EASLEY RESIDENCE

FAUQUIER COUNTY, VA

1. GENERAL

A. ALL CONSTRUCTION SHALL BE IN COMPLIANCE WITH THE PROVISIONS OF THE 2000 INTERNATIONAL BUILDING CODE & LOCAL COUNTY REQUIREMENTS

B. DESIGN LOADS (PSF):

LOCATIONS	LIVE LOAD TC	LIVE LOAD BC	DEAD LOAD TC	DEAD LOAD BC	TOTAL LOAD TC	TOTAL LOAD BC	TOTAL LOAD
ROOF RAFTERS:	30	N/A	7	5	37	5	42
ROOF TRUSSES:	20	10	7	10	37	20	57
LIVING UNITS:	40	--	15	5	55	5	60
PRIVATE DECKS < 100SQ FT	40	--	10	--	50	--	50
CORRIDORS:	100	--	15	5	115	5	120
EXIT STAIRS LANDINGS	100	--	15	5	115	5	120
LIGHT STORAGE	125	--	15	5	140	5	145

SNOW LOADS: GROUND SNOW LOAD (Pg) = 30 PSF
ASCE 7-98 EXPOSURE FACTOR (Ce) = 0.9 (TABLE 7-2, TERRAIN B)
THERMAL FACTOR (Ct) = 1.1 (TABLE 7-3)
IMPORTANCE FACTOR (I) = 1.00 (TABLE 7-4)
ROOF SLOPE FACTOR (Cs) = 1.0 WITH ROOF PITCH < 8:12
(SEE 7-36, Fig. 7-2)
FLAT ROOF SNOW LOAD (Pf=0.7 Ce Ct I Pg), 21 PSF
SLOPED ROOF SNOW LOAD (Ps=Cs Pf) >21 PSF

WIND LOAD: WIND LOADS ARE EVALUATED IN ACCORDANCE WITH PROVISIONS OF SECTION 1609 OF THE 2000 INTERNATIONAL BUILDING CODE BASED ON THE FOLLOWING PARAMETERS:
- BASIC WIND SPEED 90 MPH (3-SECOND GUST WIND SPEED)
- WIND LOAD IMPORTANCE FACTOR: 1.0
- WIND EXPOSURE CATEGORY: EXPOSURE B

EARTHQUAKE LOADS: EARTHQUAKE LOADS ARE EVALUATED IN ACCORDANCE WITH PROVISIONS OF SECTION 1613 OF THE 2000 INTERNATIONAL BUILDING CODE BASED ON THE FOLLOWING PARAMETERS:
- MAX. EARTHQUAKE SPECTRAL RESPONSE ACCELERATION AT SHORT PERIODS, S_a = 0.2g
- MAX. EARTHQUAKE SPECTRAL RESPONSE ACCELERATION AT 1 SECOND, S_1 = 0.06g
- SITE CLASS = C
- EARTHQUAKE LOAD IMPORTANCE FACTOR: 1.00
- MAX. CONSIDERED EARTHQUAKE SPECTRAL RESPONSE ACCELERATION AT SHORT PERIODS, S_{ms} = 0.24g
- MAX. CONSIDERED EARTHQUAKE SPECTRAL RESPONSE ACCELERATION AT 1 SECOND, S = 0.136g

C. THE STRUCTURAL INTEGRITY OF THE BUILDING IS DEPENDENT UPON COMPLETION ACCORDING TO THE PLANS AND SPECIFICATIONS. THE STRUCTURAL ENGINEER OF RECORD ASSUMES NO LIABILITY FOR THE STRUCTURE DURING CONSTRUCTION. THE METHOD OF CONSTRUCTION AND SEQUENCE OF OPERATIONS IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL SUPPLY ANY NECESSARY BRACING, GUYS, ETC. TO PROPERLY BRACE THE STRUCTURE AGAINST WIND, DEAD AND LIVE LOADS UNTIL THE BUILDING IS COMPLETED ACCORDING TO THE PLANS AND SPECIFICATIONS. ANY QUESTIONS REGARDING TEMPORARY BRACING REQUIREMENTS SHOULD BE FORWARDED TO A STRUCTURAL ENGINEER FOR REVIEW.

D. SHOP DRAWINGS FOR ALL STRUCTURAL ELEMENTS SHOWN ON THE CONTRACT DOCUMENTS MUST BE SUBMITTED BY THE GENERAL CONTRACTOR AND REVIEWED BY THE ENGINEER. SHOULD THE OWNER OR GENERAL CONTRACTOR FAIL TO OBTAIN THE STRUCTURAL ENGINEER'S REVIEW OF THE SHOP DRAWINGS, THE STRUCTURAL ENGINEER WILL NOT ACCEPT RESPONSIBILITY FOR THE DESIGN AND CERTIFICATION OF THIS PROJECT. PRIOR TO SUBMISSION OF SHOP DRAWINGS, THE CONTRACTOR SHALL REVIEW SHOP DRAWINGS FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS. SHOP DRAWINGS SHALL NOT BE ISSUED PRIOR TO FINAL CONSTRUCTION SET.

E. CONTRACTOR SHALL SUBMIT A MINIMUM OF THREE (3) COPIES OF SHOP DRAWINGS FOR THE FOLLOWING STRUCTURAL ITEMS:

ROOF AND FLOOR TRUSSES, CONCRETE MIX DESIGN, BRICK ANCHOR AND TIES, AND STAIR, GUARD, AND HANDRAIL DESIGN INCLUDING CONNECTIONS. SEE SECTION B.

F. DO NOT FABRICATE PRIOR TO SHOP DRAWING REVIEW. REVIEW IS LIMITED TO CONFORMANCE WITH THE DESIGN CONCEPT. ALL DIMENSIONS SHALL BE VERIFIED BY THE CONTRACTOR FOR COMPATIBILITY OF ARCHITECTURAL AND STRUCTURAL REQUIREMENTS. NOTIFY ARCHITECT OR ENGINEER OF ANY CONFLICTS PRIOR TO FABRICATION.

G. MECHANICAL UNITS AND ANY OTHER EQUIPMENT SUPPORTED BY THE STRUCTURE WITH WEIGHTS IN EXCESS OF 200 LBS. SHALL BE BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER PRIOR TO INSTALLATION.

H. CONTRACTOR SHALL REVIEW AND VERIFY ALL FIELD CONDITIONS, DIMENSIONS AND CONTRACT DOCUMENTS PRIOR TO COMMENCING WORK AND SHALL NOTIFY THE ARCHITECT OR ENGINEER OF ANY DISCREPANCIES OR OMISSIONS BEFORE PROCEEDING WITH WORK.

2. EARTHWORK

A. ALL EXCAVATION, SUBGRADE PREPARATION, AND OTHER EARTHWORK SHALL BE PERFORMED IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEERING REPORT BY _____ DATED _____ AND ANY SUPPLEMENTAL CORRESPONDANCE. GEOTECHNICAL RECOMMENDATIONS SHALL TAKE PRECEDENCE OVER THE ITEMS THAT FOLLOW IN THIS SECTION OF THE STRUCTURAL NOTES.

B. THE FOUNDATION HAS BEEN DESIGNED FOR AN ALLOWABLE BEARING PRESSURE OF _____ PSF FOR ORIGINAL UNDISTURBED SOILS AND COMPACTED FILL. THE FOOTING SUBGRADES SHALL BE VERIFIED FOR BEARING REQUIREMENTS BY A GEOTECHNICAL ENGINEER JUST PRIOR TO THE PLACEMENT OF CONCRETE. FOOTING EXCAVATIONS SHALL HAVE THE SIDES AND BOTTOMS CLEANED AND HAND TAMPED TO A UNIFORM SURFACE.

C. ALL FOOTINGS SHALL PROJECT AT LEAST 1'-0" INTO UNDISTURBED NATURAL SOIL OR COMPACTED STRUCTURAL FILL. BOTTOMS OF ALL EXTERIOR FOOTINGS SHALL BE AT LEAST _'-__" BELOW FINISHED GRADE. ALL BEARING STRATA SHALL BE ADEQUATELY DRAINED BEFORE FOUNDATION CONCRETE IS PLACED. NO EXCAVATION SHALL BE CLOSER THAN AT A SLOPE OF 2:1 (TWO HORIZONTAL TO ONE VERTICAL) TO A FOOTING. DO NOT PLACE CONCRETE OVER FROZEN SOIL. FOOTINGS SHALL NOT BE FOUNDED ON EXISTING FILL, LOOSE OR WET SOIL. STEP FOOTINGS WITH A RATIO OF 2 HORIZONTAL TO 1 VERTICAL.

D. PRIOR TO THE START OF ANY CONSTRUCTION, ALL VEGETATION, TOPSOIL, ORGANIC SOILS, SOIL MIXED WITH EXCESSIVE AMOUNTS OF ROOTS, STUMPS, ASPHALT OR OTHER DELETERIOUS MATERIALS, BUILDING DEBRIS, EXISTING UTILITY LINES AND BACKFILL SHALL BE REMOVED FROM ALL BUILDING AND PAVEMENT AREAS INCLUDING AT LEAST 5 FT OFFSETS OUTSIDE ALL BUILDING AND PAVEMENT LINES. SOFT, VERY WET AND LOOSE SOILS SHALL ALSO BE REMOVED FROM BUILDING AREAS. THE CLEARED AREAS SHALL ALSO BE PROOFROLLED PRIOR TO THE PLACEMENT OF FILL. PROOFROLLING SHALL BE CARRIED OUT IN THE PRESENCE OF A GEOTECHNICAL ENGINEER. IF PUMPING OR RUTTING IS OBSERVED, THE SOFT OR WET MATERIAL SHALL BE REMOVED DOWN TO FIRM SUBGRADE AND REPLACED WITH SUITABLE FILL. ALL POTENTIALLY EXPANSIVE CLAY (CL-CH) SOILS BELOW FOOTINGS AND FOR AT LEAST 2 FT BELOW SLABS AND PAVEMENTS SHALL BE REMOVED AND REPLACED WITH SUITABLE FILL MATERIALS. SEE GEOTECHNICAL REPORT FOR ADDITIONAL REQUIREMENTS.

E. CONTRACTOR TO PROVIDE A DE-WATERING SYSTEM (IF REQUIRED) TO PREVENT SOFTENING OF SUBGRADE, FACILITATE CONTROL OF GROUND-WATER AND ALLOW CONSTRUCTION IN DRY CONDITIONS. NO EXCAVATION SHALL EXTEND CLOSER THAN 2 FT TO GROUNDWATER LEVEL. IF THE SOIL AT THE SUBGRADE BECOMES WET, THEN CONSTRUCTION SHOULD BE STOPPED AND DE-WATERING MUST BE PERFORMED TO LOWER THE WATER LEVEL. RESUME EXCAVATION ONLY AFTER THE GEOTECHNICAL ENGINEER HAS EXAMINED THE CONDITION AND HAS APPROVED THE RESTART OF ANY EXCAVATION WORK.

3. CONCRETE

A. ALL CONCRETE SHALL BE MIXED AND PLACED IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE (ACI) "BUILDING CODE REQUIREMENTS AMERICAN CONCRETE INSTITUTE (ACI) "BUILDING CODE REQUIREMENTS ACCORDANCE WITH SECTION 1905 "CONCRETE QUALITY, MIXING AND PLACING" AND TABLE 1904.2.2(2) OF THE 2000 INTERNATIONAL BUILDING CODE. TEST CYLINDERS SHALL BE TAKEN FROM EACH CONCRETE POUR IN ACCORDANCE WITH THE ACI CODE. CONTRACTOR SHALL SUBMIT VERIFICATION OF PROPOSED CONCRETE MIX DESIGN PRIOR TO PLACEMENT.

MINIMUM SPECIFIED COMPRESSIVE STRENGTH F'_c, TABLE 1904.2.2 (2)		
TYPE OR LOATION OF CONCRETE CONSTRUCTION	MIN. COMP. STRENGTH F'c @ 28 DAYS FOR SEVERE EXPOSURE	MIN. SLUMP
BASEMENT WALLS AND FOUNDATIONS NOT EXPOSED TO WEATHER, BASEMENT SLABS AND INTERIOR SLABS ON GRADE, EXCEPT GARAGE FLOOR SLABS	2500 PSI[1]	4 ± 1
BASEMENT WALLS, FOUNDATION WALLS, EXTERIOR WALLS, AND OTHER VERTICAL CONCRETE SURFACES EXPOSED TO THE WEATHER.	3000 PSI[2]	4 ± 1
DRIVEWAYS, CURBS, WALKS, PATIOS, PORCHES, STEPS AND OTHER FLATWORK EXPOSED TO THE WEATHER, AND GARAGE FLOOR SLABS.	3500 PSI[2]	4 ± 1

NOTES: 1. CONCRETE IN THESE LOCATIONS WHICH CAN BE SUBJECTED TO FREEZING AND THAWING DURING CONSTRUCTION SHALL BE OF AIR-ENTRAINED CONCRETE.
2. CONCRETE SHALL BE AIR-ENTRAINED, IN ACCORDANCE W/ TABLE 1904.2.1

AIR-ENTRAINMENT: ALL CONCRETE SUBJECTED TO SEVERE WEATHERING POTENTIAL SHALL BE AIR-ENTRAINED AS FOLLOWS:

AGGREGATE SIZE	AIR-ENTRAINMENT %
3/8"	7.5
1/2"	7.0
3/4"	6.0

AGGREGATE SHALL CONFORM TO ASTM C33 AND MAY RANGE FROM 3/8" TO 3/4" IN SIZE.

B. MIXING, TRANSPORTING, AND PLACEMENT OF CONCRETE SHALL CONFORM TO ACI 301.

C. HIGH STRENGTH GROUT SHALL BE NON-SHRINK, NON-METALLIC CONFORMING TO ASTM C 827 AND SHALL HAVE A COMPRESSIVE STRENGTH OF 5000 PSI AT 28 DAYS.

D. ALL REINFORCING STEEL SHALL BE HIGH STRENGTH NEW BILLET STEEL CONFORMING TO ASTM A-615, GRADE 60 (60,000 PSI). WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A-185. ALL REINFORCING SHALL BE DETAILED, FABRICATED, AND PLACED IN ACCORDANCE WITH THE ACI'S "MANUAL OF STANDARD PRACTICE FOR DETAILING CONCRETE STRUCTURES" (ACI-315). DETAILS OF REINFORCEMENT SHALL CONFORM TO ACI 318-95, ACI 315-74 AND CRSI STANDARDS.

E. CONCRETE PROTECTION FOR REINFORCEMENT: PROVIDE THE MINIMUM CLEARANCES (COVER) FOR REINFORCEMENT AS FOLLOWS:

FOOTINGS AND OTHER CONCRETE POURED AGAINST EARTH	3"
FORMED CONCRETE EXPOSED TO EARTH	2"
FORMED CONCRETE NOT EXPOSED TO WEATHER OR EARTH	1-1/2"
SLABS ON GROUND, UNLESS OTHERWISE NOTED	MID-DEPTH
ELEVATED SLAB NOT EXPOSED TO WEATHER OR EARTH	3/4"

F. SLABS ON GRADE SHALL BE 4" THICK CONCRETE AND REINFORCED WITH 6X6 W1.4XW1.4 WWF. LAP MESH 8" IN EACH DIRECTION. PLACE CONCRETE OVER 6 MIL POLYETHYLENE VAPOR BARRIER AND 4 INCHES MINIMUM OF FREE DRAINING COARSE AGGREGATE OR AS RECOMMENDED BY SOILS ENGINEER. THE AGGREGATE LAYER SHALL BE PLACED OVER FIRM NATURAL SUBGRADE OR ON COMPACTED AND CONTROLLED FILL. USE AIR ENTRAINMENT AT ALL EXTERIOR SLABS. PROVIDE CONTROL AND CONSTRUCTION JOINTS AT 30'-0" MAXIMUM OR AS REQUIRED TO PREVENT UNCONTROLLED CRACKING PER ACI RECOMMENDATIONS.

G. PROVIDE 3' X 3' CORNER AND "T" BARS TO MATCH ALL HORIZONTAL REINFORCING IN WALLS AND FOOTINGS. ALL LAPS SHALL BE A MINIMUM OF 30 BAR DIAMETERS. PROVIDE DOWELS BETWEEN ALL FOOTINGS, WALLS AND PIERS TO MATCH SIZE AND SPACING OF VERTICAL REINFORCING.

4A. BRICK VENEER

A. ALL BRICK VENEER CONSTRUCTION TO BE IN ACCORDANCE WITH ACI 530-99 "BUILDING CODE REQUIREMENTS FOR ENGINEERED BRICK MASONRY", THE BRICK INSTITUTE OF AMERICA AND 2000 IBC REQUIREMENTS.

VENEER BRICK_____ASTM C216, GRADE SW
MORTAR_____ASTM C270, TYPE S

B. BRICK VENEER WITH A MAXIMUM WEIGHT OF 40 PSF SHALL BE ANCHORED IN ACCORDANCE WITH ACI 530-99 SECTION 6.2.2.5. MAINTAIN A MINIMUM SPACING OF 1" BETWEEN THE INSIDE FACE OF VENEER AND OUTSIDE FACE OF SOLID SHEATHING.
-BRICK VENEER LESS THAN 30'-0" IN HEIGHT SHALL BE ANCHORED TO WOOD FRAMING WITH 7/8" x 7" LONG x 22 GAGE STANDARD CORRUGATED WALL TIES W/ A MAXIMUM SPACING OF 1" BETWEEN THE INSIDE FACE OF VENEER AND OUTSIDE FACE OF SOLID SHEATHING.
-BRICK VENEER WALLS TALLER THAN 30'-0" BUT NOT EXCEEDING 45'-0" IN HEIGHT, ANCHOR ENTIRE HEIGHT WITH "DW-10" SERIES VENEER ANCHORS BY HOHMANN AND BARNARD OR APPROVED EQUIVALENT ATTACHED TO WOOD STUDS WITH (2)#6 x 1¼" GALV. SCREWS PER ANCHOR. MAINTAIN A MAXIMUM SPACING OF 4⅓" BETWEEN THE INSIDE FACE OF VENEER AND OUTSIDE FACE OF SOLID SHEATHING.
-ALL TIES SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION CONFORMING TO ASTM A-153 CLASS B2. EMBED ALL ANCHORS IN THE MORTAR JOINT 1½"MIN W/ AT LEAST ⅝" COVER TO THE OUTSIDE FACE. SPACE ANCHORS TO PROVIDE AT LEAST ONE ANCHOR FOR EACH 2.67 SQ FT. OF WALL AREA W/ MAXIMUM SPACING OF ANCHORS AND TIES OF 16" O.C. VERTICAL AND 24" O.C. HORIZONTAL. PROVIDE ADDITIONAL ANCHORS AROUND ALL OPENINGS GREATER THAN 16" IN EITHER DIMENSION. SPACE ANCHORS AROUND PERIMETER OF OPENINGS AT A MAXIMUM OF 3'-0" ON CENTER. PLACE ANCHORS WITHIN 12" OF OPENING. PROVIDE WEEP HOLES SPACED HORIZONTALLY LESS THAN 33" O.C. BRICK VENEER SHALL BE DESIGNED & DETAILED BY THE ARCHITECT/CONTRACTOR TO ALLOW FOR DIFFERENTIAL MOVEMENT AT ALL FIXED OBJECTS WITHIN THE VENEER INCLUDING DOORS, WINDOWS, BEAMS, TRIM, ETC.

C. COORDINATE OPENINGS WITH LINTEL SCHEDULE.

4B. MASONRY

D. ALL MASONRY CONSTRUCTION TO BE IN ACCORDANCE WITH THE NATIONAL CONCRETE MASONRY ASSOCIATION'S STANDARD PRACTICES AND "SPECIFICATION FOR THE DESIGN AND CONSTRUCTION OF LOAD-BEARING CONCRETE MASONRY" OR ACI 531 "BUILDING CODE REQUIREMENTS FOR CONCRETE MASONRY CONSTRUCTION". ALL MASONRY TO CONFORM TO THE FOLLOWING SPECIFICATION

-HOLLOW LOAD-BEARING C.M.U.____ASTM C90
-SOLID LOAD-BEARING C.M.U.____ ASTM C145
-MORTAR_____ ASTM C270, TYPE M OR S

4B. MASONRY (CONT.)

E. CMU UNITS SHALL HAVE A MINIMUM COMPRESSION STRENGTH OF FM = 1500 PSI. CONTRACTOR SHALL PROVIDE SPECIAL TEST AND INSPECTION FOR THE LOCATION OF THE REINFORCEMENT AND DURING CONSTRUCTION OF CMU WALL.

F. JOINT REINFORCING: PROVIDE TRUSS TYPE ZINC COATED, COLD DRAWN STEEL WIRE CONFORMING TO ASTM A82 DUROWALL OR EQUIVALENT AT EVERY OTHER BLOCK COURSE ABOVE GRADE. REINFORCEMENT SHOULD CONSIST OF TWO OR MORE LONGITUDINAL WIRES NO. 9 GAUGE OR LARGER, WELD CONNECTED WITH NO. 12 GAUGE OR LARGER CROSS WIRES. ZINC COATING

G. GROUT OR PEA GRAVEL CONCRETE USED FOR FILLING UNIT CELLS OF MASONRY SHALL CONFORM TO ASTM C476 AND SHALL HAVE A COMPRESSIVE STRENGTH OF 2500 PSI ON THE NET AREA AT 28 DAYS.

5. WOOD

ALL FOLLOWING DESIGN VALUES ARE IN ACCORDANCE WITH REVISED NATIONAL DESIGN SPECIFICATIONS (NDS) SUPPLEMENT TO THE REVISED 1997 EDITION.

A. ALL JOISTS, HEADERS, BEAMS AND BUILT-UP COLUMNS TO BE MINIMUM SPF-NO.2 HAVING THE FOLLOWING MINIMUM PROPERTIES UNLESS NOTED OTHERWISE:

Fb = 875 PSI
Fc par = 425 PSI
Fv = 70 PSI
E = 1,400,000 PSI

B. EXTERIOR & INTERIOR BEARING WALL STUDS AND TOP & BOTTOM PLATES *** SHALL BE MINIMUM SPF NO.2 2X4'S HAVING THE FOLLOWING MINIMUM PROPERTIES UNLESS NOTED OTHERWISE:

Fb = 875 PSI
Fc par = 425 PSI
Fc per = 1150 PSI
Fv = 70 PSI
E = 1,400,000 PSI

* SEE WALL STUD SCHEDULE FOR SPACING
** NON-BEARING INTERIOR WALL STUDS MAY BE SPF-STUD GRADE 2X4 AT 24" O.C.
*** DOUBLE TOP PLATES WITH ROOF TRUSSES BEARING ABOVE ARE TO BE SOUTHERN YELLOW PINE #1, TYPICAL THROUGHOUT.

C. ALL 6X6 POSTS TO BE MINIMUM SP NO.2 AND SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:

Fb = 850 PSI
Fc par = 375 PSI
Fc per = 525 PSI
E = 1,200,000 PSI

D. ALL 8X8 POSTS TO BE DOUGLAS FIR-LARCH (NORTH) #2 HAVING THE FOLLOWING MINIMUM PROPERTIES.

Fb = 725 PSI
Fc par = 625 PSI
Fc per = 700 PSI
E = 1,300,000 PSI

E. ALL LUMBER USED IN EXTERIOR APPLICATIONS, INCLUDING BALCONY DECK BOARDS, LEDGER, JOISTS, BEAMS, AND SILL PLATES EXPOSED TO CONCRETE SHALL BE SOUTHERN PINE PRESSURE TREATED IN ACCORDANCE WITH AWPA C2 SPECIFICATIONS, HAVING THE FOLLOWING PROPERTIES:

Fc = 565 PSI
Fv = 90 PSI
E = 1,600,000 PSI
Fb = 1500 1250 1200 1050 975 PSI
2x4 2x6 2x8 2x10 2x12

ALL FASTENERS FOR PRESSURE TREATED WOOD SHALL BE OF HOT-DIPPED ZINC-COATED GALVANIZED, STAINLESS STEEL, OR OTHER CORROSION RESISTENT MATERIALS THAT ARE COMPATIBLE WITH THE PRESERVATIVE USED. CONTRACTOR TO VERIFY THE SUITABILITY OF CONNECTORS WITH THE MANUFACTURER AND THE GOVERNING JURISDICTION.

F. LVL's (LAMINATED VENEER LUMBER) SHALL BE 1-3/4" WIDE, OF THE DEPTH SPECIFIED ON THE PLANS, AND SHALL BE SECURED TOGETHER AS DIRECTED BY THE MANUFACTURER UNLESS NOTED OTHERWISE. THE FOLLOWING MINIMUM PROPERTIES SHALL APPLY:

Fb = 2600 PSI, FOR 12" DEPTH. FOR OTHERS, MULTIPLY BY: (d/12)^0.136
Fv = 285 PSI
Fcper= 750 PSI
E = 1,900,000 PSI

G. PSL's (PARALLEL STRAND LUMBER) SHALL BE OF THE WIDTH AND DEPTH SPECIFIED ON THE PLANS, AND SHALL BE SECURED TOGETHER AS DIRECTED BY THE MANUFACTURER UNLESS NOTED OTHERWISE. THE FOLLOWING MINIMUM PROPERTIES SHALL APPLY:

Fb = 2900 PSI, FOR 12" DEPTH. FOR OTHERS, MULTIPLY BY: (d/12)^0.111
Fv = 290 PSI
Fcper = 650 PSI
E = 2,000,000 PSI

H. ALL STUDS SHALL BE INSTALLED IN ACCORDANCE WITH NFPA (NATIONAL FOREST PRODUCTS ASSOCIATION) REQUIREMENTS. MEMBERS ARE NOT TO BE DRILLED IN EXCESS OF NDS OR LOCAL CODE REQUIREMENTS, WHICHEVER IS MORE STRINGENT. ALL POSTS AND STUDS SHALL STACK CONTINUOUSLY TO SOLID BEARING ON FOUNDATION WALLS OR BEAMS; PROVIDE SOLID BLOCKING AND OR CRIPPLES AS REQUIRED BETWEEN FLOORS.

I. SHEATHING: EACH PANEL SHALL BE IDENTIFIED WITH THE APPROPRIATE TRADEMARK OF THE AMERICAN PLYWOOD ASSOCIATION, AND SHALL MEET THE REQUIREMENTS OF APA PRP-108 PERFORMANCE STANDARDS. ALL PANELS WHICH HAVE ANY EDGE OR SURFACE PERMANENTLY EXPOSED TO THE WEATHER SHALL BE CLASSED EXTERIOR GRADE. PANEL THICKNESS, GRADE, AND GROUP NUMBER OR SPAN RATING SHALL BE AT LEAST EQUAL TO THAT SHOWN ON THE DRAWINGS. APPLICATION SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE AMERICAN PLYWOOD ASSOCIATION. ALL ADHESIVES SHALL CONFORM TO APA SPECIFICATION AFG-01 AND APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. LAP SHEATHING OVER WALL PLATES TO PREVENT UPLIFT.

J. ADD EXTRA FLOOR TRUSS UNDER FULL HEIGHT WALLS WHERE WALL EXTENDS MORE THAN HALF THE SPAN OF THE TRUSS.

K. FLOOR DECKING SHALL BE GLUED AND NAILED WITH RING SHANK NAILS AT 12" O.C. PER APA RECOMMENDATIONS FOR THE STURDI-FLOOR SYSTEM.

6. STEEL

A. STRUCTURAL STEEL W-SHAPES TO CONFORM TO ASTM A992 (FY = 50 KSI MIN.), STRUCTURAL STEEL M, S, HP, C, MC, AND L SHAPES TO CONFORM TO ASTM A36 (FY = 36 KSI). STRUCTURAL STEEL PIPE SHALL CONFORM TO ASTM A53 GR. B (FY = 35 KSI). ROUND HSS SHAPES W/ WALL THICKNESS LESS THAN OR EQUAL TO 0.625" TO CONFORM TO ASTM A500 GR. B (FY = 42 KSI) SQUARE AND RECTANGULAR HSS SHAPES TO CONFORM TO ASTM A500 GR. B (FY = 46 KSI) ALL STRUCTURAL PLATES SHALL CONFORM TO ASTM A36 (FY = 36 KSI)

B. WELDS SHALL COMPLY WITH AWS D1.1-98. WELDING ELECTRODE: E70XX

C. CONNECTIONS SHALL BE AISC STANDARD DESIGNED FOR REACTIONS SHOWN ON PLAN. IF NO REACTIONS ARE SHOWN ON PLAN, PROVIDE CONNECTION CAPABLE OF SUPPORTING 1/2 OF TOTAL UNIFORM LOAD CAPACITY OF THE BEAM. MINIMUM CONNECTION SHALL BE (2) 3/4" DIAMETER HIGH STRENGTH BOLTS MEETING ASTM A325.

D. PROVIDE STEEL BASE PLATE FOR ALL STRUCTURAL STEEL BEARING ON CONCRETE OR MASONRY

E. ADJUSTABLE STEEL COLUMNS SHALL MEET OR EXCEED ALLOWABLE LOADS GIVEN FOR CARDINAL MANUFACTURERS "TEL-O-POST". COLUMNS SHALL BE MINIMUM 11 GAUGE, ASTM A513 OR BETTER. COLUMNS SHALL BE CERTIFIED BY BOCA AND SHALL HAVE A MARK INDICATING THE BOCA RESEARCH REPORT NUMBER, THE MANUFACTURER'S NAME, AND DATE OF MANUFACTURE ON EACH COLUMN. COLUMNS SHALL HAVE A MINIMUM 6"X10"X1/4" BEARING PLATE AND SCREW JACK SHALL BE ENCASED IN CONCRETE OR TACK WELDED AFTER INSTALLATION. CAPACITY RATING SHOULD BE DESIGNATED ON COLUMN.

F. ANCHOR BOLTS FOR BEAM AND COLUMN BASE PLATES: ASTM A307, U.N.O. GROUT UNDER BASE PLATE SHALL BE NON-SHRINK, NON-METALLIC, F'C = 5000 PSI.

7. PRE-FABRICATED WOOD TRUSSES

A. WORK INCLUDED. FABRICATE, SUPPLY AND ERECT WOOD TRUSSES AS SHOWN ON THE DRAWINGS AND AS SPECIFIED. WORK TO INCLUDE ANCHORAGE, BLOCKING, CURBING, MISCELLANEOUS FRAMING AND BRACING.

B. TRUSSES SHALL BE DESIGNED IN ACCORDANCE WITH NDSO, AFPA, NDSMPCWTC, TPI, 2000 IBC AND THE FOLLOWING REQUIREMENTS:

BASIC WIND SPEED: 90 MPH (3 SECOND GUST)
IMPORTANCE FACTOR: 1.00
BUILDING SITED IN EXPOSURE B

TRUSS MEMBERS
COMPONENTS & CLADDING, EXPOSURE B CASE 1, INTERIOR ZONE 1

TRUSS UPLIFT REACTIONS
MAIN WINDFORCE-RESISTING SYSTEM
EXPOSURE B CASE 1, BASED ON WINDWARD OR LEEWARD ROOF (WHICHEVER IS GREATER)

C. MANUFACTURER SHALL FURNISH DESIGN DRAWINGS BEARING THE SEAL AND REGISTRATION NUMBER OF THE DESIGN PROFESSIONAL LISCENSED IN THE STATE WHERE TRUSSES ARE TO BE INSTALLED. DRAWINGS SHALL BE APPROVED BY ARCHITECT AND SER PRIOR TO FABRICATION.

D. INCLUDED IN THE MANUFACTURER DESIGN DRAWING PACKAGE SHALL BE SIGNED AND SEALED COPIES OF THE FOLLOWING ITEMS:
LETTER STATING THAT GOVERNING DESIGN CRITERIA HAS BEEN MET, TRUSS LAYOUT PLAN TO MATCH THE CONCEPT GENERATED ON THE STRUCTURAL DESIGN DRAWINGS, & INDIVIDUAL TRUSS PROFILES THAT SHOW CORRECT LOADING, SPACING, MAX. DEFLECTIONS, MEMBER FORCES, DIMENSIONS, LUMBER GRADE AND SPECIES, AND REACTION/UPLIFT FORCES.

E. LUMBER USED SHALL BE IDENTIFIED BY THE GRADE MARK OF A LUMBER INSPECTION BUREAU OR AGENCY APPROVED BY BOARD OF REVIEW OF THE AMERICAN LUMBER STANDARDS COMMITTEE.

F. CONNECTOR PLATES SHALL MEET OR EXCEED ASTM A446 STEEL.

G. TRUSSES SHALL BE FABRICATED IN COMPLIANCE WITH REQUIREMENTS IN NDSMPCWTC, TPI.

H. TRUSSES SHALL BE HANDLED DURING FABRICATION, DELIVERY AND AT JOB SITE SO AS NOT TO BE SUBJECTED TO EXCESSIVE LATERAL BENDING. ERECTION SHALL BE IN ACCORDANCE WITH HIB-91, TPI. TRUSSES MUST BE SET AND SECURED LEVEL AND PLUMB, AND IN CORRECT LOCATION. CUTTING AND ALTERING OF TRUSSES IS NOT PERMITTED.

I. BRACE TRUSSES SUFFICIENTLY DURING ERECTION TO PREVENT TOPPLING OR DOMINOING. INSTALL ALL BRACING BEFORE PLACING CONCENTRATED LOAD ATOP TRUSSES.

J. MANUFACTURER SHALL SUPPLY ALL REQUIRED HANGERS, HOLD DOWN STRAPS, SHEAR PANELS, CRIPPLES AND OTHER SPECIAL HARDWARE.

K. FLOOR TRUSS LIVE LOAD DEFLECTION SHALL NOT EXCEED L/480. FLOOR TRUSSES SUPPORTING CERAMIC TILE ABOVE SHALL BE LIMITED TO L/720 LIVE LOAD DEFLECTION. IF A 2x RIBBON RATHER THAN A FULL HEIGHT SOLID BAND IS USED AT BEARING WALLS, THEN THE TRUSS MANUFACTURER SHALL SUPPLY PRE-CUT CRIPPLE STUDS TO TRANSFER WALL LOADS FROM FLOOR TO FLOOR BETWEEN STUDS.

L. ROOF TRUSS LIVE LOAD DEFLECTION SHALL NOT EXCEED L/360. A MINIMUM OF (1) "SIMPSON" H2.5A OR EQUIVALENT HURRICANE CLIP WILL BE REQUIRED AT EACH TRUSS BEARING POINT. GIRDER TRUSSES SUPPORTING OTHER ROOF TRUSSES SHALL BE ANCHORED AT EACH BEARING POINT WITH A SIMPSON "H16" TIE DOWN OR APPROVED EQUIVALENT. ADDITIONAL UPLIFT FORCE RESSTANCE WILL BE DETERMINED AT THE TIME OF ROOF TRUSS SHOP DRAWING REVIEW. ALL GABLE END ROOF TRUSSES THAT ARE ADJACENT TO A CATHEDRAL OR SLOPED CEILING SHALL BE DESIGNED SO THAT THE WALL STUDS MAY SPAN TO THE BOTTOM OF THE CEILING LINE.

8. PRE-ENGINEERED GUARD RAILS

A. WORK INCLUDED. FABRICATE, SUPPLY AND ERECT RAILINGS AS SHOWN ON SHOP DRAWING PROFILE AND LAYOUT SHEETS AND AS SPECIFIED.
B. WORK TO INCLUDE BUT NOT LIMITED TO COMPLETE DETAILS AND MATERIALS SCHEDULES FOR FABRICATION OF EACH MEMBER, BUILDING ELEVATIONS INDICATING THE LOCATION AND FABRICATOR DESIGNATION OF EACH RAILING, SCALE ELEVATIONS AND PLAN DRAWINGS OF ALL RAILING CONFIGURATIONS SHOWING THE ACTUAL DIMENSIONS AND QUANTITY OF RAILINGS, DISTINGUISH CLEARLY THE LIMIT OF FACTORY AND FIELD ASSEMBLED WORK, ILLUSTRATE METHOD OF JOINING COMPONENTS, AND ILLUSTRATE PROVISIONS FOR ACCOMMODATION OF THERMAL EXPANSION AND CONTRACTION.
C. SHOP DRAWINGS SHALL BE THOROUGHLY CHECKED BY THE FABRICATOR AND CONTRACTOR BEFORE BEING SUBMITTED TO THE ARCHITECT/ENGINEER FOR REVIEW. THE REVIEW BY THE ARCHITECT/ENGINEER IS FOR GENERAL CONFORMANCE WITH THE DESIGN INTENT ONLY AND DOES NOT RELIEVE FABRICATOR OF FULL RESPONSIBILITY OF THE CORRECTNESS OF ALL MATERIALS, SIZES, DIMENSIONS, AND DETAILS.
D. FABRICATOR SHALL NOT PROCEED WITH FABRICATION OR ERECTION UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED BY ARCHITECT/ENGINEER
E. FABRICATION, ASSEMBLY, AND ERECTION SHALL CONFORM TO REVIEWED SHOP DRAWINGS.
F. COMPLETE STRUCTURAL CALCULATIONS INCLUDING MAXIMUM ALLOWABLE FIBER STRESSES, DEFLECTIONS, AND ACTUAL LOADS FOR BASE PLATE AND POST ANCHORS. ALL ASSUMPTIONS, GIVEN VALUES, CONSTANTS, ETC...SHALL BE CLEARLY STAT