○ CONTRACTOR(S) SHALL VERIFY EXISTING CONDITIONS AND CORRELATE DIMENSIONS PRIOR TO PROVIDING THE WORK DETAILED IN THESE DRAWINGS, AND SHALL PROMPTLY NOTIFY THE ARCHITECT OF ANY DISCREPANCIES.
○ COPYRIGHT SBLM, ARCHITECTS PC, UNAUTHORIZED REPRODUCTION OR OTHER USE OF THIS DRAWING IS PROHIBITED.

DESIGN CRITERIA: (2009 NORTH CAROLINA BUILDING CODE)

1. ROOF LOADS:
   A. ROOF LIVE LOAD (Lr) = 20 psf (REDUCIBLE PER TRIB. AREA & SLOPE)
   B. GROUND SNOW LOAD (Pg) = 15 psf
2. WIND LOADS:
   A. BASIC WIND SPEED (V) = 100 mph (3 SECOND GUST)
   B. WIND LOAD IMPORTANCE (Iw) = 1.0 (OCCUPANCY CATEGORY II)
   C. EXPOSURE B
   D. INTERNAL PRESSURE COEFFICIENT (GCpi) = ±0.18
   E. SEE THE DIAGRAM ON THIS SHEET FOR MINIMUM WIND LOADS TO BE USED IN THE DESIGN OF WALL AND ROOF COMPONENTS AND CLADDING.
3. SEISMIC DESIGN DATA:
   A. SEISMIC IMPORTANCE (Ie) = 1.0 (OCCUPANCY CATEGORY II)
   B. MAPPED SPECTRAL RESPONSE ACCELERATIONS S_S = 0.20, S_1 = 0.08
   C. SITE CLASS D
   D. SPECTRAL RESPONSE COEFFICIENTS S_{DS} = 0.213, S_{D1} = 0.128
   E. SEISMIC DESIGN CATEGORY B
   F. SEISMIC-FORCE-RESISTING SYSTEM: ORDINARY REINFORCED MASONRY SHEAR WALLS (BEARING WALL SYSTEM)
   G. SEISMIC RESPONSE COEFFICIENT, Cs = 0.107
   H. RESPONSE MODIFICATION FACTOR, R = 2
   I. ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE PROCEDURE

FOUNDATIONS – GENERAL:

1. CONTINUOUS WALL FOOTINGS & SPREAD FOOTINGS SHALL BEAR ON A SOIL CAPABLE OF SUSTAINING A NET ALLOWABLE BEARING PRESSURE OF 2,000 psf UNDER SERVICE LIVE AND DEAD LOADS.
2. FOOTINGS MAY BE POURED INTO AN EARTH-FORMED TRENCH IF SOIL CONDITIONS PERMIT.
3. ALL BEARING MATERIAL SHALL BE INSPECTED BY AN INDEPENDENT TESTING AGENCY PRIOR TO CONCRETE PLACEMENT. THE INDEPENDENT TESTING AGENCY SHALL BE THE SOLE JUDGE AS TO THE SUITABILITY OF THE BEARING MATERIAL. FOOTING ELEVATIONS SHALL BE ADJUSTED AS REQUIRED.
4. BOTTOM OF EXTERIOR FOOTINGS SHALL BEAR A MINIMUM OF 1'-0" BELOW FINAL FINISHED GRADES.
5. FOUNDATION WALLS THAT RETAIN EARTH SHALL BE BRACED AGAINST BACKFILLING PRESSURES UNTIL FLOOR SLABS AT TOP AND BOTTOM ARE IN PLACE.
6. WHERE FOUNDATION WALLS ARE TO HAVE EARTH PLACED ON EACH SIDE, PLACE FILL SIMULTANEOUSLY SO AS TO MAINTAIN A COMMON ELEVATION ON EACH SIDE OF THE WALL.
7. FOUNDATION CONCRETE SHALL HAVE REACHED A MINIMUM COMPRESSIVE STRENGTH OF 2,000 PSI BEFORE BEING LOADED. STRENGTHS SHALL BE VERIFIED BY TESTS.

CONCRETE:

1. CONCRETE SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH (f'c) OF 3,000 psi AND A DENSITY OF 145 pcf, UNLESS NOTED OTHERWISE.
2. REINFORCING SHALL CONFORM TO ASTM A615, GRADE 60, UNLESS NOTED OTHERWISE.
3. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.
4. MINIMUM CONCRETE COVER, UNLESS NOTED OTHERWISE:
   UNFORMED SURFACE IN CONTACT WITH THE GROUND. — 3 IN.
   FORMED SURFACES EXPOSED TO EARTH OR WEATHER.
   #6 BARS AND LARGER — 2 IN.
   #5 BARS AND SMALLER — 1 1/2 IN.
   FORMED SURFACES NOT EXPOSED TO EARTH OR WEATHER:
   BEAMS, GIRDERS, AND COLUMNS — 1 1/2 IN.
   SLABS, WALLS, AND JOISTS:
   #11 BARS AND SMALLER — 3/4 IN.
   #14 AND #18 BARS — 1 1/2 IN.
5. LAP SPLICES SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE, UNLESS NOTED OTHERWISE. WHERE CLASSES ARE NOT CALLED OUT ON DRAWINGS, USE CLASS "B" SPLICES.

	TENSION SPLICES (INCHES)				COMPRESSION SPLICES (INCHES)
BAR SIZE	TOP BARS		OTHER BARS		ALL BARS
	A	B	A	B	
#3	22	28	17	22	12
#4	29	37	22	29	15
#5	36	47	28	36	19
#6	43	56	33	43	23
#7	63	81	48	63	27
#8	72	93	55	72	30
#9	81	105	62	81	34
#10	91	116	70	91	38
#11	101	131	76	101	42

COMPRESSION DOWEL EMBEDMENT: 22 BAR DIAMETERS
LAP WELDED WIRE FABRIC ONE SPACING OF CROSS WIRES PLUS 2".

6. BASE PLATES, ANCHOR BOLTS, SUPPORT ANGLES, ETC., BELOW GRADE SHALL BE COVERED WITH A MINIMUM OF 3" OF CONCRETE.

STRUCTURAL STEEL:

1. STEEL SHALL CONFORM TO THE FOLLOWING GRADES:
   ALL WIDE FLANGES (U.N.O.) — A992 (Fy = 50 ksi)
   ALL CHANNELS, ANGLES, PLATES, ETC. — A36 (Fy = 36 ksi)
   STRUCTURAL TUBE — A500 (Fy = 46 ksi) (GRADE B)
   STEEL PIPE — A53 (Fy = 35 ksi)
   ANCHOR BOLTS — A307, A36, OR F1554
   BOLTS — A325
   WELDING ELECTRODES — E70XX
2. ALL STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE AISC CODE OF STANDARD PRACTICE (2005), EXCEPT AS MODIFIED IN THESE NOTES AND THE PROJECT SPECIFICATIONS.
3. THE FABRICATOR IS RESPONSIBLE FOR THE DESIGN OF ALL CONNECTIONS. CONNECTIONS SHOWN ON THE STRUCTURAL DRAWINGS ARE SCHEMATIC AND ARE ONLY INTENDED TO SHOW THE RELATIONSHIP OF MEMBERS CONNECTED. CONNECTION DETAILS INDICATED ON THE DRAWINGS SHALL BE INCORPORATED INTO FABRICATOR'S CONNECTION DESIGN. SEE SPECIFICATIONS. ALL SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY THE FABRICATOR'S ENGINEER WITH THE ENGINEER'S SEAL FOR THE STATE WHERE THE STRUCTURE IS LOCATED. ENGINEERS SEAL MAY BE QUALIFIED "FOR DESIGN OF CONNECTIONS ONLY." UNLESS DESIGN END REACTIONS ARE SPECIFICALLY SHOWN OTHERWISE IN THE DESIGN DRAWINGS, BEAM END CONNECTIONS SHALL BE CAPABLE OF SUPPORTING ONE HALF OF THE MAXIMUM TOTAL UNIFORM LOAD LISTED IN PART 3 OF AISC'S "MANUAL OF STEEL CONSTRUCTION," 13TH EDITION, FOR THE BEAM SIZE AND YIELD STRENGTH UTILIZED.

STRUCTURAL STEEL (cont.):

4. REVIEW OF SHOP DRAWINGS DOES NOT RELIEVE THE FABRICATOR OF RESPONSIBILTY FOR THE ADEQUACY OF ALL CONNECTIONS.

REINFORCED MASONRY:

1. REINFORCED MASONRY SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH, f'm, OF 1500 PSI. MASONRY UNITS SHALL BE NORMAL WEIGHT BLOCK CONFORMING TO ASTM C90, GRADE N, TYPE 1, AND SHALL HAVE A MINIMUM NET AREA COMPRESSIVE STRENGTH OF 1900 PSI. MORTAR SHALL CONFORM TO ASTM C270, TYPE S. GROUT SHALL CONFORM TO ASTM C476.
2. REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60, UNLESS NOTED OTHERWISE.
3. CONTINUOUS WIRE REINFORCING (JOINT REINFORCING) SHALL BE GALVANIZED TRUSS OR LADDER TYPE FORMED FROM 9 GAUGE COLD – DRAWN STEEL WIRE COMPLYING WITH ASTM A82. JOINT REINFORCING SHALL BE SPACED AT 16" O.C. VERTICALLY IN ALL MASONRY WALLS.
4. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF VERTICAL CONTROL JOINTS. HORIZONTAL BOND BEAM AND LINTEL REINFORCING SHALL BE CONTINUOUS ACROSS VERTICAL CONTROL JOINTS. JOINT REINFORCING SHALL BE STOPPED EITHER SIDE OF VERTICAL CONTROL JOINTS.
5. ALL REINFORCED CELLS, ALL CELLS BELOW GRADE, AND ALL CELLS BELOW FINISHED FLOOR SHALL BE GROUTED SOLID.
6. AT VERTICAL REINFORCING LOCATIONS, PROVIDE DOWEL FROM FOOTING TO MATCH SIZE AND SPACING OF VERTICAL WALL REINFORCING. DOWELS SHALL BE EMBEDDED INTO THE FOOTING MINIMUM 9 INCHES AND SHALL HAVE A 90° STANDARD HOOK.
7. WHEN A FOUNDATION DOWEL DOES NOT LINE UP WITH A VERTICAL BLOCK CORE, IT SHALL NOT BE SLOPED MORE THAN ONE HORIZONTAL IN 6 VERTICAL. DOWELS MAY BE GROUTED INTO A CELL IN VERTICAL ALIGNMENT, EVEN THOUGH IT IS IN AN ADJACENT CELL TO THE VERTICAL WALL REINFORCING.
8. REINFORCING STEEL SHALL BE SECURED IN PLACE BEFORE GROUTING STARTS.
9. SPLICED REINFORCING (INCLUDING DOWELS) SHALL BE LAPPED 48 BAR DIAMETERS OR 24 INCHES, WHICHEVER IS GREATER. SPLICED BARS SHALL BE WIRE-TIED.
10. VERTICAL BARS SHALL BE HELD IN POSITION AT TOP AND BOTTOM AND AT INTERVALS NOT EXCEEDING 200 DIAMETERS OF THE REINFORCING, NOR 10 FEET. BARS SHALL BE IN PLACE PRIOR TO GROUTING.
11. VERTICAL REINFORCING BARS SHALL HAVE A MINIMUM CLEARANCE OF 3/4 OF AN INCH FROM THE MASONRY AND NOT LESS THAN ONE BAR DIAMETER BETWEEN BARS.
12. VERTICAL CELLS THAT WILL BE GROUTED SHALL HAVE A VERTICAL ALIGNMENT TO MAINTAIN A CONTINUOUS UNOBSTRUCTED CELL AREA NOT LESS THAN 3"x4".
13. GROUTING SHALL BE STOPPED 1-1/2" BELOW THE TOP OF A COURSE SO AS TO FORM A KEY AT THE POUR JOINT.
14. GROUTING OF MASONRY BEAMS OVER OPENINGS SHALL BE DONE IN ONE CONTINUOUS OPERATION.
15. ALL BOLTS, ANCHORS, ETC., INSERTED IN THE WALLS SHALL BE GROUTED SOLID INTO POSITION, UNLESS NOTED OTHERWISE.

MISCELLANEOUS:

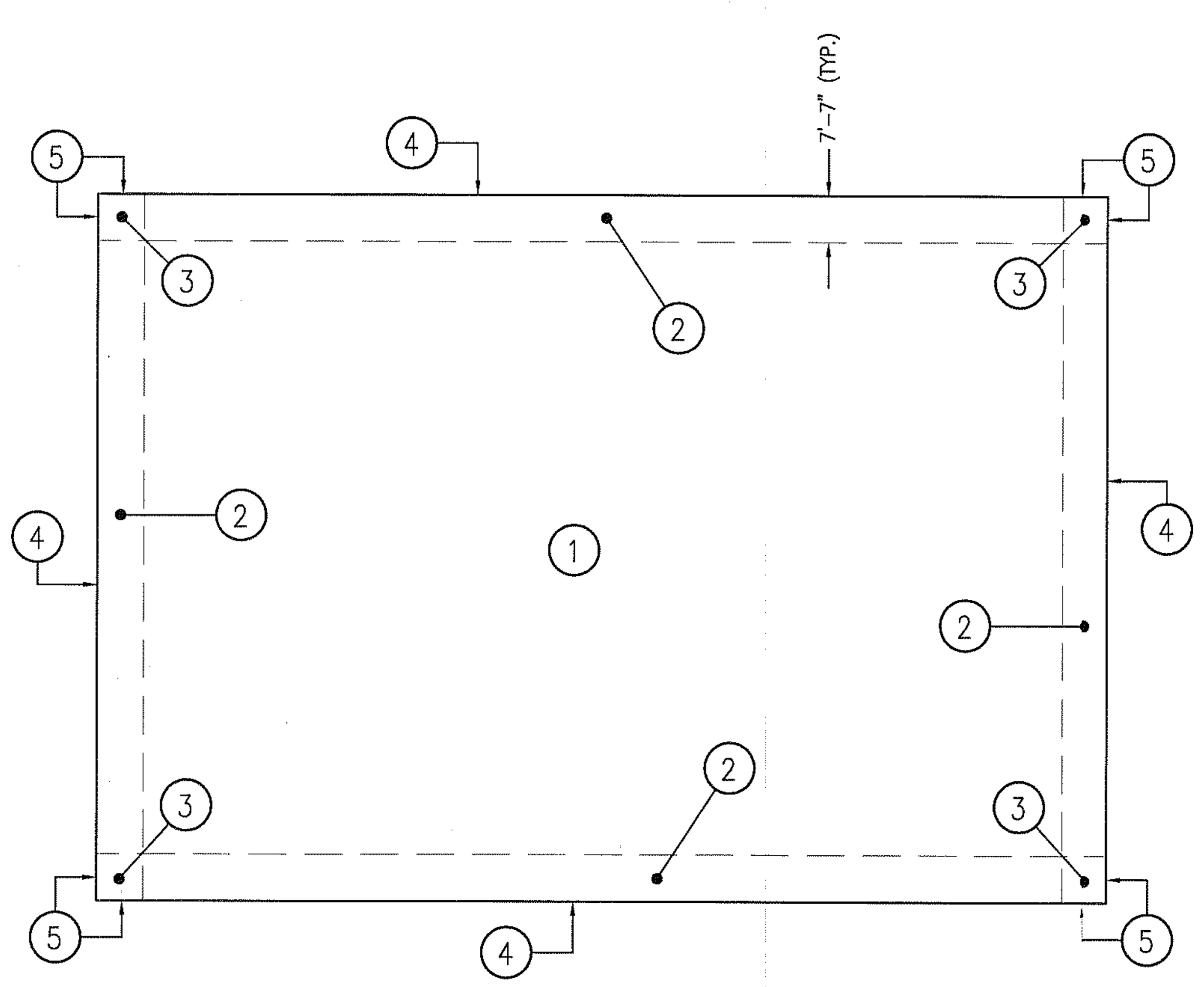
1. THESE GENERAL NOTES SUPPLEMENT THE PROJECT SPECIFICATIONS. REFER TO PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. STRUCTURAL DRAWINGS ARE INTENDED TO BE USED WITH ARCHITECTURAL AND MECHANICAL DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR COORDINATING SUCH REQUIREMENTS INTO THEIR SHOP DRAWINGS AND WORK.
3. NO OPENINGS SHALL BE MADE IN ANY STRUCTURAL MEMBER WITHOUT THE WRITTEN APPROVAL OF THE PROFESSIONAL OF RECORD.
4. NO CHANGE IN SIZE OR DIMENSION OF STRUCTURAL MEMBERS SHALL BE MADE WITHOUT THE WRITTEN APPROVAL OF THE PROFESSIONAL OF RECORD.
5. OPENINGS 1'-4" AND LESS ON A SIDE ARE GENERALLY NOT SHOWN ON THE STRUCTURAL DRAWINGS. REFER TO ARCHITECTURAL AND MECHANICAL DRAWINGS FOR SUCH OPENINGS.
6. THE CONTRACTOR IS RESPONSIBLE FOR LIMITING THE AMOUNT OF CONSTRUCTION LOAD IMPOSED UPON STRUCTURAL FRAMING. CONSTRUCTION LOADS SHALL NOT EXCEED THE DESIGN CAPACITY OF THE FRAMING AT THE TIME THE LOADS ARE IMPOSED.
7. THE STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION. THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL TEMPORARY BRACING AND/OR SUPPORT THAT MAY BE REQUIRED AS THE RESULT OF THE CONTRACTOR'S CONSTRUCTION METHODS AND/OR SEQUENCES.
8. THE CONTRACT DRAWINGS REPRESENT THE FINISHED STRUCTURE AND DO NOT INDICATE THE METHOD OR MEANS OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, PROCEDURES, TECHNIQUES, SEQUENCES, AND SAFETY. THE ENGINEER DOES NOT HAVE CONTROL OR CHARGE OF, AND SHALL NOT BE RESPONSIBLE FOR:
   A. CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES.
   B. PRECAUTIONS AND PROGRAMS FOR SAFETY IN CONNECTION WITH THE WORK.
   C. THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTOR, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK, OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
9. DO NOT SCALE THESE DRAWINGS, USE DIMENSIONS SHOWN.
10. CONTRACTOR'S CONSTRUCTION AND/OR ERECTION SEQUENCES SHALL RECOGNIZE AND CONSIDER THE EFFECTS OF THERMAL MOVEMENTS OF STRUCTURAL ELEMENTS DURING THE CONSTRUCTION PERIOD.
11. THE CONTRACTOR SHALL INFORM THE PROFESSIONAL OF RECORD IN WRITING OF ANY DEVIATION FROM THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL NOT BE RELIEVED OF THE RESPONSIBILITY OF SUCH DEVIATION BY THE PROFESSIONAL OF RECORD REVIEW OF SHOP DRAWINGS, PRODUCT DATA, ETC., UNLESS THE CONTRACTOR HAS SPECIFICALLY INFORMED THE PROFESSIONAL OF RECORD OF SUCH DEVIATION AT THE TIME OF SUBMISSION, AND THE PROFESSIONAL OF RECORD HAS GIVEN WRITTEN APPROVAL TO THE SPECIFIC DEVIATION.
12. WHERE REQUIRED, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ARCHITECT FOR REVIEW BY THE STRUCTURAL ENGINEER. FABRICATION OF MATERIAL SHALL NOT BEGIN PRIOR TO RETURN OF SHOP DRAWINGS MARKED "NO EXCEPTIONS TAKEN" OR "EXCEPTIONS NOTED". WHERE EXCEPTIONS ARE NOTED, FIELD USE DRAWINGS SHALL BE SUBMITTED SHOWING THE REQUIRED CORRECTIONS. REFER TO THE PROJECT SPECIFICATIONS FOR REQUIRED SHOP DRAWING SUBMITTALS.
13. THE CONTRACTOR SHALL NOT IMPLEMENT REMEDIAL DETAILS NECESSITATED BY MISFABRICATION OR FAULTY CONSTRUCTION WITHOUT WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER.

LIGHTGAGE METAL FRAMING

1. MATERIALS:
   A. STUDS: 16 GAGE, ASTM A446 – GRADE D, Fy = 50 KSI
      TRACKS: 16 GAGE, ASTM A446 – GRADE D, Fy = 33 KSI
2. SPECIFICATIONS: DESIGN, FABRICATION AND ERECTION TO BE GOVERNED BY LATEST REVISIONS OF:
   A. AISI SPECIFICATIONS FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS.
3. PROPERTIES:
   A. LIGHTGAGE FRAMING MEMBER SIZES INDICATED ON DRAWINGS SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS: (BASED ON DIETRICH PRODUCT OR APPROVED EQUAL)

MEMBER DESIGNATION	DEPTH	FLANGE WIDTH	GAGE	Ix (in4)	Mr (in-lb.)
600S162-54	6"	1 5/8"	16	2.860	21,170
600T150-54	6"	1 1/2"	16	2.611	14,110
800S162-54	8"	1 5/8"	16	5.736	31,830
800T150-54	8"	1 1/2"	16	5.214	21,850

4. CONNECTIONS:
   A. MECHANICAL FASTENERS:
      1. CORROSION RESISTANT COATED SELF DRILLING, SELF THREADING, STEEL DRILL SCREWS, BUILDEX #10-16 TEKS/1 SCREWS OR APPROVED EQUAL.
      2. POWDER ACTUATED FASTENERS: FASTENER SYSTEM OF TYPE SUITABLE FOR APPLICATION INDICATED, FABRICATED FROM CORROSION RESISTANT MATERIALS, W/ CAPABILITY TO SUSTAIN, WITHOUT FAILURE, A LOAD EQUAL TO 10 TIMES DESIGN LOAD, AS DETERMINED BY TESTING PER ASTM E1190 CONDUCTED BY A QUALIFIED INDEPENDENT TESTING AGENCY. HILTI DX TYPE FASTENERS OR APPROVED EQUAL.
5. FINISH:
   A. ALL MATERIALS TO BE GALVANIZED COATED IN ACCORDANCE WITH ASTM A525 G-60.
6. MISCELLANEOUS:
   A. SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION.
   B. ALL STUD MEMBERS AND THEIR CONNECTIONS SHALL BE DESIGNED BY THE FABRICATOR FOR A HORIZONTAL WIND LOADING AS SHOWN IN THE ACCOMPANYING DIAGRAM (INWARD OR OUTWARD PRESSURES).
   C. DEFLECTION LIMIT = L/360
   D. ALL FIELD CUTTING TO BE PERFORMED WITH A SAW.
   E. TRACKS TO BE ANCHORED TO STRUCTURE AS DETAILED, OR WITH A MINIMUM OF THE FOLLOWING:
      · TO STEEL ¼" IN THICKENSS OR LESS – (1) 12-24x⅞" HWH TEKS/4 SCREW @ EACH STUD OR 24" O.C. MAX
      · TO STEEL GREATER THAN ¼" THICK, LESS THAN OR EQUAL TO ½" – (1) 12-24x1¼" HWH TEKS/5 SCREW @ EACH STUD OR 24" O.C. MAX.
      · TO CONCRETE WITH (2) HILTI ZF 32 P8 POWDER ACTIVATED FASTENERS @ EACH STUD.
   F. PROVIDE CONTINUOUS HORIZONTAL BRIDGING AT 4'-0" O.C. MAXIMUM FOR WALLS.
   G. ALL PUNCHOUTS TO BE MADE IN STUDS MUST BE KEPT 10" (MIN.) FROM STUD ENDS.
   H. PROVIDE 1 1/2" COLD ROLLED CHANNEL, LATERAL STUD BRACING @ 4'-0" O.C. (MAX.) PLACE CHANNELS IN STUD WEB HOLES AND ATTACH TO EACH STUD WITH 2"x2"x16 GAUGE CLIP ANGLES (5" LONG). FASTEN CLIP ANGLES TO METAL STUD AND LATERAL BRACING WITH A MINIMUM OF (2) 10-16x3/4" HWH TEKS/1 SCREWS (4 TOTAL PER CLIP ANGLE).



COMPONENTS AND CLADDING WIND PRESSURE DIAGRAM
SCALE: NONE

	ZONE	TRIBUTARY AREA (SF)	POSITIVE PRESSURE (PSF)	NEGATIVE PRESSURE (PSF)
ROOF	1	10	10.0	−18.0
		20	10.0	−17.5
		50	10.0	−16.9
		100	10.0	−16.5
	2	10	10.0	−30.2
		20	10.0	−27.0
		50	10.0	−22.7
		100	10.0	−19.5
	3	10	10.0	−45.4
		20	10.0	−37.6
		50	10.0	−27.3
		100	10.0	−19.5
WALLS	4	10	18.0	−19.5
		20	17.2	−18.7
		50	16.1	−17.6
		100	15.3	−16.8
		500	13.4	−14.9
	5	10	18.0	−24.1
		20	17.2	−22.5
		50	16.1	−20.3
		100	15.3	−18.7
		500	13.4	−14.9

WIND LOAD INFORMATION | 01
REF.: SOURCE: NONE

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SCALE: NONE

S1.0