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STRUCTURAL NOTES

GENERAL:

GN-1 INTERNATIONAL BUILDING CODE: 2012 EDITION.

GN-2 THE DETAILS DESIGNATED AS "TYPICAL DETAILS", APPLY GENERALLY TO THE DRAWINGS IN ALL AREAS WHERE CONDITIONS ARE SIMILAR TO THOSE DESCRIBED IN DETAILS.

GN-3 VERIFY REQUIREMENTS OF OTHER TRADES (MECHANICAL, ELECTRICAL, PLUMBING ETC.) PRIOR TO PROCEEDING WITH FABRICATION OR INSTALLATION OF MATERIALS.

GN-4 THE CONTRACTOR AND FABRICATOR SHALL VERIFY ALL QUANTITIES, DIMENSIONS AND CONDITIONS THOROUGHLY WITH THE CONTRACT DOCUMENTS AND THEN NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES OR INCONSISTENCIES BEFORE SUBMITTING SHOP DRAWINGS AND PROCEEDING WITH THE WORK. DO NOT SCALE DRAWINGS FOR DIMENSIONS.

GN-5 COMPLETED SHOP DRAWINGS SHALL BE PROVIDED, AS SPECIFIED, FOR ALL FABRICATED ITEMS AND SHALL BE REVIEWED BY THE GENERAL CONTRACTOR PRIOR TO FABRICATION. STRUCTURAL DRAWINGS SHALL NOT BE REPRODUCED FOR SHOP DRAWINGS. USE OF STRUCTURAL DRAWINGS WITHOUT PERMISSION IS GROUNDS FOR REJECTION OF SHOP DRAWINGS. THE STRUCTURAL ENGINEER WILL REVIEW SHOP DRAWINGS FOR THE LIMITED PURPOSE OF CHECKING FOR CONFORMANCE WITH INFORMATION GIVEN AND THE DESIGN CONCEPT EXPRESSED IN THE CONTRACT DOCUMENTS. THEREFORE, ALL CLOUDED DIMENSIONS, INDICATED ON ANY SHOP DRAWINGS, THAT ARE RELATIVE TO EXISTING STRUCTURES SHALL BE VERIFIED BY THE CONTRACTOR AND FABRICATOR. AS A MINIMUM, THE FOLLOWING SHOP DRAWINGS SHALL BE SUBMITED:

A. CONCRETE MIX DESIGN FOR EACH TYPE OF CONCRETE TO BE USED.
B. CONCRETE REINFORCING STEEL SHOP DRAWINGS INCLUDING PLACEMENT DRAWINGS AND CUT SHEETS.
C. STRUCTURAL STEEL SHOP DRAWINGS.
D. PREFABRICATED WOOD TRUSSES. (GENERAL CONTRACTOR SHALL SUBMIT TO THE CITY PRIOR TO CERTIFICATE OF OCCUPANCY)

GN-6 SHOP DRAWINGS NOT PREVIOUSLY REVIEWED BY THE GENERAL CONTRACTOR SHALL BE RETURNED WITHOUT REVIEW BY STRUCTURAL ENGINEER. SHOP DRAWINGS ON ITEMS THAT HAVE BEEN DELIVERED AND PRESENT AT THE JOB SITE WILL NOT BE REVIEWED. STRUCTURAL ENGINEER DOES NOT BEAR ANY RESPONSIBILITY TO THE STRUCTURAL MEMBERS BUILT WITHOUT APPROVED SHOP DRAWINGS.

GN-7 GENERAL CONTRACTOR SHALL INSPECT JOB FOR COMPLETION BEFORE SCHEDULING ANY OBSERVATION BY THE ENGINEER.

GN-8 SEE ARCH'L. AND MEP DRAWINGS FOR LOCATIONS AND SIZES OF SLAB OPENINGS, SLEEVES, INSERTS, ANCHORS AND BOLTS REQUIRED BY VARIOUS TRADES.

GN-9 ALL PLUMBING CONDUITS AT FOUNDATION SHOULD HAVE FLEXIBLE CONNECTIONS TO SUSTAIN A MAXIMUM DIFFERENTIAL MOVEMENT OF 1 INCH.

GN-10 THE STRUCTURE HAS BEEN DESIGNED TO RESIST DESIGN LOADS ONLY AS A COMPLETED STRUCTURE. CONTRACTOR SHALL CONSIDER ALL CONSTRUCTION LOADS APPLIED TO THE PARTIALLY COMPLETED STRUCTURE UNTIL ALL PERMANENT CONNECTIONS ARE MADE, AND ENCLOSED PERMANENTLY AS PER CONSTRUCTION DOCUMENTS. TEMPORARY BRACING SHALL BE PROVIDED BY THE CONTRACTOR IN ALL DIRECTIONS.

GN-11 CONSTRUCTION MATERIALS SHALL NOT BE STORED ON FLOORS OR ROOFS IN EXCESS OF THE DESIGN LOADS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENFORCE THIS REQUIREMENT. IMPACT LOADS SHALL BE PREVENTED WHEN PLACING MATERIALS ON FLOORS OR ROOFS.

GN-12 CONTRACTOR TO INCLUDE **(500)** POUNDS OF MISC. STEEL (STRUCTURAL STEEL, REINFORCING STEEL, LIGHT GAGE STEEL, AND MISC. STEEL) IN THEIR BID PRICE FOR INSTALLATION PER DESIGN TEAM MEMBERS. THIS ALLOWANCE SHOULD INCLUDE LABOR DURING ANYTIME OF CONSTRUCTION.

GN-13 THE ENGINEER SHALL NOT HAVE CONTROL OF, AND SHALL NOT BE RESPONSIBLE FOR, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES, FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTOR, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK, OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

GN-14 PERIODIC SITE OBSERVATIONS BY FIELD REPRESENTATIVES OF ALPHA CONSULTING ENGINEERS, INC. ARE SOLELY FOR THE PURPOSE OF DETERMINING IF THE WORK OF THE CONTRACTOR IS PROCEEDING IN ACCORDANCE WITH THE STRUCTURAL CONTRACT DOCUMENTS. THESE LIMITED SITE OBSERVATIONS ARE NOT INTENDED TO BE A CHECK OF THE QUALITY OR QUANTITY OF THE WORK, BUT RATHER PERIODIC IN AN EFFORT TO INFORM THE OWNER OF DEFECTS AND DEFICIENCIES IN THE WORK OF THE CONTRACTOR.

GN-15 ASSUMPTIONS HAVE BEEN MADE BY THIS OFFICE REGARDING EXISTING CONDITIONS. ACTUAL CONDITIONS MAY VARY FROM THOSE ASSUMED. THE CONTRACTOR IS TO REPORT ANY SUCH DISCREPANCIES TO THE ENGINEER FOR POSSIBLE MODIFICATIONS NEEDED TO THE CONTRACT DRAWINGS.

GN-16 PROVIDE CONTROL JOINTS AT 15'-0" ON CENTER MAXIMUM FOR ALL BRITTLE FINISHES.

GN-17 IF CONFLICT EXISTS BETWEEN DRAWINGS AND SPECIFICATIONS, DRAWINGS SHOULD CONTROL.

SCHEDULE OF SITE OBSERVATIONS BY ENGINEER:

SO-1 ALL STRUCTURAL ELEMENTS OF THE BUILDING SHALL BE OBSERVED BY THE STRUCTURAL ENGINEER'S REPRESENTATIVE DURING THE CONSTRUCTION PHASE, SO THAT A FINAL LETTER OF COMPLIANCE CAN BE PROVIDED TO THE OWNER AND/OR BUILDING AUTHORITY.

SO-2 PRIOR TO THE BEGINNING OF CONSTRUCTION, THE CONTRACTOR SHALL ARRANGE A MEETING WITH THE STRUCTURAL ENGINEER TO SET UP A SCHEDULE FOR THE FOLLOWING OBSERVATIONS, NOT TO EXCEED THE SPECIFIED NUMBER OF VISITS:

A. CONCRETE: FOR EACH CONCRETE POUR UNLESS NOTED OTHERWISE BY THE ENGINEER. SEE NOTE 5 OF CONCRETE AND CONCRETE REINFORCEMENT – ONE VISIT.

B. STRUCTURAL STEEL: BEFORE CONNECTIONS AND STRUCTURAL MEMBERS ARE HIDDEN BY INSTALLATION OF ARCHITECTURAL FINISHES – N/A.

C. TIMBER FRAMING: AFTER ALL WOOD FRAMING AND CONNECTIONS ARE MADE BUT BEFORE APPLYING SHEATHING. – ONE VISIT

G. NOTIFY ARCHITECT AT LEAST 24 HOURS BEFORE EACH SITE OBSERVATION IS REQUIRED TO ALLOW TIME FOR ARRANGEMENTS TO BE MADE WITH ENGINEER FOR SITE OBSERVATION.

NOTE: THESE STRUCTURAL OBSERVATIONS ARE THE REQUIREMENTS OF THE STRUCTURAL ENGINEER AND DOES NOT INCLUDE OR WAIVE THE RESPONSIBILITY FOR THE SPECIAL INSPECTIONS REQUIRED BY CHAPTER 17 OF THE 2012 INTERNATIONAL BUILDING CODE. SPECIAL INSPECTION SHALL BE PERFORMED BY THE SPECIAL INSPECTOR WHO SHALL BE HIRED BY OWNER TO MEET CHAPTER 17 OF IBC 2012.

BUILDING PAD PREPARATION:

A SUBSURFACE SOIL STUDY PREPARED BY INTEC. THEIR REPORT/PROJECT NUMBER FOR THIS SITE IS S141623 ON WAS COMPLETED ON APRIL 04, 2014. THIS GEOTECHNICAL REPORT AND ITS ADDENDUMS WAS USED IN THE DESIGN OF THE STRUCTURES FOUNDATION. THE GENERAL CONTRACTOR SHALL OBTAIN A COPY OF THIS REPORT PRIOR TO THE BEGINNING OF ANY FOUNDATION WORK.

UF-1 PROVIDE TEMPORARY PROVISION FOR DRAINAGE OF THE BUILDING PAD AREA DURING CONSTRUCTION AND PERMANENT DRAINAGE AWAY FROM BUILDING AFTER CONSTRUCTION.

UF-2 AT THE ENTIRE AREA OCCUPIED BY THE BUILDING (AND FOR A DISTANCE OF 3.0 FT. OUTSIDE OF THE BUILDING), REMOVE ALL ORGANIC AND OTHER DELETERIOUS MATERIALS. DO NOT USE FOR UNDERFLOOR FILL. REMOVE SOIL PER GEOTECHNICAL REPORT TO ACHIEVE THE PVR MENTIONED IN UF-10. EXPOSED SUBGRADE SHALL BE RELATIVELY LEVEL.

UF-3 THE EXPOSED SUBGRADE SHALL BE SCARIFIED AND COMPACTED PER THE GEOTECHNICAL REPORT MENTIONED ABOVE.

UF-4 BRING THE BUILDING PAD TO UNDERSIDE OF SLAB WITH SELECT STRUCTURAL FILL AS SPECIFIED PER THE GEOTECHNICAL REPORT TO ACHIEVE A MAX. PVR LISTED IN UF-10.

UF-5 PERFORM ALL EARTHWORK DESCRIBED ABOVE BEFORE TRENCHING FOR GRADE BEAMS, MEP ITEMS, OR UTILITY LINES.

UF-6 EXCAVATE BEAM TRENCHES TO MEET PLANNED DIMENSIONS. PRIOR TO PLACEMENT OF CONCRETE, HAND COMPACT BOTTOM OF BEAM TRENCHES PER THE GEOTECHNICAL REPORT STANDING WATER SHOULD NOT BE PERMITTED IN THE BEAM TRENCHES AFTER FINAL COMPACTION AND BEFORE PLACEMENT OF CONCRETE. REMOVE ALL LOOSE MATERIALS AND UNSUITABLE SOILS DUE TO RAINFALL OR BY DESICCATION.

UF-7 PLACE A VAPOR RETARDER WITH THE FOLLOWING REQUIREMENTS PER CONSTRUCTION DOCUMENTS:
o 15 MIL, CLASS A WITH A MAXIMUM WATER VAPOR PERMEANCE 0.009 PERMS SHALL BE PLACED UNDER MOISTURE SENSITIVE FLOOR COVERINGS
o 10 MIL, CLASS C OR BETTER WITH A MAXIMUM WATER VAPOR PERMEANCE 0.040 PERMS SHALL BE PLACED UNDER NON MOISTURE SENSITIVE FLOOR COVERINGS

THE GENERAL CONTRACTOR IS TO COORDINATE THE LOCATION AND MOISTURE REQUIREMENTS OF THE FLOOR COVERINGS. PROVIDE A SMOOTH SUBGRADE TO PREVENT PROTRUSIONS THAT MAY CAUSE DAMAGE OR RUPTURE FILM. LAY FILM ON SUBGRADE INCLUDING BEAM AND FOOTING SOFFITS AND SIDES OF BEAMS AND FOOTINGS USING WIDEST PRACTICAL WIDTHS. LAP EDGES OF RETARDER A MIN. OF 6", OR AS REQUIRED BY MANUFACTURER, WITH TOP LAP PLACED IN DIRECTION OF CONCRETE FLOW AND TAPE ALL JOINTS. CUT FILM AROUND PIPES AND ROUGH-INS AND SEAL CUTS WITH PRESSURE SENSITIVE TAPE.

UF-8 AT AREAS OUTSIDE THE BUILDING LINE, SLOPE THE TOP SURFACE OF FILL A MIN. 5% FOR A DISTANCE OF 10 FEET TO MATCH FINISH GRADE SLOPE AND HOLD DOWN A MINIMUM OF 10 INCHES BELOW FINISH FLOOR LINE, GUTTER DOWNSPOUTS EXTEND AT LEAST THREE (3) FEET PAST THE EDGE OF BUILDING, UNLESS NOTED OTHERWISE ON THE CIVIL ENGINEERS CONSTRUCTION DOCUMENTS.

UF-9 THE OWNER IS TO EMPLOY AN INDEPENDENT TESTING LABORATORY TO TAKE DENSITY TESTS FOR SUBGRADE & EACH LIFT OF SELECT FILL TO MEET THE REQUIREMENTS.

UF-10 THE FOLLOWING DESIGN PARAMETERS WHERE USED TO DESIGN THE FOUNDATION
o SOIL BEARING CAPACITY – 2000 PSF.
o MAX. PVR FOR SLAB ON GROUND IS TO BE 1"

UF-11 IF UTILITY TRENCHES ARE REQUIRED, WE RECOMMEND THAT MEASURES BE TAKEN TO PROHIBIT TRANSMITTING WATER UNDER THE BUILDING PAD. REFERENCE GEOTECHNICAL REPORT OR CONTACT GEOTECHNICAL ENGINEER FOR BACKFILL REQUIREMENTS.

DESIGN LOADS:

DL-1 DEAD LOADS INCLUDE THE WEIGHT OF CONSTRUCTION MATERIALS INCORPORATED INTO THE BUILDING, INCLUDING BUT NOT LIMITED TO WALLS, FLOORS, ROOFS, CEILINGS, STAIRWAYS, BUILT-IN PARTITIONS, FINISHES, CLADDING AND OTHER SIMILARLY INCORPORATED ARCHITECTURAL AND STRUCTURAL ITEMS, AND FIXED SERVICE EQUIPMENT. ALL DEAD LOADS ARE CONSIDERED PERMANENT LOADS.

DL-2 DEAD LOADS FOR MECHANICAL UNITS ARE BASED ON THE WEIGHTS OF EQUIPMENT, AS INDICATED ON THE STRUCTURAL DRAWINGS (INCLUDING THE WEIGHT OF CONCRETE PADS, WHERE INDICATED). ANY CHANGES IN TYPE, SIZE, LOCATION OR NUMBER OF PIECES OF EQUIPMENT SHOULD BE REPORTED TO THE ARCHITECT FOR VERIFICATION OF THE ADEQUACY OF SUPPORTING MEMBERS PRIOR TO THE PLACEMENT OF SUCH EQUIPMENT.

DL-3 UNIFORM DESIGN LIVE LOADING IS AS FOLLOWS:
o ROOF ....20 PSF
o MECHANICAL ROOM....................125 PSF
o LOBBIES & FIRST FLOOR CORRIDORS..........100 PSF
o DINING ROOMS AND RESTAURANT..................100 PSF

DL-4 ROOF LIVE LOADS MAY BE REDUCED.

DL-5 SNOW LOAD:
o GROUND SNOW LOAD, Pg..............................5 PSF

DL-6 WIND LOADS:
o RISK CATEGORY.......................................II
o ULTIMATE DESIGN WIND SPEED, V...................115 MPH
o NOMINAL DESIGN WIND SPEED, Vasd................90 MPH
o EXPOSURE CATEGORY.."B"
o FOR COMPONENTS AND CLADDING, USE APPLICABLE INTERIOR AND EXTERIOR PRESSURE COEFFICIENTS.

DL-7 EARTHQUAKE DESIGN DATA:
o SEISMIC IMPORTANCE FACTOR IE....................1.0
o RISK CATEGORY..II
o MAPPED SPECTRAL RESPONSE ACCELERATIONS:
Ss....................0.14g
S1....................0.04g
o SITE CLASS "C"
o SPECTRAL RESPONSE COEFFICIENTS
SDS....................0.078g
SD1....................0.031g
o BASIC SEISMIC FORCE RESISTING SYSTEM– WOOD SHEAR WALLS, NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE
o DESIGN BASE SHEAR, V = N/A
o SEISMIC RESPONSE COEFFICIENT, Cs = N/A
o SEISMIC MODIFICATION FACTOR, R = 3
o ANALYSIS PROCEDURE-STATIC SIMPLIFIED ANALYSIS.

DL-8 UNLESS SPECIFICALLY NOTED, THERE ARE NO PROVISIONS FOR FUTURE FLOORS, ROOFS OR OTHER LOADS.

CONCRETE AND CONCRETE REINFORCEMENT:

CN-1 STRUCTURAL CONCRETE SHALL BE IN ACCORDANCE WITH THE CODE APPLICABLE EDITION OF "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318)", THE AMERICAN CONCRETE INSTITUTE.

CN-2 ALL CONCRETE REINFORCEMENT SHALL BE NEW DOMESTIC DEFORMED BILLET STEEL, CONFORMING TO ASTM A615, GRADE 60, EXCEPT WELDABLE REBARS ASTM A706, GR. 60, WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185, GRADE 70'

CN-3 DETAIL REINFORCING BARS AND PROVIDE BAR SUPPORTS AND SPACERS IN ACCORDANCE WITH ACI 315.

CN-4 ALL REINFORCING SHALL BE PROPERLY CHAIRED AND TIED PER ACI 315 (SP66) AND CRSI (PLACING REINFORCING BARS) PRIOR TO PLACING CONCRETE.

CN-5 PLACEMENT OF ALL REINFORCING STEEL SHALL BE OBSERVED BY THE ENGINEER PRIOR TO CONCRETE PLACEMENT UNLESS APPROVED OTHERWISE.

CN-6 ALL CONCRETE SHALL BE NORMAL WEIGHT STONE AGGREGATE CONCRETE UNLESS NOTED OTHERWISE. AGGREGATE SHALL MEET ASTM C33 REQUIREMENTS, AND SHALL BE 3/4" TO 1 1/2" NOMINAL AGGREGATE SIZE. PROVIDE WATER REDUCING ADMIXTURES AS REQUIRED TO IMPROVE WORKABILITY. MAXIMUM SLUMP SHALL NOT EXCEED 5 INCHES. PLASTIC CONCRETE TEMPERATURE SHALL NOT EXCEED 90 DEGREES PRIOR TO PLACEMENT. ALL CONCRETE SHALL BE CURED FOR A MINIMUM OF 7 DAYS USING MOIST CURING PROCEDURES, OR CURING COMPOUNDS WHICH WILL NOT INTERFERE WITH THE BONDING OF FINISH TILE FLOORS. MAXIMUM AMOUNT OF FLY ASH SHALL NOT EXCEED 20% OF CEMENTITIOUS MATERIALS BY WEIGHT. MINIMUM CONCRETE COMPRESSIVE STRENGTH WHEN TESTED AT 28 DAYS SHALL BE AS FOLLOWS:

o SLAB-ON-GRADE .... 3,000 PSI
o FOOTINGS .... 3,000 PSI

CN-7 PROVIDE A SET OF FIVE CYLINDERS IN ACCORDANCE WITH ASTM C 31 TO BE TAKEN BY AN INDEPENDENT TESTING LAB AT THE FOLLOWING FREQUENCY FOR EACH CLASS OF CONCRETE:
A. ONCE EACH DAY A GIVEN CLASS IS PLACED, NOR LESS THAN
B. ONCE FOR EACH 100 YD^3 OF EACH CLASS PLACED EACH DAY, NOR LESS THAN
C. ONCE FOR EACH 5,000 FT^2 OF SLAB OR WALL SURFACE AREA PLACED EACH DAY.
REPORT COMPRESSION TEST RESULTS TO THE ENGINEER WITHIN 24 HOURS.

CN-8 NO SUBSEQUENT CONSTRUCTION WILL BE ALLOWED UNTIL CONCRETE HAS REACHED 75% OF DESIGN STRENGTH .

CN-9 PORTLAND CEMENT SHALL CONFORM TO ASTM – C150, TYPE 1.

CN-10 NO WELDING OF REINFORCING BARS OR TORCHING TO BEND REINFORCING BARS SHALL BE ALLOWED WITHOUT THE SPECIFIC APPROVAL OF THE STRUCTURAL ENGINEER.

CN-11 CONCRETE COVER SHOULD BE AS FOLLOWS:

A. FOOTINGS AND OTHER PRINCIPAL STRUCTURAL MEMBERS IN WHICH CONCRETE IS CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH – 3 INCHES.

B. WHERE CONCRETE SURFACES, AFTER REMOVAL OF FORMS, ARE EXPOSED TO WEATHER OR EARTH:

o BARS 3/4" AND LARGER IN DIAMETER..............................2 INCHES
o BARS SMALLER THAN 5/8" IN DIAMETER..........................1 1/2 INCHES

C. WHERE SURFACES ARE NOT DIRECTLY EXPOSED TO WEATHER OR EARTH:

o SLAB ON GRADE (FROM TOP OF SLAB)....................1 1/2 INCHES
o SLABS, WALLS, JOISTS
No. 14 AND No. 18 BARS..1 1/2 INCHES
No. 11 BARS AND SMALLER..3/4 INCHES
o BEAMS, COLUMNS
PRIMARY REINF., TIES, STIRRUPS, SPIRALS..................1 1/2 INCHES

CN-12 MECHANICAL AND ELECTRICAL CONDUIT CAN NOT BE PLACED IN BEAMS PARALLEL TO BEAM REINFORCING. PROVIDE A MINIMUM OF 1 1/2" CLEAR BETWEEN CONDUIT AND PARALLEL REINFORCING. DO NOT "BUNDLE" CONDUITS. CONDUITS SHALL BE PLACED BELOW SLAB REINFORCEMENT.

CN-13 SET AND BUILD INTO FORM WORK ANCHORAGE DEVICES AND OTHER EMBEDDED ITEMS REQUIRED FOR OTHER WORK THAT IS ATTACHED TO OR SUPPORTED BY CAST-IN-PLACE CONCRETE. REBAR PROJECTING FROM CONCRETE SHALL BE SECURED IN PLACE PRIOR TO PLACING CONCRETE.

CN-14 IF NOT SHOWN ON PLAN, THE CONTRACTOR SHALL SUBMIT A PROPOSED CONSTRUCTION JOINT LAYOUT FOR REVIEW.

STRUCTURAL STEEL:

SS-1 STRUCTURAL STEEL SHALL CONFORM TO THE 2005 "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION, AISC 360-05.

SS-2 WELDING: CODE APPLICABLE EDITION OF THE STRUCTURAL WELDING CODE – STEEL, AMERICAN WELDING SOCIETY (AWS D1.1 AND AWS D1.3).

SS-3 VERIFY THE EXACT SIZE AND LOCATION OF ALL FLOOR AND ROOF OPENINGS FOR MECHANICAL AND ELECTRICAL REQUIREMENTS AND COORDINATE WITH MECHANICAL AND ELECTRICAL CONTRACTOR PRIOR TO FABRICATION OF MATERIALS.

SS-4 STEEL SHALL BE MEET THE FOLLOWING REQUIREMENTS:

WIDE FLANGES..ASTM A992 Gr. 50
OTHER ROLLED SHAPES, PLATES, BARS..........ASTM A36
PIPE (Fy 35ksi)..ASTM A53 Gr. B
TUBE (Fy 46ksi)..ASTM A500 Gr. B

SS-5 STEEL SHALL BE CLEANED PER SSPC-SP2. STEEL SHALL BE PAINTED WITH ONE SHOP COAT OF RED OXIDE PRIMER, MINIMUM OF 1.5 MILS (DRY FILM THICKNESS). DO NOT PAINT STRUCTURAL STEEL AND ANCHOR RODS THAT ARE TO BE EMBEDDED IN CONCRETE OR TO RECEIVE FIREPROOFING.

SS-6 WELDING SHALL BE PERFORMED BY WELDERS HOLDING VALID CERTIFICATES, IN ACCORDANCE WITH SECTION 4 OF THE AWSD1.1 "STRUCTURAL WELDING CODE-STEEL", AND HAVING CURRENT EXPERIENCE IN THE TYPE OF WELDS AS SHOWN ON THE DRAWINGS. ALL WELDS SHALL BE PERFORMED USING E70XX SERIES LOW HYDROGEN RODS. ALL WELDS SHALL BE VISUALLY INSPECTED IN ACCORDANCE WITH SECTIONS 6.5 AND 6.9 OF THE AWSD1.1 "STRUCTURAL WELDING CODE-STEEL". VISUAL INSPECTIONS OF WELDS SHALL BE PERFORMED BY AN INDEPENDENT TESTING AGENCY. UNLESS NOTED OTHERWISE ON THE PLANS, ALL SHOP FABRICATED OR FIELD ASSEMBLED ADJOINING STEEL MEMBERS SHALL BE CONNECTED USING CONTINUOUS, ALL AROUND/BOTH SIDES OF MEMBER FILLET WELDS IN ACCORDANCE WITH THE MINIMUM SIZE FILLET WELD SHOWN ON THE TABLE BELOW. UNLESS NOTED OTHERWISE ON THE PLANS, THE CONTRACTOR MAY SHOP WELD OR FIELD WELD AT THEIR DISCRETION.

MINIMUM SIZE OF FILLET WELDS

MATERIAL THICKNESS OF THINNER PART JOINED, IN.	MINIMUM SIZE OF FILLET WELD, IN.
TO 1/4 INCLUSIVE	3/16
OVER 1/4 TO 1/2	1/4
OVER 1/2 TO 3/4	5/16
OVER 3/4	3/8

LEG DIMENSION OF FILLET WELDS. SINGLE PASS WELDS MUST BE USED.

STRUCTURAL STEEL (CONTINUED):

SS-7 BOLTED BEAM CONNECTIONS SHALL BE SIMPLE FRAMED SHEAR CONNECTIONS USING A.S.T.M. A325X BOLTS AND SHALL BE IN ACCORDANCE WITH THE "SPECIFICATION FOR STRUCTURAL JOINTS USING A.S.T.M. A325 OR A490 BOLTS." JOINT TYPES FOR SIMPLE FRAMED SHEAR CONNECTIONS SHALL BE "SNUG-TIGHTENED JOINTS" AND SHALL BE INSTALLED AND VISUALLY INSPECTED PER SECTIONS 8.1 AND 9.1 RESPECTIVELY OF THE "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS." VISUAL INSPECTION OF BOLTED CONNECTIONS SHALL BE PERFORMED BY AN INDEPENDENT TESTING AGENCY. UNLESS NOTED OTHERWISE IN THE CONSTRUCTION DOCUMENTS THE CONNECTIONS MUST BE DESIGNED TO SUPPORT ONE-HALF THE TOTAL UNIFORM LOAD CAPACITY SHOWN IN THE "ALLOWABLE UNIFORM LOAD TABLES", SHOWN IN PART 2 OF THE AISC MANUAL OF STEEL CONSTRUCTION. DIRECT TENSION INDICATOR (DTI) BOLTS SHALL BE PERMITTED. THE STEEL FABRICATOR SHALL PROVIDE CONNECTION DESIGN CALCULATIONS SEALED AND SIGNED BY A REGISTERED ENGINEER LICENSED IN THE STATE OF TEXAS FOR ALL CONNECTIONS DETAILED BY OTHERWISE ON THE STRUCTURAL STEEL SHOP DRAWINGS.

SS-8 IN FRAMED BEAM CONNECTIONS, WELDS MAY BE SUBSTITUTED FOR BOLTED CONNECTIONS IN ACCORDANCE WITH TABLE 10-2 OF THE AISC MANUAL OF STEEL CONSTRUCTION. TO OBTAIN AN ALL WELDED CONNECTION IT IS RECOMMENDED SUCH CONNECTIONS BE CHOSEN FROM TABLE 10-3 OF THE AISC MANUAL OF STEEL CONSTRUCTION.

SS-9 THE CONTRACTOR SHALL REVIEW SHOP AND FIELD WELD REQUIREMENTS FOR COMPATIBILITY WITH THE CONSTRUCTION SEQUENCE. PROPOSED REVISIONS FROM SHOP TO FIELD WELDS OR FROM FIELD TO SHOP WELDS SHALL BE IDENTIFIED BY THE CONTRACTOR ON THE SHOP DRAWINGS.

SS-10 DRY PACK SHALL BE 5,000 PSI FIVE STAR NON-SHRINK GROUT OR EQUIVALENT. INSTALL DRY PACK UNDER BEARING PLATES BEFORE FRAMING MEMBER IS INSTALLED. AT COLUMNS, INSTALL DRY PACK UNDER BASE PLATES AFTER COLUMN HAS BEEN PLUMBED BUT PRIOR TO FLOOR OR ROOF INSTALLATION.

SS-11 NO MECHANICAL UNITS (SUCH AS A/C UNITS, HEATER UNITS, ETC.) ARE TO BE HUNG FROM STRUCTURE WITHOUT THE ENGINEER'S APPROVAL, UNLESS SHOWN ON THE STRUCTURAL DRAWINGS.

SS-12 CONTRACTOR SHALL PROVIDE PROTECTION FOR ALL EXISTING CONSTRUCTION DURING ALL FIELD WELDING OPERATIONS. A FIRE EXTINGUISHER SHALL BE ON THE JOB SITE AND IN THE IMMEDIATE WORKING AREA OF ALL FIELD WELDING.

SS-13 ROLLED MEMBER SIZES / THICKNESSES INDICATED ON THE STRUCTURAL DRAWINGS ARE REQUIRED MINIMUMS TO MEET STRENGTH AND DEFLECTION REQUIREMENTS. MEMBER THICKNESSES CAN BE INCREASED AS REQUIRED TO ACCOMMODATE ROLLING FABRICATION REQUIREMENTS AT NO ADDITIONAL COST TO THE OWNER OR DESIGN TEAM MEMBERS.

SS-14 ALL WELDS EXPOSED TO VIEW SHALL BE CLEANED AND GROUND SMOOTH.

ABBREVIATIONS

& – AND
@ – AT
℄ – CENTERLINE
° – DEGREE
ø – DIAMETER
– NUMBER/POUND
A.B. – ANCHOR BOLT
APPROX. – APPROXIMATE
ARCH. – ARCHITECT/ARCHITECTURAL
ADH. – ADHESIVE
ALT. – ALTERNATE
B.P. – BASE PLATE
B.L. – BUILDING LINE
B.U.R. – BUILT-UP ROOF
BM. – BEAM
B.W. – BOTH WAYS
BOT. – BOTTOM
BLDG. – BUILDING
BSMT. – BASEMENT
BRG. – BEARING
BTWN. – BETWEEN
CANT. – CANTILEVER
C.I.P – CAST-IN-PLACE
CLG. – CEILING
CLR. – CLEAR
CMU – CONCRETE MASONRY UNITS
COL. – COLUMN
CONC. – CONCRETE
CONTR. – CONTRACTOR
C.J. – CONSTRUCTION JOINT
CONN. – CONNECTION
CONST. – CONSTRUCTION
CONT. – CONTINUOUS
DEMO. – DEMOLITION
DIA. – DIAMETER
DIAG. – DIAGONAL
DIM. – DIMENSION
D.L. – DEAD LOAD
DBL. – DOUBLE
DN. – DOWN

DWL. – DOWEL
DWG. – DRAWING
EA. – EACH
E.F. – EACH FACE
E.J. – EXPANSION JOINT
ELEV. – ELEVATION
EQ. – EQUAL
EQUIP. – EQUIPMENT
E.W. – EACH WAY
EXIST. – EXISTING
EXP. – EXPANSION
EXT. – EXTERIOR
FDN. – FOUNDATION
F.D. – FLOOR DRAIN
F.S. – FAR SIDE
FIN. – FINISH
FLD. – FIELD
FLR. – FLOOR
FT. – FOOT OR FEET
FTG. – FOOTING
GA. – GAGE
GALV. – GALVANIZED
GR. – GRADE
HK. – HOOK
HORIZ. – HORIZONTAL
HCA – HEADED CONCRETE ANCHOR
H.S. – HIGH STRENGTH

I.D. – INSIDE DIAMETER
IN. – INCH
INV. – INVERTED
INT. – INTERIOR
JST. – JOIST
JT. – JOINT
K – KIP (THOUSAND POUNDS)
L – ANGLE
LBS. – POUND
LF – LINEAR FOOT
LLH – LONG LEG HORIZONTAL
LG. – LONG
LLV – LONG LEG VERTICAL
MAX. – MAXIMUM
MECH. – MECHANICAL
MEZZ. – MEZZANINE
MFR. – MANUFACTURER
MID. – MIDDLE
MIN. – MINIMUM
MISC. – MISCELLANEOUS
MAS. – MASONRY
NS – NEAR SIDE
NOM. – NOMINAL
N.T.S. – NOT TO SCALE
O.C. – ON CENTER
O.D. – OUTSIDE DIAMETER
O.H. – OPPOSITE HAND
OPNG. – OPENING
OPP. – OPPOSITE
P/C – PRECAST
PREFAB. – PREFABRICATED
PSF – POUND PER SQUARE FOOT
PSI – POUND PER SQUARE INCH
PL. – PLATE
R – RISER
RAD. – RADIUS
R.D. – ROOF DRAIN
REF. – REFERENCE
REINF. – REINFORCING/REINFORCED
REQ'D – REQUIRED
SPAC. – SPACES/SPACING
SCHED. – SCHEDULE
SECT. – SECTION
SHT. – SHEET/SHEATHING
SIM. – SIMILAR
SPEC. – SPECIFICATION
SL. – SLOPE
STIFF. – STIFFENERS
STIR. – STIRRUPS
SQ. – SQUARE
STD. – STANDARD
STL. – STEEL
STR. – STAIR
STRUCT. – STRUCTURE/STRUCTURAL
SYM. – SYMMETRICAL
T – TREAD
T&B – TOP AND BOTTOM
THK. – THICK/THICKNESS
T.O.C. – TOP OF CONCRETE
T.O.J. – TOP OF JOIST
T.O.S. – TOP OF STEEL
T.O.W. – TOP OF WALL
TYP. – TYPICAL
U.N.O. – UNLESS NOTED OTHERWISE
VERT. – VERTICAL
W/ – WITH
W.P. – WORK POINT
W.W.F. – WELDED WIRE FABRIC

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SCALE

REVISIONS

SHEET TITLE
STRUCTURAL NOTES

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