

GENERAL NOTES

- ALL STRUCTURAL WORK SHALL BE COORDINATED WITH ARCHITECTURAL AND MECHANICAL DRAWINGS AND SHALL CONFORM TO THE PROJECT SPECIFICATIONS, INCLUDING THE MASSACHUSETTS BUILDING CODE LATEST EDITION.
- CONTRACTOR SHALL PROVIDE TEMPORARY SHORING, BRACING, SHEETING AND MAKE SAFE ALL FLOORS, ROOFS, WALLS AND ADJACENT PROPERTY AS PROJECT CONDITIONS REQUIRE. SHORING AND SHEETING SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE PROJECT JURISDICTION HIRED BY THE CONTRACTOR WHO SHALL SUBMIT SHOP DRAWINGS AND CALCULATIONS FOR THE OWNER'S REVIEW.
- DIMENSIONS AND ELEVATIONS OF EXISTING CONSTRUCTION GIVEN IN STRUCTURAL DRAWINGS ARE BASED ON INFORMATION CONTAINED IN VARIOUS ORIGINAL DESIGN AND CONSTRUCTION DOCUMENTS PROVIDED BY THE OWNER, AND LIMITED FIELD OBSERVATIONS AND MEASUREMENTS. THE CONTRACTOR SHALL VERIFY ALL INFORMATION PERTAINING TO EXISTING CONDITIONS BY ACTUAL MEASUREMENT AND OBSERVATION AT THE SITE. ALL DISCREPANCIES BETWEEN ACTUAL CONDITIONS AND THOSE SHOWN IN THE CONTRACT DOCUMENTS SHALL BE REPORTED TO THE ENGINEER OF RECORD FOR HIS EVALUATION BEFORE THE AFFECTED CONSTRUCTION IS PUT IN PLACE.
- THE CONTRACT DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY. THESE NOTES HIGHLIGHT RATHER THAN REPLACE THE SPECIFICATIONS CONTAINED IN THE PROJECT MANUAL. PLEASE NOTIFY THE ENGINEER OF ANY CONFLICTS. REFER TO THE SPECIFICATION FOR WORK NOT SHOWN ON THE DRAWINGS.

FOUNDATIONS

- BUILDING FOUNDATIONS SHALL BEAR ON UNDISTURBED SOIL HAVING MINIMUM BEARING CAPACITY OF 3000 PSF. AS SPECIFIED BY THE GEOTECHNICAL CONSULTANT. ADEQUACY OF BEARING STRATUM SHALL BE VERIFIED IN FIELD PRIOR TO PLACING CONCRETE. ADJUST BOTTOM OF FOOTING ELEVATIONS AS REQUIRED.
- DO NOT PLACE BACKFILL AGAINST BASEMENT WALLS UNTIL ALL FLOORS BRACING THESE WALLS ARE IN PLACE AND HAVE ATTAINED THEIR 28 DAY STRENGTH.
- ALL EXTERIOR FOOTINGS SHALL BE PLACED A MINIMUM OF 4'-0" BELOW FINAL GRADE.
- CONCRETE SHALL BE POURED IN DRY EXCAVATIONS. CONTRACTOR SHALL NOTE SOIL AND WATER CONDITIONS AS SHOWN BY BORINGS AND DEPTHS OF FOOTING AS SHOWN ON FOUNDATION PLANS.

CONCRETE

- ALL CONCRETE WORK SHALL CONFORM TO THE ACI FOLLOWING GOVERNING STANDARDS:
 - AMERICAN CONCRETE INSTITUTE (ACI) "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" (ACI 318), LATEST EDITION.
 - ACI "MANUAL OF CONCRETE PRACTICE" LATEST EDITION
 - CONCRETE REINFORCING STEEL INSTITUTE (CRSI) "MANUAL OF STANDARD PRACTICE" LATEST EDITION
- ALL CONCRETE COMPOSITE ON METAL DECK SHALL BE LIGHT WEIGHT CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS, UNLESS OTHERWISE NOTED.
- ALL OTHER CONCRETE SHALL BE NORMAL WEIGHT CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS, UNLESS OTHERWISE NOTED.
- REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615, GRADE 60 OR A775 EPOXY COATED WHEN CALLED OUT ON PLAN. REINFORCING STEEL SHALL BE DETAILED ACCORDING TO THE ACI "DETAILS AND DETAILING OF REINFORCEMENT", (ACI 315), LATEST EDITION.
- WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185, WITH A MINIMUM YIELD STRENGTH OF 65,000 PSI.
- PROVIDE MINIMUM SHRINKAGE AND TEMPERATURE REINFORCEMENT, AS REQUIRED BY ACI 318, IN ALL SLABS AND WALLS WHERE REINFORCEMENT IS NOT INDICATED ON DRAWINGS.
- COORDINATE SIZE AND LOCATION OF ALL OPENINGS AND PIPE SLEEVES WITH ARCHITECTURAL AND MECHANICAL DRAWINGS. MINIMUM CONCRETE BETWEEN SLEEVES SHALL BE 6". CORE DRILLING OF WALLS AND SLABS SHALL NOT BE PERMITTED.
- ALL GROUT SHALL BE NONSHRINK WITH A MINIMUM COMPRESSIVE STRENGTH OF 5000 PSI.
- PROVIDE CLEARANCE FROM FACE OF CONCRETE TO REINFORCEMENT AS FOLLOWS:
SLABS: 3/4"
BEAMS, COLUMNS: 1 1/2"
FOOTINGS: 3"
EXTERIOR WALLS: 2" FOR #6 OR LARGER, 1 1/2" FOR #5 OF SMALLER
INTERIOR WALLS: 3/4"
- SHOP DRAWINGS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL. NO CONCRETE WORK SHALL COMMENCE WITHOUT APPROVED SHOP DRAWINGS.
- CLEAN AND ROUGHEN TO 1/4" AMPLITUDE ALL EXISTING CONCRETE SURFACES TO RECEIVE NEW CONCRETE PRIOR TO PLACEMENT.
- SEE OTHER DRAWINGS IN THIS PROJECT FOR SIZE AND LOCATIONS OF EQUIPMENT PADS, INSERT AND EMBED ITEMS.
- REINFORCING DOWELS, WATERSTOPS AND OTHER EMBED ITEMS SHALL BE INSTALLED AND SECURED PRIOR TO CONCRETE PLACEMENT. "WET-SETTING" OF EMBEDDED ITEMS IS NOT PERMITTED.

CONCRETE BLOCK

- ALL CONCRETE BLOCK WORK SHALL CONFORM TO THE "NATIONAL CONCRETE MASONRY ASSOCIATION SPECIFICATIONS," LATEST EDITION AND "ACI 530-BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES", LATEST EDITION.
- CONCRETE BLOCK SHALL BE OF NORMAL WEIGHT AGGREGATE AND CONFORM TO THE FOLLOWING STANDARDS: SOLID/HOLLOW BLOCK: ASTM C90, GRADE N1.

NET AREA COMPRESSIVE STRENGTH OF CONCRETE MASONRY UNIT, PSI	NET AREA COMPRESSIVE STRENGTH OF MASONRY ASSEMBLY, F'm, PSI USING TYPE S MORTAR
1900	1500
2800	2000
3750	2500
4800	3000

UNLESS OTHERWISE NOTED ON PLANS AND/ OR ELEVATIONS, CONCRETE BLOCK UNIT STRENGTH SHALL BE 1900 PSI MIN. NOTE: CONCRETE BLOCK WITH UNIT STRENGTH HIGHER THAN 1900 PSI REQUIRE LONGER DELIVERY LEAD TIMES.

- ALL MORTAR SHALL BE ASTM C270, TYPE S.
- ALL GROUT FOR FILLING CELLS SHALL BE ASTM C 476 WITH MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI BUT NOT LESS THAN THE COMPRESSIVE STRENGTH OF THE MASONRY ASSEMBLY, F'M". WHERE GROUT CELLS DO NOT EXCEED 4" IN DIAMETER FINE GROUT SHALL BE USED.
- ALL BLOCK DIMENSIONS INDICATED ON STRUCTURAL PLANS ARE NOMINAL DIMENSIONS.
- ALL CONCRETE BLOCK BELOW GRADE SHALL BE FILLED SOLID WITH GROUT.
- CONCRETE BLOCK BELOW BEAM OR TRUSS BEARING POINTS SHALL BE FILLED SOLID FOR A MINIMUM OF TWO COURSES IN DEPTH AND A MINIMUM OF 32" IN WIDTH, U.O.N.
- INSTALL HEAVY DUTY LADDER JOINT REINFORCEMENT AT 16" O/C (SPACED VERTICALLY).
- UNLESS NOTED OTHERWISE ALL MASONRY WALLS SHALL BE REINFORCED WITH #4@48" O/C VERTICAL. GROUT ALL REINFORCED CELLS SOLID. PROVIDE DOWELS TO MATCH VERTICAL REINFORCING AT FOUNDATION.

POST INSTALLED ADHESIVE AND MECHANICAL ANCHORS

- POST INSTALLED ANCHORAGE SHALL BE INSTALLED PER MANUFACTURER TECHNICAL DATA TO INTACT BASE MATERIAL. NOTIFY ENGINEER OF RECORD PRIOR TO INSTALLATION IF BASE MATERIAL CONDITION DEVIATES FROM STRUCTURAL DRAWINGS OR MANUFACTURER TECHNICAL DATA.
- MANUFACTURER DATA FOR ALTERNATE ANCHORAGE PROPOSED BY CONTRACTOR SHALL BE SUBMITTED TO ENGINEER OF RECORD FOR REVIEW AND APPROVAL. SUBMITTAL SHALL INCLUDE THE ICC EVALUATION SERVICE REPORT WITH ICC TESTED CAPACITY MEETING OR EXCEEDING CAPACITY OF ANCHORAGE SPECIFIED IN CONTRACT DOCUMENTS.
- UNLESS OTHERWISE INDICATED, POST INSTALLED ANCHORAGE SHALL BE ADHESIVE TYPE HILTI HIT-HY150 MAX INTO CONCRETE OR STONE BASE MATERIAL OR HY-20 INTO BRICK MASONRY BASE MATERIAL.

WOOD STRUCTURAL PANEL SHEATHING

- PROVIDE STRUCTURAL 1 PLYWOOD SHEATHING WITH BOND CLASSIFICATIONS APPROPRIATE TO THE END USE: "EXTERIOR" (PERMANENT EXPOSURE), OR "EXPOSURE 1" (CONSTRUCTION EXPOSURE ONLY)
- FLOOR SHEATHING: NOM. 3/4" THICK T&G PLYWOOD (48/24 SPAN RATING), APA STURD-I-FLOOR, OR ADVANTECH SUBFLOOR.
- ROOF SHEATHING (STANDARD): NOM. 3/8" THICK T&G PLYWOOD (48/24 SPAN RATING).
- WALL SHEATHING (STANDARD: NOM. 1/2" THICK PLYWOOD (32/16 SPAN RATING).
- USE PLY CLIPS OR OTHER EDGE SUPPORT AS REQUIRED FOR PLYWOOD SHEATHING.
- LEAVE 1/8" SPACE AT ALL PLYWOOD PANEL END JOINTS AND 1/8" SPACE AT ALL PANEL EDGE JOINTS.
- UNLESS NOTED OTHERWISE, WALL SHEATHING SHALL BE FASTENED TO FRAMING WITH 8d COMMON NAILS @ 4" O.C. AT EACH SHEET PERIMETER AND 12" O.C. ELSEWHERE. PROVIDE 2x6 BLOCKING AT ALL FREE EDGES.
- UNLESS NOTED OTHERWISE, ROOF SHEATHING SHALL BE FASTENED TO FRAMING WITH 8d COMMON NAILS @ 6" O.C. AT EACH SHEET PERIMETER AND 12" O.C. ELSEWHERE.
- ALL FLOOR SHEATING SHALL BE GLUED AND SCREWED TO FLOOR JOISTS USING AN APA APPROVED ADHESIVE AND #8 SCREWS @ 6" O.C. AT EACH SHEET PERIMETER AND 12" O.C. ELSEWHERE, UNLESS NOTED OTHERWISE.

ENGINEERED WOOD PRODUCTS

- MICRO-LAM BEAMS: PROVIDE ENGINEERED BEAMS, SIZES AS SHOWN, MICROLAM LVL OR PARALLAM PSL AS MANUFACTURED BY ILEVEL BY WEYERHAEUSER OR APPROVED EQUAL. INSTALL IN STRICT COMPLIANCE WITH THE MANUFACTURER'S STANDARD RECOMMENDATIONS AND DETAILS.

FRAMING LUMBER

- ALL FRAMING LUMBER WORK SHALL CONFORM TO THE FOLLOWING GOVERNING STANDARDS:
 - AMERICAN INSTITUTE OF TIMBER CONSTRUCTION, "TIMBER CONSTRUCTION MANUAL" LATEST EDITION.
 - NATIONAL FOREST PRODUCTS ASSOCIATION "NATIONAL DESIGN SPECIFICATIONS FOR WOOD CONSTRUCTION," LATEST EDITION.
- FRAMING LUMBER SHALL HAVE EACH PIECE GRADE STAMPED, SHALL BE SURFACED DRY (EXCEPT STUDS, WHICH SHALL BE KILN DRIED) AND SHALL CONFORM TO THE FOLLOWING SPECIES AND GRADE:
RAFTERS AND JOISTS: DOUGLAS FIR-LARCH #2 OR HEM FIR #2
BEAMS, GIRDERS AND HEADERS: DOUGLAS FIR-LARCH #1 OR HEM FIR #1
STUDS AND PLATES: DOUGLAS FIR-LARCH STUD GRADE OR HEM FIR STUD GRADE
- TIMBER LUMBER SHALL CONFORM TO THE FOLLOWING SPECIE AND GRADE:
POST AND TIMBER: DOUGLAS FIR-LARCH #1 OR HEM FIR #1
BEAMS AND STRINGERS: DOUGLAS FIR-LARCH #1 OR HEM FIR #1
- PRESERVATIVE-TREATED WOOD: PROVIDE TREATED DOUG-FIR #2 LUMBER COMPLYING WITH ACQ-D (CARBONATE), COPPER AZOLE (CA-B), OR SODIUM BORATE (SBX (DOT) WITH NaS10/2) AT ALL LUMBER IN CONTACT WITH CONCRETE OR MASONRY, OR AS OTHERWISE INDICATED ON ARCHITECTURAL OR STRUCTURAL DRAWINGS. ACZA TREATMENT IS NOT PERMITTED. TREATED LUMBER AND/OR PLYWOOD SHALL BEAR THE LABEL OF AN ACCREDITED AGENCY SHOWING 0.40 PCF RETENTION. WHERE LUMBER AND/OR PLYWOOD IS CUT OR DRILLED AFTER TREATMENT, THE TREATED SURFACE SHALL BE FIELD-TREATED WITH COPPER NAPHTHATE (THE CONCENTRATION OF WHICH SHALL CONTAIN A MINIMUM OF 2% COPPER METAL) BY REPEATED BRUSHING, DIPPING, OR SOAKING UNTIL THE WOOD ABSORBS NO MORE PRESERVATIVE.
- ALL WOOD FRAMING INCLUDING DETAILS FOR BRIDGING, BLOCKING, FIRE STOPPING, ETC., SHALL CONFORM TO THE LATEST EDITION OF THE "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION" AND ITS SUPPLEMENTS AND SHALL BE INSTALLED IN ACCORDANCE WITH THE NFPA "MANUAL FOR HOUSE FRAMING" OR THE GOVERNING LOCAL/STATE BUILDING CODE.
- FASTENING SHALL BE IN ACCORDANCE WITH THE MOST RESTRICTIVE OF: THE GOVERNING LOCAL/STATE BUILDING CODE, (LATEST EDITION), OR THE MANUFACTURER'S RECOMMENDED FASTENING SCHEDULES.
- ALL FLUSH FRAMED CONNECTIONS SHALL BE MADE WITH APPROVED GALVANIZED STEEL JOIST OR BEAM HANGERS, MINIMUM 18 GAUGE, INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
- WHERE FRAMING LUMBER IS FLUSH FRAMED TO MICROLAM, STEEL OR FLUTCH-PLATE GIRDER, SET THESE GIRDERS 1/2" CLEAR (MIN.) BELOW TOP OF FRAMING LUMBER, TO ALLOW FOR SHRINKAGE.
- STUD BEARING WALLS ARE TO BE 2 x 4 @ 16"/c. AT THE INTERIOR AND 2 x 6 @ 16"/c. AT THE EXTERIOR, UNLESS NOTED OTHERWISE ON PLAN.
- ALL RAFTERS AND JOISTS SHALL ALIGN DIRECTLY WITH STUDS BELOW, WHERE REQUIRED INSTALL ADDITIONAL STUDS.
- LAP ALL PLATES AT CORNERS AND AT INTERSECTION OF PARTITIONS.
- STAGGER ALL TOP AND BOTTOM PLATE SPLICES A MINIMUM OF 32 INCHES.
- USE DOUBLE STUDS @ ENDS OF WALL AND ENDS OF WALL OPENINGS.
- AT THE ENDS OF ALL BEAMS, HEADERS AND GIRDERS PROVIDE A BUILT UP OR SOLID POST WHOSE WIDTH IS AT LEAST EQUAL TO THE WIDTH OF THE MEMBER IT IS SUPPORTING AND WHOSE DEPTH IS 4" (NOM.) AT INTERIOR WALLS AND 6" (NOM.) AT EXTERIOR WALLS.
- USE DOUBLE TRIMMERS AND HEADERS AT ALL FLOOR OPENINGS WHERE BEAMS ARE NOT DESIGNATED.
- PROVIDE CROSS BRIDGING AT A MAXIMUM OF 8' o/c.
- BUILT UP BEAMS LESS THAN 8" DEEP SHALL BE SPIKED TOGETHER WITH 2 - 16D NAILS @16"/c. BUILT UP BEAMS GREATER THAN 8" DEEP SHALL BE SPIKED TOGETHER WITH 3 - 16D NAILS @16"/c.
- WHERE THERE IS NO PLYWOOD WALL SHEATHING, PROVIDE DIAGONALS AT ALL EXTERIOR CORNERS OF STUD WALLS AT EACH FLOOR. (1" x 4" BRACES LET INTO STUDS AND NAILED AT EACH STUD CROSSING WITH 2 - 10D NAILS.)
- CHIMNEYS: ALL STUDS FOR CHIMNEY FRAMING TO BE CONTINUOUS FROM ATTIC FLOOR LEVEL UP. CHIMNEY SHALL BE FACED WITH 1/2" APA GRADED FIRE-RETARDANT PLYWOOD GLUED & SCREWED TO STUDS. WHERE WALLS EXCEED 4'-0" IN WIDTH, INSTALL DIAGONAL METAL BRACING AT INSIDE FACE OF CHIMNEY AT ALL FOUR WALLS.
- NO NEW OR EXISTING JOISTS SHALL BE CUT OR NOTCHED WITHOUT APPROVAL.
- WOOD HEADER SCHEDULE
ROUGH OPENING WIDTH HEADER
2 x 4 WALL 2 x 6 WALL
LESS THAN 3'-0" (2) 2 x 6 (3) 2 x 8
3'-1 TO 4'-0" (2) 2 x 8 (3) 2 x 8
4'-1" TO 6'-0" (2) 2 x 10 (3) 2 x 10
6'-1" TO 8'-0" (2) 2 x 12 (3) 2 x 12
OVER 8'-0" SEE PLANS SEE PLANS
NOTE: PROVIDE (1) JACK STUD FOR SPANS LESS THAN 4'-0" WIDE,
(2) JACK STUDS FOR SPANS LESS THAN 8'-0" WIDE,
(3) JACK STUDS FOR SPANS OVER 8'-0" WIDE.
- ALL LIGHT-GAUGE HANGERS SUPPORTING PRESERVATIVE TREATED WOOD SHALL MEET OR EXCEED G185 (1.85 OZ OF ZINC PER SQUARE FOOT). ALTERNATIVELY, STAINLESS STEEL CONNECTIONS MAY BE USED. FASTENERS SHALL MATCH THE HANGER FINISH AND MATERIAL.
- WHERE JOIST ORIENTATION IS PARALLEL TO EXTERIOR STUD OR FOUNDATION WALLS, PROVIDE FULL-SECTION BLOCKING FOR 3 BAYS @ 4'-0" O.C. MAX. WHERE SHEATHING IS NOT CONTINUOUSLY FASTENED TO TOP OR BOTTOM OF JOIST. PROVIDE 18 GA x 1-1/2" x 1'-0" (MIN.) FLAT TENSION STRAP BETWEEN ALIGNED BLOCKING MEMBERS.
- ALL SILL PLATES SHALL BE PRESSURE TREATED AND ANCHORED TO FOUNDATION WALLS WITH 1/2" DIA. HEADED ANCHOR BOLTS (ASTM F1554) @ 4'-0" O.C. AND WITHIN 12" OF ALL SILL PLATES SPLICES. (MIN, 7" EMBED.)

SPECIAL INSPECTIONS

- INSPECTIONS REQUIRED BY THE LOCAL JURISDICTION SHALL BE PERFORMED BY A TESTING AGENCY PROVIDED BY THE OWNER FOR THE FOLLOWING ITEMS:
 - CONCRETE CONSTRUCTION (BC 1704.4, TABLE 1704.4)
 - MATERIALS (BC 1704.4.1)
 - SOILS (BC 1704.7, TABLE 1704.7)

THE TESTING AGENCY FOR THE INSPECTIONS SHALL FILE ALL APPROPRIATE FORMS WITH THE BUILDING DEPARTMENT.

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REV DATE ISSUED FOR

GENERAL NOTES

DATE: 1/27/2012
SCALE: AS NOTED

DWS. No. S-200