GENERAL NOTES

1. DESIGN CRITERIA

A. GENERAL BUILDING CODE

THE CONTRACT DOCUMENTS ARE BASED ON REQUIREMENTS OF THE 2009 INTERNATIONAL BUILDING CODE WITH LOCAL AMMENDMENTS

B. DESIGN LOADS

1. LIVE LOADS PRODUCED BY THE USE OR OCCUPANCY OF THE STRUCTURE HAVE BEEN INCLUDED IN THE DESIGN, BASED ON THE FOLLOWING OCCUPANCIES:

OCCUPANCY OR USE	UNIFORM LOAD (PSF)	CONCENTRATED LOAD (LB)
ROOF LIVE LOAD	20	
ROOF DEAD LOAD	20	
YARDS AND TERRACES		
(PEDESTRIAN TRAFFIC ONLY)	100	--
SIDEWALKS, VEHICULAR DRIVEWAYS		
SUBJECT TO TRUCK LOADS	250	8000
STAIRS AND EXITS		
TYPICAL	100	SEE BELOW
MISCELLANEOUS		
RETAIL (GROUD FLOOR)	100	1000
PUBLIC ASSEMBLY	100	1000
MECHANICAL/ELECTRICAL ROOMS	100	1000

THE STRUCTURAL DESIGN IS BASED ON THE GREATER OF THE EFFECTS OF THE UNIFORM LOADS NOTED ABOVE OR THE CONCENTRATED LOADS NOTED ABOVE (ASSUMED TO BE DISTRIBUTED OVER AN AREA 2.5 FEET SQUARE SPECIFICALLY NOTES BELOW).

2. THE CONCENTRATED LOAD DUE TO TRUCK WHEELS ON SIDEWALKS, VEHICULAR DRIVEWAYS AND YARDS, SUBJECT TO TRUCKING, SHALL BE DISTRIBUTED OVER AN AREA OF 20 SQUARE INCHES.

3. HANDRAILS AND GUARDRAILS SHALL BE DESIGNED TO RESIST A LOAD OF 200 POUNDS APPLIED IN ANY DIRECTION AT ANY POINT ON THE RAIL, AND HAVE ATTACHMENT DEVICES AND SUPPORTING STRUCTURE TO TRANSFER THIS LOADING TO APPROPRIATE STRUCTURAL ELEMENTS OF THE BUILDING. THIS LOAD NEED NOT BE ASSUMED CONCURRENT WITH UNIFORM LOADS SPECIFIED ABOVE.
INTERMEDIATE RAILS, PANEL FILLERS, AND THEIR CONNECTIONS SHALL BE DESIGNED TO WITHSTAND A HORIZONTALLY APPLIED NORMAL LOAD OF 50 POUNDS DESIGNED ON AN AREA NOT TO EXCEED A 1-FOOT-SQUARE AREA, INCLUDING OPENINGS AND SPACES BETWEEN RAILS. REACTIONS DUE TO THIS LOADING ARE NOT REQUIRED TO BE SUPERIMPOSED WITH THOSE FROM LOADS APPLIED TO THE TOP RAIL.

4. VEHICLE BARRIERS SHALL BE DESIGNED TO WITHSTAND A HORIZONTAL FORCE OF 6000 POUNDS APPLIED HORIZONTALLY IN ANY DIRECTION TO THE BARRIER SYSTEM AT A HEIGHT OF 18 INCHES ABOVE THE PARKING SURFACE AND SHALL HAVE ANCHORAGE OR ATTACHMENT CAPABLE OF TRANSMITTING THIS LOAD TO THE STRUCTURE. THE FORCE MAY BE DISTRIBUTED OVER A 1-FOOT-SQUARE AREA.

5. DESIGN LIVE LOADS HAVE BEEN REDUCED IN ACCORDANCE WITH THE GENERAL BUILDING CODE NOTED ABOVE.

C. SNOW LOADS

SNOW LOADS HAVE BEEN DETERMINED IN ACCORDANCE WITH THE GENERAL BUILDING CODE NOTE ABOVE, USING THE FOLLOWING PARAMETERS:

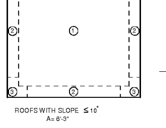
GROUND SNOW LOAD (P)	5 PSF
FLAT-ROOF SNOW LOAD (P_f)	5 PSF
SNOW EXPOSURE COEFFICIENT (C_e)	0.9
IMPORTANCE FACTOR (I)	1.0
THERMAL FACTOR (C_t)	1.1

D. WIND LOADS

WIND LOADS HAVE BEEN DETERMINED IN ACCORDANCE WITH THE GENERAL BUILDING CODE NOTED ABOVE, USING THE FOLLOWING PARAMETERS:

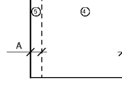
WIND SPEED (V)	90 MPH
EXPOSURE CATEGORY	B
OCCUPANCY CATEGORY	II
IMPORTANCE FACTOR $(I)_w$	1.0
BUILDING CATEGORY	ENCLOSED
GUST RESPONSE FACTOR FOR FLEXIBLE BUILDINGS (G)	
EAST-WEST DIRECTION	0.85
NORTH-SOUTH DIRECTION	0.85
INTERNAL PRESSURE COEFFICIENT (GCPI)	+/- 0.18
COMPONENTS AND CLADDING PRESSURES	SEE PRESSURE DIAGRAMS ON THESE DOCUMENTS

GROSS UPLIFT PRESSURE DIAGRAM



ROOFS WITH SLOPE ≤ 10°
A= 6'-3"

WALL PRESSURE DIAGRAM



FLAT ROOF GROSS UPLIFT PRESSURE (PSF)

ZONE	TRIB AREA = 0-10 SQ FT	TRIB AREA = 10-100 SQ FT	TRIB AREA = 100-500 SQ FT
1 (INT)	---/-14.6	---/-13.7	---/-13.3
2 (EDGE)	---/-24.4	---/-18.4	---/-15.8
3 (CORNER)	---/-24.4	---/-18.4	---/-15.8

WALL GROSS PRESSURE (PSF)

ZONE	TRIB AREA = 0-10 SQ FT	TRIB AREA = 10-100 SQ FT	TRIB AREA = 100-500 SQ FT
4 (INT)	13.3/-14.4	11.4/-12.5	10.0/-11.1
5 (END)	13.3/-17.8	11.4/-13.9	10.0/-11.1

WINDWARD/LEEWARD PARAPET PRESSURE (PSF)

ZONE	TRIB AREA = 0-10 SQ FT	TRIB AREA = 10-100 SQ FT	TRIB AREA = 100-500 SQ FT
4 (INT)	33.3/-23.3	22.7/-19.4	21.4/-16.7
5 (END)	33.3/-26.7	22.7/-20.8	21.4/-16.7

E. SEISMIC DESIGN CRITERIA:

IMPORTANCE FACTOR	1.0
SHORT PERIOD, S_s	0.296g
1 SEC. PERIOD, S_1	0.094g
DESIGN RESPONSE SHORT PERIOD, S_{DS}	0.237g
DESIGN RESPONSE 1 SEC. PERIOD, S_{D1}	0.107g
SEISMIC DESIGN CATEGORY	B
SEISMIC OCCUPANCY CATEGORY	II
SEISMIC RESPONSE COEFFICIENT, C_s	0.059g
SITE CLASS	C
R	4
C_d	2.5

ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE

BASIC STRUCTURAL AND SEISMIC RESISTING SYSTEM:

ORDINARY REINFORCED MASONRY SHEAR WALLS

DESIGN BASE SHEAR:
V = (W)(C_s) = 0.059W

F. CONSTRUCTION SEQUENCING
THE CONTRACTOR SHALL COORDINATE THE SEQUENCE AND SCHEDULE OF CONSTRUCTION WITH THE ENGINEER.

G. PROVISION FOR FUTURE EXPANSION
NO PROVISIONS HAVE BEEN MADE IN THE STRUCTURAL DESIGN FOR FUTURE EXPANSION.

2. FOUNDATION

A. FOUNDATION DESIGN BASED ON THE FOLLOWING REPORT: "REPORT OF GEOTECHNICAL EXPLORATION - LIBERTY PARK RETAIL DEVELOPMENT - VESTAVIA HILLS, JEFFERSON COUNTY, ALABAMA" PREPARED BY CONTOUR ENGINEERING, PROJECT NUMBER AG18BWR02, DATED MAY 18, 2018.

1. ALLOWABLE SOIL BEARING FOR FOOTINGS: 2500 PSF

2. RETAINING WALL DESIGN PARAMETERS:

ON-SITE SOIL:	115 PCF
ACTIVE PRESSURE COEFFICIENT (Ka):	0.36
AT REST PRESSURE COEFFICIENT (Ko):	0.53
PASSIVE PRESSURE COEFFICIENT (Kp):	2.70
FRICTION COFFICIENT:	0.53

3. MODULUS OF SUBGRADE REACTION: 125 PCI

B. FOOTINGS

1. BOTH VERTICAL FACES OF ALL FOOTINGS SHALL BE FORMED FOR FULL DEPTH.
2. FOOTINGS REINFORCING SHALL BE SUPPORTED USING BEAM BOLSTERS DESIGNED AND MANUFACTURED FOR SUPPORT ON SOIL.
3. MINIMUM FOOTING EMBEDMENT BELOW ADJACENT GRADE:
INTERIOR: 24 INCHES
EXTERIOR: 24 INCHES
4. MINIMUM FOOTING WIDTHS:
STRIP FOOTINGS: 18 INCHES
SPREAD FOOTINGS: 24 INCHES

C. CONTRACTOR SHALL PROVIDE AND INSTALL ALL CRIBBING, SHEATHING AND SHORING REQUIRED TO SAFELY RETAIN THE EARTH BANKS.

D. CONTRACTOR SHALL PROTECT ALL UTILITY LINES, ETC. ENCOUNTERED DURING EXCAVATION AND BACKFILLING.

E. ALL EXCAVATIONS SHALL BE PROPERLY BACKFILLED, BUT NOT BEFORE CONCRETE HAS ATTAINED FULL DESIGN STRENGTH. NO BACKFILL SHALL BE PLACED AGAINST CONCRETE WALLS UNTIL CONCRETE HAS ATTAINED FULL 28-DAY STRENGTH. BASEMENT WALLS SHALL BE BRACED AGAINST LATERAL THRUST - SUCH BRACING SHALL REMAIN IN PLACE UNTIL SLAB ON EARTH (AND SUPPORTED SLAB, IF ANY) HAS BEEN PLACED AND ALLOWED TO CURE FOR 28 DAYS. CANTILEVER WALLS SHALL BE BRACED AGAINST LATERAL THRUST DURING BACKFILLING UNLESS COMPACTION IS PERFORMED ONLY BY HAND OPERATED EQUIPMENT IN ZONE WITHIN 5 FEET OF BACK WALL.

F. CONTRACTOR SHALL OBTAIN A COPY OF THE ABOVE REFERENCED SOILS REPORT AND COMPLY WITH ITS RECOMMENDATIONS.

G. GEOTECHNICAL ENGINEER SHALL VERIFY THE ASSUMED BEARING PRESSURE NOTED ABOVE, CONDITION AND/ OR ADEQUACY OF ALL SUBGRADES, FILLS AND BACKFILLS BEFORE PLACEMENT OF FOUNDATIONS, FOOTINGS, SLABS, WALLS, FILLS, BACKFILLS, ETC.

H. THE SOILS ENGINEER OF RECORD SHALL CERTIFY IN WRITING THAT ALL FOUNDATIONS WERE PLACED AND COMPLETED AS SPECIFIED.

I. SUBGRADE PREPARATION FOR SLAB ON GRADE SHALL BE PERFORMED IN ACCORDANCE WITH GEOTECHNICAL REPORT AND CIVIL SPECIFICATION SECTION RELATED TO "SUBGRADE PREPARATION."

J. WHERE FOOTING STEPS ARE NECESSARY, THEY SHALL BE NO STEEPER THAN ONE VERTICAL TO TWO HORIZONTAL.

K. UNDER SLAB DRAINAGE SYSTEMS, IF REQUIRED, ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS. DRAINAGE SYSTEMS SHALL BE PROVIDED AS DETERMINED AND RECOMMENDED BY THE GEOTECHNICAL ENGINEER OF RECORD. CONTRACTOR TO PROVIDE FOR DE-WATERING IN EXCAVATIONS FROM SURFACE WATER, GROUND WATER OR SEEPAGE.

L. SOIL BELOW INTERIOR CONCRETE SLABS ON GRADE AND ANY FILL WITHIN 10'-0" OF BUILDING LIMIT SHALL BE COMPACTED TO 98% OF STANDARD PROCTOR (ASTM D698) IN FINAL TWO (2) FEET OF FILL AND 95% OF STANDARD PROCTOR BELOW. ALL FOOTINGS SHOULD BEAR ON ORIGINAL UNDISTURBED SOIL OR CONTROLLED FILL PREPARED PER THE SOILS REPORT.

M. SIDES OF FOUNDATIONS SHALL BE FORMED UNLESS CONDITIONS PERMIT EARTH FORMING. FOUNDATIONS POURED AGAINST THE EARTH REQUIRE THE FOLLOWING PRECAUTIONS: SLOPE SIDES OF EXCAVATIONS AS APPROVED BY GEOTECHNICAL ENGINEER AND CLEAN UP SLOUGHING BEFORE AND DURING CONCRETE PLACEMENT.

N. CONSTRUCTION COORDINATION

1. THE SLAB-ON-GRADE HAS NOT BEEN DESIGNED FOR CRANE LOADS, WHICH WOULD REQUIRE AN INCREASE IN SLAB STRENGTH, THICKNESS, AND REINFORCING. THE CONTRACTOR IS CAUTIONED AGAINST LOADING THE SLAB-ON-GRADE (AS SHOWN ON THESE DRAWINGS) WITH CRANE LOADS. SHOULD CONSTRUCTION SEQUENCING REQUIRE THE SLAB-ON-GRADE TO RESIST CRANE LOADS, THE CONTRACTOR IS REQUIRED TO PRODUCE AND SUBMIT A COMPLETE DESIGN FOR THE NECESSARY SLAB-ON-GRADE, INCLUDING CALCULATIONS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS LOCATED.
2. THE CONTRACTOR SHALL DETERMINE THE EXTENT OF CONSTRUCTION DEWATERING NECESSARY FOR ANY REQUIRED EXCAVATION. THE CONTRACTOR SHALL SUBMIT THE PROPOSED PLAN FOR CONSTRUCTION DEWATERING TO THE GEOTECHNICAL ENGINEER FOR REVIEW, PRIOR TO COMMENCEMENT OF THE EXCAVATION.

3. REINFORCED CONCRETE

A. THE DESIGN OF ALL REINFORCED CONCRETE SHALL CONFORM TO ACI 318, IN ACCORDANCE WITH THE GENERAL BUILDING CODE NOTED ABOVE.

B. CONCRETE MIX DESIGNS SHALL BE ESTABLISHED BY THE SUPPLIER IN ACCORDANCE WITH THE ACI 318-08. MIX DESIGNS SHALL BE SUBMITTED WITH BACK-UP DATA PER ACI 318-08 TO THE ARCHITECT FOR REVIEW PRIOR TO CONCRETE PLACEMENT. THE PROPOSED MATERIALS AND MIX SHALL BE FULLY DOCUMENTED AND REVIEWED BY THE OWNER'S TESTING LABORATORY. RESPONSIBILITY FOR OBTAINING THE REQUIRED DESIGN STRENGTH IS THE CONTRACTOR'S.

C. CLASSES OF CONCRETE
ALL CONCRETE SHALL CONFORM TO THE REQUIREMENTS SPECIFIED IN THE TABLE BELOW UNLESS NOTED OTHERWISE ON THESE DRAWINGS:

USAGE TYPE	COMPRESSIVE STRENGTH	MAXIMUM AGGREGATE SIZE
SPREAD FOOTINGS	3000 PSI	1 INCH
SLABS-ON-GRADE	4000 PSI	1 INCH

1. COMPRESSIVE STRENGTH NOTED ABOVE SHALL BE THE 28-DAY COMPRESSIVE STRENGTH FOR ALL CONCRETE.
2. ALL CONCRETE SHALL BE NORMAL WEIGHT CONCRETE.
3. IN ADDITION TO THE MINIMUM COMPRESSIVE STRENGTH REQUIREMENT, CONCRETE MIX DESIGNS FOR FLOORS AND WALLS SHALL BE PROPORTIONED FOR A MAXIMUM WATER-CEMENT RATIO OF 0.45.
4. ALL CONCRETE MIX DESIGNS SHALL BE PROPORTIONED FOR A MAXIMUM ALLOWABLE UNIT SHRINKAGE OF 0.03% AS DETERMINED BY ASTM C157 (MEASURED AT 28 DAYS AFTER CURING IN LIME WATER WITH AIR STORAGE).
5. ALL CONCRETE EXPOSED TO THE WEATHER SHALL CONTAIN 6 TO 8% ENTRAINED AIR.
6. USE OF CALCIUM CHLORIDE, CHLORIDE IONS, OR OTHER SALTS IN CONCRETE IS NOT PERMITTED.

D. THERE SHALL BE NO HORIZONTAL CONSTRUCTION JOINTS IN THE PLACEMENT OF CONCRETE UNLESS SHOWN ON THESE DRAWINGS. ANY DEVIATIONS SHALL BE SUBMITTED TO AND APPROVED BY THE ARCHITECT OR ENGINEER IN WRITING.

E. REFER TO ARCHITECTURAL DRAWINGS FOR CLIPS, GROOVES, GROUNDS, ETC., TO BE CAST IN CONCRETE AND CONCRETE FINISHES. CHAMFER OR ROUND ALL EXPOSED CORNERS MINIMUM 3/4".

F. SLEEVE PLUMBING OPENINGS IN SLABS BEFORE PLACING CONCRETE AND BEND REINFORCING AROUND SLEEVES. CORING NOT PERMITTED IN FLOOR SLABS, UNLESS APPROVED BY STRUCTURAL ENGINEER. DO NOT PLACE PIPES OR DUCTS EXCEEDING ONE-THIRD THE SLAB OR WALL THICKNESS WITH THE SLAB OR WALL UNLESS SPECIFICALLY SHOWN AND DETAILED ON STRUCTURAL DRAWINGS. SEE MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR LOCATION OF SLEEVES, ACCESSORIES, ETC.

G. REINFORCING STEEL

1. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60 UNLESS NOTED OTHERWISE ON THESE DRAWINGS OR IN THE NOTES BELOW.
2. PROVIDE REINFORCING STEEL CONFORMING TO ASTM A706 FOR ALL REINF. STEEL REQUIRED TO BE WELDED AND WHERE NOTED ON THESE DRAWINGS.
3. PROVIDE GALVANIZED REINFORCING STEEL IN ACCORDANCE WITH ASTM A767 CLASS II (2.0 OZ ZINC PER SQUARE FOOT) WHERE NOTED ON THESE DRAWINGS.
4. PROVIDE EPOXY-COATED REINFORCING STEEL CONFORMING TO ASTM A775 WHERE NOTED ON THESE DRAWINGS.
5. PROVIDE DEFORMED BAR ANCHORS CONFORMING TO ASTM A496 (75,000 PSI YIELD STRENGTH) WHERE NOTED ON THESE DRAWINGS. REINFORCING BARS SHALL NOT BE SUBSTITUTED FOR DEFORMED BAR ANCHORS.
6. PROVIDE WELDED SMOOTH WIRE REINFORCEMENT CONFORMING TO ASTM A185 (65,000 PSI YIELD STRENGTH) WHERE NOTED ON THESE DRAWINGS.
7. PROVIDE WELDED DEFORMED WIRE REINFORCEMENT CONFORMING TO ASTM A497 (70,000 PSI YIELD STRENGTH) WHERE NOTED ON THESE DRAWINGS.

H. WHERE WELDED WIRE REINFORCEMENT IS SPECIFIED, IT SHALL BE CONTINUOUS ACROSS THE ENTIRE CONCRETE SURFACE WITHOUT INTERRUPTION BY BEAMS, GIRDERS, OR COLUMNS. SPLICES SHALL BE LAPPED ONE CROSS WIRE SPACING PLUS 2 INCHES.

I. PROVIDE WELDED SMOOTH WIRE REINFORCEMENT (6X6 W2.9XW2.9 MINIMUM) IN ALL TOPPING SLABS AND HOUSEKEEPING SLABS (SUPPORTING MECHANICAL UNITS) UNLESS SPECIFIED OTHERWISE ON THESE DRAWINGS.

J. MINIMUM CONCRETE COVER TO REINFORCING SHALL BE IN ACCORDANCE WITH ACI 318, UNLESS NOTED OTHERWISE ON THESE DRAWINGS.

K. THE FOLLOWING NOTATION IS USED ON THESE DRAWINGS TO DENOTE REINFORCING STEEL DEVELOPMENT LENGTHS AND SPLICE TYPES:

CD - COMPRESSION DEVELOPMENT LENGTH
TD - TENSION DEVELOPMENT LENGTH
CS - COMPRESSION LAP SPLICE
EB - END-BEARING COMPRESSION SPLICE
M - MECHANICAL SPLICE (MINIMUM 125% YIELD STRENGTH)
A - CLASS A TENSION LAP SPLICE
B - CLASS B TENSION LAP SPLICE

SPLICE LENGTHS SHALL BE IN ACCORDANCE WITH ACI-318. ANY SPLICE LENGTH TABLES SHOWN ON THE DOCUMENTS ARE PROVIDED FOR CONVENIENCE.

L. UNSCHEDULED BEAMS AND SLABS, INCLUDING GRADE BEAMS, SHALL HAVE CONTINUOUS TOP BARS LAPPED AT MIDSPAN BETWEEN SUPPORTS WITH A CLASS A TENSION SPLICE. BOTTOM BARS SHALL BE LAPPED AT THE SUPPORTS WITH A CLASS A TENSION SPLICE.

M. VERTICAL BARS PLACED ON THE DIRT-FACING SIDE OF BASEMENT WALLS SHALL BE SPLICED AT MIDSPAN BETWEEN SUPPORTS WITH A CLASS A TENSION SPLICE. VERTICAL BARS PLACED OPPOSITE THE DIRT-FACING SIDE SHALL BE LAPPED AT THE SUPPORTS WITH A CLASS A TENSION SPLICE. HORIZONTAL BARS SHALL HAVE A LAP SPLICE OF 30 BAR DIAMETERS.

N. REINFORCING STEEL MARKED "CONTINUOUS" SHALL BE LAPPED W/ CLASS "B" LAP SPLICE UNLESS SPECIFICALLY DETAILED OTHERWISE. PROVIDE CONTINUOUS REINFORCEMENT WHERE EVER POSSIBLE; SPLICE ONLY AS SHOWN OR APPROVED; STAGGER SPLICES WHERE POSSIBLE; USE TENSION SPLICE (CLASS "B") UNLESS NOTED OTHERWISE. DOWELS SHALL MATCH THE SIZE AND SPACING OF THE WALL OR COLUMN SPECIFIED REINFORCEMENT AND SHALL BE LAPPED WITH TENSION SPLICES (CLASS "B") UNLESS NOTED OTHERWISE.

O. HORIZONTAL REINFORCEMENT IN FOOTINGS, TURNDOWN SLABS AND WALLS SHALL BE CONTINUOUS AROUND CORNERS. HORIZONTAL REINFORCEMENT SHALL CONTINUE AT BENDS AND CORNERS WITH BEND TO FAR FACE OF INTERSECTING ELEMENT IN EACH DIRECTION. ADDITIONAL HORIZONTAL CORNER BARS OF SAME SIZE AND SPACING MAY BE PROVIDED. PROVIDE CORNER BARS AT ALL TURN-DOWN SLAB CORNERS AND C.I.P. CONCRETE WALL CORNERS. PROVIDE CLASS B LAP BETWEEN CORNER BARS AND MAIN REINFORCING.

P. DETAILING, FABRICATION AND PLACING REINFORCING STEEL AND ACCESSORIES SHALL BE IN ACCORDANCE WITH ACI 315, "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT" DETAILING MANUAL. SUBMIT SHOP DRAWINGS FOR APPROVAL, SHOWING ALL FABRICATION DIMENSIONS AND LOCATIONS FOR PLACING REINFORCING STEEL AND ACCESSORIES. DO NOT BEGIN FABRICATION UNTIL SHOP DRAWINGS ARE COMPLETED AND REVIEWED.

Q. CONTRACTORS SHALL NOT PLACE ANY REINFORCING UNTIL APPROVED SHOP DRAWINGS ARE RECEIVED ON THE JOB. SUBMIT SHOP DRAWINGS WHICH ADEQUATELY DEPICT THE REINFORCING BAR SIZES AND PLACEMENT. WRITTEN DESCRIPTION OF REINFORCEMENT WITHOUT ADEQUATE SECTIONS, ELEVATIONS, AND DETAILS IS NOT ACCEPTABLE.

R. ALL REINFORCING BARS, ANCHOR BOLTS AND OTHER CONCRETE INSERTS SHALL BE SECURED IN POSITION PRIOR TO PLACING CONCRETE, TIE ALL REINFORCING STEEL AND EMBEDMENTS SECURELY IN PLACE PRIOR TO PLACING CONCRETE PROVIDE SUFFICIENT SUPPORTS TO MAINTAIN THE POSITION OF REINFORCEMENT WITHIN SPECIFIED TOLERENCES DURING ALL CONSTRUCTION ACTIVITIES.

S. DO NOT WELD OR TACK WELD REINFORCING STEEL UNLESS APPROVED OR DIRECTED BY THE STRUCTURAL ENGINEER. HORIZONTAL CONSTRUCTION JOINTS ARE PERMITTED ONLY WHERE INDICATED. THE LOCATION OF VERTICAL CONSTRUCTION JOINTS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER. CONSTRUCTION JOINTS SHALL BE THOROUGHLY ROUGHENED BY MECHANICAL MEANS AND CLEANED. PROVIDE DOWELS FROM FOUNDATIONS THE SAME SIZE AND NUMBER AS THE VERTICAL WALL OR COLUMN REINFORCING, UNLESS NOTED OTHERWISE.

T. PROVIDE FOR AN ALLOWANCE OF 1.5% OF REINFORCING BAR TONNAGE TO BE FABRICATED AND PLACED DURING PROGRESS OF WORK AS MAY BE DIRECTED BY THE STRUCTURAL ENGINEER, IN ADDITION TO ALL THE STEEL INDICATED ON THE DRAWINGS.

U. ALL CONCRETE CONSTRUCTION SHALL BE INSPECTED BY OR BE UNDER SUPERVISION OF A LICENSED DESIGN PROFESSIONAL OR BY A QUALIFIED SPECIAL INSPECTOR.

V. WHERE INDICATED ON THE PLANS, REINFORCING BAR STANDARD HOOKS MAY BE REPLACED WITH LENTON TERMINATORS PER ICC ER 3967.

W. WHERE INDICATED ON THE PLANS, CLASS B TENSION LAP SPLICES MAY BE REPLACED WITH TYPE 2 MECHANICAL SPLICES PER ICC ER 5064 OR ICC ER 5461.

4. STRUCTURAL STEEL

A. MATERIAL

1. ALL HOT ROLLED STEEL PLATES, SHAPES, SHEET PILING, AND BARS SHALL BE NEW STEEL CONFORMING TO ASTM SPECIFICATION ASTM A6-98A.
2. CLEARLY MARK THE GRADE OF STEEL ON EACH PIECE, WITH A DISTINGUISHING MARK VISIBLE FROM FLOOR SURFACES, FOR THE PURPOSE OF FIELD INSPECTION OF PROPER GRADE OF STEEL. UNLESS NOTED OTHERWISE ON THE DRAWINGS, STRUCTURAL STEEL SHALL BE AS FOLLOWS:

A) ALL WIDE FLANGE SHAPES SHALL CONFORM TO ASTM A992. (ASTM A572-50 IS ACCEPTABLE AS A SUBSITITUTE FOR A992).
B) ALL CHANNEL SHAPES SHALL CONFORM TO ASTM A36.
C) ALL ELEVATOR DIVIDER BEAMS DESIGNATED AS S SHAPES SHALL CONFORM TO ASTM A36.
D) ALL ROLLED ANGLE SHAPES SHALL CONFORM TO ASTM A36.
E) ALL PIPE SHAPES SHALL CONFORM TO ASTM A53 (TYPES E OR S), GRADE B OR ASTM A501.
F) ALL RECTANGULAR HSS SHALL CONFORM TO ASTM A500, GRADE B (FY=46 KSI).
G) ALL ROUND HSS SHALL CONFORM TO ASTM A500, GRADE B (FY=42 KSI).
H) ALL BASEPLATES SHALL CONFORM TO ASTM A572, GR. 50
I) ALL CONNECTION MATERIAL, EXCEPT AS NOTED OTHERWISE HEREIN OR ON THE DRAWINGS, INCLUDING BEARING PLATES, GUSSET PLATES, STIFFENER PLATES, FILLER PLATES, ANGLES, ETC. SHALL CONFORM TO ASTM A36 UNLESS A HIGHER GRADE OF STEEL IS REQUIRED BY STRENGTH AND PROVIDED THE RESULTING SIZE ARE COMPATIBLE WITH THE CONNECTED MEMBERS.
J) ANY OTHER STEEL NOT INDICATED OTHERWISE SHALL CONFORM TO ASTM A992 OR ASTM A572-50, EXCEPT PLATES AND ANGLES WHICH SHALL CONFORM TO ASTM A36.

B. CONNECTIONS

1. STRUCTURAL STEEL DETAILING, FABRICATION AND ERECTION SHALL BE DONE IN ACCORDANCE WITH AISC 360-05. ALL CONNECTIONS SHALL BE SHOP WELDED AND FIELD BOLTED EXCEPT AS NOTED ON DRAWINGS.
2. CONNECTION DETAILS NOT COMPLETELY DETAILED ON THE DRAWINGS (INCLUDING MATERIAL GRADE AND SIZES; NUMBER, SIZE, AND GRADE OF BOLTS; AND SIZE OF WELDS) SHALL BE DESIGNED AND DETAILED BY THE CONTRACTOR'S ENGINEER IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. CONNECTION DESIGN REACTIONS NOTED ON THESE DRAWINGS ARE BASED ON SERVICE LOADS AND ARE INTENDED FOR USE WITH THE AISC ALLOWABLE STRESS DESIGN (ASD) METHOD IN THE 13TH EDITION AISC STEEL CONSTRUCTION MANUAL. CONNECTION DESIGN SHALL BE PERFORMED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED.
3. ALL BOLTS IN STRUCTURAL CONNECTIONS SHALL CONFORM TO ASTM A325 TYPE 1, UNLESS INDICATED OTHERWISE ON THESE DRAWINGS.
4. SEE DRAWINGS FOR LOCATIONS REQUIRING ASTM A490 TYPE 1 BOLTS. USE ONLY FOR BEARING-TYPE CONNECTIONS WITH A BOLT DIAMETER GREATER THAN 1½ INCHES.
5. THREADED ROUND STOCK SHALL CONFORM TO ASTM A36.
6. ALL PINS IN PIN-CONNECTED MEMBERS SHALL CONFORM TO ASTM A36 AND ASTM A108 FOR PINS FOUR INCHES IN DIAMETER OR LESS, AND TO ASTM A668 CLASS D (FY=37,500 PSI) FOR PINS GREATER THAN FOUR INCHES IN DIAMETER.
7. THE GENERAL CONTRACTOR SHALL SUBMIT TO THE ARCHITECT, FOR REVIEW, ENGINEERED AND CHECKED SHOP DRAWINGS SHOWING SHOP FABRICATION DETAILS, SUBASSEMBLY DETAILS AND ERECTION DRAWINGS FOR ALL STRUCTURAL STEEL. SUBMIT SHOP DRAWINGS PREPARED IN ACCORDANCE WITH AISC MANUAL "DETAILING FOR STEEL CONSTRUCTION". DO NOT BEGIN FABRICATION UNTIL SHOP DRAWINGS ARE COMPLETED AND REVIEWED.
8. ALL CONNECTION SHALL BE DESIGNED AND DETAILED BY THE FABRICATOR. DETAILING SHALL BE PERFORMED USING RATIONAL ENGINEERING DESIGN AND STANDARD PRACTICE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE GENERAL DETAILS SHOWN ON THE DRAWINGS ARE CONCEPTUAL ONLY AND DO NOT INDICATE THE REQUIRED NUMBER OF BOLTS OR WELD SIZES, UNLESS SPECIFICALLY NOTED.
9. MINIMUM NUMBER OF BOLT ROWS BASED ON MEMBER DEPTH FOR W & C SHAPES ARE AS FOLLOWS:

UP TO 12" DEEP	2 ROWS
14" TO 16" DEEP	3 ROWS
18" TO 21" DEEP	4 ROWS
24" TO 27" DEEP	5 ROWS

10. ALL CONNECTIONS SHALL BE SIMPLE SHEAR CONNECTIONS UTILIZING HIGH-STRENGTH BOLTS IN BEARING-TYPE CONNECTIONS (U.N.O.) WITH THREADS INCLUDED IN THE SHEAR PLANE.
11. NON-COMPOSITE BEAM CONNECTIONS SHALL BE DESIGNED FOR THE REACTION DUE TO MAXIMUM ALLOWABLE LOAD FOR THE APPROPRIATE SPAN AND SHAPE BASED ON THE BEAM TABLES OF AISC 360-05.
12. ALL SIMPLE SHEAR CONNECTIONS SHALL BE CAPABLE OF END ROTATION AS PER THE REQUIREMENTS OF THE A.I.S.C. CODE SECTION ON UNRESTRAINED MEMBERS, SECTION J1.2.

C. WELDING

1. UNLESS NOTED OTHERWISE, ELECTRODES FOR WELDING SHALL CONFORM TO E70XX (SMAW), F7XX - EXXX (SAW), ER70S-X (GMAW), OR E7XT-X (FCAW). ALL FIELD WELDING SHALL BE DONE WITH E-70XX ELECTRODES.
2. ALL WELDING SHALL BE DONE BY QUALIFIED WELDERS AND SHALL CONFORM TO THE "CODE FOR ARC AND GAS WELDING IN BUILDING CONSTRUCTION", LATEST EDITION.
3. ALL WELDED JOINTS SHALL COMPLY W/ THE PROVISIONS OF AWS D1.1 STRUCTURAL WELDING CODE BY AMERICAN WELDCING SOCIETY (SECTION 2207). THE GC SHALL MAKE PROOF OF WELDER CERTIFICATION AVAILABLE AT THE JOB SITE.

D. ANCHOR RODS

UNLESS INDICATED OTHERWISE IN THE COLUMN SCHEDULE OR ON THE DRAWINGS, ANCHOR RODS SHALL CONFORM TO ASTM F1554 GRADE 55 AND SHALL BE 3/4 INCH DIAMETER WITH 12 INCH EMBEDMENT INTO CONCRETE WITH A HEAVY HEX NUT AT THE EMBEDDED END. DAMAGE THREADS AT TWO PLACES BELOW THE NUT TO PREVENT LOOSENING.

E. GROUT

GROUT BELOW STRUCTURAL STEEL BASE PLATES SHALL BE NON-METALLIC, NON-SHRINK GROUT WITH A MINIMUM STRENGTH OF 6000 PSI WHEN BEARING ON 3000 PSI CONCRETE OR LESS, A STRENGTH OF 8000 PSI WHEN BEARING ON CONCRETE BETWEEN 3000 AND 4000 PSI, AND, UNLESS NOTED OTHERWISE ON THE DRAWINGS, A STRENGTH OF 8000 PSI WHEN BEARING ON CONCRETE GREATER THAN 4000 PSI.

F. MISC.

1. ALL BEAMS AND GIRDERS SHALL BE FABRICATED WITH NATURAL CAMBER UP.
2. AFTER FABRICATION, ALL STEEL SHALL BE CLEANED OF ALL RUST, LOOSE MILL SCALE AND OTHER FOREIGN MATERIALS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF ALL ERECTION PROCEDURES AND SEQUENCES WITH RELATION TO TEMPERATURE DIFFERENTIALS.
4. THERE SHALL BE NO FIELD CUTTING OF STRUCTURAL STEEL MEMBER FOR THE WORK OF OTHER TRADES WITHOUT THE PRIOR APPROVAL OF THE ARCHITECT.
5. ALL ADDITIONAL STEEL REQUIRED BY THE CONTRACTOR FOR ERECTION PURPOSES AND SITE ACCESS OF STOCKPILED MATERIALS SHALL BE PROVIDED AT NO COST TO THE OWNER. ALL SUCH ADDITIONAL STEEL SHALL BE REMOVED BY THE CONTRACTOR.
6. ALL STEEL EXPOSED TO EARTH SHALL BE PAINTED WITH BITUMINOUS COATING. ALL STRUCTURAL STEEL EXPOSED TO THE WEATHER SHALL BE SHOP PRIMED & FIELD PAINTED W/ TWO COATS OR PAINT. (EXCEPT FOR SURFACES TO RECEIVE WELD OR TO BE ENCASED IN CONCRETE. TOUCH UP ALL STRUCTURAL STEEL AFTER ERECTION WITH SAME PRIMER.)
7. CONTRACTOR SHALL PROVIDE TEMPORARY BRACING OF STRUCTURAL FRAMING UNTIL ALL PERMANENY BRACING AND MOMENT CONNECTIONS ARE COMPLETELY INSTALLED.
8. STEEL COLUMNS ARE TO BE CONTINUOUS WITH NO SPLICES UNLESS NOTED OTHERWISE. ALL STEEL COLUMNS TO HAVE 1/2" CAP PLATE UNLESS NOTED.

5. CONCRETE MASONRY

A. MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS (f'm) SHALL BE 1500 PSI.

B. MATERIAL SHALL BE AS FOLLOWS:
1. CMU: GRADE N, ASTM C-90 (UNIT STRENGTH = 1900 PSI)
2. MORTAR: TYPE S FOR WALLS NOT IN CONTACT WITH EARTH
TYPE M FOR WALLS IN CONTACT WITH EARTH

C. GROUT FOR CONCRETE MASONRY WALL SHALL CONFORM TO ASTM C476, f'c= 3000 PSI MIN. GROUT SHALL BE CONSOLIDATED BY VIBRATING ALL CELLS.

D. GROUT PLACEMENT SHALL BE DONE ACCORDING TO ACI 530-05. THE CONSTRUCTION JOINTS ARE CREATED BY THE LEVEL OF GROUT STOPPING AT 1 1/2" FROM TOP OF MASONRY AND THE STEEL REINFORCING PROJECTING ABOVE THE TOP COURSE FOR A SUFFICIENT HEIGHT TO PROVIDE A LAP AT THE SPLICE OF 48 BAR DIAMETERS. THE CONSTRUCTION JOINT SHALL BE LOCATED 3'-0" MINIMUM FROM TOP AND BOTTOM OF STRUCTURAL ELEMENTS STUCH AS SLABS, ROOFS, ETC.

E. WHERE APPLICABLE, ALL CONCRETE BLOCK BELOW THE DESIGN FLOOD ELEVATION SHALL HAVE ALL CELLS FILLED WITH GROUT. SEE ARCH. AND CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.

F. ALL CELLS CONTAINING REINFORCEMENT SHALL BE GROUTED SOLID.

G. CMU GROUT FILL SHALL ARRIVE AT THE JOB SITE WITH A SLUMP BETWEEN 3" TO 5". PRIOR TO DEPOSITING GROUT, SUPERPLASTICIZER SHALL BE ADDED TO THE GROUT AT THE JOB SITE INCREASING THE SLUMP TO 8" TO 10".

H. ALL CMU SHALL BE PLACED IN RUNNING BOND UNLESS EXPLICITLY DETAILED OTHERWISE ON THESE DRAWINGS.

I. SEE ARCHITECTURAL DRAWINGS FOR ALL CMU WALL AND PARTITION LOCATIONS, AS WELL AS ALL CMU WALL OPENING LOCATIONS AND SIZES.

J. CONCRETE MASONRY WALLS SHALL BE TEMPORARILY BRACED DURING ERECTION. REMOVE TEMPORARY BRACING ONLY AFTER WALLS ARE CONNECTED TO SUPPORTING ELEMENTS.

K. MAXIMUM CONTROL JOINT SPACING IN MASONRY WALL = 30'-0" UNLESS NOTED. SEE ARCHITECTURAL DRAWINGS FOR LOCATION.

L. UNLESS SPECIFICALLY NOTED OTHERWISE, ALL CMU WALLS SHALL BE REINFORCED AS FOLLOWS:
1. VERT. REINF. #5 @ 48" o.c. CTR'D IN WALL THICKNESS W/CONTINUOUS BOND BEAM REINF W/2-#5 CONT @ ALL FLOOR LEVELS, @ TOP OF WALL AND @ SLAB ON GRADE ELEVATION, U.N.O.
2. CONTINUOUS 9 GA. TRUSS TYPE HORIZONTAL JOINT REINFORCEMENT AT 16" O.C. (8 INCHES ON CENTER AT PARAPETS). U.N.O.

M. DOWEL ALL CMU INTO GRADE BEAMS, FOOTINGS, ELEVATED CONCRETE SLABS, AND CONCRETE FOUNDATION WALLS WITH STANDARD HOOKS AND A MINIMUM 48 BAR DIAMETER PROJECTION FOR LAP WITH VERTICAL REINFORCING. DOWELS SHALL BE OF THE SAME SIZE AND SPACING AS SCHEDULED VERTICAL WALL REINFORCING.

N. ALL C.M.U. SHALL BE PLACED IN RUNNING BOND.

O. PROVIDE CORNER BARS AT ALL BOND BEAMS TO ENSURE CONTINUITY AT CORNERS. LAP CORNER BARS 48 DIAMETERS WITH BOND BEAM BARS.

P. ALL MASONRY CONSTRUCTION AND INSPECTION SHALL COMPLY WITH ACI 530-08 & ACI 530.1-08. COSTS OF THE SERVICES OF AN INDEPENDENT TESTING LABORATORY TO PERFORM TESTING AND INSPECTION SERVICES SHALL BE BORNE BY THE CONTRACTOR.

Q. CMU WALL REINFORCING SHOP DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT PRIOR TO FABRICATION. DRAWINGS SHALL SHOW ALL WALL AND PILASTER REINFORCING IN PLAN AND IN ELEVATION.

R. PROVIDE BAR SUPPORTS AND POSITIONERS AS REQUIRED TO ENSURE THAT FINAL IN-PLACE LOCATION OF REINFORCING IS AS INDICATED ON THE DRAWINGS.

S. SIDE AND TOP OF MASONRY WALL PANELS SHALL BE ANCHORED TO STRUCTURE BY APPROPRIATE DOVETAIL ANCHORS, METAL STRAPS, OR EQUIVALENT AT 24" O.C. MAXIMUM SPACING U.N.O.

T. THE CONTRACTOR SHALL PROVIDE AND INSTALL BRACING AND SHORING FOR ALL MASONRY WALLS AS REQUIRED TO ENSURE STABILITY DURING CONSTRUCTION. REMOVE TEMPORARY BRACING ONLY AFTER WALLS ARE CONNECTED TO SUPPORTING ELEMENTS.

U. MASONRY SHALL BE PROTECTED FROM FREEZING DURING PLACEMENT AND CURING. COLD WEATHER MASONRY PROCEDURES SHALL COMPLY WITH ACI 530-08 & ACI 530.1-08.

V. BRICK TIES SHALL BE 3#16 DIAMETER WIRE TRIANGULAR TIES WITH A MINIMUM EMBEDMENT INTO BRICK OF 1/2 BRICK DEPTH OR 11#2", WHICHEVER IS GREATER. TIE SHOULD EXTEND NO CLOSER THAN 5#8" TO THE EXTERIOR FACE OF THE BRICK VENEER. DO NOT BEND TIES TO MEET THIS CRITERION. BRICK TIES SHALL BE SPACED VERTICALLY AND HORIZONTALLY AS INDICATED IN ARCHITECTURAL DRAWINGS. INSTALL TIES AT STUD OR COLUMNS AT WALL ENDS, EACH SIDE OF THE WALL CORNERS, AROUND ALL WALL OPENINGS, AND AT EACH SIDE OF WALL CONTROL JOINTS.

W. BRICK WALLS ARE TO HAVE VERTICAL CONTROL JOINTS AT 20'-0" MAXIMUM, U.N.O. PROVIDE DOUBLE STUDS AT BRICK CONTROL JOINTS (ONE STUD EACH SIDE OF CONTROL JOINT). EACH STUD SHALL HAVE BRICK TIES.

X. PROVIDE DOUBLE BRICK TIES AT CONTROL JOINTS (ONE TIE EACH SIDE OF CONTROL JOINT).

6. CONNECTIONS TO EXISTING MASONRY OR CAST-IN-PLACE CONCRETE

A. ALL PROPRIETARY ANCHORING SYSTEMS (EXPANSION, ADHESIVE ANCHORING SYSTEMS, ETC.) TO BE INSTALLED INTO EXISTING CONCRETE AND MASONRY ELEMENTS ARE TO BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS FOR DRILLING AND CLEANING OF HOLES, FOR SPACING AND EDGE DISTANCE REQUIREMENTS, AND FOR THE UTILIZATION OF SUPPLEMENTAL COMPONENTS FOR THE ANCHORING SYSTEMS SUCH AS SCREEN TUBES, DOWELING ADHESIVES, ETC.

B. FOR CONNECTIONS TO EXISTING CONCRETE AND MASONRY, CONTRACTOR MUST LOCATE THE POSITION OF EXISTING REINFORCING BARS WITH AN R-METER OR PILOT HOLES PRIOR TO INSTALLATION OF ANCHORS. NOTIFY ENGINEER OF FIELD CONFLICTS PRIOR TO INSTALLATION.

C. CONNECTIONS TO EXISTING CONCRETE SHALL BE MADE WITH ANCHORS CONFORMING TO ACI 318, APPENDIX D FOR CRACKED CONCRETE AND THE INTERNATIONAL BUILDING CODE, SECTION 1909.

1. ADHESIVE ANCHOR RODS OR REINFORCING BARS SHALL BE INSTALLED IN ROTARY HAMMERED DRILLED HOLES USING THE FOLLOWING ADHESIVE ANCHORING SYSTEM:

HILTI "HIT HY 200" SAFE SET SYSTEM WITH HILTI HIT-Z RODS OR WITH ISO 898 CLASS 5.8 ANCHOR RODS (MINIMUM YIELD STRENGTH = 58 KSI AND MINIMUM ULTIMATE STRENGTH = 72.5 KSI) OR ASTM A193 GRADE B7 HIGH STRENGTH ANCHOR RODS.

HILTI "HIT RE 500-SD" ADHESIVE ANCHORING SYSTEM WITH ISO 898 CLASS 5.8 ANCHORS RODS (MINIMUM YIELD STRENGTH = 58 KSI AND MINIMUM ULTIMATE STRENGTH = 72.5 KSI) OR ASTM A193 GRADE B7 HIGH STRENGTH ANCHOR RODS.

SIMPSON "SET-XP" ADHESIVE ANCHORING SYSTEM WITH ASTM F1554 GRADE 36 ANCHOR RODS OR ASTM A193 GRADE B7 HIGH STRENGTH ANCHOR RODS.

SIMPSON "AT-XP" ADHESIVE ANCHORING SYSTEM WITH ASTM F1554 GRADE 36 ANCHOR RODS OR ASTM 193 GRADE B7 HIGH STRENGTH ANCHOR RODS.

USING ANY OF THE ABOVE ADHESIVE ANCHORING SYSTEMS, REINFORCING BARS SHALL CONFORM TO THE REQUIREMENTS OF THE CONCRETE GENERAL NOTES.

SIZE, EMBEDMENT, SPACING AND EDGE DISTANCE OF ANCHORS AND REINFORCING BARS SHALL BE AS INDICATED ON THE DRAWINGS.

D. CONNECTIONS TO GROUT FILLED CONCRETE MASONRY SHALL BE MADE WITH HILTI STANDARD "HAS-E" ISO 898 CLASS 5.8 ANCHOR RODS (MINIMUM YIELD STRENGTH = 58 KSI AND MINIMUM ULTIMATE STRENGTH = 72.5 KSI) USING HILTI "HIT HY70" ADHESIVE ANCHORING SYSTEMS OR EQUAL AS APPROVED BY THE ENGINEER.

E. EMBED ANCHOR RODS INTO DRILLED HOLES A MINIMUM OF 9 ANCHOR DIAMETERS, WITH A MINIMUM EDGE DISTANCE OF 4 INCHES UNLESS OTHERWISE NOTED, MEASURED FROM THE EDGE OF THE MASONRY TO THE CENTERLINE OF THE ANCHOR. INCREASED EMBEDMENT DEPTHS OR EDGE DISTANCES MAY BE REQUIRED AT CERTAIN LOCATIONS, SEE PLANS AND DETAILS.

7. METAL DECK

A. STEEL DECK SHALL BE DESIGNED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE CURRENT SPECIFICATION OF THE STEEL DECK INSTITUTE.

B. FORMED STEEL ROOF DECK TO BE 1-1/2" DEEP, 22 GAGE (UNCOATED STEEL THICKNESS = 0.0295"), GALVANIZED (G60 COATING), WIDE RIB, VULCRAFT "B" DECK PROFILE, AS MANUFACTURED BY VULCRAFT OR AN APPROVED EQUAL.

C. THE STEEL DECK SHALL BE SUPPLIED IN MINIMUM LENGTHS AS REQUIRED TO PROVIDE A "3-SPAN" CONDITION. END CLOSURES, ROOF SUMPS, CLOSURES AT PENETRATIONS, AND ALL OTHER ACCESSORIES NECESSARY FOR A COMPLETE INSTALLATION ARE REQUIRED.

D. FORMED STEEL ROOF DECK SHALL BE WELDED TO SUPPORTING STEEL WITH 5/8" DIAMETER PUDDLE WELDS AT ALL EDGE RIBS AND AT THE DECK ATTACHMENT PATTERN SHOWN ON THE FRAMING PLANS. SEE FRAMING PLANS FOR SPACING OF INTERMEDIATE SIDE LAP CONNECTIONS WITH #10 SELF TAPPING SCREWS. FOR CONNECTION OF METAL ROOF DECK TO COLD FORMED FRAMING, USE #10 SELF TAPPING SCREWS AT 12" ON CENTER. END LAPS OF SHEETS SHALL BE A MINIMUM OF 2" AND SHALL OCCUR OVER SUPPORTS. .

E. IN LIEU OF PUDDLE WELDS, POWDER ACTUATED FASTENERS HAVING THE SAME CAPACITY AS THE SPECIFIED PUDDLE WELDS, MAY BE USED. FASTENERS SHALL BE MANUFACTURED BY HILTI, INC. OR AN APPROVED EQUAL. SHOP DRAWINGS SHALL BE SUBMITTED FOR APPROVAL TO THE ENGINEER INDICATING FASTENER DATA INCLUDING SIZE VS. STEEL SUBSTRATE MATERIAL, SPACINGS, CAPACITIES, INCLUDING DIAPHRAGM SHEAR CAPACITIES, METHOD OF INSTALLATION AND PROGRAM FOR QUALITY ASSURANCE OF INSTALLATION.

F. STEEL DECK MUST BE PROTECTED BEFORE AND AFTER ERECTION AND ALL DEBRIS CLEANED FROM ITS SURFACE WHERE CONCRETE WILL BE POURED OR ROOFING IS TO BE PLACED.

8. STEEL JOISTS

A. OPEN WEB STEEL JOISTS SHALL BE DESIGNED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE CURRENT SPECIFICATION OF THE STEEL JOIST INSTITUTE.

B. JOISTS SHALL BE SUPPLIED WITH ALL ATTACHMENT DEVICES, BRIDGING, AND SIMILAR ACCESSORIES REQUIRED FOR STRICT CONFORMANCE WITH THE STEEL JOIST INSTITUTE'S SPECIFICATIONS. JOIST ERECTION SHALL BE IN STRICT CONFORMANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REQUIREMENTS. ALL OF THE ABOVE INFORMATION SHALL BE SHOWN ON THE SHOP DRAWINGS.

C. JOISTS SHALL BE FIELD WELDED TO THEIR SUPPORTING MEMBERS BY A CERTIFIED WELDER AS DEFINED BY THE AMERICAN WELDING SOCIETY.

D. JOISTS AT ALL COLUMN LINES SHALL BE FIELD BOLTED TO THE COLUMN AND HAVE THEIR LOWER CHORDS EXTENDED AND CONNECTED TO THE COLUMN.

E. EXTEND JOISTS 1 INCH PAST CENTERLINE OF SUPPORTING MEMBER WHERE POSSIBLE. ON MASONRY WALLS 12 INCHES OR MORE IN THICKNESS, THE MINIMUM BEARING LENGTH SHALL BE 6 INCHES, UNLESS OTHERWISE NOTED.

F. DESIGN OF JOISTS AND JOIST BRIDGING SHALL ACCOUNT FOR THE NET UPLIFT LOAD (COMBINED WIND AND DEAD LOADS) SHOWN ON THE FRAMING PLANS.

G. JOISTS SHALL BE CLEANED IN ACCORDANCE WITH THE STEEL STRUCTURES PAINTING COUNCIL SPECIFICATION SP-2- OR SP3 AND PAINTED AS PER SSPC PAINT NO. 15 OR MANUFACTURER'S STANDARD SHOP PRIMER COMPLYING WITH THE PERFORMANCE REQUIREMENTS IN SSPC PAINT NO. 15.

H. BRIDGING SHALL BE AS SHOWN AND NOT LESS THAN CALLED FOR BY THE SJI SPECIFICATION, AS NOTED IN NOTE 1.

I. ADJACENT JOISTS OF THE SAME DEPTH SHALL HAVE WEB MEMBERS IN LINE TO PERMIT PASSAGE OF MECHANICAL DUCTS.

J. JOIST MANUFACTURER SHALL DESIGN SPECIAL JOISTS, DESIGNATED "SP", FOR LOAD AND DEFLECTION CRITERIA SHOWN ON THE DRAWINGS. JOIST MANUFACTURER SHALL COORDINATE AND VERIFY WEIGHT, SIZE AND LOCATION OF MECHANICAL EQUIPMENT AND ANY OTHER ATTACHED EQUIPMENT/APPURTENANCE WITH THE GENERAL AND MECHANICAL CONTRACTORS.

K. "K" SERIES JOISTS

1. WELD ALL JOISTS TO SUPPORTING STEEL WITH 1 1/2" OF 3/16" FILLET WELD EACH SIDE OF BEARING, UNLESS OTHERWISE SHOWN.
2. PROVIDE 5" DEEP BEARING ENDS ON JOISTS WHICH SHARE A COMMON BEARING GIRDER WITH "LH" JOISTS.

L. WELD ALL JOIST GIRDERS TO SUPPORTING STEEL WIITH 3" OF 1/4" FILLET WELD EACH SIDE OF BEARING, UNLESS OTHERWISE SHOWN.

M. JOIST SEATS SHALL BE DESIGNED TO RESIST A ROLL-OVER FORCE OF 2.3 KIPS.

9. COLD FORMED LIGHT GAUGE METAL FRAMING

A. UNLESS SPECIFICALLY SIZED ON THE DRAWINGS, ALL MEMBERS AND ASSOCIATED CONNECTIONS SHALL BE DESIGNED AND FABRICATED BY THE SUPPLIER IN ACCORDANCE WITH THE AISI SPECIFICATION FOR THE DESIGN OF COLD FORMED STRUCTURAL STEEL MEMBERS (LATEST EDITION.)

B. THE LIGHT GAUGE SUPPLIER SHALL SUBMIT COMPLETE CALCULATIONS FOR DESIGN OF ALL MEMBERS AND CONNECTIONS (INCLUDING CONNECTIONS TO THE SUPPORTING STRUCTURE) TO THE ARCHITECT FOR THE ARCHITECTS RECORD. CALCULATIONS SHALL BE PREPARED AND SEALED & SIGNED BY A PROFESSIONAL ENGINEER CURRENTLY REGISTERED IN THE STATE WHERE THE PROJECT IS BEING CONSTRUCTED, AND SHALL BE DONE IN ACCORDANCE WITH THE STATE AND LOCAL BUILDING CODES AND THE AISI SPECIFICATION (LATEST EDITION). DESIGN CALCULATIONS SHALL BE SUBMITTED WITH SHOP DWGS.

C. SHOP DWGS SHALL BE SUBMITTED FOR THE ARCHITECTS REVIEW PRIOR TO FABRICATION. SHOP DWGS SHALL INDICATE ALL MEMBER PROPERTIES, SIZES, DETAILS OF MEMBER CONNECTIONS AND DETAILS OF CONNECTIONS TO THE SUPPORTING STRUCTURE. SHOP DWGS SHALL INCLUDE ERECTION DWGS AND SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER CURRENTLY REGISTERED IN THE STATE WHERE THE PROJECT IS BEING CONSTRUCTED. ALL LIGHT GAUGE METAL SHOP DRAWINGS SHALL BE AVAILABLE ON THE JOB SITE.

D. SEE ARCH DWGS FOR ALL DIMENSIONS NOT SHOWN ON THE STRUCTURAL DRAWINGS.

E. WHERE STUDS ARE NOT BRACED LATERALLY BY GYPSUM BOARD OR PLYWOOD ON EACH SIDE, PROVIDE CONTINUOUS 1 1/2" COLD ROLLED CHANNEL BRIDGING @ 48" O.C. MAX.

F. WHERE COLD FORMED METAL FRAMING IS FIELD WELDED, ALL WELDS AND SURROUNDING AREAS SHALL BE FIELD PAINTED W/ A ZINC RICH PAINT.

G. PROVIDE BUILT UP SECTIONS WHERE REQ'D @ OPENING JAMBS, HEADS & SILLS.

H. PROVIDE SPACER, STUDS & FILLER STUDS WHERE REQ'D TO ACHIEVE CONNECTIONS @ CORNICE FRAMING.

I. FOR COMPONENT & CLADDING WIND PRESSURES, SEE DESIGN CRITERIA NOTE I.D.

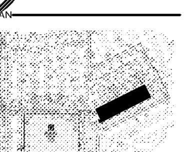
J. STUD TO STUD CONNECTIONS AND STUD TO SUPPORTING STRUCTURE CONNECTIONS ARE SHOWN ON SECTIONS AND DETAILS FOR ILLUSTRATIVE PURPOSES ONLY. ACTUAL CONNECTIONS SHALL BE DESIGNED BY THE STUD SUPPLIER PER NOTE "B" ABOVE.

K. MASONRY VENEER ANCHOR TIES SHALL BE ATTACHED TO CORROSION RESISTANT STRUCTURAL BACKING WITH A MINIMUM BASE METAL THICKNESS OF .043 IN. (18 GAUGE MINIMUM) PER ACI 530-11, SECTION 6.2.2.7.3. COLD-FORMED LIGHT GAGE STEEL DESIGN SHALL CONSIDER THE LOCATIONS WHERE MASONRY VENEER IS CALLED FOR ON THE ARCHITECTURAL PLANS.

L. LATERAL DEFLECTION LIMITS FOR LIGHT GAGE FRAMING SHALL CONFORM TO SPAN/240 FOR BRITTLE FINISHES (MASONRY VENEER) AND SPAN/120 FOR FLEXIBLE FINISHES.

PHILLIPS

KEY PLAN



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ISSUE & REVISION RECORD

#	DATE	DESCRIPTION
1	08/03/2018	75% COMPLETE SET
2	08/24/2018	100% COMPLETE SET

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PROJECT

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