GENERAL NOTES

1.1 DESIGN LOADS

A. THE STRUCTURE WAS DESIGNED FOR THE LIVE LOADS SHOWN BELOW AND DEAD LOADS AS REQUIRED BY CONSTRUCTION IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE, 2012 (I.B.C. 2012).

B. LOADS DUE TO SNOW LOAD DRIFT WERE CONSIDERED IN DESIGN OF STRUCTURAL COMPONENTS ADJACENT TO PARAPETS, HIGH BUILDING WALLS, ETC. INCREASE IN THESE LOADINGS, DUE TO CHANGE IN FUNCTION, CONSTRUCTION MATERIALS, ETC., TO HAVE WRITTEN APPROVAL FROM THE DESIGNING STRUCTURAL ENGINEER.

C. THE BASIC STABILITY OF THE STRUCTURE IS DEPENDENT UPON THE DIAPHRAGM ACTION OF FLOORS, WALLS, AND ROOF ACTING TOGETHER. PROVIDE GUYS, BRACES, STRUTS, ETC., TO ACCOMMODATE LIVE, DEAD, AND WIND LOADS UNTIL FINAL CONNECTIONS BETWEEN THESE ELEMENTS ARE MADE.

D. MECHANICAL UNITS WITH WEIGHTS SHOWN IN PLAN AND SUPPORTED BY THE STRUCTURE WERE CONSIDERED IN THE DESIGN OF THE STRUCTURE. ADDITIONAL MECHANICAL EQUIPMENT NOT SHOWN ON STRUCTURAL DRAWINGS AND HAVING A WEIGHT IN EXCESS OF 200 POUNDS SHALL BE BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER PRIOR TO INSTALLATION.

E. LIVE LOADS SHOWN BELOW ARE IN POUNDS PER SQUARE FOOT (PSF).

ROOF LIVE LOAD: 20

ROOF CONCENTRATED LOAD: 300

LIGHT MACHINERY LOADS INCREASED BY 20%

FLOOR LIVE LOAD: 100

SNOW LOAD IMPORTANCE FACTOR: 1

SNOW EXPOSURE FACTOR (Ce): 1

THERMO FACTOR (Ct): 1

GROUND SNOW LOAD (Pg): 15

FLAT ROOF SNOW LOAD (Pf): 10.5

F. WIND CRITERIA:

RISK CATEGORY: II

EXPOSURE CATEGORY: B

ULTIMATE DESIGN WIND SPEED (Vult): 115 MPH

NOMINAL DESIGN WIND SPEED (Vasd): 90 MPH

WIND IMPORTANCE FACTOR (Iw): 1

MAIN WIND FORCE SYSTEM EXPOSURE CATEGORY: B

INTERNAL PRESSURE COEFFICIENT: +/- 0.18

MEAN ROOF HEIGHT: 14.5 FT

1.5 SUBMITTALS

A. BEFORE SUBMISSION OF SHOP DRAWINGS, CONTRACTOR SHALL HAVE DETERMINED AND VERIFIED QUANTITIES, DIMENSIONS, SPECIFIED PERFORMANCE CRITERIA, INSTALLATION REQUIREMENTS, MATERIALS, CATALOG NUMBERS, AND SIMILAR DATA WITH RESPECT THERETO AND REVIEWED OR COORDINATED EACH SHOP DRAWING WITH OTHER SHOP DRAWINGS AND SAMPLES AND WITH THE REQUIREMENTS OF THE WORK AND THE CONTRACT DOCUMENTS.

B. AFTER CHECKING AND VERIFYING COMPLIANCE WITH CONTRACT DOCUMENTS AND ACTUAL FIELD CONDITIONS, CONTRACTOR SHALL SUBMIT, FOR REVIEW, SHOP DRAWINGS REFERENCED IN THE INDIVIDUAL MATERIALS SECTIONS. CONTRACTOR SHALL STAMP OR PROVIDE A SIMILAR WRITTEN INDICATION THAT CONTRACTOR HAS REVIEWED THE SUBMISSION AND IS SATISFIED THAT MATERIALS SHOWN ARE IN COMPLIANCE WITH THE CONTRACT DOCUMENTS.

C. A REVIEW PERIOD OF 5 WORKING DAYS WILL BE REQUIRED FOR SHOP DRAWING REVIEW OF EACH UNIT TYPE. SHOP DRAWINGS WILL BE FORWARDED TO ARCHITECT OR CLIENT FOR THEIR REVIEW BEFORE RETURNING TO THE CONTRACTOR.

2.3 FOUNDATIONS

A. IT IS RECOMMENDED THAT THE SITE BE INSPECTED BY A PROFESSIONAL GEOTECHNICAL ENGINEER REGISTERED IN THE JURISDICTION OF THE PROJECT.

B. INSTALL INTERIOR FOOTING BOTTOMS 1'-0" MINIMUM BELOW EXISTING GRADE OR COMPACTED FILL, WHICHEVER IS HIGHER.

C. INSTALL EXTERIOR FOOTING BOTTOMS 1'-6" MINIMUM BELOW FINISH GRADE.

D. FOUNDATION WALLS ARE DEPENDENT UPON THE COMPLETED INSTALLATION OF FLOORS AND ROOFS FOR THEIR STABILITY. DO NOT PLACE BACKFILL UNTIL THESE ELEMENTS ARE COMPLETELY INSTALLED, OR PROVIDE SHORING AND BRACING.

E. COMPACT FILL AND BACKFILL TO 95% OF ASTM D-698. PERFORM FILL AND BACKFILL OPERATIONS UNDER THE DIRECT SUPERVISION OF THE GEOTECHNICAL ENGINEER.

F. AFTER SITE HAS BEEN STRIPPED OF ALL TOPSOIL AND OTHER UNSUITABLE MATERIALS THE ENTIRE SITE SHALL BE PROOFROLLED AS DETERMINED BY THE GEOTECHNICAL ENGINEER. ALL "SOFT" SPOTS OR OTHER UNSUITABLE MATERIALS SHALL BE REMOVED TO EXTENT DETERMINED BY THE GEOTECHNICAL ENGINEER AND REPLACED WITH CONTROLLED FILL MATERIALS.

G. PRIOR TO POURING CONCRETE, ENGAGE THE SERVICES OF A PROFESSIONAL GEOTECHNICAL ENGINEER (REGISTERED IN THE JURISDICTION WHERE THE PROJECT IS LOCATED) TO PERFORM TESTS, BORINGS, ETC., REQUIRED TO CERTIFY THAT THE SOIL BEARING CAPACITY MEETS OR EXCEEDS THAT SHOWN IN THE GENERAL NOTES ABOVE. GEOTECHNICAL ENGINEER SHALL VERIFY SUBGRADE CAPACITIES PRIOR TO INSTALLATION OF DRAINAGE FILL AND MOISTURE BARRIER.

3.1 CONCRETE

A. UNLESS GOVERNED BY BUILDING CODE OR LOCAL AMENDMENTS: CONCRETE WORK INCLUDING FORMING, MIXING, PLACING AND CURING SHALL BE IN ACCORDANCE WITH ACI 301. WHEN THERE IS A CONFLICT, THE MOST STRINGENT IS TO APPLY.

B. SUBMIT COMPLETE SHOP AND ERECTION DRAWINGS FOR REVIEW PRIOR TO FABRICATION OR ERECTION. REPRINTS OF CONTRACT DRAWINGS ARE NOT ACCEPTABLE. SUBMIT DESIGN MIXES FOR EACH CLASS OF CONCRETE PRIOR TO USE.

C. CONCRETE REINFORCING: ASTM A-615, GRADE 60.

D. WELDED WIRE REINFORCEMENT: ASTM A-185.

E. PORTLAND CEMENT: ASTM C-150, TYPE I.

F. BLENDED HYDRAULIC CEMENT: ASTM C-595.

G. AGGREGATE: ASTM C-33. 1" MAXIMUM FOR FOOTINGS, WALLS AND SLABS ON GRADE, 1/2" MAXIMUM FOR THINS SLABS AND FILL FOR WALL FILL.

H. CONCRETE SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH OF: 3,000 PSI.

I. EXTERIOR CONCRETE TO BE AIR ENTRAINED AND SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH OF: 3,000 PSI.

J. WATER CEMENT RATIO NOT TO EXCEED 0.54 FOR 3,000 PSI CONCRETE AND 0.45 FOR AIR ENTRAINED CONCRETE.

K. INSTALL WELDED WIRE REINFORCEMENT 2" BELOW UPPER SURFACE OF CONCRETE SLAB.

L. REINFORCING FOR FOOTINGS AND OTHER CONCRETE USING EARTH FORMS SHALL HAVE 3" CONCRETE COVER. REINFORCING FOR CONCRETE EXPOSED TO GROUND OR WEATHER AFTER REMOVAL OF FORMS SHALL HAVE 2" CONCRETE COVER. REINFORCING SHALL HAVE ¾" CONCRETE COVER FOR SLABS AND WALLS AND 1½" FOR BEAMS, GIRDERS, AND COLUMNS.

M. LAP CONTINUOUS FOOTING REINFORCING 44 BAR DIAMETERS AT SPLICES.

N. USE A WATER REDUCING ADMIXTURE IN ALL CONCRETE.

O. USE A MINIMUM OF 5 ½ BAGS OF CEMENT AND A MAXIMUM OF 6 ½ GALLONS OF WATER PER BAG FOR EACH CUBIC YARD OF CONCRETE. USE OF "CEMENT SUBSTITUTES" SUCH AS SLAG OR FLY ASH SHALL NOT BE PERMITTED WITHOUT PRIOR APPROVAL FROM THE STRUCTURAL ENGINEER. THE USE OF CEMENT SUBSTITUTES WILL ONLY BE PERMITTED DURING SPECIFIC SEASONS. DURING COLD WEATHER, AS DEFINED BY ACI, NO FLY ASH WILL BE PERMITTED FOR USE. THE AMOUNT OF FLY ASH PERMITTED IN THE MIX DESIGN WILL BE LIMITED TO 25% BY WEIGHT OF THE TOTAL AMOUNT OF CEMENT IN THE MIX. THE AMOUNT OF SLAG PERMITTED IN THE MIX DESIGN WILL BE LIMITED TO 50% BY WEIGHT OF THE TOTAL AMOUNT OF CEMENT IN THE MIX. WHERE A COMBINATION OF CEMENT SUBSTITUTES IS USED, THE MAXIMUM AMOUNT OF FLY ASH PERMITTED IN THE MIX DESIGN WILL BE LIMITED TO 15% BY WEIGHT OF THE TOTAL AMOUNT OF CEMENT IN THE MIX, AND THE REMAINDER OF SLAG WHEN ADDED TO THE FLY ASH SHALL NOT EXCEED 50% BY WEIGHT OF THE TOTAL AMOUNT OF CEMENT IN THE MIX.

P. SLUMP - AS REQUIRED BY ACI (211), EXCEPT THAT SLABS-ON-GRADE AND THIN-FRAMED SLABS SHALL HAVE A MAXIMUM SLUMP OF 4". SHOULD EXTRA WATER BE REQUIRED BEFORE DEPOSITING CONCRETE AND WATER/CEMENT RATIO OF ACCEPTED MIX DESIGN HAS NOT BEEN EXCEEDED, GENERAL CONTRACTOR'S SUPERINTENDENT SHALL HAVE SOLE AUTHORITY TO AUTHORIZE ADDITION OF WATER. ANY ADDITIONAL WATER ADDED TO MIX AFTER LEAVING BATCH PLANT SHALL BE INDICATED ON THE TRUCK TICKET AND SIGNED BY PERSON RESPONSIBLE. SUBMIT COPY OF TRUCK TICKET FOR REVIEW.

Q. AIR ENTRAIN EXTERIOR EXPOSED CONCRETE 5% +/- 1%.

R. NO CALCIUM CHLORIDE WILL BE PERMITTED IN CONCRETE.

S. ENGAGE THE SERVICES OF A TESTING AGENCY APPROVED BY THE ARCHITECT TO PERFORM TESTS OF CONCRETE. TAKE A MINIMUM OF 5 CYLINDERS FOR EACH CLASS OF CONCRETE POURED IN ANY ONE DAY. PERFORM 1 SLUMP TEST PER TRUCK LOAD OF CONCRETE.

T. PROVIDE TWO COMPRESSION TESTS AT 7 DAYS, TWO AT 28 DAYS, AND RETAIN ONE TEST FOR ADDITIONAL TESTING AS REQUIRED. COMPRESSIVE STRENGTH OF CONCRETE AT 7 DAYS TO ACHIEVE AT LEAST 65% OF MINIMUM DESIGN STRENGTH.

3.4 EXPANSION BOLTS & POWER ACTUATED FASTENERS

A. SUBMIT TO ENGINEER COMPLETE MANUFACTURER'S TYPE AND CAPACITY DATA FOR ALL ANCHORS PRIOR TO INSTALLATION.

6.1 WOOD FRAMING

A. WOOD FRAMING AND FASTENERS - COMPLY WITH THE RECOMMENDATIONS OF THE AMERICAN FOREST AND PAPER ASSOCIATION (FORMERLY THE NATIONAL FOREST PRODUCTS ASSOCIATION).

B. PLYWOOD - AMERICAN PLYWOOD ASSOC. GRADE TRADE MAKED MEETING THE REQUIREMENTS OF THE LATEST EDITION OF U.S. PRODUCT STANDARD PS-1.

C. PANEL THICKNESS AND IDENTIFICATION INDEX SHALL BE AT LEAST EQUAL TO THAT SHOWN ON THE DRAWINGS. INSTALL AND CONNECT IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE AMERICAN PLYWOOD ASSOCIATION.

D. ATTACH PLYWOOD FLOOR SHEATHING USING GLUE AND NAILS.

E. UNLESS OTHERWISE NOTED ON DRAWINGS, ATTACH PLYWOOD TO FRAMING WITH MIN. 8d NAILS AT 4" O/C ON EDGES OF SHEET AND 12" O/C ON EACH INTERIOR SUPPORT.

F. FOR PLYWOOD ½" IN THICKNESS AND LESS, USE H CLIPS AT MIDPOINT FOR SPANS GREATER THAN 16"O.C. FOR PLYWOOD 5/8" AND THICKER, USE TONGUE AND GROOVE EDGES OR H CLIPS AT MIDPOINT FOR SPANS GREATER THAN 16" O.C. FOR 48" SPANS, PROVIDE 2-H CLIPS AT 1/3 POINTS OF SPAN OR PROVIDE TONGUE AND GROOVE PLYWOOD.

G. STRUCTURAL LUMBER (2"-4" THICK, INCLUDING STUDS) - SPRUCE-PINE-FIR NO. 1/NO. 2, OR BETTER WITH 19% MAXIMUM MOISTURE CONTENT IN USE AND SHALL HAVE THE FOLLOWING MINIMUM UNFACTORED PROPERTIES:

E = 1,400,000 PSI fc = 425 PSI

Fb = 875 PSI ft = 450 PSI

fc (PARALLEL TO GRAIN) = 1,150 PSI fv = 135 PSI

STRUCTURAL TIMBER (5"X5" AND LARGER) - SPRUCE-PINE-FIR NO. 1/NO. 2, OR BETTER WITH 19% MAXIMUM MOISTURE CONTENT IN USE AND SHALL HAVE THE FOLLOWING MINIMUM UNFACTORED PROPERTIES:

E = 1,400,000 PSI fc = 425 PSI

Fb = 875 PSI ft = 450 PSI

fc (PARALLEL TO GRAIN) = 1,150 PSI fv = 135 PSI

H. PRESSURE TREATED LUMBER - SOUTHERN PINE #2 WITH THE FOLLOWING RETENTION LEVELS: FOR ABOVE GROUND USE - 0.4 PCF FOR PROCESSES USING ACQ AND CBA-A, 0.2 FOR PROCESS USING CA-B.

I. ATTACH MULTIPLE MEMBERS TOGETHER AS FOLLOWS:

2-2X: 2 ROWS OF 16d NAILS @ 16" O/C

TOP LOADED 3-2X: 2 ROWS OF 16d NAILS @ 16" O/C

SIDE LOADED 3-2X6 AND 3-2X8: 2 ROWS OF 16d NAILS @ 12" O/C

SIDE LOADED 3-2X10 AND 3-2X12: 3 ROWS OF 16d NAILS @ 12" O/C

4-2X12: 2 ROWS OF 1/2" DIAMETER BOLTS @ 24" O/C

J. PROVIDE FLUSH FRAMED JOISTS AND HEADERS WITH 2 PIECE PREFABRICATED GALVANIZED (SADDLE TYPE) METAL CONNECTORS UNLESS NOTED OTHERWISE. HANGERS SHALL BE 18 GAGE MINIMUM THICK AND HAVE CAPACITY TO RESIST 400 LBS MINIMUM FOR EACH 2X MEMBER IN SHEAR FOR THE SPECIES OF WOOD USED.

K. BRIDGING FOR WOOD JOISTS (ROOF AND FLOOR) TO BE DIAGONAL WOOD SPACED AS FOLLOWS:

SPANS OVER 8'-0" ONE ROW

SPANS OVER 15'-0" TWO ROWS

PROVIDE STUD BEARING WALLS WITH 2 CONTINUOUS TOP PLATES AND 1 CONTINUOUS BOTTOM PLATE PLUS A MINIMUM OF ONE ROW OF HORIZONTAL BRIDGING AT MID HEIGHT OF WALL UNLESS NOTED OTHERWISE.

M. EXPOSED STRUCTURAL FRAMING MEMBERS IN ABOVE GROUND USE AND WOOD PLATES IN CONTACT WITH SLABS ON GRADE TO BE PRESSURE TREATED LUMBER. TREAT WOOD WITH A WATERBORNE PRESERVATIVE MATERIAL WITH ONE OF THE FOLLOWING: ALKALINE COPPER QUAT (ACQ) TYPES B OR D, OR COPPER AZOLE (CBA-A, CA-B).

N. STEEL MATERIALS IN CONTACT WITH PRESSURE TREATED LUMBER TO BE HOT DIPPED GALVANIZED. MINIMUM GALVANIZED COATING FOR PREFABRICATED METAL CONNECTORS TO BE G-185 PER ASTM A-653. CONNECTORS, HOT DIPPED GALVANIZED AFTER FABRICATION, IN ACCORDANCE WITH ASTM A-123. FASTENERS HOT DIPPED GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH STM A-153. MECHANICALLY GALVANIZED FASTENERS IN ACCORDANCE WITH ASTM B-695, CLASS 55.

O. PROVIDE SOLID (CONTINUOUS) BRIDGING AT BEARING POINTS.

P. HURRICANE TIES: CONNECT ROOF JOISTS AT EACH BEARING POINT WITH PREFABRICATED GALVANIZED METAL CONNECTORS UNLESS OTHERWISE NOTED. EACH CONNECTOR SHALL BE 18 GAGE MINIMUM THICK AND SHALL HAVE THE MINIMUM UPLIFT AND SHEAR CAPACITY NOT LESS THAN 350# UPLIFT AND 150# SHEAR (EQUIVALENT TO 2 - H4 SIMPSON, INC. ANCHORS) FOR THE SPECIES OF WOOD USED.

Q. INSTALL DOUBLE STUD EACH END OF WOOD BEAMS, UNLESS NOTED OTHERWISE.

R. ATTACH WOOD BLOCKING, NAILERS, ETC., TO STEEL OR CONCRETE FRAMING WITH POWER ACTUATED FASTENERS UNLESS NOTED OTHERWISE. SPACE FASTENERS AT 2'-0" MAXIMUM O/C STAGGERED. MINIMUM CAPACITY OF EACH FASTENER SHALL BE 100 POUNDS IN SHEAR AND PULLOUT, UNLESS NOTED OTHERWISE.

S. EXTERIOR WALL SHEATHING - MINIMUM 1/2" THICK PLYWOOD WITH PANEL ID 24/0 ATTACHED TO EACH STUD WITH 8d NAILS 6" ON CENTER AT PANEL PERIMETER AND 12" ON CENTER AT INTERIOR PANEL SUPPORTS. EXCEPT ALL WALLS LESS THAN 6'-0" IN LENGTH SHALL HAVE SHEATHING ATTACHED TO EACH STUD WITH SIMPSON STRONG DRIVE FASTENERS 4" ON CENTER AT PANEL PERIMETER AND 6" ON CENTER AT INTERIOR PANEL SUPPORTS. PROVIDE HORIZONTAL (2) 2x6 BLOCKING BETWEEN STUDS AT ALL PANEL JOINTS AT WALLS LESS THAN 6'-0" IN LENGTH. THESE SHEARWALLS LESS THAN 6'0" IN LENGTH SHALL HAVE 2 ROWS OF SIMPSON STRONG DRIVE FASTENERS WITH STAGGERED SCREWS AT THE PERIMETER STUDS/POSTS. A MINIMUM SEPARATION OF 1-1/2" CENTER TO CENTER SHALL BE PROVIDED BETWEEN ADJACENT ROWS OF SCREWS.

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ARCHITECT OF RECORD
JAMES D. SMITH, AIA
522 BAY LN.
CENTERVILLE, MA 02632

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DWG TITLE:

GENERAL NOTES

SHEET No.
S-4