- 2. EXISTING DIMENSIONS AND CONDITIONS ARE FOR REFERENCE ONLY. CONTRACTOR SHALL VERIFY ALL EXISTING CONSTRUCTION AND DIMENSIONS IN THE FIELD PRIOR TO CONSTRUCTION OR FABRICATION. ALL DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER PRIOR TO COMMENCING WORK.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF DEVIATIONS OR CHANGES ARE REQUIRED TO THE CONTRACT DOCUMENTS OR APPROVED SHOP DRAWINGS DUE TO INTERFERENCES, FABRICATION ERRORS, OR
- 4. THE STRUCTURE IS SELF-SUPPORTING AND STABLE AFTER THE ENTIRE BUILDING IS COMPLETELY CONSTRUCTED. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ERECTION PROCEDURES AND SEQUENCING DURING CONSTRUCTION AND ERECTION TO PROVIDE AND ENSURE LOCAL AND OVERALL STABILITY OF THE BUILDING AND ITS COMPONENTS DURING CONSTRUCTION AND ERECTION. THE CONTRACTOR SHALL RETAIN A LICENSED STRUCTURAL ENGINEER TO DESIGN TEMPORARY BRACING/SHORING AND DETERMINE WHERE THE TEMPORARY BRACING/SHORING IS NEEDED.
- 5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ERECTION PROCEDURES, SEQUENCING AND FOR COMPLYING WITH ALL APPLICABLE SAFETY REGULATIONS DURING THE WORK.
- 6. ONE ELECTRONIC COPY OR TWO SETS OF HARD COPIES OF SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER. ONE HARD COPY WILL BE RETURNED TO THE CONTRACTOR AND ONE HARD COPY WILL BE RETAINED BY THE ENGINEER.
- REFERENCE THE PROJECT SPECIFICATIONS FOR MATERIAL, WORKMANSHIP AND ADDITIONAL INFORMATION NOT COVERED IN THESE NOTES (WHERE APPLICABLE)

DESIGN CRITERIA:

- INTERNATIONAL RESIDENTIAL CODE (IC), 2009 EDITION ASCE 7-05 MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES MAINE UNIFORM BUILDING AND ENERGY CODE
- 2. LIVE LOADS: FIRST FLOOR LIVING AREAS = 40 PSF SECOND FLOOR SLEEPING AREAS = 30 PSF
- 3. SNOW LOADS: GROUND SNOW LOAD (Pg) = 60 PSFSNOW EXPOSURE FACTOR (Ce) = 1.0 SNOW LOAD IMPORTANCE FACTOR (Is) = 1.0THERMAL FACTOR (Ct) = 1.1FLAT ROOF SNOW LOAD (Pf) = 46.2 PSF + DRIFT
- WIND LOADS: BASIC WIND SPEED = 100 MPH IMPORTANCE FACTOR (Iw) = 1.0WIND EXPOSURE B MAIN WINDFORCE-RESISTING SYSTEM (INCLUDES WINDWARD + LEEWARD) = 18.6 PSF COMPONENTS & CLADDING - PER ASCE 7-05

CONCRETE NOTES:

- 1. ALL WORK SHALL CONFORM TO IC 2009 REFERENCED EDITIONS OF "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318) AND "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" (ACI 301).
- 2. REQUIRED CONCRETE PARAMETERS ARE AS FOLLOWS:

LOCATION	MAX W/C RATIO	f'c	AIR-ENTRAINMEN		
INT. WALLS/ELEV. SLABS	.52	3,000 PSI	2% ± 1½%		
FOUNDATIONS, FOOTINGS, & FOUNDATION WALLS	.45	4,500 PSI	6% ± 1½%		
INT. SLAB-ON-GRADE	.45	4,500 PSI	2% ± 1½%		
EXT. SLAB-ON-GRADE	.45	4,500 PSI	6% ± 1½%		

WHERE: W/C = WATER TO CEMENT RATIO AND f'c = COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS

USE PORTLAND CEMENT TYPE II. IN CONFORMANCE WITH ASTM 150 AIR ENTRAINING ADMIXTURES SHALL CONFORM TO ASTM C 260 ADMIXTURES SHALL CONFORM TO ASTM C 494 FLY ASH USED AS ADMIXTURES SHALL CONFORM TO ASTM C 618

- 3. MAXIMUM AGGREGATE SIZE SHALL BE $\frac{3}{4}$ ", IN CONFORMANCE WITH ASTM C33.
- CALCIUM CHLORIDE OR ADMIXTURES CONTAINING CALCIUM CHLORIDE IS NOT PERMITTED.
- 5. MAXIMUM SLUMP AFTER THE ADDITION OF A WATER-REDUCING ADMIXTURE IS 6 INCHES.
- CONTRACTOR SHALL NOT PLACE CONCRETE ON FROZEN GROUND OR IN WATER. ADEQUATE EQUIPMENT SHALL BE PROVIDED FOR HEATING CONCRETE MATERIALS AND PROTECTING CONCRETE DURING NEAR-FREEZING OR FREEZING WEATHER. REFERENCE ACI 306, AS NOTED ABOVE, FOR RECOMMENDATIONS FOR COLD WEATHER CONCRETING.
- 7. VERTICAL CONSTRUCTION JOINTS IN WALLS SHALL NOT EXCEED A SPACING OF 40 FEET, U.N.O.
- ANCHOR BOLTS SHALL BE HEADED RODS AND CONFORM TO ASTM F1554, GRADE 36 KSI WELDABLE STEEL, U.N.O. ON DRAWINGS. PROVIDE GALVANIZED ANCHOR BOLTS WHERE IN CONTACT WITH PRESSURE TREATED LUMBER.
- 9. REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60, DEFORMED BARS.
- 10. WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185 AND BE PROVIDED IN FLAT SHEETS. PROVIDE ADEQUATE SUPPORT FOR WWF TO ENSURE PROPER LOCATION WITHIN SLAB DURING CONCRETE PLACEMENT.
- 11. MINIMUM CONCRETE COVER FOR REINFORCEMENT SHALL BE AS FOLLOWS: A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3 INCHES B. FORMED CONCRETE IN CONTACT WITH EARTH OR EXPOSED TO WEATHER 2 INCHES C. CONCRETE NOT EXPOSED TO EARTH OR WEATHER IN SLABS & WALLS 1½ INCHES
- 12. WELDING OF REINFORCEMENT IS NOT PERMITTED.
- 13. PROVIDE NON-SHRINK GROUT BENEATH LEVELING PLATES & BEARING PLATES w/ MINIMUM COMPRESSIVE STRENGTH OF 7,000 PSI AT 28 DAYS.
- 14. PROVIDE CONTINUOUS REINFORCEMENT AT ALL CORNERS AND INTERSECTIONS, SEE TYPICAL FOUNDATION WALL DETAILS ON FOUNDATION DETAILS SHEET.
- 15. REINFORCING BARS AND ALL EMBEDDED ITEMS, INCLUDING ANCHOR BOLTS, MUST BE ACCURATELY PLACED AND ADEQUATELY SECURED BEFORE CONCRETE IS PLACED. "WET SETTING" OF COLUMN ANCHOR BOLTS INTO CONCRETE IS STRICTLY PROHIBITED.
- 16. UNLESS NOTED ON DRAWINGS, FOLLOW ACI STANDARDS FOR LAP SPLICE LENGTHS OF REINFORCING BARS.

REBAR LAP SPLICE TABLE							
BAR SIZE	#3	#4	# 5	#6	#7	#8	#9
3000 PSI CONCRETE	18"	24"	30"	36 "	48"	56"	64"
4500 PSI CONCRETE	16"	20"	24"	30"	40"	48"	54"

- 1. ALL TIMBER FRAMING SHALL BE IN ACCORDANCE WITH IC 2009 REFERENCED EDITIONS OF THE AITC TIMBER CONSTRUCTION MANUAL AND AF&PA NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION (NDS).
- 2. ALL FRAMING SHALL BE SPRUCE-PINE-FIR, No.2 OR BETTER U.N.O. AND HAVE A MAXIMUM MOISTURE CONTENT
- 3. ALL WOOD IN CONTACT WITH MASONRY OR CONCRETE OR EXPOSED TO WEATHER SHALL BE PRESSURE TREATED (PT) SOUTHERN YELLOW PINE.
- 4. WHERE "LVL" IS NOTED ON DRAWINGS. PROVIDE LAMINATED VENEER LUMBER. WHICH HAS THE FOLLOWING MINIMUM ALLOWABLE STRESSES:

Fb = 2600 PSIFc = 2510 PSI (PARALLEL TO GRAIN)Fc = 750 PSI (PERPENDICULAR TO GRAIN) Fv = 285 PSIFt = 1555 PSIE = 2,000,000 PSI

5. WHERE "PSL" IS NOTED ON DRAWINGS, PROVIDE PARALLAM STRAND LUMBER, WHICH HAS THE FOLLOWING MINIMUM ALLOWABLE STRESSES:

> Fb = 2900 PSIFc = 2900 PSI (PARALLEL TO GRAIN)Fc = 750 PSI (PERPENDICULAR TO GRAIN)Fv = 290 PSIE = 2,000,000 PSIFt = 2025 PSI

- 6. ALL ENGINEERED LUMBER THAT IS EXPOSED TO WEATHER SHALL BE WOLMANIZED.
- 7. ALL FLOOR SHEATHING SHALL BE 34" TONGUE AND GROOVE, GLUED AND NAILED TO FLOOR FRAMING WITH 8d RINK SHANK NAILS AT 6" o.c. AT SUPPORTED PANEL EDGES, 12" o.c. AT INTERMEDIATE SUPPORTS UNLESS NOTED OTHERWISE ON DRAWINGS.
- 8. ALL ROOF SHEATHING (5/8") AND WALL SHEATHING (1/2") SHALL BE APA PERFORMANCE-RATED. ATTACH TO SUPPORTED PANEL EDGES WITH 8d NAILS AT 6" o.c. AND AT INTERMEDIATE SUPPORTS WITH 8d NAILS AT 12" o.c. U.N.O. SEE DRAWINGS FOR MORE STRINGENT NAILING REQUIREMENTS AT WOOD SHEAR WALLS.
- 9. SHEATHING SHALL BE ORIENTED WITH LONG DIMENSION PERPENDICULAR TO THE SUPPORTS AND BE CONTINUOUS OVER TWO OR MORE SUPPORTS. STAGGER ALL JOINTS & PROVIDE ADEQUATE JOINT SPACING (1/8" TYP) AS RECOMMENDED BY MANUFACTURER.
- 10. PROVIDE FULL DEPTH BLOCKING AT ENDS AND INTERIOR SUPPORTS OF ALL JOISTS AND RAFTERS WHERE JOISTS AND RAFTERS FRAME OVER SUPPORTS. PROVIDE 1x3 DIAGONAL BRIDGING OR FULL DEPTH SOLID BLOCKING FOR EACH 8'-0" OF SPAN FOR ALL JOISTS AND RAFTERS.
- 11. WHERE BEAMS ARE LABELED ON PLAN, DO NOT SPLICE BEAM NOR ANY PLY OF BEAM BETWEEN SUPPORTS.
- 12. ALL CONNECTION HARDWARE SHALL BE BY SIMPSON STONG-TIE (OR APPROVED EQUIVALENT) AND SHALL BE HOP-DIPPED GALVANIZED. HARDWARE IN CONTACT WITH PRESSURE TREATED (PT) LUMBER SHALL BE GALVANIZED G185 (ZMAX). REFER TO MANUFACTURERS LITERATURE FOR PROPER INSTALLATION GUIDELINES.
- 13. FASTENERS USED IN CONTACT WITH PRESSURE TREATED (PT) LUMBER SHALL BE HOT-DIPPED GALVANIZED, STAINLESS STEEL, OR OTHER FINISH APPROVED BY ENGINEER.
- 14. ALIGN COLUMNS SUCH THAT COLUMNS BEAR CONTINUOUSLY TO FOUNDATION SUPPORT. INSTALL ADDITIONAL SOLID BLOCKING WITHIN FLOOR PACKAGE TO PROVIDE CONTINUITY OF LOAD PATH.

ABBREVIATION:

ADDL

ARCH

CLR

CMU

CONC

CONN CONT

CONTR

DIM

DISCONT

(E), EX, EXIST

EL, ELEV

EQUIP

FDN

GALV

INFO

HOR, HORIZ

DWG

ANCHOR BOLT

ADDITIONAL

ARCHITECT

BEARING

CANTILEVER

CONCRETE

CONNECTION

CONTINUOUS

CONTRACTOR

CUBIC YARD

DIAMETER

DRAWING

EXISTING

FACH FACE

ELEVATION

EQUIPMENT

EACH SIDE

FACH WAY

EXTERIOR

FLANGE

FOOTING

FIELD VERIFY

GALVANIZED

HORIZONTAL

INSIDE FACE

INFORMATION

JOINT

HOLLOW STRUCTURAL SHAPE

KIP (1 KIP = 1.000 LBS)

KIPS PER SQUARE INCH

FI OOR

EXPANSION

FOUNDATION FINISH FLOOR

FOOTING DESIGNATION

DIMENSION

DISCONTINUOUS

CONTROL JOINT CENTERLINE

BOTTOM OF FOOTING

STRUCTURAL STEEL CHANNEL

CAST-IN-PLACE CONCRETE

CONCRETE MASONRY UNIT

COMPLETE PENETRATION WELD

CONSTRUCTION JOINT

DOUBLE ANGLE

LINEAR FOOT

MECHANICAL

MANUFACTURER MINIMUM

MISCELLANEOUS

NEAR FACE

NUMBER

NTS

OPNG

PREFAB

PSI

REINF

SECT

SOG

SPAC

STD

STIFF

STRUCT

T&B

TOC, T/CONC

T/FTG, TOF

T/SHELF

T/SLAB

T/STL

T/WALL

UNO

w/0

VER, VERT

SPECS

SHEATH

REQ, REQD

NEAR SIDE

NOT TO SCALE

ON CENTER

OPENING OPPOSITE

OUTSIDE FACE

PIER DESIGNATION

PREFABRICATED

REINFORCING STEEL

REQUIRED

SECTION

SIMII AR

SHEATHING

ROOF DRAIN

SLIP CRITICAL

SLAB-ON-GRADE

SPECIFICATIONS

STANDARD

STIFFENER

STRAIGHT

STRUCTURAL

TOP AND BOTTOM

TOP OF CONCRETE

TOP OF FOOTING

TEMPERATURE

TOP OF SHELF

TOP OF SLAB

TOP OF STEEL

TOP OF WALL

VERIFY IN FIELD

TYPICAL

WITHOUT

WEIGHT

WORK POINT

WELDED WIRE FABRIC

STRUCTURAL TUBING

UNLESS NOTED OTHERWISE

STRUCTURAL STEEL WIDE FLANGE

STEEL

STAINLESS STEEL

PARTIAL PENETRATION WELD

POUNDS PER SQUARE FOOT

POUNDS PER SQUARE INCH

LONG LEG HORIZONTAL

LONG LEG VERTICAL

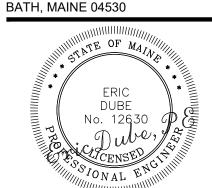
- 15. PROVIDE HORIZONTAL BLOCKING FOR ALL LOAD BEARING WALLS AT 4'-0" O.C. VERTICAL, MAXIMUM.
- 16. SUBMIT SHOP DRAWINGS FOR ALL PREFABRICATED WOOD JOISTS AND WALL PANELS TO ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION.

CASCO BAY ENGINEERING

424 Fore Street Portland, ME 04101 Phone 207.842.2800 Fax 207.842.2828 www.cascobayengineering.com

DAVID MATERO ARCHITECTURE

100 FRONT STREET, SUITE 40



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	DATE	7-31-17	8-1-17	10-3-17			
	CKD.	ED	TD	ED			
	DR. BY	SD	SD	SD			
ISSUED	DESCRIPTION	ISSUE FOR REVIEW	FOR PERMIT ONLY	ISSUE FOR CONSTRUCTION			
	No.	⋖	В	0			

SHEET TITLE:

DESIGNED:

DRAWN:

STRUCTURAL NOTES

PROJECT NUMBER:	17-090
DATE:	10-3-2017
	02

FOUNDATION NOTES:

- FOUNDATIONS HAVE BEEN DESIGNED USING A PRESUMED ALLOWABLE BEARING PRESSURE PER TABLE 1806.2 OF THE INTERNATIONAL BUILDING CODE BASED ON TYPICAL SOILS FOUND IN THIS AREA. IF CLAY, MUD. ORGANIC SILT, PEAT OR UNPREPARED FILL IS FOUND DURING CONSTRUCTION, NOTIFY ENGINEER IMMEDIATELY, AS THE ALLOWABLE LOADS USED IN DESIGN WILL NEED TO BE VERIFIED BY A GEOTECHNICAL ENGINEER. CASCO BAY ENGINEERING RECOMMENDS PROCURING A GEOTECHNICAL ENGINEER TO VERIFY EXISTING SOIL CONDITIONS.
- 2. ALLOWABLE SOIL BEARING CAPACITY USED IN DESIGN = 2,000 PSF
- 3. MINIMUM FROST DEPTH COVER = 4'-6" FOR EXTERIOR FOOTINGS BELOW FINAL EXTERIOR GRADE.
- EXCAVATION, BACKFILL, COMPACTION, GRADATION REQUIREMENTS, FOUNDATION DRAINAGE AND PERMANENT DEWATERING REQUIREMENTS SHALL BE PROVIDED BY A GEOTECHNICAL ENGINEER.
- CONCRETE SLABS ON GRADE SHALL BE CONSTRUCTED ON A MINIMUM 12" THICK LAYER OF PROPERLY COMPACTED STRUCTURAL FILL, UNLESS OTHERWISE DIRECTED BY A GEOTECHNICAL ENGINEER.
- 6. FOUNDATIONS SHALL BEAR ON UNDISTURBED NATIVE SOIL, UNLESS NOTED OTHERWISE. THE CONTRACTOR SHALL NOTIFY THE GEOTECHNICAL AND STRUCTURAL ENGINEER IF ANY UNSUITABLE SOILS ARE ENCOUNTERED PRIOR TO PLACING FOUNDATIONS.
- FOUNDATION WALLS AND SLAB-ON-GRADES SHALL REACH THEIR FULL 28 DAY COMPRESSIVE STRENGTH PRIOR TO BACKFILLING. THE CONTRACTOR SHALL PROVIDE TEMPORARY SHORING/BRACING FOR WALLS WHEN BACKFILL IS PLACED PRIOR TO CONCRETE ACHIEVING ITS FULL 28 DAY STRENGTH. CONTRACTOR SHALL PROVIDE TEMPORARY SHORING/BRACING FOR WALLS AND OTHER STRUCTURAL ELEMENTS PRIOR TO INSTALLATION OF PERMANENT BRACING/FLOOR/STRUCTURE.
- PROTECT FOUNDATIONS FROM FROST AND KEEP BOTTOM OF TRENCH DRY DURING CONSTRUCTION. IF GROUNDWATER IS ENCOUNTERED NEAR OR ABOVE THE BASE OF THE FOOTINGS, EXCAVATIONS SHALL BE DEWATERED DURING CONSTRUCTION. SURFACE WATER SHALL BE DIVERTED AWAY FROM EXCAVATIONS.
- 9. DO NOT UNDERMINE EXISTING FOUNDATIONS OF ADJACENT STRUCTURES. CONTRACTOR SHALL BE RESPONSIBLE FOR THE SHORING, BRACING AND UNDERPINNING OF EXISTING STRUCTURES DURING EXCAVATION, BACKFILLING, AND CONSTRUCTION. CONTRACTOR SHALL SLOPE EXCAVATIONS TO ACHIEVE SOIL STABILITY.

STRUCTURAL STEEL NOTES:

- 1. STRUCTURAL STEEL WORK SHALL CONFORM TO IC 2009 REFERENCED EDITIONS OF AISC "SPECIFICATION FOR THE DESIGN FABRICATIONS, AND ERECTION OF STRUCTURAL STEEL" AND THE "CODE OF STANDARD PRACTICE"
- 2. STRUCTURAL STEEL MEMBERS SHALL BE IN CONFORMANCE WITH THE FOLLOWING:

WIDE FLANGE SHAPES AND TEES ASTM A992 ANGLES, PLATES, CHANNELS ASTM A36, Fy=36 KSI (U.N.O.) SQUARE/RECTANGULAR HSS ASTM A500, GRADE B, Fy=46 KSI ROUND HSS ASTM A500, GRADE B, Fy=42 KSI Steel Pipe ASTM A53, TYPE E OR S, GRADE B, Fy=35 KSI

- 3. SHOP DRAWINGS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW PRIOR TO COMMENCING
- FIELD CONNECTIONS SHALL UTILIZE MINIMUM 3/4" DIAMETER A325 HIGH STRENGTH BOLTS, U.N.O. BOLTED CONNECTIONS SHALL BE SLIP CRITICAL AT ALL MOMENT FRAMES, BRACED FRAMES, AND AT ADDITIONAL LOCATIONS INDICATED "SC" IN THE DRAWINGS. SLIP CRITICAL CONNECTIONS SHALL UTILIZE LOAD INDICATOR WASHERS OR TENSION CONTROL BOLTS. USE A490 BOLTS WHERE INDICATED ON DRAWINGS.
- 5. CONTRACTOR IS RESPONSIBLE FOR DESIGN OF CONNECTIONS NOT ALREADY DETAILED ON STRUCTURAL DRAWINGS. CONTRACTOR SHALL SUBMIT DESIGN STAMPED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE WHERE PROJECT IS LOCATED PRIOR TO COMMENCING FABRICATION.
- 6. WELDING SHALL CONFORM TO AWS D1.1. USE LOW-HYDROGEN SMAW ELECTRODES WITH MINIMUM TENSILE STRENGTH OF 70 KSI.
- PROVIDE ¼" LEVELING PLATES UNDER ALL COLUMN BASE PLATES, U.N.O. LEVELING PLATES SHALL BE SET AND GROUTED PRIOR TO COLUMN ERECTION.
- 8. ALL STRUCTURAL STEEL NOT EXPOSED TO WEATHER SHALL RECEIVE ONE COAT OF STANDARD SHOP PRIMER,
- 9. SEE DRAWINGS AND CONCRETE NOTES FOR ANCHOR BOLT INFORMATION.