

STRUCTURAL GENERAL NOTES

DESIGN CRITERIA

ALL MATERIAL, WORKMANSHIP, DESIGN AND CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS, AND THE 2006 SEATTLE BUILDING CODE.

DESIGN LOADING CRITERIA:

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| LIVE LOADS: | |
| ROOF..... | 25 PSF |
| FLOOR RESIDENTIAL..... | 40 PSF |
| RESIDENTIAL ATTIC W/ STORAGE..... | 20 PSF |
| WIND LOADS: | |
| EXPOSURE CATEGORY..... | B |
| WIND SPEED..... | 85 MPH |
| IMPORTANCE FACTOR, <i>I_w</i> | 1.0 |
| INTERNAL PRESSURE COEFFICIENT, <i>C_{pi}</i> | 0.85 |
| TOPOGRAPHICAL FACTOR, <i>K_{zt}</i> | 1.00 |
| SEISMIC LOADS: | |
| LATITUDE / LONGITUDE..... | 47.700 / -122.316 |
| IMPORTANCE FACTOR, <i>I_e</i> | 1.0 |
| OCCUPANCY CATEGORY..... | II |
| MAPPED SPECTRAL RESPONSE, <i>S_a / S₁</i> | 1.229g / 0.424g |
| SPECTRAL RESPONSE COEF., <i>S_u / S_m</i> | 0.829g / 0.445g |
| SITE CLASS..... | D |
| SEISMIC DESIGN CATEGORY..... | D |
| SEISMIC FORCE-RESISTING SYSTEM..... | PLYWOOD SHEAR WALLS |
| RESPONSE MODIFICATION FACTOR, <i>R</i> | 6.5 |
| ANALYSIS PROCEDURE..... | EQUIVALENT LATERAL FORCE |
| SEISMIC RESPONSE COEFFICIENT, <i>C_s</i> | 0.127 |
| BASE SHEAR, <i>V</i> | 6.24 KIPS (ADDITION) |

STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS FOR BIDDING AND CONSTRUCTION. CONTRACTOR SHALL VERIFY DIMENSIONS AND CONDITIONS FOR COMPATIBILITY AND SHALL NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.

CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO COMMENCING WORK AND DETERMINE THE LOCATION OF ALL ADJACENT UNDERGROUND UTILITIES PRIOR TO COMMENCING EXCAVATION AND NOTIFY ARCHITECT OF DISCREPANCIES AND CONFLICTS.

CONTRACTOR SHALL PROVIDE TEMPORARY BRACING FOR THE STRUCTURE AND STRUCTURAL COMPONENTS UNTIL ALL FINAL CONNECTIONS HAVE BEEN COMPLETE IN ACCORDANCE WITH THE PLANS. THE CONTRACTOR MUST RETAIN A LICENSED STRUCTURAL ENGINEER WHO SHALL INVESTIGATE WHERE THIS TEMPORARY SHORING/BRACING IS REQUIRED, AND SHALL DESIGN THIS TEMPORARY SHORING/BRACING.

CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS AND THE METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES REQUIRED TO PERFORM THE WORK. THE STRUCTURAL ENGINEER HAS NO OVERALL SUPERVISION/AUTHORITY OR ACTUAL AND/OR DIRECT RESPONSIBILITY FOR THE SPECIFIC WORKING CONDITIONS AT THE SITE AND/OR FOR ANY HAZARDS RESULTING FROM THE ACTIONS OF ANY TRADE CONTRACTOR. THE STRUCTURAL ENGINEER HAS NO DUTY TO INSPECT, SUPERVISE, NOTE, CORRECT, OR REPORT ANY HEALTH OR SAFETY DEFICIENCIES OF THE OWNER, CONTRACTORS, OR OTHER ENTITIES OR PERSONS AT THE PROJECT SITE.

IN ADDITION TO THE DEMOLITION WORK INDICATED ON THE ARCHITECTURAL DRAWINGS, MONOR LOCAL DEMOLITION OF EXISTING ELEMENTS MAY BE REQUIRED TO PERFORM THE STRUCTURAL WORK AS INDICATED ON THE PLANS, SECTIONS, AND DETAILS.

INSPECTIONS

SPECIAL INSPECTIONS ARE REQUIRED BY THE LOCAL BUILDING CODE. THE CONTRACTOR SHALL NOTIFY BUILDING DEPARTMENT FOR INSPECTIONS REQUIRED BY THE LOCAL JURISDICTION.

FOOTINGS AND FOUNDATIONS

TO BE ON UNDISTURBED FIRM NATURAL SOIL OR COMPACTED SOIL OF 2,000 PSF BEARING CAPACITY AT LEAST 1'-0" BELOW LOWEST ADJACENT GRADE, FREE OF ORGANIC MATERIALS. FOOTING AND FOUNDATION EXCAVATION SHALL BE FREE OF LOOSE SOILS, SLOUGHS, DEBRIS, AND FREE STANDING WATER AT ALL TIMES. FOOTING SIZES AS INDICATED ON DRAWINGS.

RETAINING WALLS ARE DESIGNED FOR 35 PSF ACTIVE SOIL PRESSURE, 250 PSF PASSIVE SOIL PRESSURE.

ALL FILL PLACED TO SUPPORT SLABS ON GRADE, BEHIND PERMANENT WALLS, AND AROUND ALL DRAINS SHALL CONSIST OF WALL GRADED, GRANULAR MATERIAL PER THE SPECIFICATIONS. SOILS FOR STRUCTURAL FILL SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER. STRUCTURAL FILL SHALL BE PLACED ON SOUND NATIVE MATERIAL. PROOF-ROLL CUT AREAS WHICH PROVIDE SUPPORT FOR PERMANENT STRUCTURES. AREAS WHICH ARE EXCESSIVELY YIELDING, AS DETERMINED BY THE CONTINUOUS OBSERVATION OF THE GEOTECHNICAL ENGINEER, SHALL BE OVEREXCAVATED AND REPLACED WITH STRUCTURAL FILL. STRUCTURAL FILL SHALL BE PLACED PER THE GEOTECHNICAL RECOMMENDATIONS.

CONCRETE

CONCRETE TO BE MIXED, PROPORTIONED, CONVEYED AND PLACED IN ACCORDANCE WITH THE IBC AND ACI 301. *f'_c* = 2,500 PSI @ 28 DAYS, MAX. SLUMP 4", MAX. AGGREGATE 1-1/2". CEMENT MAY BE REPLACED WITH FLYASH 1:1 WEIGHT RATIO UP TO 50%. ALL CONCRETE SHALL BE REINFORCED. REINFORCING STEEL PER PLANS WITH COVERAGE AS FOLLOWS:

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| CONCRETE CAST AGAINST AND EXPOSED TO EARTH..... | 3" |
| CONCRETE EXPOSED TO EARTH BUT CAST IN FORM..... | 2" |
| CONCRETE NOT EXPOSED TO WEATHER OR EARTH..... | 3/4" |
| SLAB-ON-GRADE (FROM TOP OF SURFACE)..... | 1 1/2" |

AN AIR ENTRAINING AGENT, CONFORMING TO ASTM-C260 SHALL BE USED TO PROVIDE ENTRAINMENT OF APPROX. 5%.

ALL ANCHOR BOLTS SHALL BE ASTM A-307, 5/8" DIAMETER, EMBEDDED A MIN. OF 7" INTO CONCRETE WITH HOOK, U.N.O. MINIMUM 2 BOLTS PER SILL PLATE PIECE WITH ONE BOLT TO BE PLACED WITHIN 12" OF EACH END OF THE SILL PLATE.

NON-SHRINK GROUT SHALL BE FURNISHED BY AN APPROVED MANUFACTURER AND SHALL BE MIXED AND PLACED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED RECOMMENDATIONS. GROUT STRENGTH SHALL BE AT LEAST EQUAL TO THE MATERIAL ON WHICH IT IS PLACED (3000 PSI MINIMUM).

EPOXY GROUTED ITEMS SPECIFIED ON THE DRAWINGS SHALL BE GROUTED WITH "SET" HIGH STRENGTH EPOXY AS MANUFACTURED BY THE SIMPSON COMPANY AND INSTALLED BY STRICT ACCORDANCE WITH ICBO ER 5279.

REINFORCING STEEL

ALL REINFORCING STEEL SHALL BE PLACED IN CONFORMANCE WITH THE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318-05) AND THE MANUAL OF STANDARD PRACTICE FOR REINFORCED CONCRETE CONSTRUCTION (LATEST EDITION) BY CRSI. TO BE DEFORMED BILLET STEEL CONFORMING TO ASTM A-615, GRADE 40, *F_y* = 40,000 PSI, OF THE SIZE SHOWN ON DRAWINGS. REINFORCING SHALL BE CONTINUOUS, STAGGER ALL SPLICES, LAPS SHALL BE 27" MINIMUM. PROVIDE ELBOW BARS TO LAP HORIZONTAL BARS AT ALL CORNERS AND INTERSECTIONS. ALL STEEL SHALL BE ACCURATELY LOCATED IN THE FORMS AND SECURED BEFORE AND DURING THE PLACING OF CONCRETE BY FORM TIES ADEQUATE TO PREVENT DISPLACEMENT DURING CONSTRUCTION.

EPOXY ADHESIVE

EPOXY ADHESIVE SHALL CONFORM TO ASTM C881 FOR BONDING STEEL TO HARDENED CONCRETE. EPOXY ADHESIVE SHALL BE USED FOR DRILLED AND GROUTED REINFORCING BARS OR BOLTS UNLESS NOTED OTHERWISE. EPOXY SHALL BE ICBO APPROVED AND SHALL BE MIXED, APPLIED AND CURED IN STRICT ACCORDANCE WITH THE ICBO REPORT. ALL PLACEMENT AND CURING SHALL BE CONDUCTED WITH CONCRETE AND AIR TEMPERATURES ABOVE 50 DEGREES. APPLY EPOXY ONLY TO CLEAN, DRY CONCRETE. PROVIDE POSITIVE PROTECTION SO ANCHORS ARE NOT DISTURBED DURING THE CURING PERIOD. HOLES FOR DOWELS AND BOLTS SHALL BE DRILLED WITH ROTARY IMPACT HAMMER OR EQUIVALENT METHOD TO PRODUCE A HOLE WITH A ROUGH INSIDE SURFACE. NO REINFORCING SHALL BE CUT TO INSTALL DOWELS, BARS, OR BOLTS.

FRAMING LUMBER

FRAMING LUMBER SHALL BE KILN DRIED OR MC-15, AND GRADED AND MARKED IN CONFORMANCE WITH WCLIB STANDARD GRADING RULES FOR WEST COAST LUMBER NO. 17, LATEST EDITION. ALL WOOD FRAME CONSTRUCTION SHALL CONFORM TO THE STANDARDS OF THE IBC AS A MINIMUM REQUIREMENT. FURNISH TO THE FOLLOWING MINIMUM STANDARDS:

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| JOISTS: (2X8 AND SMALLER) | HEM-FIR NO. 2 MINIMUM BASE VALUE, FB = 850 PSI |
| BEAMS AND STRINGERS: (2X10 AND LARGER) | DOUGLAS FIR NO. 1 MINIMUM BASE VALUE, FB = 1350 PSI |
| POSTS AND TIMBERS: (4X4 AND LARGER) | DOUGLAS FIR NO. 1 MINIMUM BASE VALUE, FB = 1200 PSI |
| STUDS, PLATES & MISC. FRAMING: | DOUGLAS FIR OR HEM-FIR STANDARD GRADE |
| TOP AND BOTTOM PLATES AT BEARING WALLS | DOUGLAS FIR-LARCH CONSTRUCTION GRADE |
| 2X6 STUDS AND PLATES: | HEM-FIR NO.3/ STUD GRADE |

ENGINEERED LUMBER MEMBERS SHALL BE MANUFACTURED UNDER A PROCESS BY THE NATIONAL RESEARCH BOARD. EACH PIECE SHALL BEAR A STAMP OR STAMPS NOTING THE NAME AND PLANT NUMBER OF THE MANUFACTURER, THE GRADE, THE NATIONAL RESEARCH BOARD NUMBER, AND THE QUALITY CONTROL AGENCY. ALL LUMBER SHALL BE MANUFACTURED IN ACCORDANCE WITH THE APPROPRIATE NER REPORT AND GLUED WITH A WATERPROOFING ADHESIVE MEETING THE REQUIREMENTS OF ASTM D2559 WITH ALL GRAIN PARALLEL WITH THE LENGTH OF THE MEMBER.

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|-----|---------------|--------------|--------------|-----------|
| PSL | FB = 2900 PSI | E = 2000 PSI | FV = 290 PSI | NER - 292 |
| LVL | FB = 2600 PSI | E = 1900 PSI | FV = 285 PSI | NER - 126 |
| LSL | FB = 1700 PSI | E = 1300 PSI | FV = 150 PSI | NER - 481 |

DESIGN SHOWN ON PLANS IS BASED ON LUMBER MANUFACTURED BY THE TRUS-JOIST CORPORATION. ALTERNATE MANUFACTURERS MAY BE USED SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND STRUCTURAL ENGINEER. ALTERNATE JOIST HANGERS AND OTHER HARDWARE MAY BE SUBSTITUTED FOR ITEMS SHOWN PROVIDED THEY HAVE ICBO APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES. ALL JOIST HANGERS AND OTHER HARDWARE SHALL BE COMPATIBLE IN SIZE WITH MEMBERS PROVIDED.

GLUED LAMINATED MEMBERS SHALL BE FABRICATED IN CONFORMANCE WITH ANSI/AITC A190.1 AND ASTM D3737. EACH MEMBER SHALL BEAR AN AITC IDENTIFICATION MARK AND SHALL BE ACCOMPANIED BY AN AITC CERTIFICATE OF CONFORMANCE. ALL SIMPLE SPAN BEAMS SHALL BE DOUGLAS FIR COMBINATION 24F-V4, *F_b* = 2400 PSI, *F_v* = 190 PSI. CAMBER ALL GLULAM BEAMS TO A 2,000 FOOT RADIUS UNLESS NOTED OTHERWISE ON THE PLANS.

ALL WOOD IN DIRECT CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESURE-TREATED WITH AN APPROVED PRESERVATIVE OR (2) LAYERS OF ASPHALT IMPREGNATED BUILDING PAPER SHALL BE PROVIDED BETWEEN UNTREATED WOOD AND CONCRETE OR MASONRY. ALL WOOD EXPOSED TO WEATHER WITHOUT THE ADEQUATE PROTECTION OF A ROOF OR EAVE SHALL BE AN APPROVED WOOD OF NATURAL RESISTANCE TO DECAY OR PRESSURE TREATED. SUCH MEMBERS INCLUDE HORIZONTAL MEMBERS SUCH AS GIRDERS, JOISTS, DECKING, OR VERTICAL MEMBERS SUCH AS POSTS, POLES AND COLUMNS.

PREFABRICATED PLYWOOD WEB JOISTS

PREFABRICATED PLYWOOD WEB JOIST DESIGN SHOWN ON PLANS IS BASED ON JOISTS MANUFACTURED BY THE TRUS-JOIST CORPORATION AND SHALL BE FURNISHED AND INSTALLED IN CONFORMANCE WITH THE MANUFACTURER'S PUBLISHED SPECIFICATIONS. ALL NECESSARY BRIDGING, BLOCKING, BLOCKING PANELS, STIFFENERS, ETC., SHALL BE DETAILED AND FURNISHED BY THE MANUFACTURER. SUBMIT SHOP DRAWINGS TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION. ALTERNATE PLYWOOD WEB JOIST MANUFACTURERS MAY BE USED SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND STRUCTURAL ENGINEER. ALTERNATE JOIST HANGERS AND OTHER HARDWARE MAY BE SUBSTITUTED FOR ITEMS SHOWN PROVIDED THEY HAVE ICBO APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES. ALL JOIST HANGERS AND OTHER HARDWARE SHALL BE COMPATIBLE IN SIZE WITH PLYWOOD WEB JOIST PROVIDED.

STRUCTURAL INSULATED PANELS

STRUCTURAL INSULATED PANELS (SIP) SHALL BE PREMIER PANELS, CONSISTING OF PRESSURE-LAMINATED COMPOSITES OF APPROVED ORIENTED STRAND BOARD (OSB) AND CERTIFIED EXPANDED POLYSTYRENE INSULATION (ESP), AS MANUFACTURED BY THE AFM CORPORATION, OR APPROVED EQUAL. MANUFACTURER SHALL CERTIFY THAT PANELS HAVE BEEN TESTED IN ACCORDANCE WITH ASTM E72, ASTM E119, AND ASTM E84. EPS CORE SHALL HAVE A MINIMUM DENSITY OF 0.95 PCF AND SHALL COMPLY WITH ASTM C578. OSB SHALL BE EXPOSURE 1. ALL FASTENERS, CAULKS, SEALANTS, AND ADHESIVES SHALL BE SUPPLIED BY PANEL MANUFACTURER AND SHALL FOLLOW AFM REQUIREMENTS. PANELS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED INSTRUCTIONS. STORED PANELS MUST BE KEPT DRY AND PROPERLY SUPPORTED, AND NOT ALLOWED TO COME INTO CONTACT WITH THE GROUND.

SHEATHING

PLYWOOD SHEATHING SHALL BE GRADE C-D, EXTERIOR GLUE OR STRUCTURAL II, EXTERIOR GLUE SHALL BE IN CONFORMANCE WITH APA STANDARDS. ORIENTED STRAND BOARD OF EQUIVALENT THICKNESS, EXPOSURE RATING AND PANEL INDEX MAY BE USED IN LIEU OF PLYWOOD.

ROOF SHEATHING SHALL BE 1/2" (NOM) WITH SPAN RATING 24/0

FLOOR SHEATHING SHALL BE 3/2" (NOM) WITH SPAN RATING 40/20

WALL SHEATHING SHALL BE 1/2" (NOM) WITH SPAN RATING 24/0

PLYWOOD ROOF AND FLOOR SHEATHING TO BE LAID UP WITH GRAIN PERPENDICULAR TO SUPPORTS AND NAILED WITH 8D NAILS AT 6" O.C. TO FRAMED PANEL EDGES AND OVER STUD WALLS AS SHOWN ON PLANS AND AT 12" O.C. TO INTERMEDIATE SUPPORTS UNLESS NOTED OTHERWISE. PROVIDE APPROVED PLYWOOD EDGE CLIPS AT 16" O.C. AT UNBLOCKED ROOF SHEATHING EDGES. ALL FLOOR SHEATHING EDGES SHALL HAVE APPROVED TONGUE-AND-GROOVE JOINTS OR SHALL BE SUPPORTED WITH SOLID BLOCKING. TOENAIL BLOCKING TO SUPPORTS WITH 16D @ 12" O.C. UNLESS NOTED OTHERWISE. AT BLOCKED FLOOR AND ROOF DIAPHRAGMS PROVIDE FLAT 2X BLOCKING AT ALL UNFRAMED PLYWOOD PANEL EDGES AND NAIL WITH EDGE NAILING SPECIFIED.

WOOD FRAMING NOTES

THE FOLLOWING APPLY UNLESS NOTED OTHERWISE ON THE PLANS.

ALL WOOD FRAMING DETAILS NOT SHOWN OTHERWISE SHALL BE CONSTRUCTED TO THE MINIMUM STANDARDS OF THE INTERNATIONAL BUILDING CODE. MINIMUM NAILING, UNLESS OTHERWISE NOTED, SHALL CONFORM TO TABLE 2304.9.1 OF THE INTERNATIONAL BUILDING CODE. UNLESS NOTED OTHERWISE, ALL NAILS SHALL BE COMMON. COORDINATE THE SIZE AND LOCATION OF ALL OPENINGS WITH MECHANICAL ARCHITECTURAL DRAWINGS. PROVIDE PLATE 14X2X2 WASHERS UNDER THE HEADS AND NUTS OF ALL BOLTS AND LAG SCREWS BEARING ON WOOD.

WALL FRAMING: ALL STUD WALLS SHOWN AND NOT OTHERWISE NOTED SHALL BE 2 X 4 STUDS @ 16" O.C. AT INTERIOR WALLS AND 2 X 6 @ 24" O.C. AT EXTERIOR WALLS. TWO STUDS MINIMUM SHALL BE PROVIDED AT THE END OF ALL WALLS AND ONE STUD AT EACH SIDE OF ALL OPENINGS. TWO 2 X 6 INSULATED HEADERS SHALL BE PROVIDED OVER ALL OPENINGS NOT OTHERWISE NOTED. SOLID BLOCKING FOR WOOD COLUMNS SHALL BE PROVIDED THROUGH FLOOR TO SUPPORTS BELOW. WALLS SHALL HAVE A SINGLE BOTTOM PLATE AND A SINGLE SPLICED TOP PLATE. END NAIL TOP PLATE TO EACH STUD WITH TWO 16D NAILS, AND TOENAIL OR END NAIL EACH STUD TO BOTTOM PLATE WITH TWO 16D NAILS. SPLICE TOP PLATE WITH SIMPSON * *C24H x24* *. ALL STUD WALLS SHALL HAVE THEIR LOWER WOOD PLATES ATTACHED TO WOOD FRAMING BELOW WITH 16D NAILS AT 12" O.C. STAGGERED OR BOLTED TO CONCRETE WITH 5/8" DIAMETER ANCHOR BOLTS (WITH 7" MINIMUM EMBEDMENT) AT 4'-0" O.C. UNLESS NOTED OTHERWISE. INDIVIDUAL MEMBERS OF BUILT-UP POSTS SHALL BE NAILED TO EACH OTHER WITH 16D @ 9" O.C. STAGGERED. REFER TO THE PLANS AND WALL SCHEDULE FOR REQUIRED SHEATHING AND NAILING. WHEN NOT OTHERWISE NOTED, PROVIDE GYPSUM WALLBOARD ON INTERIOR SURFACE NAILED TO ALL STUDS, TOP AND BOTTOM PLATES AND BLOCKING WITH NAILS AT 7" O.C. OR GYPSUM WALLBOARD CLIPS. USE 50 COOLER NAILS FOR 1/2" GWB AND 60 COOLER NAILS FOR 5/8" GWB. WHEN NOT OTHERWISE NOTED, PROVIDE 1/2" (NOM) APA RATED SHEATHING (SPAN RATING 24/0) ON EXTERIOR SURFACES NAILED AT ALL PANEL EDGES (BLOCK UNSUPPORTED EDGES), TOP AND BOTTOM PLATES WITH 8D @ 6" O.C. AND TO ALL INTERMEDIATE STUDS AND BLOCKING WITH 8D @ 6" O.C. AND TO ALL INTERMEDIATE STUDS AND BLOCKING WITH 8D @ 12" O.C. ALLOW 1/8" SPACING AT ALL PANEL EDGES AND ENDS.

USE FULL LENGTH STUDS (BALCON FRAME) ON EXTERIOR WALLS AT STAIRWAYS AND AT VAULTED CEILINGS.

ALL COLUMNS AND POSTS SUPPORTING BEAMS NOT SPECIFIED FOR SIZE ON PLANS SHALL CONSIST OF 2 STUDS SPIKE-LAMINATED TOGETHER WITH 16D NAILS 9" O.C.

FLOOR AND ROOF FRAMING: PROVIDE DOUBLE JOISTS AROUND ALL OPENINGS IN FLOORS OR ROOFS UNLESS OTHERWISE NOTED. PROVIDE SOLID BLOCKING AT ALL BEARING POINTS. TOENAIL JOISTS TO SUPPORTS WITH TWO 16D NAILS. ATTACH TIMBER JOISTS TO FLUSH HEADERS OR BEAMS WITH SIMPSON METAL JOIST HANGERS.

TIMBER CONNECTORS CALLED OUT BY LETTERS AND NUMBERS SHALL BE "STRONG-TIE" BY SIMPSON COMPANY, AS SPECIFIED IN THEIR MOST RECENT CATALOG. EQUIVALENT DEVICES BY OTHER MANUFACTURERS MAY BE SUBSTITUTED, PROVIDED THEY HAVE ICBO APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES. PROVIDE NUMBER AND SIZE OF FASTENERS AS SPECIFIED BY MANUFACTURER. CONNECTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. WHERE CONNECTOR STRAPS CONNECT TWO MEMBERS, PLACE ONE-HALF OF THE NAILS OR BOLTS IN EACH MEMBER. ALL BOLTS IN WOOD MEMBERS SHALL FORM TO ASTM A307. PROVIDE WASHERS UNDER THE HEADS AND NUTS OF ALL BOLTS AND LAG SCREWS BEARING ON WOOD. UNLESS NOTED OTHERWISE, ALL NAILS SHALL BE COMMON. ALL SHIMS SHALL BE SEASONED AND DRIED AND THE SAME GRADE (MINIMUM) AS MEMBERS CONNECTED. HANGERS IN DIRECT CONTACT WITH PRESERVATIVE-TREATED WOOD SHALL BE EITHER STAINLESS STEEL (SST300), POST HOT-DIPPED GALVANIZED (HDG) OR GALVANIZED WITH A MINIMUM OF 1.85OZ ZINC PER SQUARE INCH (MAX), UNLESS NOTED OTHERWISE. ALL LUMBER JOISTS SHALL BE CONNECTED TO FLUSH BEAMS WITH "LUS" SERIES JOIST HANGERS.

MISCELLANEOUS

REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, CIVIL, ELEVATOR, OR OTHER SPECIALTY ENGINEERING DRAWINGS FOR DIMENSIONS NOT SHOWN, INCLUDING BUT NOT LIMITED TO: SIZE AND LOCATION OF CURBS, EQUIPMENT HOUSEKEEPING PADS, WALL AND FLOOR OPENINGS, BLOCKOUTS, FLOOR DEPRESSIONS, SUMPS, DRAINS, ANCHOR BOLTS, EMBEDDED ITEMS, ARCHITECTURAL TREATMENT, ETC. CONTRACTOR SHALL VERIFY DIMENSIONS AND RESOLVE DISCREPANCIES OR CONFLICTS PRIOR TO CONSTRUCTION.

SHOP DRAWINGS

SHOP DRAWINGS FOR REINFORCING STEEL, GLUE LAMINATED MEMBERS, PLYWOOD WEB JOISTS, AND STRUCTURAL STEEL SHALL BE SUBMITTED FOR REVIEW PRIOR TO FABRICATION OF THESE ITEMS.

CONTRACTOR SHALL SUBMIT CONCRETE WALL ELEVATION DRAWINGS OF AT LEAST 1/8" = 1'-0" SCALE INDICATING LOCATIONS OF CONNECTION EMBEDMENT AND WALL OPENINGS FOR REVIEW PRIOR TO CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH REINFORCEMENT DRAWINGS.

DIMENSIONS AND QUANTITIES ARE NOT REVIEWED BY THE ENGINEER OF RECORD, THEREFORE THEY SHALL BE VERIFIED BY THE CONTRACTOR. CONTRACTOR SHALL REVIEW AND STAMP DRAWINGS PRIOR TO REVIEW BY THE ENGINEER OF RECORD. CONTRACTOR SHALL REVIEW DRAWINGS FOR CONFORMANCE WITH THE MEANS, METHODS, TECHNIQUES, SEQUENCES, AND OPERATIONS OF CONSTRUCTION, AND ALL SAFETY PRECAUTIONS AND PROGRAMS INCIDENTAL THERETO. SUBMITTALS SHALL INCLUDE ONE REPRODUCIBLE AND ONE COPY. REPRODUCIBLE WILL BE MARKED AND RETURNED.

SHOP DRAWING SUBMITTALS PROCESSED BY THE ENGINEER ARE NOT CHANGE ORDERS. THE PURPOSE OF SHOP DRAWING SUBMITTALS BY THE CONTRACTOR IS TO DEMONSTRATE TO THE ENGINEER THAT THE CONTRACTOR UNDERSTANDS THE DESIGN CONCEPT, BY INDICATING WHICH MATERIAL IS INTENDED TO BE FURNISHED AND INSTALLED, AND BY DETAILING THE INTENDED FABRICATION AND INSTALLATION METHODS. IF DEVIATIONS, DISCREPANCIES, OR CONFLICTS BETWEEN SHOP DRAWINGS SUBMITTALS AND THE CONTRACT DOCUMENTS ARE DISCOVERED EITHER PRIOR TO OR AFTER SHOP DRAWING SUBMITTALS ARE PROCESSED BY THE ENGINEER, THE DESIGN DRAWINGS AND SPECIFICATIONS SHALL CONTROL AND SHALL BE FOLLOWED.

TYPICAL NAILING SCHEDULE

| CONNECTION | NAILING |
|---|---|
| JOIST TO SILL OR GIRDER | (3) 8d TOENAIL |
| BRIDGING TO JOIST | (2) 8d TOENAIL EACH END |
| SOLE PLATE TO JOIST OR BLOCKING, | 16d @ 16" FACE NAIL |
| TOP PLATE TO STUD | (2) 16d END NAIL |
| STUD TO SOLE PLATE | (4) 8d TOENAIL |
| DOUBLE STUDS | 16d @ 12" FACE NAIL |
| DOUBLE TOP PLATES | 16d @ 12" FACE NAIL |
| TOP PLATE INTERSECTIONS | (2) 16d FACE NAIL |
| CONTINUOUS HEADER, TWO PIECES | 16d @ 12" ALONG EACH EDGE |
| CEILING JOISTS TO PLATE | (3) 8d TOENAIL |
| RAFTER OR TRUSS TO PLATE | (3) 8d TOENAIL |
| BUILT-UP CORNER STUDS | 16d @ 12" |
| BUILT-UP GIRDER AND BEAMS | 20d @ 12" |
| BLOCKING BETWEEN JOISTS OR RAFTERS TO TOP PLATE | (3) 8d TOENAIL |
| RIM JOIST TOP PLATE, TOENAIL | 8d @ 6" |
| POST AND BEAM OR GIRDER CONSTRUCTION | PROVIDE POSITIVE CONNECTION AGAINST UPLIFT AND LATERAL DISPLACEMENT |
| BUILT-UP RIM JOIST | (2) ROWS 16d @ 12" |

* REFER TO 2006 IBC TABLE 2304.9.1 FOR ADDITIONAL NAILING REQUIREMENTS.

STRUCTURAL STEEL

ALL STEEL SHALL CONFORM TO THE FOLLOWING:

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| ALL OTHER STEEL UNLESS NOTED OTHERWISE | ASTM A36, <i>F_y</i> =36 KSI |
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ALL WORK SHALL BE IN ACCORDANCE WITH THE AISC SPECIFICATION. SHOP DRAWINGS SHALL BE SUBMITTED AND REVIEWED BY THE ARCHITECT/ENGINEER BEFORE COMMENCING FABRICATION. ALL STEEL ANCHORS AND TIES AND OTHER MEMBERS EMBEDDED IN CONCRETE OR MASONRY SHALL BE LEFT UNPAINTED. DIMENSION TOLERANCE FOR BUILT-UP MEMBERS SHALL BE PER AWS D1.1.

STRUCTURAL STEEL WELDING

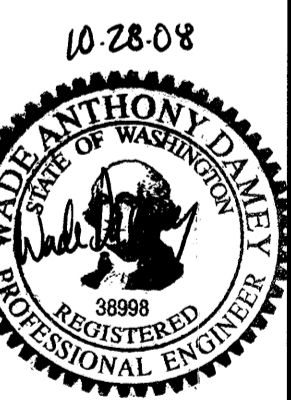
STRUCTURAL STEEL SHOP DRAWINGS SHALL SHOW ALL WELDING WITH AWS A2.4 SYMBOLS. ALL WELDING SHALL BE DONE BY AWS/AWABO (WASHINGTON STATE ASSOCIATION OF BUILDING OFFICIALS) CERTIFIED WELDERS AND IN ACCORDANCE WITH AWS D1.1. WELDS SHOWN ON THE DRAWINGS ARE THE MINIMUM SIZES. INCREASE WELD SIZE TO AWS MINIMUM SIZES, BASED ON PLATE THICKNESS. THE MINIMUM WELD SIZE SHALL BE 3/16 INCH. FIELD WELDING SYMBOLS HAVE NOT NECESSARILY BEEN INDICATED ON THE DRAWINGS. WHERE SHOWN, PROPER FIELD WELDING PER AWS D1.1 SHALL BE USED. WHERE NO FIELD WELDING SYMBOLS ARE SHOWN, IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE USE OF SHOWN AND FILED WELDS. ALL PARTIAL PENETRATION GROOVE WELD SIZES SHOWN ON THE DRAWINGS REFER TO EFFECTIVE THROAT THICKNESS. ALL WELDS SHALL BE MADE USING LOW HYDROGEN ELECTRODES WITH MINIMUM TENSILE STRENGTH PER AWS D1.1 (MINIMUM 70 KSI). LOW HYDROGEN SMAW ELECTRODES SHALL BE USED WITHIN FOUR HOURS OF PENING THEIR HERMETICALLY SEALED CONTAINERS, OR SHALL BE REDRIED PER AWS D1.1, SECTION 4.5. ELECTRODES SHALL BE REDRIED NO MORE THAN ONE TIME, AND ELECTRODES THAT HAVE BEEN WET SHALL NOT BE USED.

ALL WELDING SHALL BE PERFORMED IN STRICT ADHERENCE TO A WRITTEN WELDING PROCEDURE SPECIFICATION (WPS) PER AWS D1.1. ALL WELDING PARAMETERS SHALL BE WITHIN THE ELECTRODE MANUFACTURER'S RECOMMENDATIONS.

| REVISIONS | BY |
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A W B
ENGINEERING
6353 39th Avenue SW
Seattle, WA 98136
206-650-6196

1054 HOUSE
1054 NE 97TH STREET
SEATTLE, WA 98115



EXPIRES 5/12/2009

STRUCTURAL
GENERAL
NOTES

Date 10/23/08

Scale

Drawn

Job

Sheet

Of 51.0
Sheets

PERMIT SET