APPROVED EQUAL.

C. GROUT (REINFORCED MASONRY CORES)
   1. LOW LIFT GROUT FOR A WALL SPACE EXCEEDING 4'-0" SHALL BE A MIXTURE OF ONE PART CEMENT AND 4 TO 4 1/2 PARTS COMBINED AGGREGATE PER ASTM C404.

D. REINFORCING
   1. ALL MASONRY WALLS SHALL BE REINFORCED WITH STEEL "DUR-O-WALL" STANDARD TRUSS AS MANUFACTURED BY DUR-O-WALL, INC. OF BALTIMORE MARYLAND.
   2. STANDARD: ASTM A82
   3. FINISH: CORROSION RESISTANT (HOT DIPPED GALVANIZED).
   4. ALL NON-WELDED REINFORCING BARS SHALL BE PER ASTM A615 GRADE 60.
   5. ALL WELDED REINFORCING BARS SHALL BE PER ASTM A706 GRADE 60.
   6. WHEN "DUR-O-WALL" IS USED AS WALL TIES IN COMPOSITE OR CAVITY WALL, CROSS ROD SHALL BE HOT DIPPED GALVANIZED.

E. STANDARD REINFORCED MASONRY
   1. ALL REINFORCED CORES OF MASONRY TO BE GROUTED SOLID.
   2. UNLESS NOTED OTHERWISE, REINFORCE 8' MASONRY WALLS WITH #5 VERTICAL BARS AT 48" O.C., CENTERED IN WALL.
   3. PROVIDE (1) - #5 VERTICAL BAR AT ALL CORNERS AND ENDS OF WALLS.
   4. PROVIDE (1) - #5 BAR ON EACH SIDE OF ALL OPENINGS 4" FROM FACE OF OPENING. EXTEND BARS 2'-0" BEYOND OPENING
   5. VERTICAL BARS SHALL BE HELD IN POSITION AT THE TOP AND BOTTOM OF CELLS. MAINTAIN MINIMUM 1/2" CLEAR OF MASONRY.
   6. LAP VERTICAL BARS 48 BAR DIAMETERS MINIMUM. WIRE BARS TOGETHER.
   7. DOWELS FROM FOUNDATION WALL SHALL BE VERTICAL WITH NO MORE THAN 1 HORIZONTAL TO 6 VERTICAL OUT OF PLUMB.
   8. REINFORCING SHALL BE PLACED IN EVERY OTHER HORIZONTAL COURSE WITH AT LEAST ONE LAYER OF DUR-O-WALL REINFORCING BELOW WINDOW LEVELS AND AT LEAST ONE LAYER ABOVE LINTEL LEVELS.

F. MISCELLANEOUS
   1. PROVIDE 100% SOLID BEARING, MINIMUM 3 COURSES UNDER BEAMS, 1 COURSE UNDER JOISTS, UNLESS DETAILED OTHERWISE.
   2. FILL CORE SOLID AROUND ANCHOR BOLTS.
   3. SET WELD PLATES IN BOND BEAMS AFTER THE GROUT IS PLACED, BUT WHILE IT IS STILL PLASTIC.
   4. HOLLOW MASONRY UNITS TO BE LAID WITH FULL MORTAR COVERAGE ON HORIZONTAL AND VERTICAL FACE FACE SHELLS. WEBS SHALL ALSO BE BEDDED IN ALL UNITS.
   5. PROVIDE APPROPRIATE MASONRY ANCHORS AT 16" O.C. MAXIMUM TO TIE MASONRY TO ABUTTING VERTICAL STEEL AND CONCRETE SURFACES.

G. SAND
   1. FINE AGGREGATE.

INSTALLATION

A. MASONRY AND MORTAR
   1. MASONRY SHALL BE LAID PLUMB AND TRUE TO LINES. ANY TAMPING OF MASONRY UNITS SHALL BE DONE IMMEDIATELY AFTER.
   2. QUANTITY AND PLACEMENT OF MORTAR SHALL BE SUCH THAT FULL HEAD AND BED JOINTS RESULT. ALL JOINTS SHALL BE BACK STRUCK.
   3. EXPOSED JOINTS SHALL BE TOOLED CONCAVE WHEN MORTAR HAS STIFFENED TO THE POINT WHERE IT WILL HOLD ITS SHAPE AND BOND WITH MASONRY UNITS.

B. LINTEL NOTES
   1. PROVIDE LINTELS OVER ALL OPENINGS IN MASONRY WALLS. REFER TO ALL DRAWINGS FOR SIZES AND LOCATIONS OF OPENINGS.
   2. THE FABRICATOR SHALL SUPPLY LOOSE ANGLE LINTELS OVER ALL MASONRY OPENINGS AND RECESSES (U.N.O.). LINTELS NOT SHOWN OR DETAILED ON DRAWINGS SHALL CONSIST OF A SINGLE ANGLE WITH A 3 1/2" LEG HORIZONTAL FOR EACH FOUR INCHES OF WALL THICKNESS. ANGLES SHALL BE AS FOLLOWS:

MASONRY OPENING	ANGLE SIZE	BEARING EA. END
4'-0" OR LESS	3 1/2"x3 1/2"x5/16"	6"
4'-1" TO 5'-6"	4"x3 1/2"x5/16" LLV	6"
5'-7" TO 6'-6"	5"x3 1/2"x5/16" LLV	8"
6'-7" TO 8'-0"	6"x3 1/2"x5/16" LLV	8"

SPECIAL INSPECTIONS

A. CONTRACTOR TO COORDINATE SPECIAL INSPECTIONS IN ACCORDANCE WITH SECTION 1704 IBC 2006. AS NOTED BELOW IN SECTION D, SPECIAL INSPECTION SHALL BE PERFORMED BY AN INDEPENDENT INSPECTION FIRM UNDER THE SUPERVISION OF A LICENSED ENGINEER AND APPROVED BY THE BUILDING OFFICIAL, ARCHITECT, & ENGINEER OF RECORD.

B. SPECIAL INSPECTOR SHALL OBSERVE WORK FOR CONFORMANCE w/ DESIGN DRAWINGS & SPECIFICATIONS. ANY DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. UNCORRECTED DISCREPANCIES SHALL BE REPORTED TO THE BUILDING OFFICIAL, ARCHITECT, & STRUCTURAL ENGINEER OF RECORD.

C. INSPECTION REPORTS SHALL BE PROVIDED TO BUILDING OFFICIAL, ARCHITECT, & STRUCTURAL ENGINEER OF RECORD.

D. FABRICATORS PER SECTION 1704.2.
STEEL CONSTRUCTION PER SECTION 1704.3 & TABLE 1704.3.
CONCRETE CONSTRUCTION PER SECTION 1704.4 & TABLE 1704.4
EXCEPTIONS 1 & 2 NOT ALLOWED.
MASONRY CONSTRUCTION PER SECTION 1704.5 & TABLE 1704.5.1
EXCEPTIONS NOT ALLOWED.
SOILS PER SECTION 1704.7 - SEE GEOTECHNICAL REPORT.

Soils and Foundations

Shallow Foundations: PE/GE: Inspect soils below footings for adequate bearing capacity and consistency with geotechnical report.

Inspect removal of unsuitable material and preparation of subgrade prior to placement of controlled fill.

Controlled Structural Fill: PE/GE: Perform sieve tests (ASTM D422 & D1140) and modified Proctor tests (ASTM D1557) of each source of fill material.

Inspect placement, lift thickness and compaction of controlled fill.

Test density of each lift of fill by nuclear methods (ASTM D2922).

Verify extent and slope of fill placement.

Cast-in-Place Concrete

Mix Design: ACI-CCI, ICC-RCSI: Review concrete batch tickets and verify compliance with approved mix design. Verify that water added at the site does not exceed that allowed by the mix design.

Reinforcement Installation: ACI-CCI, ICC-RCSI: Inspect size, spacing, cover, positioning and grade of reinforcing steel. Verify that reinforcing bars are free of form oil or other deleterious materials. Inspect bar laps and mechanical splices. Verify that bars are adequately tied and supported on chairs or bolsters.

Anchor Rods: Inspect size, positioning and embedment of anchor rods. Inspect concrete placement and consolidation around anchors.

Concrete Placement: ACI-CCI, ICC-RCSI: Inspect placement of concrete. Verify that concrete conveyance and depositing avoids segregation or contamination. Verify that concrete is properly consolidated.

Sampling and Testing of Concrete: ACI-CCI, ICC-RCTest concrete compressive strength (ASTM C31 & C39), slump (ASTM C143), air-content (ASTM C231 or C173) and temperature (ASTM C1064).

Curing and Protection: ACI-CCI, ICC-RCSI: Inspect curing, cold weather protection and hot weather protection procedures.

Precast Concrete

Plant Certification/Quality Control Procedures: ACI-CCI, ICC-RCSI:Review plant operations and quality control procedures.

Mix Design: ACI-CCI, ICC-RCSI: Inspect concrete batching operations and verify compliance with approved mix design.

Reinforcement Installation: ACI-CCI, ICC-RCSI: Inspect size, spacing, position and grade of reinforcing steel. Verify that reinforcing bars are free of form oil or other deleterious materials.

Prestress Operations: ICC-PCSI: Inspect placement, stressing, grouting and protection of prestressing tendons.

Concrete Placement: ACI-CCI, ICC-RCSI: Inspect placement of concrete. Verify that concrete conveyance and depositing avoids segregation or contamination. Verify that concrete is properly consolidated.

Sampling and Testing of Concrete: ACI-CFTT, ACI-ITest concrete compressive strength (ASTM C31 & C39), slump (ASTM C143), air-content (ASTM C231 or C173) and temperature (ASTM C1064).

Curing and Protection: ACI-CCI, ICC-RCSI: Inspect curing, cold weather protection and hot weather protection procedures.

Erected Precast Elements: PE/SE: Inspect erection of precast concrete including member configuration, connections, welding and grouting.

Masonry

Mixing of Mortar and Grout: ICC-SMSI: Inspect proportioning, mixing and retempering of mortar and grout.

Installation of Masonry: ICC-SMSI: Inspect size, layout, bonding and placement of masonry units.

Mortar Joints: ICC-SMSI: Inspect construction of mortar joints including tooling and filling of head joints.

Reinforcement Installation: ICC-SMSI, AWS-CWI: Inspect placement, positioning and lapping of reinforcing steel. Inspect welding of reinforcing steel.

Grouting Operations: ICC-SMSI: Inspect placement and consolidation of grout. Inspect masonry clean-outs for high-lift grouting.

Weather Protection: ICC-SMSI: Inspect cold weather protection and hot weather protection procedures. Verify that wall cavities are protected against precipitation.

Evaluation of Masonry Strength: ICC-SMSI: Test compressive strength of mortar and grout cube samples (ASTM C780). Test compressive strength of masonry prisms (ASTM C1314).

Anchors and Ties: ICC-SMSI:Inspect size, location, spacing and embedment of dowels, anchors and ties.

Structural Steel

Fabricator Certification/
Quality Control Procedures: AWS/AISC-SSI, ICC-SWSI: Review shop fabrication and quality control procedures.

Material Certification: AWS/AISC-SSI, ICC-SWSI: Review certified mill test reports and identification markings on wide-flange shapes, high-strength bolts, nuts and welding electrodes.

Open Web Steel Joists: Inspect installation, field welding and bridging of joists.

Bolting: AWS/AISC-SSI, ICC-SWSI: Inspect installation and tightening of high-strength bolts. Verify that splines have separated from tension control bolts. Verify proper tightening sequence. Continuous inspection of bolts in slip-critical connections.

Welding: AWS-CWI, ASNT: Visually inspect all welds. Inspect pre-heat, post-heat and surface preparation between passes. Verify size and length of fillet welds. Ultrasonic testing of all full-penetration welds.

Shear Connectors: AWS/AISC-SSI, ICC-SWInspect size, number, positioning and welding of shear connectors. Inspect studs for full 360 degree flash. Ring test all shear connectors with a 3 lb hammer. Bend test all questionable studs to 15 degrees.

Structural Details: PE/SE: Inspect steel frame for compliance with structural drawings, including bracing, member configuration and connection details.

Metal Deck: AWS-CWInspect welding and side-lap fastening of metal roof and floor deck.

STATE OF KENTUCKY
BRIAN B. KLARE
20139
LICENSED
PROFESSIONAL ENGINEER

REVISIONS			
no.	description	by	date
A	UPDATED LOADS INFO.	PLS	10/28/08

CONSTRUCTION DOCUMENTS

HOLY SPIRIT CATHOLIC CHURCH

4754 SMALLHOUSE ROAD, BOWLING GREEN, KENTUCKY
BERINGER CIACCIO DENNELL MABREY - ARCHITECTURE, LANDSCAPE ARCHITECTURE, INTERIOR DESIGN, CONSTRUCTION MANAGEMENT

bccim
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