CURRENT CODES

- INTERNATIONAL BUILDING CODE - 2015
- ASCE STANDARD ASCE/SEI 7-10 - MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
- 2012 NATIONAL DESIGN SPECIFICATION (NDS) FOR WOOD CONSTRUCTION
- NATIONAL DESIGN SPECIFICATION (NDS) SUPPLEMENT: DESIGN VALUES FOR WOOD CONSTRUCTION 2015 EDITION
- ACI 318-11: BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY
- S30/S30.1-11: BUILDING CODE REQUIREMENTS AND SPECIFICATION FOR MASONRY STRUCTURES AND RELATED COMMENTARIES
- AWS D1.1/D1.1M:2015 STRUCTURAL WELDING CODE - STEEL
- ANSI/AISC 360-10 - SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS

DESIGN - LOADS & CRITERIA

1-LIVE LOAD	
FLOOR FRAMING (RETAIL, OFFICE, RESTAURANT, RECREATIONAL)	100 PSF
FLOOR FRAMING (RESIDENTIAL AREAS)	40 PSF
STAIRWAYS, EXITS	100 PSF
BALCONIES	75 PSF
PRIVATE GARAGES (PASSENGER VEHICLES ONLY)	40 PSF
INTERIOR PARTITION WALLS (UNIFORMLY DISTRIBUTED WEIGHT)	15 PSF
CORRIDORS FIRST FLOOR	100 PSF
CORRIDORS 2ND AND 3RD FLOORS	40 PSF
CORNICES	60 PSF
2-SNOW LOAD	
DESIGN SNOW LOAD	42 PSF (BALANCED)
(pf) FLAT ROOF SNOW LAOD (pf = 0.7CeCtIspg)	42 PSF
(Ce) SNOW EXPOSURE FACTOR	1.0
(Is) SNOW LOAD IMPORTANCE FACTOR	1.0
(Ct) ROOF THERMAL FACTOR	1.0
(Pg) GROUND SNOW	60 PSF
(Cs) SLOPED ROOF FACTOR	1.0
3-WIND LOADS	
(Iw) WIND IMPORTANCE FACTOR	1.0
RISK CATEGORY II	
BASIC WIND SPEED (3-SEC. GUST, ULTIMATE)	115 MPH
BASIC WIND SPEED (3-SEC. GUST, NOMINAL)	90 MPH
MEAN ROOF HEIGHT	33FT
WIND EXPOSURE CATEGORY	B
WIND EXPOSURE CLASSIFICATION	ENCLOSED
(Kz) VELOCITY EXPOSURE COEFFICIENT	0.720
(Kzt) TOPOGRAPHIC FACTOR	1.0
DESIGN PROCEDURE	METHOD 1 (SIMPLIED)
4-EARTHQUAKE LOADS	
OCCUPANCY CATEGORY	II
(Ie) SEISMIC IMPORTANCE FACTOR	1
(Ss) SHORT PERIOD SPECTRAL ACCELERATION	0.045 g
SPECTRAL RESPONSE ACCELERATIONS SS, AT SHORT PERIODS	0.038 g
SITE CLASSIFICATIONS	B
(Fa) SITE COEFFICIENT	1.0
(Fv) SITE COEFFICIENT	1.0
(Sds) DESIGN SPECTRAL RESPONSE ACCELERATION - SHORT PERIODS	0.030 g
(Sd1) DESIGN SPECTRAL RESPONSE ACCELERATION - AT 1 SEC. PERIODS	0.025 g
SEISMIC DESIGN CATEGORY	A
SEISMIC-FORCE-RESISTING SYSTEM	WOOD STRUCTURAL PANEL (WSP) SHEATHED SHEAR WALLS
ANALYSIS PROCEDURE	EQUIVALENT LATERAL FORCE PROCEDURE (ELFP)
5-SOIL	
SOIL UNIT WEIGHT	125 PCF (ASSUMED)
LATERAL EARTH PRESSURE - AT REST (BASEMENT WALLS)	62.5 PFS/FT OF DEPTH (ASSUMED)
LATERAL EARTH PRESSURE - PASSIVE	340 PSF (ASSUMED)
COEFFICIENT OF SLIDING FRICTION	0.30 (ASSUMED)
SUBGRADE MODULUS	260 PCI (ASSUMED)
ALLOWABLE SOIL BEARING PRESSURE	3000 PSF

MATERIAL STRENGTHS

CONCRETE - EXT. SLABS ON GRADE	
MIN. COMPRESSIVE STRENGTH AT 28 DAYS	f'c = 4,000 PSI
MAX. WATER-CEMENTITIOUS RATIO	0.48
MAX. AGGREGATE SIZE	3/4"
SLUMP LIMIT	4" +/-1"
AIR CONTENT	YES 4% to 6%
CONCRETE - FOOTINGS	
MIN. COMPRESSIVE STRENGTH AT 28 DAYS	f'c = 3,000 PSI
MAX. WATER-CEMENTITIOUS RATIO	0.59
MAX. AGGREGATE SIZE	1 1/2"
SLUMP LIMIT	5" +/-1"
AIR CONTENT	NO
CONCRETE - INTERIOR SLABS ON GRADE	
MIN. COMPRESSIVE STRENGTH AT 28 DAYS	f'c = 4,000 PSI
MAX. WATER-CEMENTITIOUS RATIO	0.48
MAX. AGGREGATE SIZE	3/4"
SLUMP LIMIT	4" +/-1"
AIR CONTENT	NO
CONCRETE - PIERS, WALLS, AND COLUMNS	
MIN. COMPRESSIVE STRENGTH AT 28 DAYS	f'c = 4,000 PSI
MAX. WATER-CEMENTITIOUS RATIO	0.48
MAX. AGGREGATE SIZE	3/4"
SLUMP LIMIT	4" +/-1"
AIR CONTENT	YES 4% to 6%
CONCRETE - SLURRY	
MIN. COMPRESSIVE STRENGTH AT 28 DAYS	f'c = 1,000 PSI
MAX. WATER-CEMENTITIOUS RATIO	0.55
MAX. AGGREGATE SIZE	1 1/2"
SLUMP LIMIT	6" +/-1"
AIR CONTENT	NO
CONCRETE - STAIR LANDING/TREADS	
MIN. COMPRESSIVE STRENGTH AT 28 DAYS	f'c = 4,000 PSI
MAX. WATER-CEMENTITIOUS RATIO	0.48
MAX. AGGREGATE SIZE	3/4"
SLUMP LIMIT	4" +/-1"
AIR CONTENT	NO
CONCRETE - TOPPING	
MIN. COMPRESSIVE STRENGTH AT 28 DAYS	f'c = 4,000 PSI
MAX. WATER-CEMENTITIOUS RATIO	0.48
MAX. AGGREGATE SIZE	3/4"
SLUMP LIMIT	4" +/-1"
AIR CONTENT	NO
STEEL - REINFORCING STEEL	
ALL ASTM A615, GRADE 60, DEFORMED	Fy = 60,000 PSI
WELDED WIRE REINFORCEMENT, FLAT SHEETS	Fy = 60,000 PSI
STEEL - STRUCTURAL BOLTS	
HIGH STRENGTH BOLTS, NUTS, & WASHERS	ASTM A325
ZINC-COATED HIGH STRENGTH BOLTS, NUTS, & WASHERS	ASTM A325
STAINLESS STEEL BOLTS, NUTS, & WASHERS	ASTM F593
SHEAR CONNECTORS (GRADES 1015 THRU 1020)	ASTM A108
THREADED RODS	ASTM A36
CLEVIS & TURNBUCKLES (GRADE 1035)	ASTM A108
EYE BOLTS & NUTS (GRADE 1030)	ASTM A108
ANCHOR BOLTS (GRADE 36)	ASTM F1554
STEEL - STRUCTURAL STEEL	
ROLLED WIDE FLANGE SHAPES, ASTM A992 GRADE 50	Fy = 50,000 PSI
CHANNELS, ANGLES, AND S SHAPES, ASTM A36	Fy = 36,000 PSI
PLATE AND BAR, ASTM A36	Fy = 36,000 PSI
TUBE SHAPES, ASTM A500 GRADE B	Fy = 46,000 PSI
PIPE ASTM A53, TYPE E or S, GRADE B	Fy = 46,000 PSI
ALL OTHER ROLLED SHAPES, ASTM A36	Fy = 36,000 PSI

DEFLECTION LIMITS

DESCRIPTION	LIVE LOADS	SNOW OR DEAD LOADS	DEAD + LIVE OR SNOW
EXTERIOR WALLS			
RIGID MATERIALS (BRICK/MASONRY)	N/A	L/600	N/A
FLEXIBLE MATERIALS	N/A	L/360	N/A
FLOOR			
RIGID MATERIALS (BRICK/MASONRY)	L/600	L/600	L/600
WITH GYPSUM BOARD CEILINGS	L/540	N/A	L/360
FLEXIBLE MATERIALS	L/540	N/A	L/360
LINTELS, HEADER, AND/OR BEAM			
RIGID MATERIALS (BRICK/MASONRY)	L/600	L/600	L/600
FLEXIBLE MATERIALS	L/360	L/360	L/240
ROOF			
WITH GYPSUM BOARD CEILINGS	L/360	L/360	L/240
FLEXIBLE CEILINGS	L/360	L/360	L/240
NO CEILING	L/240	L/240	L/180
RIGID MATERIALS (BRICK/MASONRY)	L/600	L/600	L/600

NET PRESSURE COEFFICIENTS C_{net}

AREA	C_{net} + INTERNAL PRESSURE	C_{net} - INTERNAL PRESSURE
WINDWARD WALL	0.43	0.73
LEEWARD WALL	-0.51	-0.21
SIDEWALL	-0.66	-0.35
PARAPET WINDWARD WALL	1.28	
PARAPET LEEWARD WALL	-0.85	
FLAT ROOF	-1.09	-0.79

NET PRESSURE COEFFICIENTS P_{net}

AREA	P_{net} + INTERNAL PRESSURE	P_{net} - INTERNAL PRESSURE
WINDWARD WALL	10.5 psf	17.8 psf
LEEWARD WALL	-12.4 psf	-5.1 psf
SIDEWALL	-16.1 psf	-8.5 psf
PARAPET WINDWARD WALL	31.2 psf	
PARAPET LEEWARD WALL	-20.7 psf	
FLAT ROOF	-26.6 psf	-19.3 psf

FOOTINGS, FOUNDATIONS AND EARTHWORK:

- DO NOT POUR ANY FOOTINGS ON FROZEN SOILS
- ALL FOOTINGS POURED BELOW LOCAL FROST LINE
- EXPOSED BEARING STRATUM SHOULD BE VERIFIED BY CONTRACTOR AND SOILS ENGINEER TO SATISFY NET ALLOWABLE SOIL BEARING CAPACITY AS OUTLINED IN THESE CONSTRUCTION DOCUMENTS, AS WELL AS THE PROJECT'S GEO-TECHNICAL REPORT. IF EXCAVATED BEARING SOILS FALL BELOW OUTLINED CAPACITIES, CONTINUE EXCAVATION UNTIL BEARING CAPACITIES ARE MET. EXTEND FOOTINGS DOWN TO NEW BEARING ELEVATION, OR USE ENGINEERED FILL TO MAKE UP THE DIFFERENCE. ALL ENGINEERED FILL TO BE DESIGNED BY SOILS ENGINEER AND TO BE FREE OF DRAINING GRANULAR MATERIAL COMPACTED TO 95% OF MODIFIED PROCTOR DENSITIES.
- SEE DESIGN LOADS AND CRITERIA FOR DETAILS RELATIVE TO ASSUMED SOIL CONDITIONS, AND GEO-TECHNICAL RECOMMENDATIONS. COORDINATE ANY SOIL CAPACITIES THAT FALL BELOW THOSE OUTLINED WITH THE STRUCTURAL ENGINEER.
- WHEN APPLICABLE, BACK-FILLING SHOULD BE DONE SIMULTANEOUSLY ON BOTH SIDE OF A CONCRETE FOUNDATION WALL
- DO NOT PLACE BACK FILL AGAINST BASEMENT WALLS UNTIL 1ST FLOOR FRAMING SYSTEM IS IN PLACE.
- SHORING AND UNDERPINNING DESIGNED TO PREVENT 1/4" MAX MOVEMENT IN EITHER THE VERT/HORZ. DIRECTION
- ALL BACK FILL WITHIN 3FT OF FOUNDATION WALLS TO BE GRANULAR FILL APPROVED BY THE PROJECT'S SOIL'S ENGINEER AND COMPACTED TO 90% OF STANDARD PROCTOR DENSITY

REBAR CONTINUITY:

UNLESS OTHERWISE NOTED, ALL REINFORCING SHOULD BE CONTINOUS. CONTACT LAPSE SLICING TO BE USED AT CORNERS AND INTERSECTION - SEE TYPICAL DETAIL. ALL SPLICES TO BE CLASS B SPLICES
SHOP DRAWINGS SHOULD SHOW THE LOCATION AND OVERLAP DISTANCE OF ALL LAP SPLICES.

REBAR CONTINUITY								
REBAR LOCATION	#3	#4	#5	#6	#7	#8	#9	#10
3,000 - 3,500 PSI								
TOP BARS	22"	20"	34"	47"	70"	94"	118"	150"
OTHER BARS	17"	22"	28"	34"	55"	71"	115"	143"
4,000 - 4,500 PSI								
TOP BARS	16"	19"	26"	36"	60"	80"	103"	158"
OTHER BARS	16"	16"	19"	28"	48"	63"	78"	100"

TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12" DEPTH OF CONCRETE CAST BELOW THE REINFORCEMENT. TABLE ABOVE DOES NOT APPLY TO EPOXY COATED REBAR

MECHANICAL CONNECTIONS CAN BE USED IN PLACE OF LAP SPLICES. SHOP DRAWING, WITH APPROPROATE ICC-ES REPORT, TO BE SUBMITTED TO ARCHITECT AND ENGINEER FOR REVIEW. CONNECTIONS SHALL DEVELOP 125 PERCENT OF THE SPECIFIED YIELD STRIGHTH OF THE BAR IN TENSION.

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RYAN P. SCHULTZ
A-11597-5
STOUGHTON, WI
ARCHITECT

Date	Description
07.08.2019	Footing/Foundation Permit
08.21.2019	Permit
05.15.2020	Permit Revision #4
07.02.2020	Permit Revision #5

STRUCTURAL NOTES
CANNERY TRAIL RESIDENCES - 1750 N OXFORD AVE. - EAU CLAIRE, WI

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